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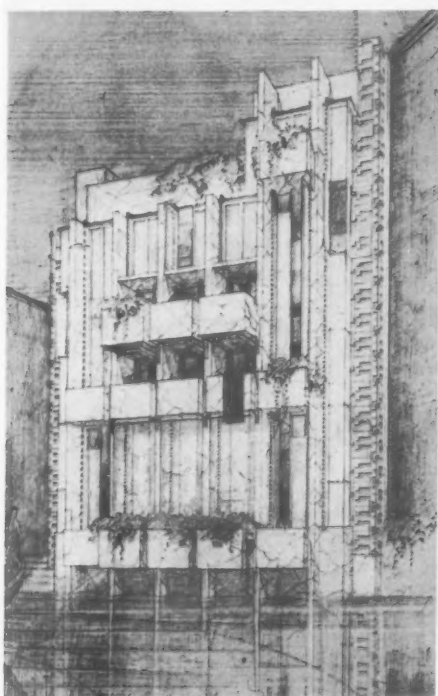
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B.D.1

MARGINALIA

Wright in Venice

When Mr. Frank Lloyd Wright's design for a building on the Grand Canal at Venice (picture below) was published, it gave a surprising turn to the controversy about it that had been occupying considerable space in the columns of *The Times* and elsewhere. The arguments had been based on little



knowledge of what was actually proposed. The preconceived ideas exhibited by many of its opponents as to the sort of design a modern American architect was likely to produce, showed ignorance of the aims and objectives of modern architecture generally and of Frank Lloyd Wright in particular.

When the controversy had died down the design was illustrated in *The Times*, revealing, instead of the expected smooth, stretched-skin façade, transparent walls and shining synthetic surfaces associated in so many people's minds with modern architecture, a small, chunkily modelled affair with square balconies and vertical strips of ornament reminiscent of Mr. Wright's almost forgotten *art nouveau* period. There was no question of overpowering the Palazzo Balbi next door, as had been feared, but whether the design can justly be described, as Mr. Wright described it, as 'a living expression of admiration and respect for the old Venetian culture' must still remain a matter of dispute between those

who admire everything Mr. Wright builds and those who hoped he was going to show how, even in so historic a setting as the Grand Canal at Venice, modern architecture could satisfactorily stand alongside the architecture of the past.

The building is to be a hostel for architectural students, with a small library, and was commissioned as a memorial to a young Italian architect, a pupil of Mr. Wright's, who recently died. It is to be put up, if the Venice Municipality agrees, on a site at present occupied by a somewhat dilapidated plaster-faced building on the outside of the first sharp bend in the canal, where the cut leads off to the railway station, between the Palazzo Balbi and the Palazzo Foscari.

The Royal College of Art

The remarkable recovery, both in vitality and public esteem, which has marked the activities of the Royal College since the war, can be traced back, it would seem, to the symbolic action of the new Principal, Mr. Robin Darwin, who, on taking office in 1948, threw the attendance book into the waste paper basket. This gesture of defiance against the civil service tradition which had gripped the College for so long had to be repeated a week later when it was discovered that the book had been retrieved and the Principal's times of entry and departure had been inserted by another hand. This time the gesture was made final by tearing the book in half.

Though Mr. Darwin has enjoyed more propitious circumstances than many of his predecessors in office, and though he went out of his way to pay tribute to the assistance he had received from Government officers in the speech from which the story above was taken, there can be no doubt that neither those circumstances nor that assistance would have had such effect without his genuinely innovating spirit. Equally symbolic and vital to the progress of the College were his insistence that the College itself should have the final say in the acceptance of students, that the members of the Advisory Council should get to know their terms of reference, and the members of the staff should get to know one another—for at the time he took office there was no Senior Common Room, while the students common room was in an ex-army drill hall.

In the later parts of the speech, which was given to the RSA—in a sense a senior partner of RCA in the same enterprise—Mr. Darwin was able to reveal that the appointment of students to posts in industry and commerce was now the rule, rather than an exception to be mentioned in the annual report, and that relations with industry were greatly improved and progressively improving, just as the College was being called upon to a growing extent to give advice or assistance with public and semi-public ventures, like the 1951 *Lion and Unicorn* South Bank pavilion or the nave windows for Coventry Cathedral. In fact, his closing definition of the college as 'a sphere of influence' seemed particularly just.

Local Historians Meet

This year's Annual Meeting of the Standing Conference of Local Historians was largely devoted to the problem of the increasing damage done to England's Architectural heritage. Lord Euston, as Deputy Chairman, stressed how important it was for the public to act as watch dogs and notify his Society (SPAB) or the National Trust of any impending danger to buildings. Winslow Hall, for instance, was saved in the nick of time by buying it back from the demolition contractors, and the re-erection of Wool Hall at Lavenham after demolition was possible only because an enthusiast kept an eye on the contractors and actually followed their lorries. But happy endings are rare, the greatest danger today being the owner who lets his property become derelict until there is no alternative but to pull it down. Lord Euston also stressed the overwhelming importance of getting architectural advice on restoration, and gave samples of what he called 'first-aid' repair, which enabled buildings to survive until further funds could be raised.

Photographic surveys of architecture are being undertaken in many Counties, but nowhere so thoroughly as in Worcestershire about which the County Archivist, Mr. E. H. Sargeant, who had inaugurated the scheme, reported.

Architect in this Issue

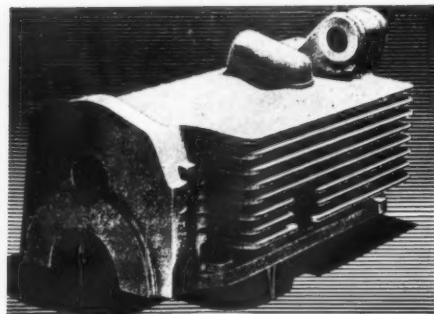


Architect of Bus Terminus in Dublin (see pages 244 to 259) MICHAEL SCOTT was born in Drogheda, Co. Louth, in 1905. Educated in the Jesuit Belvedere College, Dublin, and apprenticed to Jones & Kelly in 1923. Studied architecture in Europe and America. Designed numerous buildings in Ireland, including the Irish Pavilion at New York World's Fair in 1939. Interests include music, the theatre, making films. Is now designing new Abbey Theatre for Dublin. Member of the Irish

Cultural Relations Committee, of the Living Art Exhibition Committee. Past President of the Architectural Association of Ireland. Writes and lectures on architecture.

CORRESPONDENCE

Inspiration



To the Editors,

THE ARCHITECTURAL REVIEW

SIRS,—I saw the enclosed advertisement in a Sunday paper, and it occurred to me that it might inspire the design for a block of flats to be erected somewhere in England, or, indeed, anywhere. Brazilian sunshine would help to enhance the architectural features, of course.

I am, etc.,

Colchester.

I. A. BIRCH.

Hints to Churchwardens

To the Editors,

THE ARCHITECTURAL REVIEW

SIRS,—The advice given in 'Hints to some Churchwardens—How to carry the pipe of a stove on the outside of a chancel with best effect' (AR, April, 1948) appears not to have passed unheeded.



The enclosed photograph shows a window at South Croxton Church, Leicestershire.

Yours faithfully,

GEOFFREY W. IRELAND.

Concert Hall in Stockholm

To the Editors,

THE ARCHITECTURAL REVIEW

SIRS,—Some days ago a friend of mine told me that there had been a letter to the editor in the September, 1953, issue of the REVIEW concerning my proposed concert hall in Stockholm.*

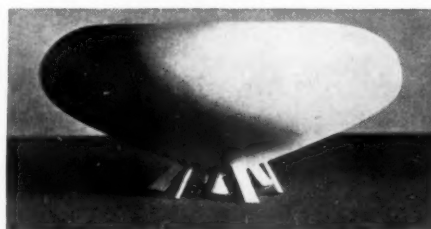
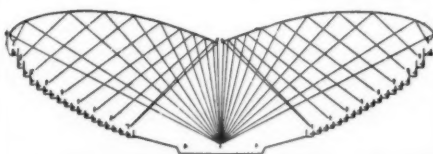
Although a keen reader of the REVIEW I had not seen the letter before and consequently not made a comment.



Concert Hall by Luning

It has not been possible for me to find the mentioned number of *l'Homme et l'architecture*, but I have now got hold of the *RIBA Journal* with the comments by Mr. Entwistle on the Argentine scheme.

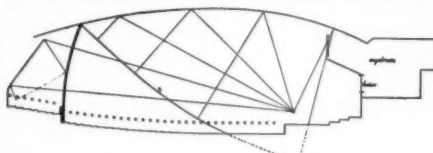
It was very interesting to study the work of Sr. Williams, and I should very much like to get



Concert Hall by Sr. Williams

in contact with him and learn what progress has been made in constructing his big concert hall.

As to the remarks by Sr. Gonzales C. about the probable Argentine influence on my scheme I want to tell him about the wonderful concert hall in Gothenburg by Nils-Einar Eriksson, built in



Concert Hall by Nils-Einar Eriksson

1935, from which I have got my main inspiration.

The 'doughnut' was first presented to the Swedish musical organizations in 1946 at what time not even Sr. Gonzales C. mentions any publication of the Argentine scheme.

Sr. Gonzales C.'s refusal to accept the possibility that the same form can be created simultaneously in different parts of the globe, and that a Swedish scheme must be a copy of an Argentine, seems to me but another example of a nationalism of which we have seen various expressions in recent years.

Yours, etc.,

Stockholm.

ORJAN LUNING.

* AR, March, 1953.

Early Cast Iron

To the Editors,

THE ARCHITECTURAL REVIEW

SIRS,—John Haviland, the English architect who came to Philadelphia in 1816 and lived there until his death in 1852, designed a bank building for the Miners Bank of Pottsville, Pennsylvania, in 1830. The local newspaper, *The Miners' Journal*, on July 31, 1830, printed the following notice:—'*Miners Bank*—This neat edifice is beginning to "show its front." The whole plan has excited a deal of attention from its admirable neatness and security. The cast iron plates and door frames prevent all possibility of fire or robbery. The design reflects great credit on its architect, Mr. Haviland, and the mechanical execution will be equally well performed.'

Haviland himself said of the bank, 'every feature of the front (not excepting the moulded cornices) are formed of cast iron, in imitation of marble; and it is believed to be the first and only example of this material being employed in the whole facade.'

Do any of your readers know of an earlier cast iron front? I should appreciate any information about early cast iron fronts, Haviland's early work in England, or that of his teacher, James Elmes, for I am working on a biography of John Haviland.

New York.

AGNES ADDISON GILCHRIST.

Intelligence

The Victoria and Albert Museum announces a competition for colour linocuts and woodcuts. It is open to British artists and others working in the British Isles or the Commonwealth. Entries must be printed in not less than two colours, and must have been done after January, 1953. The judges are the Keeper of Prints in the British Museum, and the Keeper of Prints and the Keeper of Circulation in the Victoria and Albert Museum. There is a first prize of £75, two second prizes of £50 and two third prizes of £30. The prize-winning prints will be added to the permanent collections of both museums. Entries must be in by June 30.

ACKNOWLEDGMENTS

COVER: Irish Press. MARGINALIA, pages 223-224: F. L. Wright building, *The Times*; Concert Halls, second and third, *Homme et Architecture*, fourth, *Moderne Bauformen*. FRONTISPIECE: Gordon Cullen. C20 PICTURESQUE, pages 227-229: first, Rosalind Dease, *SLA Journal*; others, H. Ginsberger et Cie. CHURCH HALL AT STEVENAGE NEW TOWN, pages 230-235: 1, Henry Lewes, 2-9, 11, 14, Galwey, Arphot, 10, 12, 13, Toomey, Arphot. DUDOK, pages 236-241: first, Duell, Sloan and Pearce, second, 1-11, Wendingen, 12, Newbery, 13, Dell and Wainwright, 14, Strange. BUS TERMINUS AND OFFICES IN DUBLIN, pages 242-257: Galwey, Arphot. POLONIA RESTITUTA, pages 258-262: 1, Zbyszkv Siemaszko, 3, Polish Cultural Institute, 5, G. Shankland. CURRENT ARCHITECTURE, pages 265-268: *Primary School at Coventry*: Galwey, Arphot; *College Extension at Liverpool*: Browns; *Showroom in Conduit Street*: John R. Pantlin. MISCELLANY, pages 267-276: *Certosa di San Lorenzo at Padula*: Gabinetto Fotografico Della Soprintendenza Alle Gallerie di Napoli; *Lettering*: 3, National Buildings Record, 5, London County Council, 6, 7, Galwey, Arphot, 9-11, Toomey, Arphot, 12, 14, de Wolfe, Arphot, 13, McCallum, Arphot. *Exhibitions*: 3, Henry Moore. SKILL, pages 277-292. *Design Review*: page 277, Galwey, Arphot, 11, N. H. E. Tovey, 13, Deighton, Wilkes & Co., 14, Hubert Davey, 20, 22, 23, 36, Sidney Darby, 29, J. Butler-Kearney, 30, Stewart Bale, 32, Guy Gravett, 35, Maltby & Warner.

THE ARCHITECTURAL REVIEW

Volume 115 Number 688 April 1954



The cover reveals how far modern architecture, for all its creeds of honesty and openness, still follows the classical precepts of art concealing artifice. This bird's eye view of the corrugated canopy of the new Dublin Bus Terminus shows the elegant and secret play of reinforcing rods which Ove Arup has devised for it, a work of art which the public will never see when it is encased in the concrete to which it lends its strength. Another view of this canopy is seen in Gordon Cullen's frontispiece to this issue, and the whole of Michael Scott's bold and contemporary contribution to the Dublin scene is described and illustrated on pp. 242-257.

223 Marginalia

224 Acknowledgments

226 Frontispiece

227 C20 Picturesque by Nikolaus Pevsner

The recent broadcast talks by Mr. Basil Taylor on the theme 'must English art be Picturesque' took to task all those, including THE ARCHITECTURAL REVIEW, whom he felt to be guilty of encouraging a Picturesque Revival, and thereby diverting attention from the 'real determinants' of contemporary art and design. But, as Professor Pevsner points out in this *riposte*, this attitude is based on misapprehensions, not only of the position of THE ARCHITECTURAL REVIEW but also of the nature and history of the Picturesque itself. Far from being the personal fancy of talented, but unserious, eighteenth century amateurs, the Picturesque theories of Uvedale Price and Payne Knight were an attempt to create a workable discipline which could replace the foibles of landscape taste. And it is the inherent principles of this discipline, Professor Pevsner insists, which give it a peculiar relevance to the Modern Movement and to contemporary planning problems. Those principles required that attention be paid to the *Genius Loci*, and to the use which was to be made of it, principles that are demonstrably the same as those of functionalism, even if the words are different. The picturesque was the first, but not necessarily the ultimate, aesthetic discipline which was not based upon the grid, the axis, the module and other academic preconceptions, but rather upon free grouping of parts, free juxtaposition of different materials, upon taking things on their own merits, upon an experimental and tentative approach

which is the guiding principle of the modern movement and the planner's life-line in a world of visual chaos.

231 Church Hall at Stevenage New Town C. Holliday and L. Vincent: Architects; D. Stirling Craig: Architect-in-Charge

237 Dudok by R. Furneaux Jordan Early installation in a modest but progressive municipal design office, and the ability to make out of Dutch tradition, Frank Lloyd Wright and other elements a style which was modern yet built of traditional materials such as brick, have given Dudok an unusual position in the Modern Movement. His simple brick modernity could, through his work for the Hilversum Town Council, be seen in the round, and his influence, unlike that of other European masters of the twenties, was transmitted by real buildings, and not by paper schemes. For this reason his early schools and the famous Town Hall at Hilversum, have had a special status in England, where theories are distrusted and brick is respected, and Dudok's work has had a powerful formative influence on English modern architecture. In this biographical analysis of his architecture, Mr. Furneaux Jordan considers the factors which went into the making of his distinctive style and the way in which they have been taken up by other architects. It is possible to identify the influence of Wright, and of Berlage, and debts to Lutyens and the masters of Art Nouveau, as well as a real sense of three dimensional composition which was ahead of its time in the twenties. But the essential eclecticism of his position is made very clear in the superficiality of the work of his followers, who took from him only clichés to dress up their conventional structures. Yet he must not be impugned for the faults of his imitators; his failure to break through to a fully and radically modern conception of architecture is due to his very virtues—as Mr. Furneaux Jordan insists, he is not an 'intellectual' but an artist and a humanist.

243 Bus Terminus and Offices in Dublin Michael Scott: Architect

259 Polonia Restituta by Graeme Shankland

Though the accidents of history have left western Europe remarkably ignorant of the architecture of Poland and other East-European countries, those same accidents have given local traditions and building styles a peculiar value in the eyes of those countries' inhabitants, and this has had a specific effect upon post-war rebuilding. So great has been the wartime destruction of Warsaw that the planners of its reconstruction have it within their power to remake the city anew. In some instances, as in Constitution Square and the residential area of Marienstadt, entirely new schemes have been devised, but elsewhere, as in the Old Town Square, elaborate and careful reproduction of the original urban scene has been the guiding principle. But Warsaw is not the whole of Poland—there are already completely new towns; and in the provincial cities, such as Wrocław, Gdanek and Cracow, famous buildings and damaged quarters are being carefully restored and rebuilt. Though it may seem paradoxical,

as Mr. Shankland observes, that countries which have broken with their past should so revere their traditional architecture, it should also be remembered, he insists, that these traditional forms are not valued only for being Polish, but also for being popular, so that the rebuilt cities are not merely dead museums of architectural history, but can fairly claim to be living works of art.

263 Current Architecture

Miscellany

267 History

269 Lettering

271 Exhibitions

273 Criticism

274 Future

275 Books

Skill

277 Design Review: Gates and Fences by Mary Ward

281 Costing: Fortighaus, an austrian experiment in costing by John Carter

285 Techniques 286 Materials 286 Equipment 288 The Building Industry 288 Contractors, etc.

Author Graeme Shankland, architect. Trained at Cambridge, the AA and the School of Planning. Lectures on nineteenth century architecture and planning; has written and broadcast on twentieth century. Studied post-war architecture and reconstruction in Eastern and Western Europe. Visited Poland with the 1952 International excursion of architects. Now working in the LCC Architects' Department (Town Planning Division) in charge of the Reconstruction Group team on the South Bank Permanent Development. Artist Paul Hogarth, born Kendal, Westmorland, 1917. Studied at the Manchester School of Art and at St. Martin's, London. Before the war, practised as a painter, since war has concentrated on graphic work. First visited Poland in 1948 with Ronald Searle and the historian Millicent Rose. Since that time travelled extensively in both western and eastern Europe, returning with social-cum-topographical drawings which are said to show affinity with work of the painter-draftsmen of the *Graphic* of the 1870's. A selection of these were shown at the AA last December under the title of *Buildings and People*. Was for a time, art editor of *Contact*, and before that, 1946-48, worked with James Boswell on Shell publicity. In 1952 visited Greece, exhibited drawings at Galerie Apollinaire. This was first one-man show. Visiting teacher of Illustration and Graphic Design at the Central School of Arts and Crafts since 1951. Took part in 'Looking Forward,' John Berger's anthology of realist trends in contemporary British art. Has also exhibited with Arts Council, the Senefelder and Artists International Association. In summer of 1953, spent four weeks in Poland—the complete series of drawings made there will be exhibited at the AIA Gallery in April.

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NEW ROSS

via TULLOW

GALWAY

via ATHLONE

ATHLONE

via CLARA

Gordon Cullen's impression of the new Bus Terminus in Dublin, designed by Michael Scott, shows part of the main block and the remarkable concrete canopy over the control-room windows. Other parts of this pioneering addition to the Dublin scene are illustrated, and the whole described on pp. 242-257.

* Le point géométral est unique, les autres sont infinis en nombre. Donc il faut faire les monuments non en prévision de ce point unique, mais bien en vue de ces points multiples.
Viollet-le-Duc. *Letters*, published 1902.

† 'Symmetrical arrangement is more ready to the hand of the unskilled than the harmonious arrangement of differences and unlikeness.'
C. F. A. Voysey, *On Town Planning*, AR, Volume XLVI. 1919.



Nikolaus Pevsner

Picturesque

AN ANSWER TO BASIL TAYLOR'S BROADCAST

'Must English art be picturesque? The historical answer is that many English artists have managed wholly or partially to escape from this imperfect vision. Hogarth at his best, Gainsborough when he was most himself, least subject to the influence of taste, Stubbs and Constable consistently, Turner after a process of emancipation, Sickert at his best. These are a few of the painters who have achieved the seriousness and the truth which the picturesque does not provide. The list could be extended to the present day—and into the fields of architecture and design. But as long as the man of taste or those institutions which have so largely superseded him continue to maintain their influence, as long as they strive to live up to the picturesque identity which we discovered during the years of war, then Stendhal's condemnation† will continue to apply to a very great deal of English art.'

This was the last paragraph of three talks broadcast recently by Mr. Basil Taylor on the Third Programme. They were called *English Art and the Picturesque* and combined an analysis of eighteenth century picturesque theory with an indictment of its effects on England in the last twenty years, effects which Mr. Taylor attributed largely to THE ARCHITECTURAL REVIEW.

The paragraph quoted sums up Mr. Taylor's attitude. The picturesque is a sign of imperfect vision. It lacks seriousness and truth. It prevents the English from facing up to the realities of an industrial age and draws them into irrelevancies and a nostalgia for the past.

Mr. Taylor's arguments ran approximately as follows:

The picturesque, viewed historically, came as a reaction against Neo-Classicism and as a kind of Transitional before Romanticism, 'related to them as Mannerism is to the High Renaissance and the Baroque'. There is an historical mistake here (Lord Burlington and Pope started Neo-Classicism and picturesque garden layout at exactly the same moment, in exactly the same places, and with exactly the same conviction)—but we can let that stand for now. Mr. Taylor proceeded to define the qualities of the picturesque. 

* Kindly communicated by Mr. Robin Middleton.

† Kindly communicated by Mr. Alan Walker.

‡ 'Regent-Street, à Londres, étonne, mais ne fait aucun plaisir et n'a pas de style. On voit des barbares fort riches, les premiers hommes du monde pour le steam-
engine et le jury, mais qui du reste ne sont sensibles qu'à la sombre mélancolie de l'architecture gothique, ou, ce qui revient au même, au monologue de Hamlet,
tenant à la main le crâne d'Yorick.' *Promenades Dans Rome*, Stendhal, Paris, 1838, Vol. I, p. 175.

The characteristic qualities of the Picturesque, according to Mr. Taylor, are 'irregularity of form, of colour, of light and shade, of texture,' and in addition 'intricacy and sudden variation'. It was an excellent touch to link these qualities to the emergence of historicism in architecture, that is, to the admission of various styles of building all acceptable in their place and their mood, and also to the new belief in nature, according to which 'nature is virtuous in herself and not only when subject to man's refinements'.

So far no quarrel. But Mr. Taylor then almost imperceptibly exchanged such terms as varied and irregular against 'accidental' and 'disorderly.' Here to my mind lies his fundamental error, an error especially fatal in considering the Picturesque today. Its full implication will only gradually come out. But even if we confine ourselves for the moment to



A design for Christmas greetings by a student of the Royal College of Art. It is work of this kind which seems to have influenced Basil Taylor in his antagonism against what he erroneously regards as the REVIEW'S attitude to design and to the Victorian age.

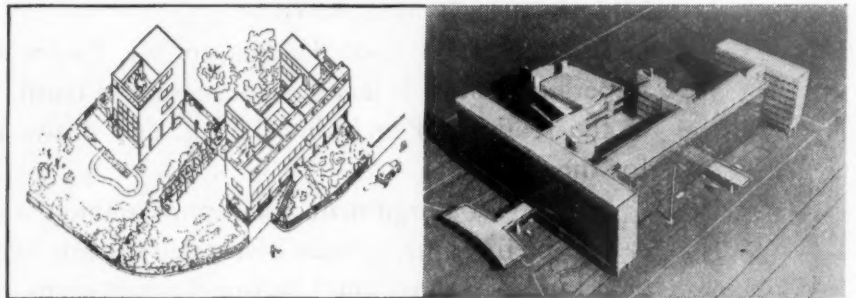
the theorists of 1800, what Uvedale Price and Payne Knight taught was not to let accident have its way or create disorder. Their message was: Keep your eyes open. See, analyse what impresses you, and for what reasons. You will then realize that we have available an infinitely richer body of materials for artistic creation than classical theory would make you believe. Use it in your work. To this day we cannot do better than follow that advice.

The Picturesque improves themselves planned carefully and self-consciously and with aesthetically highly successful results. It is true that Shelley said that Price and Knight 'could not catch the hare.' But that statement is valid only from a point of view which is not ours. The true Romantic looked at nature to provide him with certain valuable sensations. To attain them he had to abandon himself to her embrace, to undergo her full impact. Any interference with her would spoil that. So to him any improving of nature blunts his chance of revelation. All that art can do is to resuscitate the impact, and that is not a job for the planner but for the painter or poet. A Constable landscape is the perfect expression of this attitude. Landscaped 'landscape,' compared with it, must be 'imperfect' because human preconceptions have come between the adept and his source of inspiration. But all this is only valid as long as we look at a landscape garden as a substitute for painting. It becomes wrong when it is applied, as Mr. Taylor tries to, to architecture, and especially townscape.

Perhaps Mr. Taylor was bound to lose the certainty of his argument at this point. For he is an art critic rather than an architectural critic, and his own work has been concerned mainly with painting and the history of painting.

The paragraph quoted was typical of his talks in bringing in architecture and design only once and only by the way. This is explained perhaps by the immediate personal reasons which Mr. Taylor seems to have had for delivering them. He teaches at the Royal College of Art. There he meets students of painting and sculpture as well as design, and finds many of them lacking in seriousness of purpose. He sees with concern that they don't take the hard road, and that they like ready-made clichés. How true that is; but has it ever been otherwise? Should one blame Michelangelo for the sprawling super-nudes in the foregrounds of third-rate Mannerist providers of frescoes. Mr. Taylor said, referring explicitly to *THE ARCHITECTURAL REVIEW*, that 'it must be a mistake to contrive a pattern book of approved forms and elements.' He should have said that the mistake is only made when forms and elements approved for certain specific purposes and in certain specific locations are imitated pattern-book-wise. That is what often happens amongst students, even talented students, before they can stand on their own feet. I illustrate the frontispiece of a recent issue of the *Journal of the Society of Industrial Artists*, designed by a student of the Royal College. Am I wrong in thinking that this is what embitters Mr. Taylor? That he sees this kind of Victorian Revivalism as an easy way to avoid a fully thought-out answer to a set problem? I am probably right: for Mr. Taylor contrasts the items whose fashionableness he regrets (and ascribes to the influence of *THE ARCHITECTURAL REVIEW*) with 'the more real determinants' of planning.

But the 'real determinants' of planning are exactly the forces which have brought to the front the valid argument in favour of the Picturesque in the twentieth century. The argument runs in my opinion something like this. If one looks at the work of the pioneers of twentieth century architecture, say as early as about 1925, Gropius's *Bauhaus* at Dessau or better still Le Corbusier's Stuttgart houses of 1927 and his *Centrosoyus* project of 1929, what are their aesthetic qualities? First those that everyone is familiar with; cubic shapes, no mouldings, large openings and so on.



Left, Le Corbusier's two houses at Stuttgart, 1927; right, his Centrosoyus project, Moscow, 1929.

But, in addition, the free grouping of the individual building, a mixture of materials, synthetic and natural, rough and smooth, and, beyond that, the free planning of a whole quarter, with differentiation of levels, differentiation of vehicular traffic and pedestrian ways, with interaction between landscape and building (the tree inside the *Pavillon de l'Esprit Nouveau*), and between buildings of different shapes and heights. Do not these qualities define the difference

between the free exercise of the imagination stimulated by the disciplines of function and technique (e.g., Wright's 'in the nature of materials') and academic rule of thumb, within whose strait-jacket architecture was confined before the modern movement set it free? And do they not show that, albeit unconsciously, the modern revolution of the early twentieth century and the Picturesque revolution of a hundred years before had all their fundamentals in common? The qualities of the modern movement were not developed to please the eye, but because without them no workable, no functioning, no functional architecture is possible in our age. Impose symmetry, impose axuality and grids, impose rules even where the artist is feeling his way, and you reduce usefulness. Le Corbusier was already following the new principles in the years in which Mr. Hussey wrote *The Picturesque* (1927) and Sir Kenneth Clark *The Gothic Revival* (1928). The two events had superficially nothing to do with each other, and only some years later, in the REVIEW, was it argued that no other existing aesthetic theory fits the demands of modern architecture and planning so well as that of Price and Knight.

As this discovery was made, it became clear that it had a special application to planning in a town. Here the architect, instead of creating variety, has to achieve it by means of a mixture of what he finds on the site and has reasons to preserve, with what he designs himself. So the variety of shapes and materials within the individual building now grows into a larger variety of new and old elements within any one townscape.

That is what townscape meant, when the term was coined. To make townscape requires an architect wholly in sympathy with today, but at the same time sensitive to the character of a site and the character of what he finds standing on it when he starts. The procedure of modern urban planning is as different from Mr. Taylor's accident and disorder, attributed wrongly to the eighteenth century Picturesque improvers, as it is from the revival of Victoriana attributed to the REVIEW.

The difference is summed up in the phrase '*genius loci*.' Here again (to my surprise) Mr. Taylor is displeased. Paul Nash, in 1933, must have been the first to restore to it that meaning which the eighteenth century planners had endowed it with. It is a twofold meaning, when applied to the architectural tasks of the twentieth century. One refers to the fact that each country (on the rich soil of its traditions) will find its own suitable variations on the theme of the universal style of a period. The other refers to the fact that each individual task must be treated on its own merits, according to its own locus and usus. So the attitude is the very opposite of that pattern-book attitude which Mr. Taylor ascribes to it, and incidentally, quite unjustifiably, calls taste.

His use of the word 'taste' brings us to the real point of difference between Mr. Taylor's approach to Picturesque theory and the REVIEW's. He sees the whole Picturesque movement as a *beau geste* on the part of talented but whimsical amateurs, entertaining but from the point of view of art not serious. A diversion, dear to the British just because it avoids the profounder preoccupations of art.

In this, I venture to suggest, Mr. Taylor parts

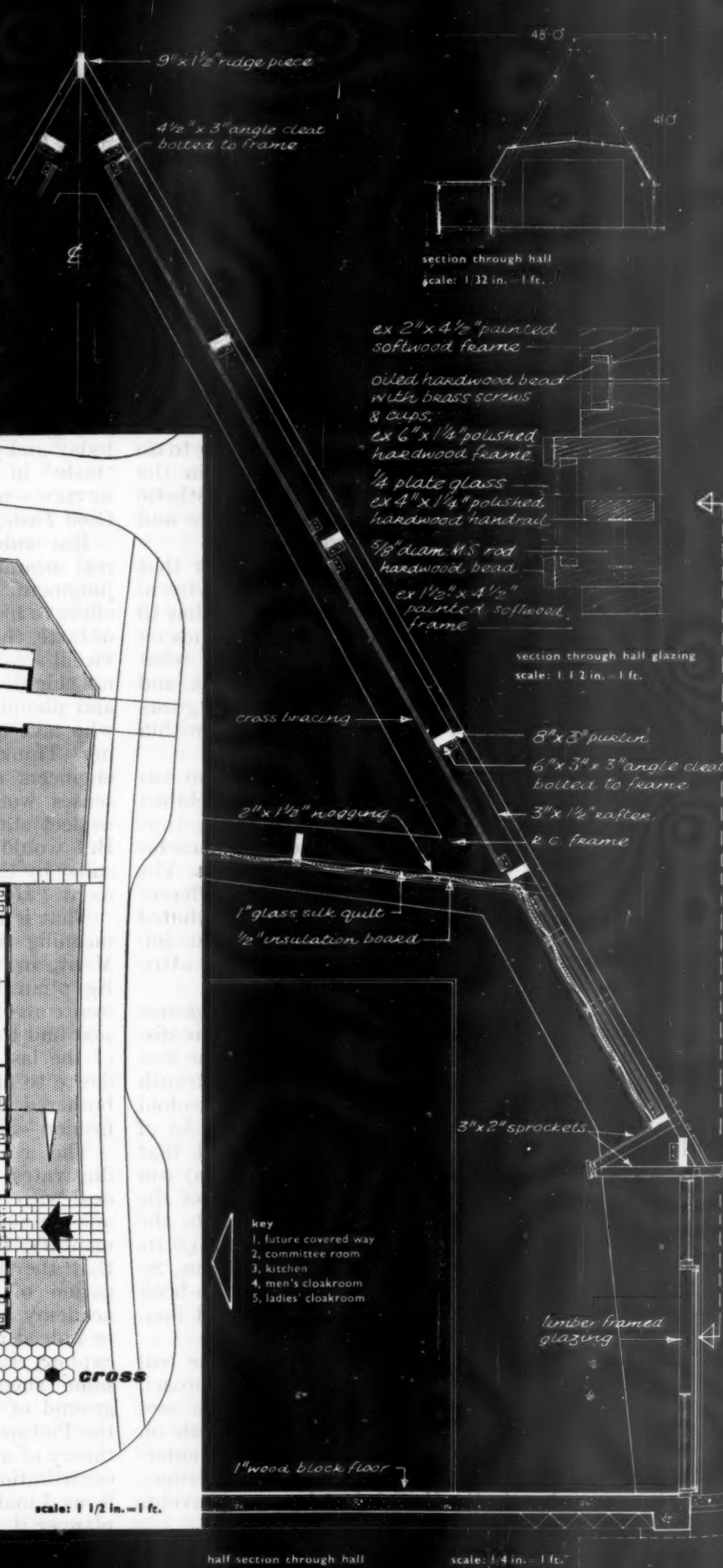
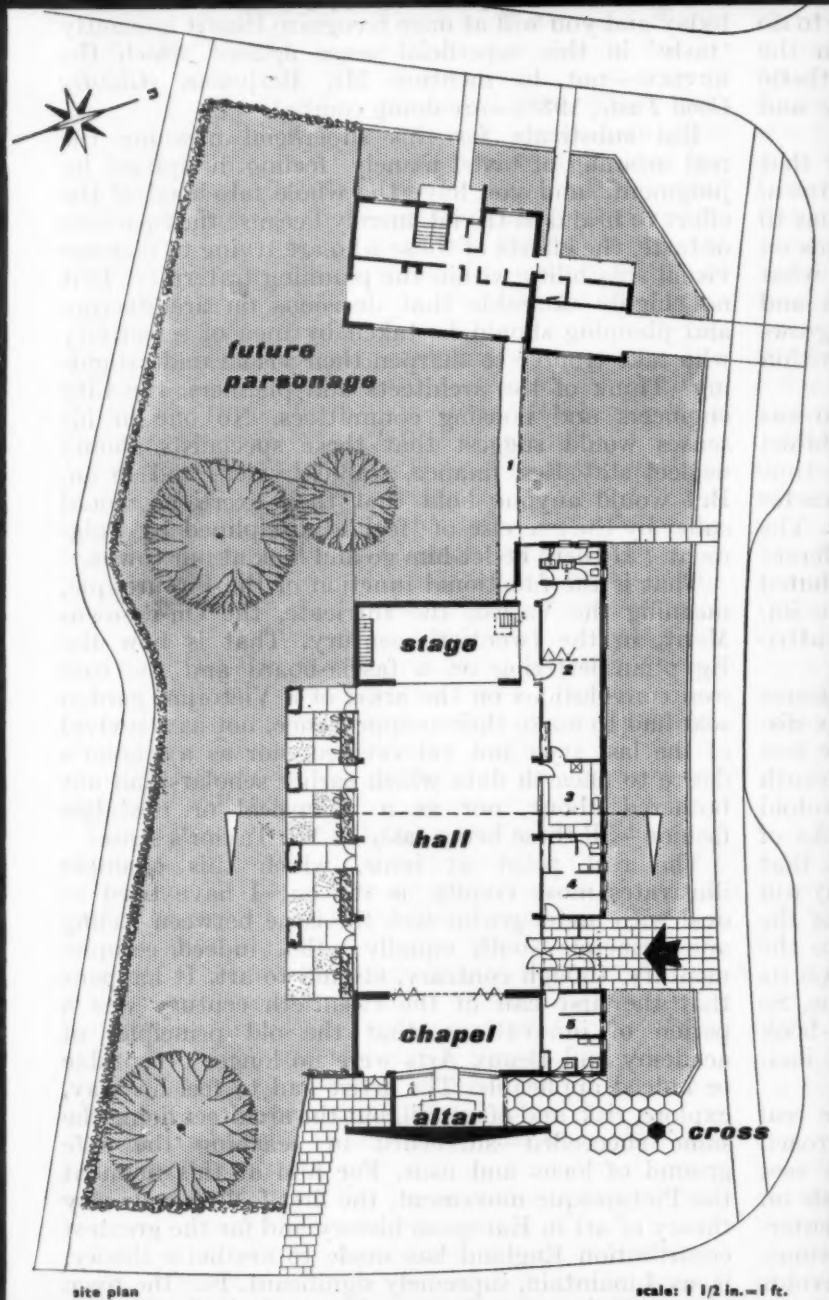
company with the REVIEW—and Payne Knight and Uvedale Price—where he least expects it; that is, most certainly not in his belief that all art, including architecture and town planning, should involve a coming to grips with the 'real determinants,' but in his belief that Picturesque theory is either its 1800 or its 1950 aspect denies that necessity. Surely this is a fantastic misrepresentation or misreading of the history of the movement, when one considers that it was just because, in the mid-eighteenth century, the Picturesque conceits of Pope and Addison had become a 'taste' in the derogatory sense in which Mr. Taylor uses the word, that is, a rule-of-thumb, a recipe unconcerned with the real determinants—it was just because of this that Uvedale Price and Payne Knight raised up Picturesque theory as a counterblast. They were combating the trivialities of a thoughtless landscape taste. Apply these conditions to today and you will at once recognize that it is exactly 'taste' in this superficial sense against which the REVIEW—not to mention Mr. Betjeman (*Ghastly Good Taste*, 1933)—are doing combat.

But substitute for this superficial meaning the real meaning of taste, namely 'feeling disciplined by judgment,' and you have the whole falsehood of the effort to brand as trivial, merely because they partake of taste, the efforts of those who are trying to increase visual sensibility within the planning fraternity. Is it not highly desirable that decisions on architecture and planning should be taken by men of sensitivity who take trouble to sharpen their visual understanding? Think of the architects and planners, the City engineers and housing committees. No one in his senses would suggest that these specialists should neglect statistics, finance, traffic, hygiene and so on. But would anyone hold that their exertions would suffer by the exercise of 'feeling disciplined by judgment'? If there be let him go and look at our towns.

That is the functional function of the Picturesque, meaning the Varied, the Intricate, the On-its-own-Merit, in the twentieth century. That is how the Egyptian lettering on a fascia-board and the cast iron convolutions on the arms of a Victorian garden seat had to make their reappearance, not as a revival of the last style not yet revived, nor as a scholar's desire to unearth data which earlier scholars had not bothered about, nor as a whimsical or nostalgic fashion—all these being taste in Mr. Taylor's sense.

The real point at issue, which this example illustrates most vividly, is the one I have tried to deal with under *genius loci*, the issue between feeling and principle—both equally valid, indeed complementary, though contrary, stimuli to art. It happens that the first half of the twentieth century was a period of innovations, that the old principles of academy and Beaux Arts were no longer acceptable or indeed applicable. The artist had to feel his way, explore, risk, and often fail, but the architect doing the same succeeded—succeeded in reaching the safe ground of locus and usus. For him at this moment the Picturesque movement, the first feeling-your-way theory of art in European history and far the greatest contribution England has made to aesthetic theory, is, as I maintain, supremely significant. For the town planner it is more than significant, it is the life-line by which he can defeat chaos.

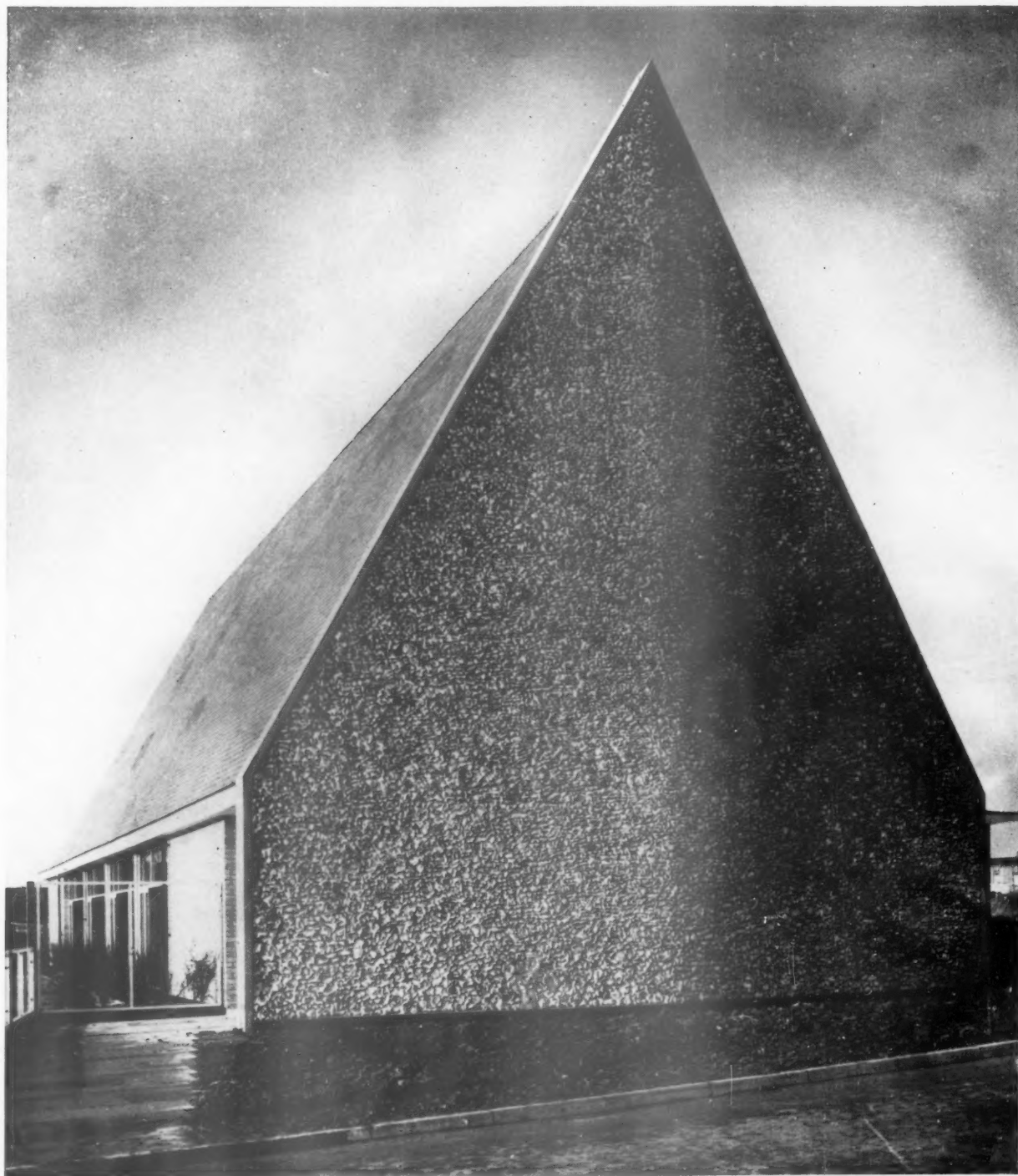
CHURCH HALL AT STEVENAGE NEW TOWN



CHURCH HALL AT STEVENAGE NEW TOWN

G. HOLLIDAY AND L. G. VINCENT: ARCHITECTS

D. Stirling Craig: architect-in-charge



1. the tall flint-faced eastern gable, which is brought to a slight prow, seen from the road. On the left is the fully glazed south wall of the hall with glass doors which open on to the terrace.



2

A building was required which could be used both as church and church hall and the plan provides a main hall, seating 250 people, with a chancel and altar at the east end, and a stage at the west end. The chancel can be divided from the main hall by means of sliding folding doors and it has a separate external entrance. The small chapel thus formed can be used for weekdays, while the main hall is left free for other purposes. Under the stage is a semi-basement, which houses the heating plant and serves as a chair store. Along the north flank of the hall are placed the main entrance, cloakrooms, committee rooms and a kitchen. The committee rooms can be divided by sliding folding doors to form separate dressing rooms for theatricals or other uses. The southern flank wall of the hall is entirely glazed, with four pairs of doors opening on to a terrace. Light from the north is obtained by high level roof lights placed in the sloping part of the roof.

The construction is composite reinforced concrete

2 and 3, the chancel and altar at the east end of the hall with the sliding folding doors shown open. A small chapel for weekday use, 3, is formed when the doors are closed, 4; the remainder of the hall is then freed for other uses. 5, detail of flints on the east wall and the fir cross. 6, general view looking east. 7, the tubular framed pulpit with front panel of sycamore and Lagos mahogany veneer. 8, looking west towards the stage.



3



4



framing and load-bearing brick walls. The east end wall is faced with flints, and the flank and west end walls with mild stock facings. The roof is covered with cedar shingles. Walls are plastered internally. Above eaves level, the roof is lined with perforated acoustic hard-board backed with glass silk on the sloping portions, and with fibre acoustic board on the soffit. Chancel and main hall floors are of muhuhu hardwood blocks, the chancel steps being finished in black terrazzo, with hardwood risers and carpet insets. The carpet is a part of that used in Westminster Abbey for



5



6



7



8



9

the Coronation last year. The committee rooms are floored with thermo-plastic tiles, kitchen and cloakroom with granolithic.

Artificial lighting is concealed in troughs along either flank of the main hall at eaves level. The chancel is lit also from concealed lights. Heating is by a warm-air system, with a gas-fired boiler in the basement.

The building was designed with a steeply pitched roof to give height and contrast to the surrounding residential development. A feature at the east end is



10

the tall floor-to-ceiling north window adjacent to the altar, with a free-standing cross constructed of rough timber (a fir tree which had to be removed during the construction of a new road nearby), placed outside in a hexagonal paved area. A bell is placed high up on the west gable, supported on a simple cantilevered steel bracket.

The church will form part of the neighbourhood centre, comprising shops, pub, community building and telephone exchange, all now under construction.



11



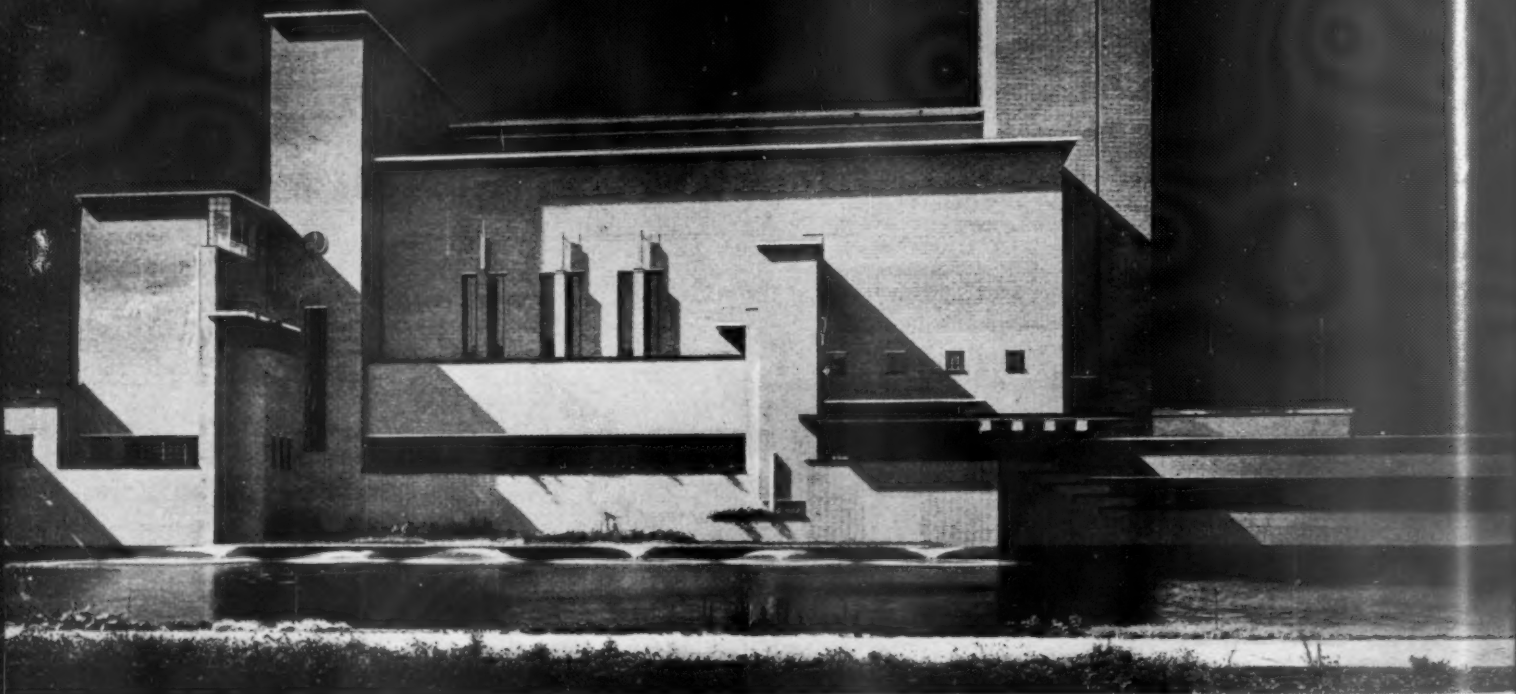
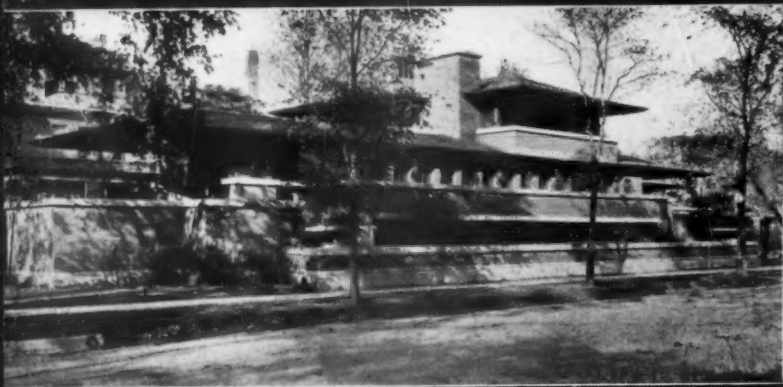
12, 13



14

CHURCH HALL AT STEVENAGE NEW TOWN

9, on the facing page, the south elevation with glass doors leading to the terrace. At the top left of the picture is the church bell supported by a simple cantilevered steel bracket. 10, doorway and light fitting in the entrance hall. 11, the north wall looking towards the fir cross. 12 and 13, roof lights on the north side of the hall; at night square panels direct diffused light on to the ceiling. 14, part of the glazed south wall with doors that open on to the terrace.



These three illustrations of Frank Lloyd Wright's Robie House (1909), top, of Hilversum Town Hall (1929-31), centre, and Burnet, Tait & Lorne's Curzon Cinema, London (1933), bottom, would seem to show a progressive influence of one architect upon another rather more clearly than was apparent to their contemporaries. The simple masses—voids as well as solids being part of the massing—was a strong and virile influence upon Dudok, a genuine departure from an architecture of facade and window. The last of the three buildings, for all its great merits, would seem to rely more upon a purely stylistic imitation of Dudok—flower-boxes, slab, vertical motifs, etc. All three buildings, however, are clearly members of one family.



R. Furneaux Jordan

DUDOK

AND THE REPERCUSSIONS OF HIS EUROPEAN INFLUENCE

Twenty years ago the work of Dudok caused a curious excitement among English architects. Excellent as was the quality of his work, that excitement now needs some explanation. Its effect on the Modern Movement in England was marked; it was not entirely for the good. Elsewhere in Europe the Modern Movement ran a fairly direct and logical course; Art Nouveau once left behind, functionalism with reinforced concrete as its technical basis was the main inspiration. In Holland there was a strong tradition of brick building; in England there was a strong tradition of brick building. . . . and of almost everything else. The Modern Movement in England, therefore, was—as seen from France, Germany, Italy or America—always a little ‘odd’ and out of focus; rather staid and lacking structural dynamic. To English architects who wished to be modern and didn’t quite know how, Dudok—applying the superficialities of modernism to traditional brick structure—was a boon. The only comparable influence in those years was the even more traditional, more romantic, more Nordic work at Stockholm. Stockholm Town Hall, Hilversum Town Hall, incredible as it now seems, were—to an enlightened laity and a large section of the profession—*modern*. Hilversum, at least, had the better claim.

Dudok is an artist, not a journalist—an independent soul more interested in building than in talking about it; versatile and deft in the handling of bricks, he is, when it comes to handling words, rather inarticulate about his own work. The big *prima donnas* of the Modern Movement have proclaimed their own position frequently and forcibly; Dudok has said, with a touch of contempt, that he would leave philosophy to those who prefer the desk to the drawing-board. Such statements as he has made from time to time* tend to be platitudinous; clearly he would prefer to be judged by his buildings. For a quarter of a century we had to judge Le Corbusier at least as much by his books as by his buildings. This is not to belittle him; the same remark might be made about

* Those most easily available are: (a) Lecture to the Architectural Association: AA Journal, June 1934. (b) Speech on receiving the Royal Gold Medal: RIBA Journal, April 1935. (c) Lecture to Société Belge des Urbanistes et Architectes Modernistes: Trans. in RIBA Journal, Sept. 1951.

Pugin or Lethaby, each of whom had, in his own way, such a high sense of mission that each wrought a revolution in the visual world. In any case large opportunities to build usually come late. Dudok in this respect was more fortunate. Through his acceptance of a municipal post in a small but growing dormitory suburb of Amsterdam, he was building on a fair scale before he was thirty, and since then—except for the war years—work has flowed from his drawing-board in a steady stream. It is useless to speculate upon what might have happened had Dudok rejected that modest appointment. Would he, later in life, have built in a more spectacular, a more cosmopolitan way, or would he have been lost to us? One suspects that he was just one of those rare beings who finds his niche early and stays in it. As a result it is possible to judge Dudok by his actual building over a period of some thirty years.

Willem Marinus Dudok was born in Amsterdam in 1884. He studied in the military academy at Breda, attaining the rank of lieutenant, but specialising—as his Renaissance predecessors might have done—in mathematics and civil engineering. In 1913 he was appointed municipal engineer at Leyden; in 1915 he became municipal architect at Hilversum but was also able to maintain a private practice. Apart from the famous series of schools built in Hilversum from 1920 onwards, Dudok will be remembered mainly for his master-plan for the development of Hilversum (1921), for the Town Hall at Hilversum (1921), for the Columbarium at Westerveld Crematorium (1925), for the Dutch Students' Hostel at Cité Universitaire, Paris (1927), for the 'Beehive Store' in Rotterdam (1930), and for his post-war proposals for the reconstruction of The Hague. In 1935 he received the Royal Gold Medal of the RIBA.

Dudok is a man of charm. He is also a happy man, happy in a profound knowledge of music and happy with the day to day problem of getting modest buildings built. It is doubtful whether he has, even secretly, nursed any ambition, let alone any high sense of mission. He is very Dutch—his work shows that—and looking out upon the lawns, clean streets and healthy children of his own garden-city, it is unlikely that he ever saw any reason for such a mission. The Dutch are not easily stirred to do great things, they do simple things very well . . . and Dudok is Dutch. There has been no catharsis in his life as when the young Lloyd Wright looked upon the towers of Chicago by night; no dramatic ambition emotionally proclaimed, as with a *Ville Radieuse*. The nearest Dudok ever came to such proclamations was in such statements as that 'a school should be a place of joy.' His other utterances concern the abstractions of architecture itself, as for instance: 'architecture is the serious and beautiful game of space' . . . professional 'shop' rather than manifestos. In eighteenth century England he would have been, say, a Carr of York rather than a Vanbrugh; he has never yearned for the romantic exaggerations of Marseilles or Bear Run, let alone for the rarified sophistications of a Farnsworth House. Absorbed in the simpler game of massing brickwork and making fenestration patterns,

such things have been outside his range. What he did do, however, he did so well that he became an international figure and—like others we have mentioned—did for a time make a revolution in the visual world.

It is with real respect for Dudok's sensitivity and skill that one nevertheless regards him as a secondary rather than a primary figure in the history of the Modern Movement. He would probably agree. Twenty years ago it was certainly at that level—the level of fine brick domesticity rather of the more spectacular gesture in steel or concrete—that the Modern Movement was in need of a master, someone who, being content with something less dramatic than, say, the Einstein Tower but more virile than the trim cottages of Welwyn or Denmark, was prepared to purge craftsmanship of its whimsicalities without himself ceasing to be a craftsman.

Where then do we place Dudok in the Modern Movement? In time he is about midway between the 'pioneers' and CIAM. And since even CIAM is passé, Dudok must date. Looking at his earlier work and reading what was said of him in the 'thirties, it is born in upon one that 1930 was very much nearer to 1910 than it was to 1950, far nearer to Lutyens and Voysey than to Saarinen or Mies. Dudok was emphatically a romantic; his work is full of almost mediaeval motifs: oriel windows, little balconies used for 'punctuation' but never used in fact, balconies by 'Motley' for a play about William the Silent, romantic scene painting around the pond at the Town Hall, and a tower all ready for a banner or a burgomaster . . . and so on.

This romanticism was not of course of the deepest 1930 dye—Stockholm had captured that market—but it seems now to be a far more fundamental part of Dudok's make-up than such 'modernism' as was possible within his self-imposed garden-city outlook. In England at that time—with the Bauhaus and Corb' appreciated only by an *avant garde* élite—it was not realized that the Modern Movement was a structural rather than a merely stylistic revolution. Consequently Dudok's horizontal windows, plain masses and flat roofs were to many—weaned in the whole Morris-Lutyens tradition—a quite sufficient sign of non-

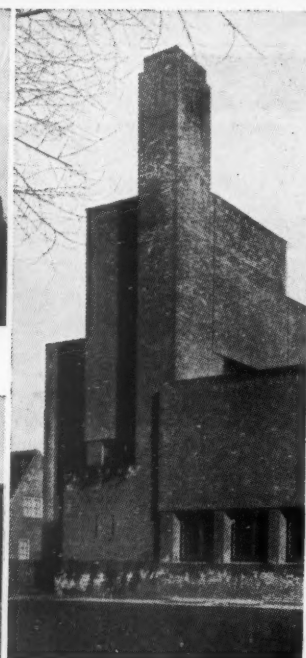
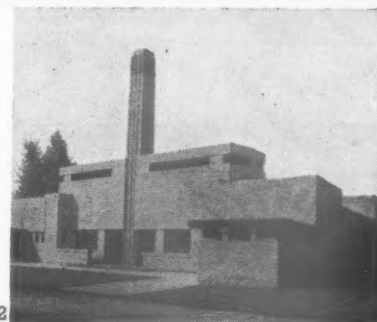
romantic modernism. 'Far removed,' wrote F. R. Yerbury in 1933, 'from the De Klerk school and the romanticism for which it stood.' The next year, when Dudok was at the AA, Humphrey Pakington said: 'I have never discovered whether Mr. Dudok is a Modernist or a Traditionalist.' At the same meeting Sir Giles Scott dismissed the 'very mechanical, mechanistic stuff of which we see a great deal,' and hailed Dudok because 'he had proved that it is possible to be a real modernist and yet preserve the qualities of traditional architecture.' Rather earlier, in 1931, Howard Robertson had written: 'Dudok is animated by a strong desire to create buildings which are in harmony with the spirit of the day . . . he feels the modern spirit as part of the essence of his being. *And Dudok is also one of those who obviously does not believe that in architecture the method of construction adopted should dominate the conception.*' The italics are mine, but a Byzantine or Mediaeval reaction to the statement would be enjoyable. Anyway, it is clear that Dudok—twenty years ago—was pleasing almost all the people all the time, even if some of them had not got around to defining their terms.

It was a dangerous thing to do; and by 1953 it has become clear that we can regard Dudok as a master of the Modern Movement only in the limited sense that, with a sensitivity amounting to genius, he imposed the outward and superficial insignia of the 'modern style' upon traditional structure. If this seems a harsh judgment upon a great man, one reply must be that Dudok placed high thatched roofs or flat ones—as the whim took him—upon school buildings of identical plan, date and function. The result was always charming, charming scenery beautifully built; but if—as I believe—the Modern Movement has that sort of structural dynamic that Mackintosh demonstrated in the Glasgow Art School in 1898, then the Hilversum schools simply do not 'belong.'

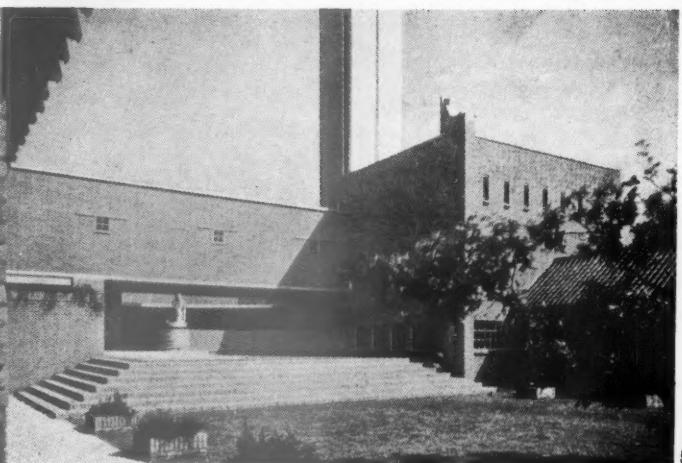
Dudok, like all romantics, was an eclectic . . . of a high order. It is fascinating to track down his sources. First, there was the whole inescapable tradition of Dutch brickwork: something that for centuries the Dutch had made into a high European craft, so that foreign architects generations apart—Wren and Lutyens for example—could regard it as a major inspiration. Then there were Dudok's own masters: Berlage and Bazel. It was left to Dudok to rationalize the crudities of this Dutch pioneering, smoothing out experiment and brashness into distinction and style. In spite of these rich infusions of 'Dutchness' I think his English sources mattered more; they were never so specific as the Dutch ones, but for that reason they were perhaps deeper, more spiritual. How much the English inspiration was direct—did the young Dudok, for instance, visit Letchworth?—how much the result of a general Teutonic passion for Muthesius's *Das Englische Haus* (1904), it is difficult now to say.

An early group of cottages—all pebbledash, weatherboarding and leaded lights—is almost pure Baillie Scott with a touch of Voysey. Dudok soon got this nonsense out of his system, although years later thatch was still turning up on Hilversum schools.

1921 22



1925 26



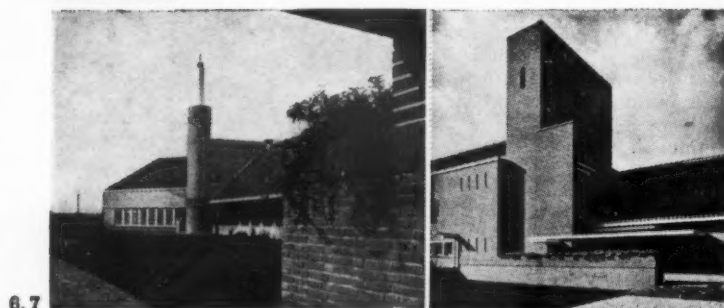
These earlier buildings by Dudok show him groping his way forward from almost purely English domestic work, under the influence of Voysey and Baillie Scott, to a strong, sometimes almost brutal, interpretation of Art Nouveau in Dutch brickwork.

- 1, three houses, Bussum, 1921-22.
- 2, municipal baths, Hilversum, 1921.
- 3, school, Hilversum, 1922.
- 4, staircase block, school at Hilversum, 1921-22.
- 5, columbarium, Westerveld, 1925-26.

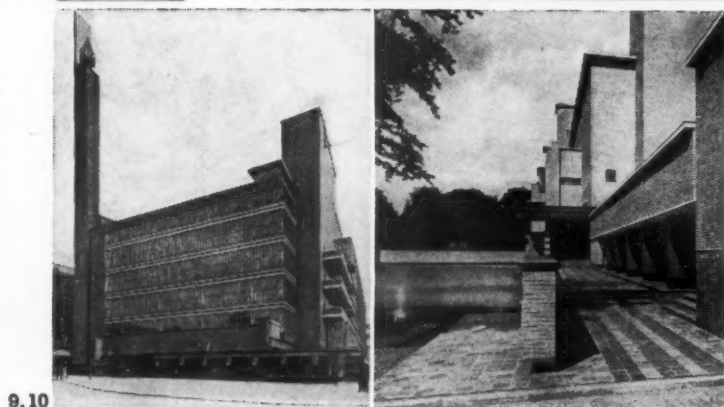
The thatched school, 8, shows how Dudok, with surprising lack of conviction, could revert to a purely romantic treatment of a plan form he was also using as the basis of his most 'modern' schools. The Utrecht Theatre, 11, shows little advance, rather a tailing off, but its lightness of detail shows Dudok as still open to contemporary influence.

6, 7, 8, three schools at Hilversum, built 1926-27.
9, the Bijenkorf ('Beehive') store, Rotterdam, 1929-30.
10, main entrance, Hilversum town hall, 1928-31.
11, theatre, Utrecht, 1939-41.

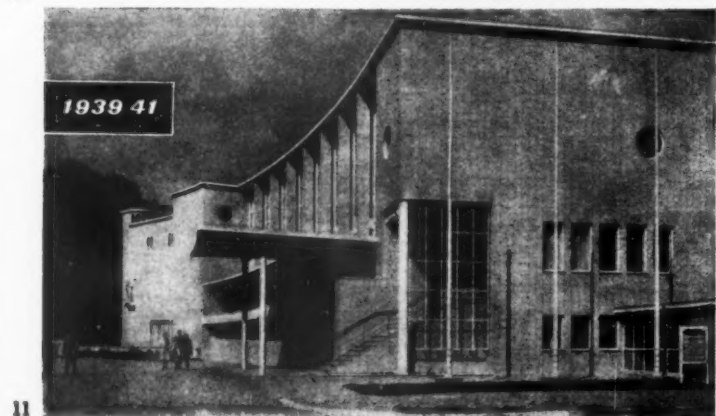
1926 27



1928/31



1939 41



Any continental architect may, of course, have got his *Art Nouveau* tricks from almost anywhere. While nothing so chaotic as Horta's work at Brussels could ever have appealed to Dudok's tidy mind, certain details of ornament, metalwork, furniture (e.g., Columbarium tower, chairs and fitting in Hilversum Council Room, etc.) do owe a debt to Mackintosh, as do innumerable attenuations, carefully placed 'spots' on the façade, etc., etc. It is all rather paradoxical; it is all so much more disciplined than anything Mackintosh ever built, and yet there is a more vital, a more structural Mackintosh to whom Dudok never penetrated.

There was another debt to England—Dudok's debt to the younger Lutyens. It was twofold. Lutyens, after all, until 1906—fatal year of Heathcote—was the finest exponent of natural materials—handmade tiles, oak, rubble, etc.—who had emerged from the Morris saga. What Lutyens did, within the inhibitions of historical style, Lloyd Wright—uninhibited—was doing for the Usonian house with pinewood planks and granite. Dudok, in Holland, formed a third corner of that particular triangle. The other debt to Lutyens was really to the Lutyens-Jekyll partnership. In these days—with Marshcourt a school and Grey Walls a hotel—the young architect who would know what Gertrude Jekyll really meant to an earlier generation, can find the whole thing—colour schemes, foliage texture, herbaceous planting—all carefully maintained by the municipality, under Dudok's guidance, in the streets and parks of Hilversum, in the beds and brick flower-boxes that are so important a part of his buildings.

To Lloyd Wright the debt is more fundamental and more obvious. One remembers the joyful cry after the Paris Exhibition of 1937: 'Façade is dead! Architecture is three-dimensional and mass has replaced pattern!' It was true but not new. If he had done nothing else Lloyd Wright had proportioned mass against mass—solid interpenetrating masses, cubical masses against horizontal ones, and set them beneath long low roof lines. How much Wright owed to Japan is—in this article—neither here nor there; he had reinterpreted Japan in the solid materials of the Middle West; Dudok, via Wright, did the same in sober buff Dutch bricks.

Hilversum Town Hall, if it marks no structural advance, was the most three-dimensional concept of its decade, and in that respect it *does* belong to the Modern canon. Stockholm, comparatively, is a building with four frontages! In his schools Dudok had been feeling his way to all this, but the schools—though massing is there too—depend far more on brilliant fenestration patterns and on the traditional gambit—played with a new twist—of solid against void. The voids are interesting and stylized, the solids are large, plain and restful, the spacing of the voids on these large areas of brickwork is sometimes almost classical in its careful ordering. In the Town Hall, however, the whole thing becomes a composition of masses, so that even the windows are often void masses rather than wall penetrations. One can walk round and round that Town Hall and all the time the masses group and regroup; one can never stop, as

influences Dudok's influence upon English work between the wars was profound and—for those prepared to do a little detective work—widespread. It was not always for the good and many a bogus modern cinema, garage or by-pass factory can be traced back to the master. On the other hand, robust massing, simple brick surfaces, etc., all benefited because of Dudok. Clifford Strange's Wembley Town Hall is a clear case of direct inspiration; Burnet, Tait & Lorne's work was fundamentally their own, but the Dudok motifs were always irrepressible, even with the brick bond.

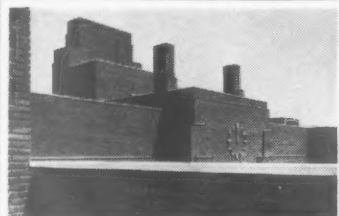
12, German Hospital, London, Sir John Burnet, Tait and Lorne, 1938.

13, Royal Masonic Hospital, Ravenscourt Park, London, Sir John Burnet, Tait & Lorne, 1931-33.

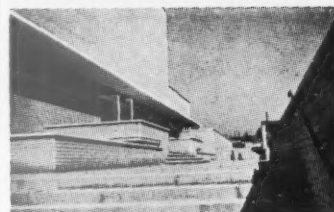
14 and 15, Wembley town hall, Clifford Strange, 1939.



12, German Hospital.



13, Royal Masonic Hospital.



14 and 15, Wembley Town Hall.

on a classical axis, and feel that one is opposite a 'façade.' Consequently the building can never be photographed; it might be filmed; primarily it can only be enjoyed on the spot. It is Dudok's triumph.

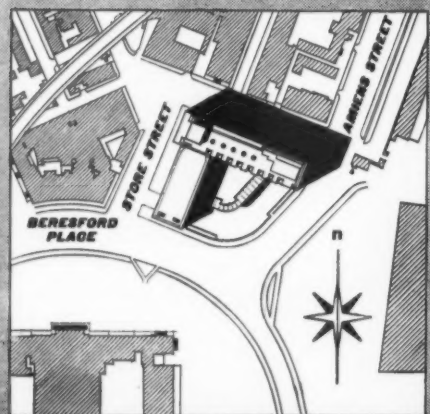
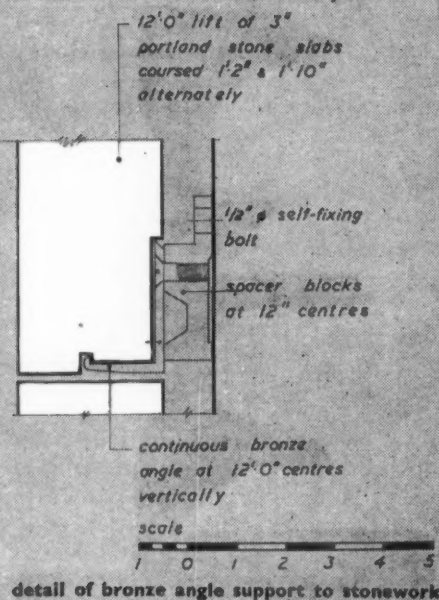
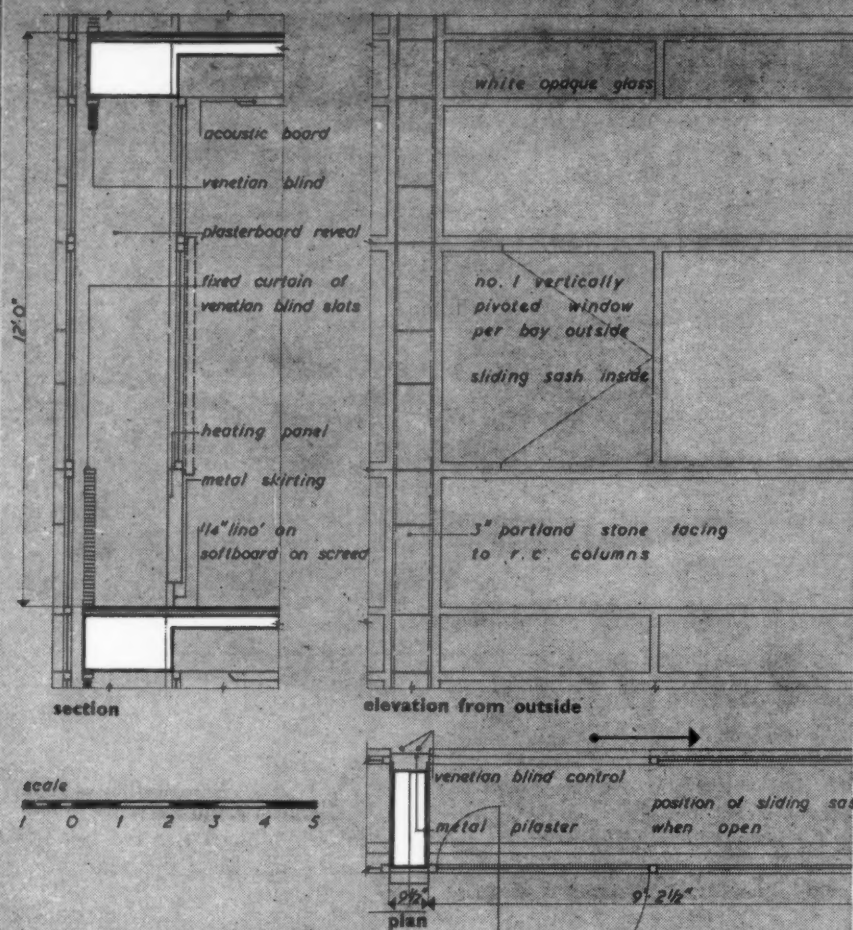
Against solid mass, beneath long roofs and against oriel and lancet, Dudok needed the long clerestory to darken and deepen the eaves shadow. He achieved it—significantly—in effect rather than through the structure itself. His long horizontal windows, like Voysey's, are mullion windows. Dudok faces the mullions with glazed tiles. Thereby he provides not only another *Art Nouveau* remnant and a charming note of positive colour, but also the effect of a long window separating wall from roof in the true Wright manner. It was a dodge. Compare—structurally—the Gropius-Fry house in Chelsea, where the long window is continuous.

It was because of this kind of thing—almost trivial in itself—that Dudok unwittingly did harm. As an eclectic of a high order he dealt with his sources intelligently. They were strands; he plaited them into a rope where, as strands, they vanish. He gave to the whole an artistic unity that was his own. Thus he did really make a minor revolution in the visual world. *He was copied.* At the RIBA Meeting in 1935 Sir Percy Thomas—never himself, I think, influenced by Dudok—remarked that the word 'Dudokey' seemed to be entering the language. It was true. Because Dudok's modern 'style'—long windows, flat roofs, etc.—had been grafted on to traditional brick construction, his copyists could evade every issue inherent in the Modern Movement and still flatter themselves they were 'modern.' Alas! not every eclectic is a Dudok . . . and there were unmentionable consequences.

The clichés flowed . . . the brick fin, the semi-circular staircase bay, the glazed tile reveal, the slab-on-the-ball. And they are clichés, not components of a virile style, for once the master had finished with them they were, in other hands, all too obviously, a debased currency. At their best they were exploited pretty freely by Sir John Burnet, Tait and Lorne—Ravenscourt Park, the Burlington

School, the German Hospital—and at their worst in a thousand suburban cinemas and garages. To go 'Dudokey' was even—in the world of the Great West Road—a sign of good taste, a gentlemanly repudiation of Wembley-Luxor. But clichés they were . . . for even at their best they lacked the freshness, the spontaneity, with which, to this day, they still please the visitor to Hilversum.

I have referred to the Town Hall as a composition in which even the voids play their parts as masses—dark ones, but masses rather than windows. It was the next step that Dudok never took—the step so fundamental to Mies van der Rohe, to Gropius, to Le Corbusier, to the Hertfordshire schools, to Bay Region. Transparency. Dudok had his opportunity in the 'Beehive Store' at Rotterdam, but preferred to mullion it heavily—not even structural mullions of the Peter Jones type—so that the huge windows are part and parcel of the wall surface. Modern architecture has four dimensions: length, breadth, height and penetration—awareness externally of depth and interior, awareness internally of space and landscape. It is a new conception in 'the serious and beautiful game of space.' It is replacement of the window by the transparent or translucent wall—transparent in both directions. It is the ultimate logic of glass and of the beautiful new geometry that springs from it. It is basic. Dudok's inability to recognize it or like it—one doesn't know which—brings us back to our assessment of his place in the Modern Movement. He is a humanist and an artist; the warmth of his humanism may make such purely intellectual concepts repugnant to him. It is that, I think, rather than any innate conservatism that has been a limiting factor in his development. That, at least, is what seems to emerge from the words he used in 1951 to the Société Belge: 'Nothing beautiful has ever come into being without the determination of the artist to attain beauty, and his complete devotion to this end. May we be led not only by *sagesse de l'esprit* but also by *sagesse de coeur* so that we may give to this thrilling age its own captivating beauty—a beauty which is essential to life.'



BUS TERMINUS AND OFFICES IN DUBLIN

The appearance of a large and uncompromisingly modern building in a central area is an event in the life of any city, and Dublin's new bus terminus is made more dramatic by the fact that it is not only the first large and conspicuous contemporary structure in the city, but that its site almost adjoins Gandon's celebrated Custom House, and overlooks the river Liffey. Intended at first to concentrate the offices and services of Coras Iompair Eirann (National Transport Services), the building was subsequently taken over by the Department of Social Welfare, who have leased out part of it for a bus terminal, for which it is well suited by its very central site and the new street which is intended to link it to a proposed bridge over the Liffey. In spite of these traffic improvements, the setting of the bus terminal is primarily Georgian even now, and in these surroundings it will retain for many years the quality of a bold architectural gesture which was once possessed by such buildings as the Ministry of Health in Rio de Janeiro. The frontispiece on page 226, drawn by Gordon Cullen, gives an impression of the terminus from beneath the canopy which shelters the passenger waiting area. On this page are working details showing the standard window wall and method of securing the Portland stone facing.

BUS TERMINUS AND OFFICES IN DUBLIN

MICHAEL SCOTT: ARCHITECT

1 exterior view from the parking area of the central concourse with the projecting control room on the right.



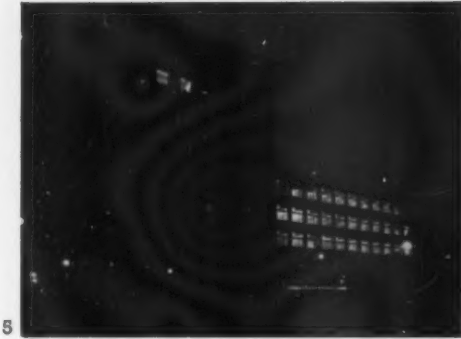




2, on the facing page, the junction of the four and six-storey blocks; the canopy seen in sharp profile marks the passenger entrance to the central concourse. 3, the west façade of the four-storey office block looking south. On the left is the entrance to the six-storey block. Beneath the porch is the passenger entrance to the central concourse, and beyond, the bus entrance. In the distance is the Custom House dome. 4, view of the bus terminus across the Liffey. On the left is Gandon's Custom House, built in 1781.



BUS TERMINUS AND OFFICES IN DUBLIN



5

planning The building consists of the bus station, occupying the ground floor, basement and a mezzanine,

with two office blocks, forming an L shape, placed above. The main approach is from the city centre to the west and entrances for buses, passengers and to the office blocks are all on the west of the site. At the rear of the nearby Custom House, and acting as a foreground to the new building, is a formal garden which has been newly laid out with a pool and fountain as a memorial to the 2nd Battalion, Dublin Brigade, of the Irish Republican Army. A picturesque ruin composed of fragments of part of the Custom House destroyed by fire in 1921 decorates a corner of this garden.

6

The bus station comprises a central concourse, parking space for seventeen buses, and various amenities for the public. It was necessary to design for double-decker buses and the height required permitted the introduction of a mezzanine floor. Buses arriving from the west are parked sawtooth fashion around the perimeter of the concourse. Passengers enter the buses through sliding doors in the concourse wall and are protected from rain by a corrugated canopy projecting over the buses. The buses leave from the north and are routed out of the city on an outer ring road avoiding obstruction or difficulties due to turning. The organisation of arrival and departure is directed by loudspeaker from a control tower at mezzanine level cantilevered over the loading platform and the concourse. Amenities





5, view of the office blocks at night. 6, the same view by day. Reinforced concrete structural members and end walls are faced with Portland stone: windows are set in bronze frames. 7, the six-storey block looking north. The decorative balcony expresses on the elevation the planning of the third floor as a suite for the Minister for Social Welfare. The setback of the penthouse restaurant provides an outdoor dining terrace.

include a restaurant and bar at mezzanine level, a shopping arcade, kiosks, baggage and freight rooms at ground level, and lavatories and news cinema in the basement.

The four and six-storey office blocks are planned on a standard unit of 10 ft. allowing flexible partitioning of office space as required. An exception is the third floor of the six-storey block which has been designed as a suite for the Minister for Social Welfare, his secretary, and three assistant secretaries. This group is clearly expressed on the exterior of the building by the decorative balcony cutting across the main block. Vertical access is by three lifts and a staircase at the junction of the two blocks. The offices are served from the lift hall by central internal corridors.

A penthouse contains a restaurant for the office staff of the Department of Social Welfare, served by its own kitchen. It was originally intended to serve this restaurant from the kitchen on the mezzanine floor and to provide changing rooms, etc., for the kitchen staff in the penthouse. The change of ownership which occurred after the building work commenced necessitated the provision of two separate kitchens, the one on the mezzanine floor being operated by CIE and that in the penthouse by the Department of Social Welfare. In addition space had to be contrived in the basement for changing rooms and this led to the elimination of certain amenities for the passengers.

An open terrace on the south side is designed to be

used during the summer for outdoor dining in the shade of the projecting canopies. The north wall inside the restaurant is planned as a series of dining booths with small windows at the end of each table overlooking north Dublin. Above the restaurant floor are two of the ventilation plant rooms.

construction The building is carried on a raft foundation which forms the basement floor and, as the ground contains tidal water, the whole of the construction below ground is waterproofed with asphalt applied to the outer faces of the structural concrete. The basement drains, encased in concrete, are contained within the asphalt tank. The structural arrangement was devised to simplify the work of asphaltting as much as possible.

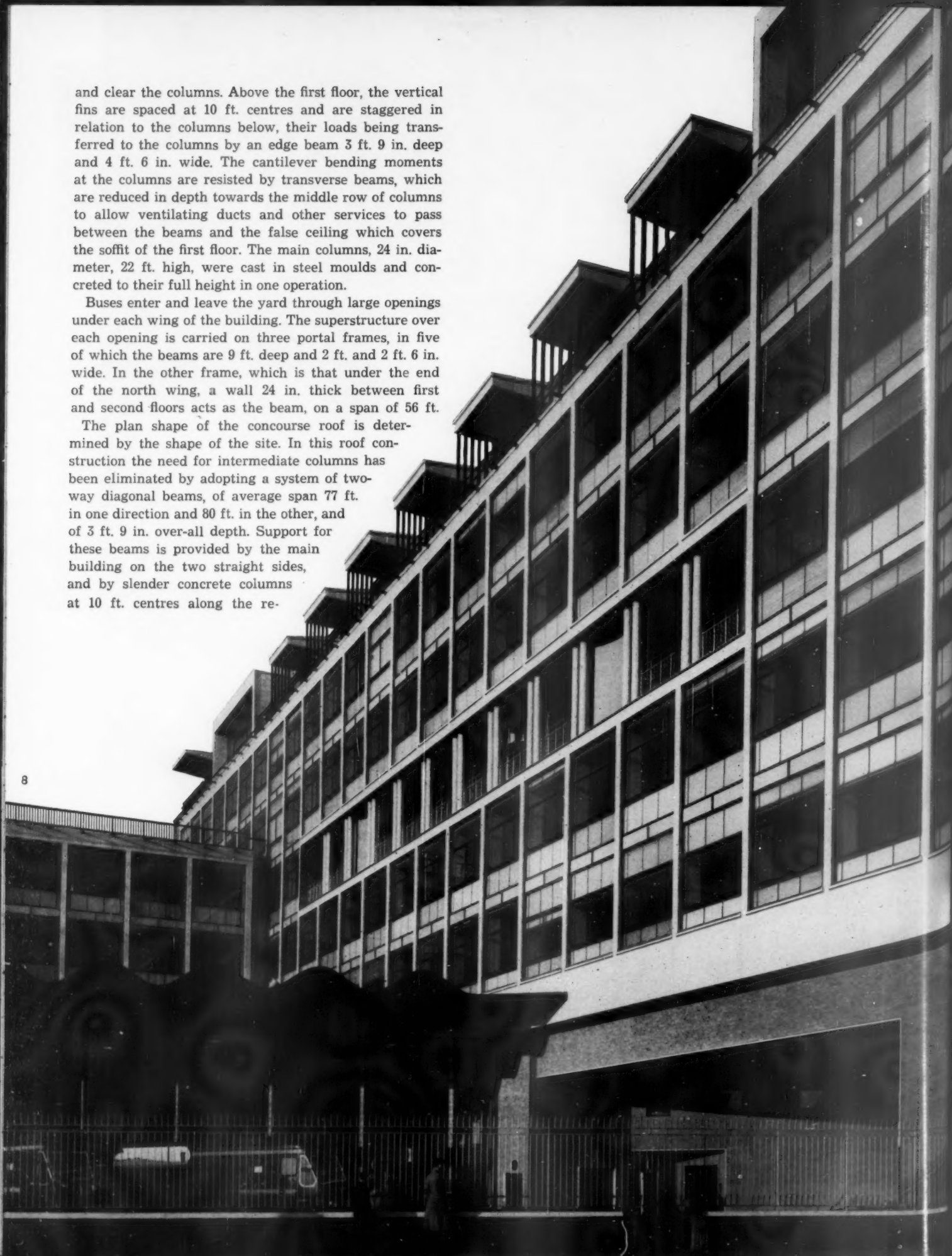
The basement floor, which is, in general, 11 ft. below street level, is mainly an 18 in. reinforced concrete slab, thickened to 36 in. under the columns. The ground floor is of ordinary solid slab and beam construction throughout, the open area being designed for omnibuses and pavings. The asphalt membrane encasing the basement is returned horizontally at ground-floor level to form a sandwich between the structural slabs and outside pavings.

Between ground and first floors the columns, which are spaced at 20 ft. centres, are inset from the building line above the first floor and the windows pass outside

and clear the columns. Above the first floor, the vertical fins are spaced at 10 ft. centres and are staggered in relation to the columns below, their loads being transferred to the columns by an edge beam 3 ft. 9 in. deep and 4 ft. 6 in. wide. The cantilever bending moments at the columns are resisted by transverse beams, which are reduced in depth towards the middle row of columns to allow ventilating ducts and other services to pass between the beams and the false ceiling which covers the soffit of the first floor. The main columns, 24 in. diameter, 22 ft. high, were cast in steel moulds and concreted to their full height in one operation.

Buscs enter and leave the yard through large openings under each wing of the building. The superstructure over each opening is carried on three portal frames, in five of which the beams are 9 ft. deep and 2 ft. and 2 ft. 6 in. wide. In the other frame, which is that under the end of the north wing, a wall 24 in. thick between first and second floors acts as the beam, on a span of 56 ft.

The plan shape of the concourse roof is determined by the shape of the site. In this roof construction the need for intermediate columns has been eliminated by adopting a system of two-way diagonal beams, of average span 77 ft. in one direction and 80 ft. in the other, and of 3 ft. 9 in. over-all depth. Support for these beams is provided by the main building on the two straight sides, and by slender concrete columns at 10 ft. centres along the re-





9

8, the south elevation of the six-storey block showing the double glazed walls. Each window unit has a fixed louvred panel behind the lower pane and a venetian blind above. Floors are separated by bands of white opaque glass (see working drawing on page 242). Between panes is a simple system of heating coils auxiliary to the main heating system. 9, the covered passenger area of the bus park (see also the frontispiece drawing by Gordon Cullen on page 226). The underside of the canopy is painted dark blue-grey. A bird's-eye view of the canopy under construction showing the pattern of reinforcing bars is on the cover of this issue. 10, general view from Beresford Place.

mainder of the periphery. The diagonal beams are arranged to intersect at the centres of the periphery columns. The corrugated canopy slab, $2\frac{1}{2}$ in. thick, cantilevers 20 ft. from the edge of the main concourse roof. The corrugations have an over-all depth of 30 in. and a pitch of 10 ft., the valleys being arranged to occur at the columns, where the main roof beams meet. This results in a good structural arrangement and simplifies the placing of the reinforcement. Hardboard, jointed in a regular pattern and supported by slabs fixed to templates, was used to shutter the soffit of the canopy, and produced a smooth finish. Where the canopy is curved

BUS TERMINUS AND OFFICES IN DUBLIN



10

11, the bus parking area looking past the central concourse to the bus entrance and four-storey block. Below the projecting mezzanine control room are ticket offices and information desk. The glass mosaic panel is in four shades of blue-green.



on plan the pitch of the corrugations was arranged to conform as nearly as possible to the pitch of 10 ft. along the outer edge, the effect of the curve being to fold up slightly the corrugation within the angle.

All office floors are of hollow clay tile construction, 13½ in. over-all depth, spanning 27 ft. 6 in. on to a central spine beam 3 ft. 7½ in. deep and 18 in. wide, which in turn spans 20 ft. between the main columns. Along the outer edges of the floors, the ribs are carried by beams 21 in. wide formed within the normal floor depth and spanning 10 ft. between the fins. In the centre of each 10 ft. bay a concealed lighting trough is formed by replacing one row of clay tiles with a special metal form, which was removed after casting of the concrete. The construction results in a perfectly flat soffit throughout, except for the central spine beam, which forms one side of the main longitudinal services duct over the corridors. Incorporated in the lighting troughs are the sprinkler heads which project through egg-crate louvres shielding the fluorescent tubes.

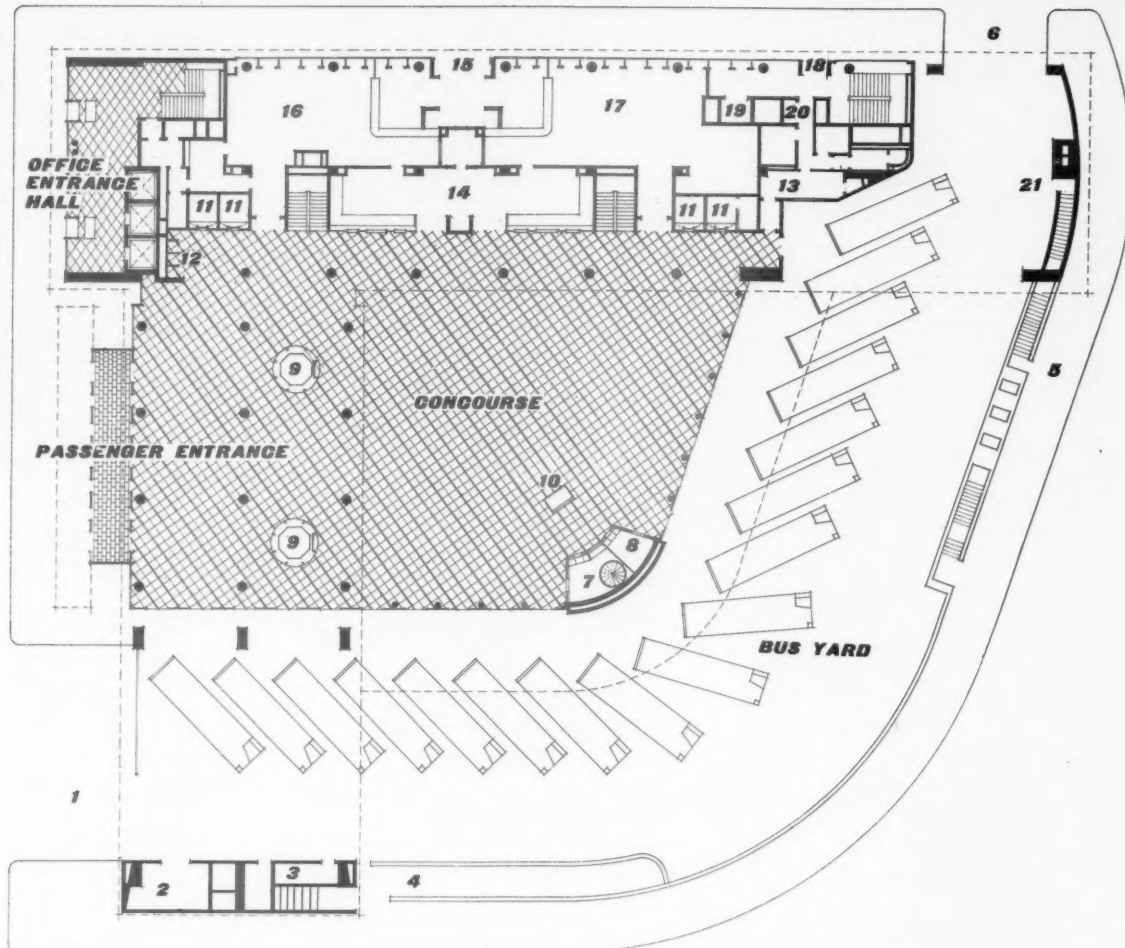
The roofs at fourth-floor level, and the sixth floor, which is partly roof and partly floor, comprise transverse beams at 10 ft. centres and solid slabs because of concealed gutters along the edges. The main roof at seventh-floor level is of beam and slab construction with canti-

levered canopies on the south side and at the west end, where the canopy is T-shaped on plan and is a double cantilever with wings sloped slightly upwards towards the edges.

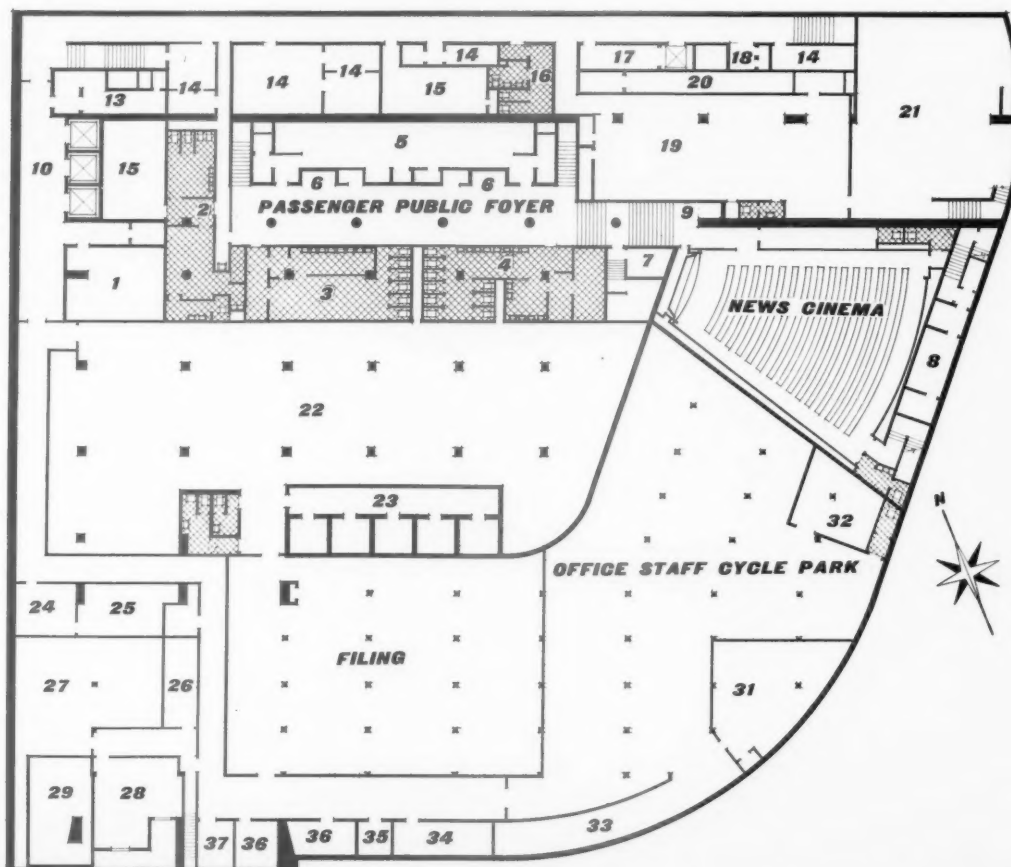
Concrete shafts are provided for the full height of the building for each of the three passenger lifts, a goods lift and a group of three food lifts, and for the intake, supply and exhaust air ducts. The chimney construction is also of reinforced concrete, with firebrick linings and glass wool insulation between concrete and firebrick.

All openings and sleeves for fixing services were formed or built in the structural members as construction proceeded, but no holes were formed for fixing masonry or windows as it was considered that the positions of such holes could not be determined with sufficient accuracy and would complicate the shuttering unnecessarily.

With the exception of the 2½ in. corrugated canopy, where the concrete mixture is 1:1½:3 by volume, the reinforced concrete is 1:2:4 by volume, using washed sand and gravel aggregates of maximum size ¾ in. The average strengths of concrete cubes at seven days were from 3,500 to 4,500 lb. per square inch, the greatest strength being about 6,000 lb. per square inch. The steel reinforcement complied with British Standards.

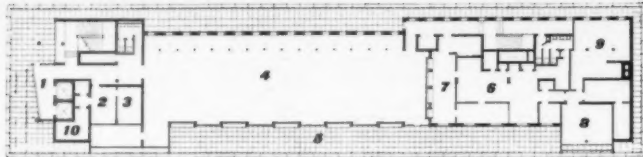


ground floor plan



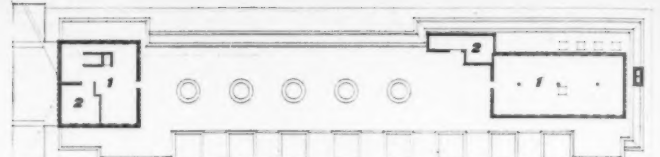
basement plan

10 0 10 20 30 40 50 60 70 80 90 100 FEET



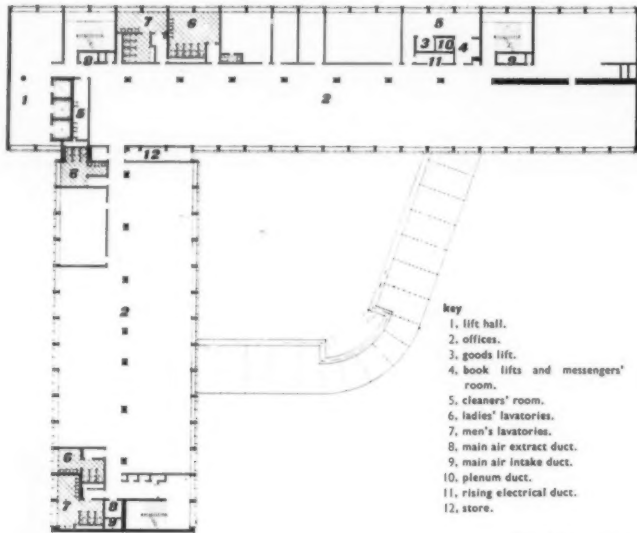
sixth floor plan

- key
- 1, lift hall.
 - 2, masron's office.
 - 3, rest room.
 - 4, office staff restaurant.
 - 5, outdoor dining balcony.
 - 6, kitchen.
 - 7, servery.
 - 8, kitchen staff dining room.
 - 9, printing room.
 - 10, lift motor room.



penthouse plan

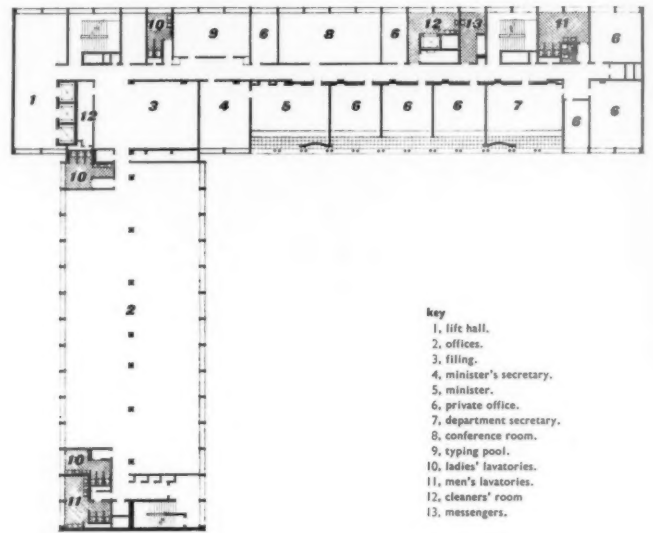
- key
- 1, air conditioning plant room.
 - 2, lift motor room.



first floor plan

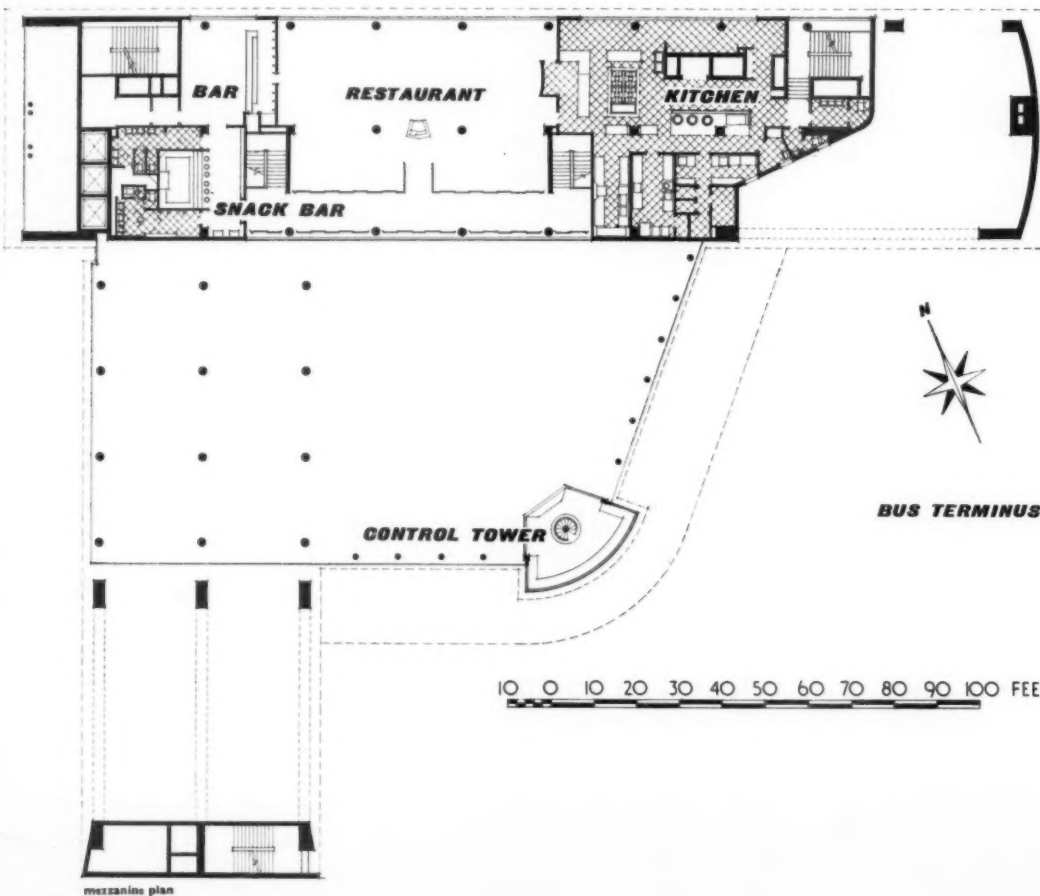
- key
- 1, lift hall.
 - 2, offices.
 - 3, goods lift.
 - 4, book lifts and messengers' room.
 - 5, cleaners' room.
 - 6, ladies' lavatories.
 - 7, men's lavatories.
 - 8, main air extract duct.
 - 9, main air intake duct.
 - 10, plenum duct.
 - 11, rising electrical duct.
 - 12, store.

scale: 1/64 in. = 1 ft.



third floor plan

- key
- 1, lift hall.
 - 2, offices.
 - 3, filing.
 - 4, minister's secretary.
 - 5, minister.
 - 6, private office.
 - 7, department secretary.
 - 8, conference room.
 - 9, typing pool.
 - 10, ladies' lavatories.
 - 11, men's lavatories.
 - 12, cleaners' room.
 - 13, messengers.



mezzanine plan

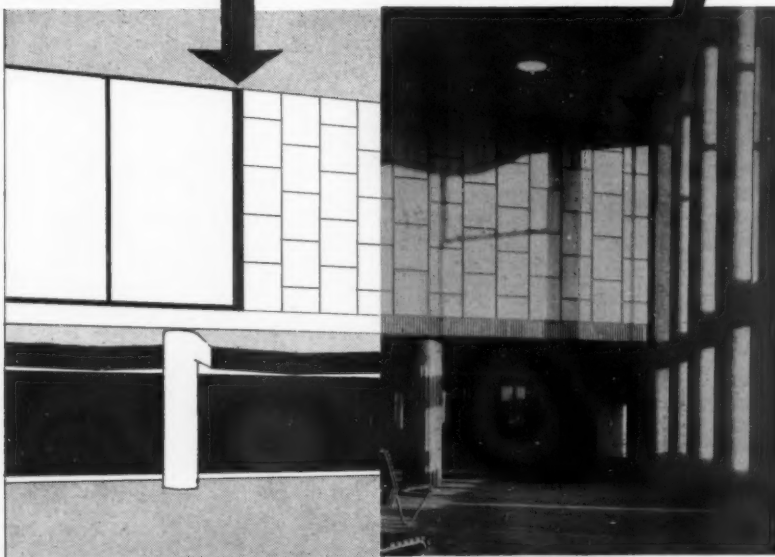
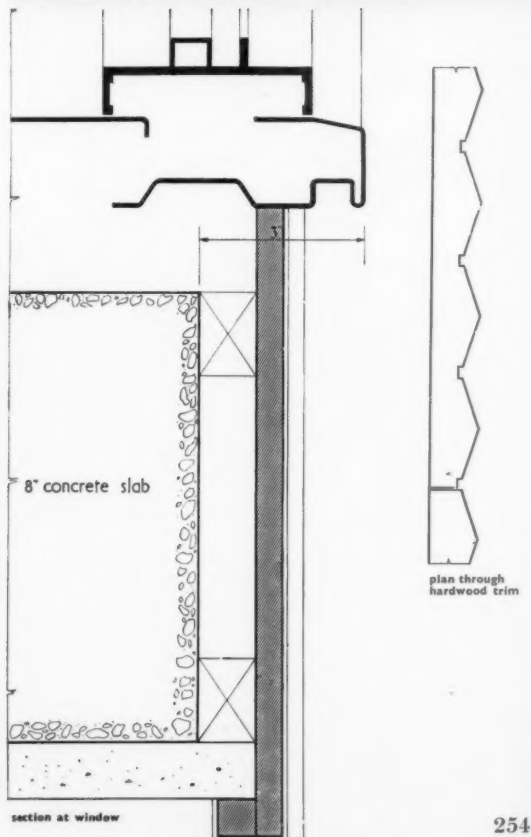
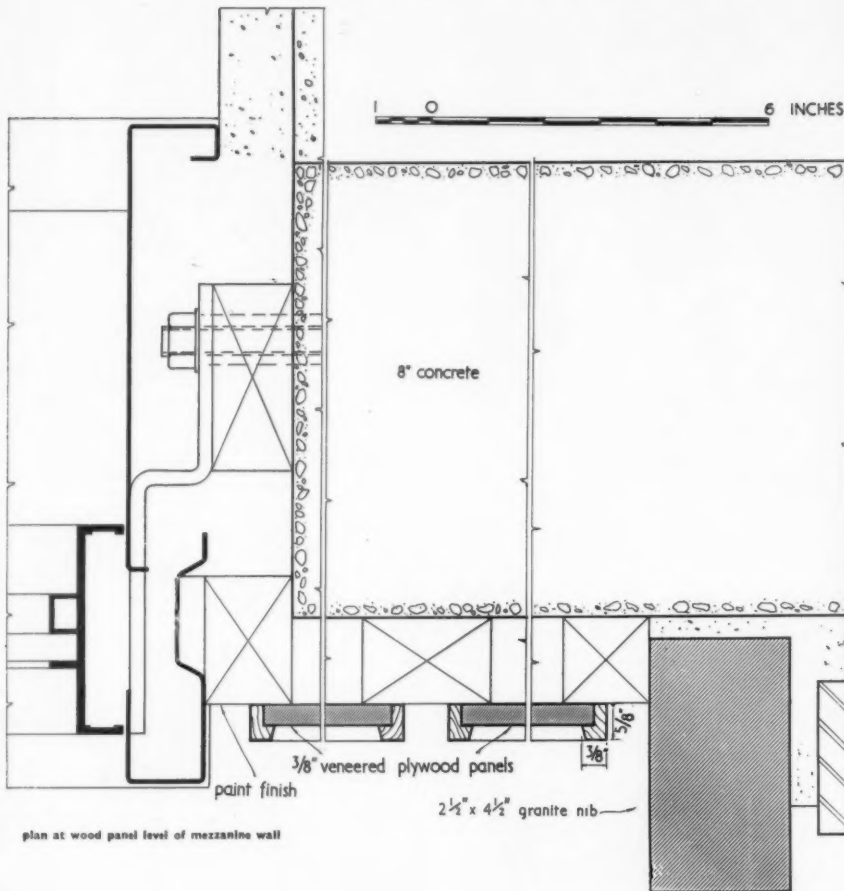
BUS TERMINUS AND OFFICES IN DUBLIN

10 0 10 20 30 40 50 60 70 80 90 100 FEET

12, the central concourse looking towards the information and control rooms. Passengers pass through sliding doors from the concourse to waiting buses.



13 and 14, ceiling detail and general view of the central concourse. On the mezzanine are the snack bar, restaurant and bar. 15, view of the panelled mezzanine wall in the concourse. Below are working details showing the construction of the wall.



16



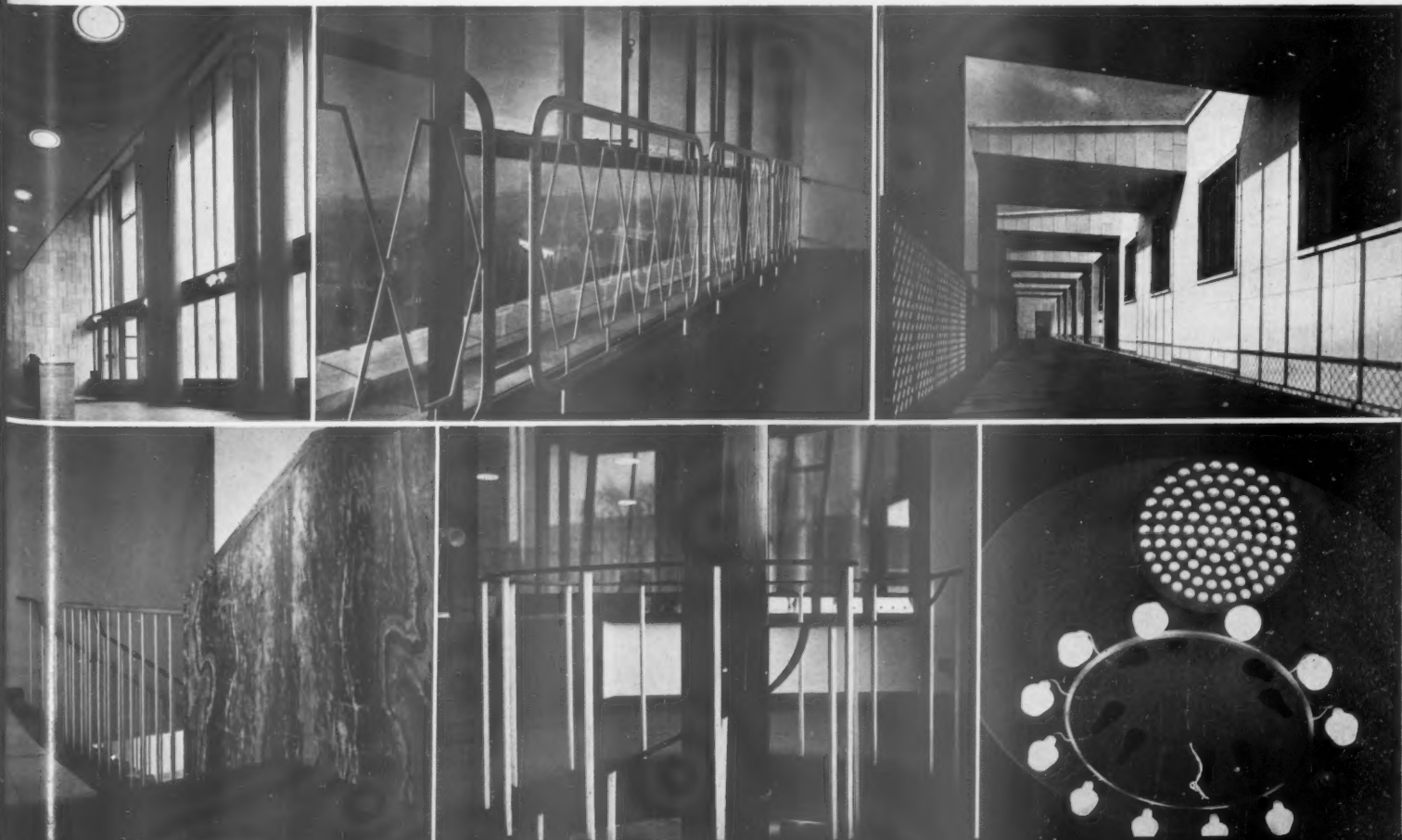
finishes The chief external finishes are glass set in bronze frames as infilling, and Portland stone to protect the reinforced concrete structure. Other finishes include faience, glass mosaic and brick, used on the ground floor and the penthouse, both of which in form and colour provide a foil to the formality of the two main blocks. Materials for internal finishes are glass mosaic, stone and ceramic tiles. The ceiling of the concourse has been finished with acoustic tiles and the ceilings of offices are finished with an acoustic board composed of perforated hardboard on a softboard base. Floors throughout the offices are linoleum laid on softboard on screed.

BUS TERMINUS AND OFFICES AT DUBLIN

17 | 18 | 19
20 | 21 | 22

16, detail of the red, yellow, blue and white mosaic of the cantilevered canopy over the west end of the penthouse, seen from the lift hall. 17, the office entrance hall. Columns are finished with grey mosaic, walls are faced with travertine. 18, detail of the sixth floor rest room with radiators designed as railings. 19, the outdoor dining terrace of the penthouse restaurant. The wall finish is faience: the mosaic patterns

of the under sides of the canopies are in red and white, blue and white and yellow and white alternately. 20, head of the staircase at the entrance of the penthouse restaurant: the facing is Connemara marble. 21, the spiral staircase to the control room in the central concourse. 22, one of the cone lights in the penthouse restaurant ceiling: the mosaic lining of the cone is yellow.





23, a kiosk in the central concourse. Timber slatting is mahogany. Columns in the concourse are finished with dark purple and grey mosaic.

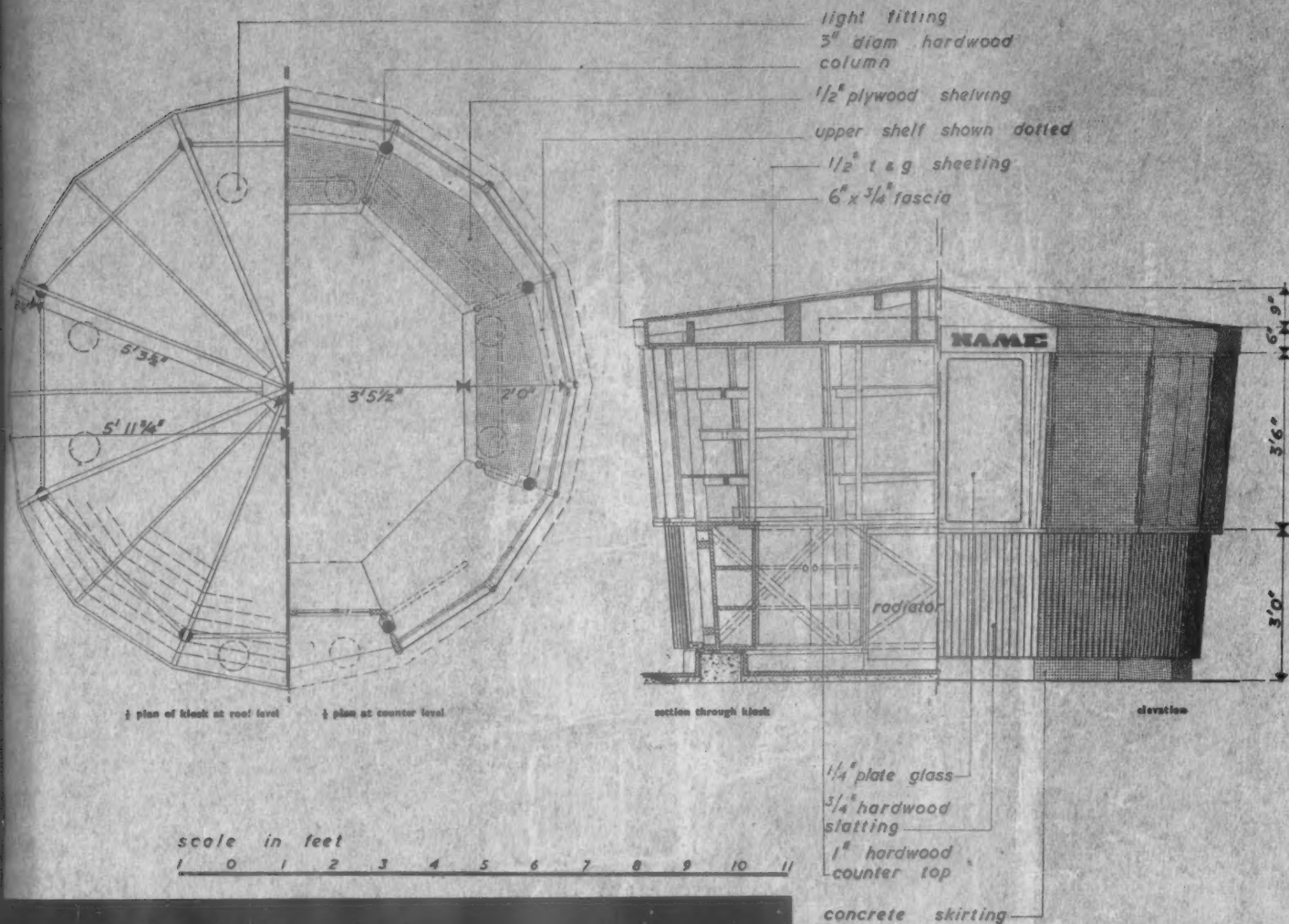
services The building serves two functions the nature and working hours of which differ widely. Except for a common boiler plant the heating and ventilating systems are separated into two groups, one serving the bus station, the other serving the upper floors which are occupied by the Department of Social Welfare. Nearly all areas are heated by air-conditioning plants. The plants consist of air intakes (located on the roof of both wings), continuous viscous oil filters, preheaters, airwashers, main heaters, inlet ducting and a number of booster heaters. The plants are automatically controlled by a compressed air system, maintaining the correct temperature and humidity in the building during the cold season.

The building is in a busy and dusty part of Dublin and double windows have therefore been installed on all office floors. A simple system of heating coils has been placed in the space between the windows. These play no part in the main system except during heating-up

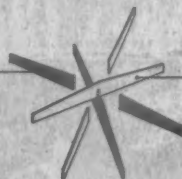
periods and extreme winter conditions. They do make possible, however, a reduction in the capacity of the air-conditioning plants, a saving in the inlet ducting and the automatic control system. Furthermore the heating coils will also prevent condensation on and draughts from the windows as the surface temperature of the inner glazing is under control.

The height of the building has also called for the installation of automatic sprinklers in the entire building with the exception of the public concourse and the cinema. An electrical ring main system with the main distribution board in the basement serves the building. In case of power failure, a stand-by 200-volt battery has been installed. A vacuum cleaning plant has been installed in the basement with outlets from all floors.

The consulting engineer was Ove Arup. The assistant architects were: Patrick Scott, Wilfred Cantwell, Kevin Fox, Patrick Hamilton, Patrick Haughey and Norman Peachey.



- 3" diam hardwood column cut at head to take joists
- 5" x 1 1/2" bracing joist
- 4" x 1" intermediate joists
- main cross joists 1 1/2" x 5" x 1' 2" at centre halved into one another
- 1" secondary joists wedged at centre to cross joists



axonometric showing roof members of block

POLONIA RESTITUTA



Graeme Shankland

POLONIA RESTITUTA

Poland's towns, like those of the other backward provinces of central and eastern Europe so long ruled by the Romanoffs and the Hapsburgs, were off the route of the Grand Tour and scorned by Baedeker and Bannister Fletcher. It is not surprising that the glories of their fabulous architecture are so little known abroad.

Within Poland, however, past neglect and tyranny, and the savage and systematic battering received at the hands of the Czars and the Nazis have only welded Poland and its national culture more firmly together. This fact has profoundly influenced contemporary architecture and civic design simply because these arts play so important a part today in this national culture.

With methodical barbarity the Nazis by 1945 had reduced Warsaw by mining and burning to a ruin far more complete than the City of London. Poland, they decided, must cease to exist as a nation, and therefore the nation's heart, its capital, must be destroyed. For exactly the opposite reason the Poles are reconstructing it today; a task that has become as much a 'spiritual' as a 'practical' necessity.

Every year on the occasion of the National Day (July 22) a new instalment of the reconstructed capital is formally presented to the nation. This may be a completely new scheme, like the monumental Constitution Square opened when I was there in 1952, or a piece of careful and brilliantly executed recon-

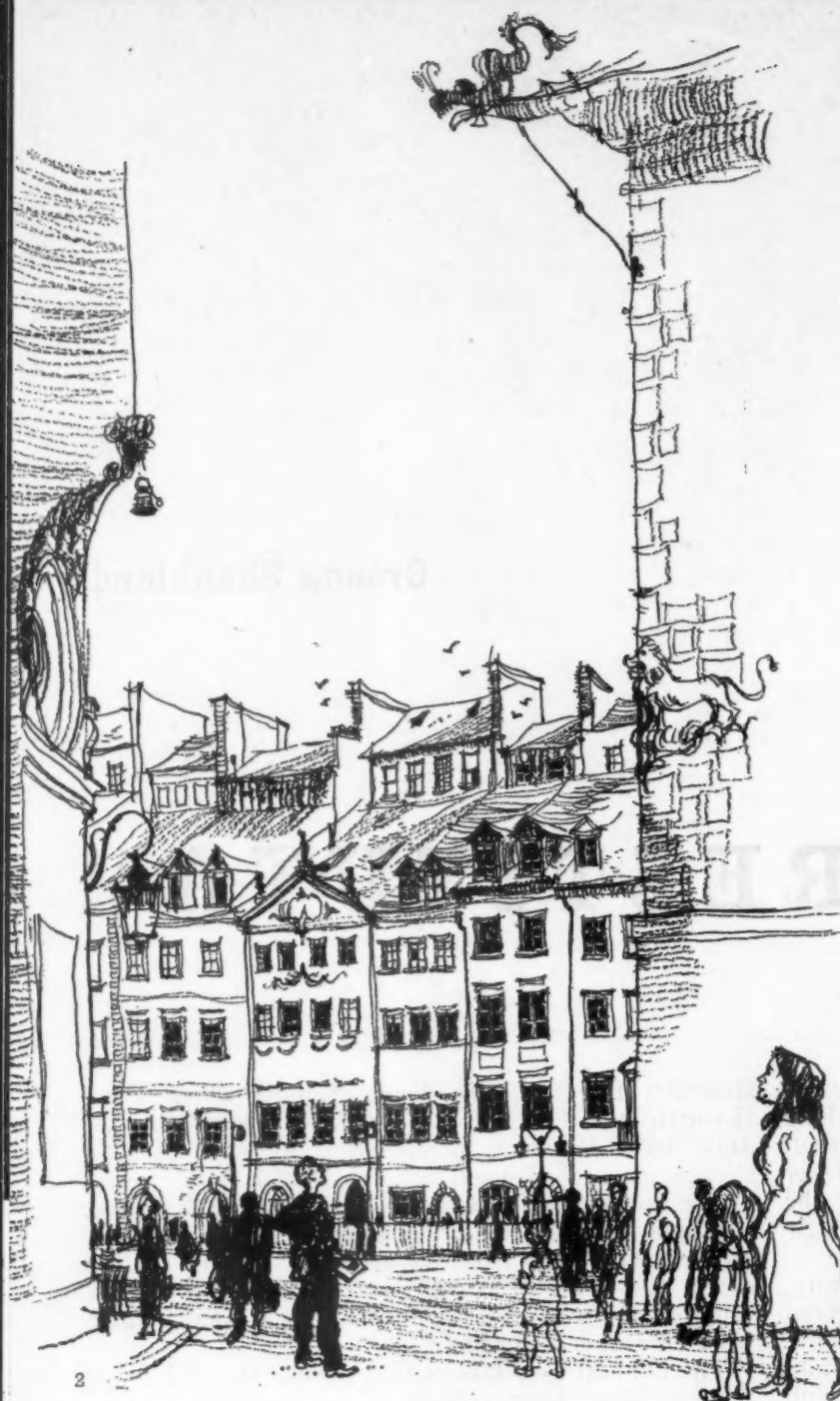
struction like the Old Town Square which Paul Hogarth has depicted, 2, just after its opening in July, 1953. When so presented these schemes constitute an architectural whole (British new towns please note) completed down to the last bollard and gargoyle. To the people, like those in Hogarth's foreground, who come from all over the country to this event these architectural *tours de force* represent tangible and vivid evidence of how the wealth their work creates is being spent.

The tall and deep houses that enclose the Old Town Square have been rebuilt exactly to their original profile and elevations, but internally have new plans and plumbing, and artists' studios have been conjured out of the remarkable penthouse roofs, 1. Sgraffito murals, a traditional craft used frequently to depict contemporary scenes on new buildings, are used here in the traditional stylised manner, 3.

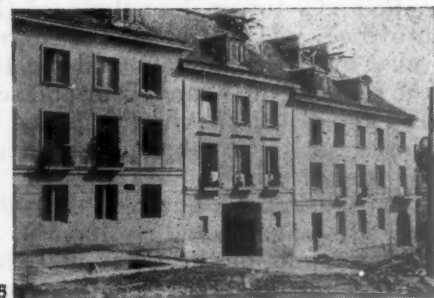
Warsaw's architects and planners are faced with the problem—and the possibility—of deciding the archi-



1, roofs of the rebuilt houses enclosing Warsaw's Old Town Square, showing artists' penthouse studios.



drawings by Paul Hogarth



tectural destiny of whole streets in relation to the civic design. In the case of two ruined seventeenth and eighteenth century streets, Krakowskie Przedmieście (The Cracow Suburb) and Nowy Świat (The New World) which together form the historic link between the medieval Old Town and the nineteenth and twentieth century centre, the decision was for rebuilding and to work as closely as possible to measured drawings and old engravings and paintings.* On the principle of not reproducing the apocryphal tear made by the Indian tailor when sent a suit to copy, they have rebuilt the eighteenth century elevation rather than a disruptive nineteenth century one, but only

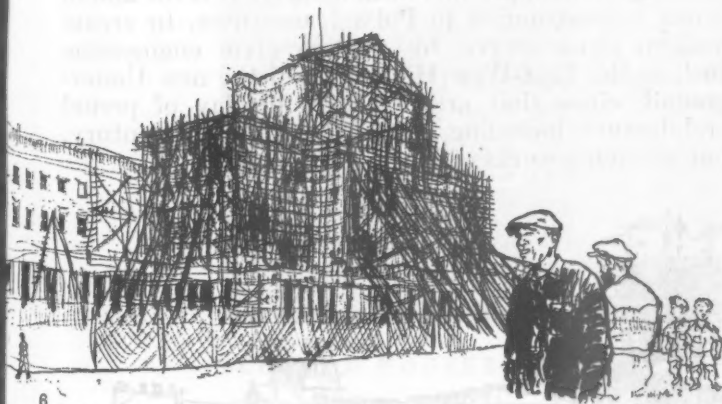
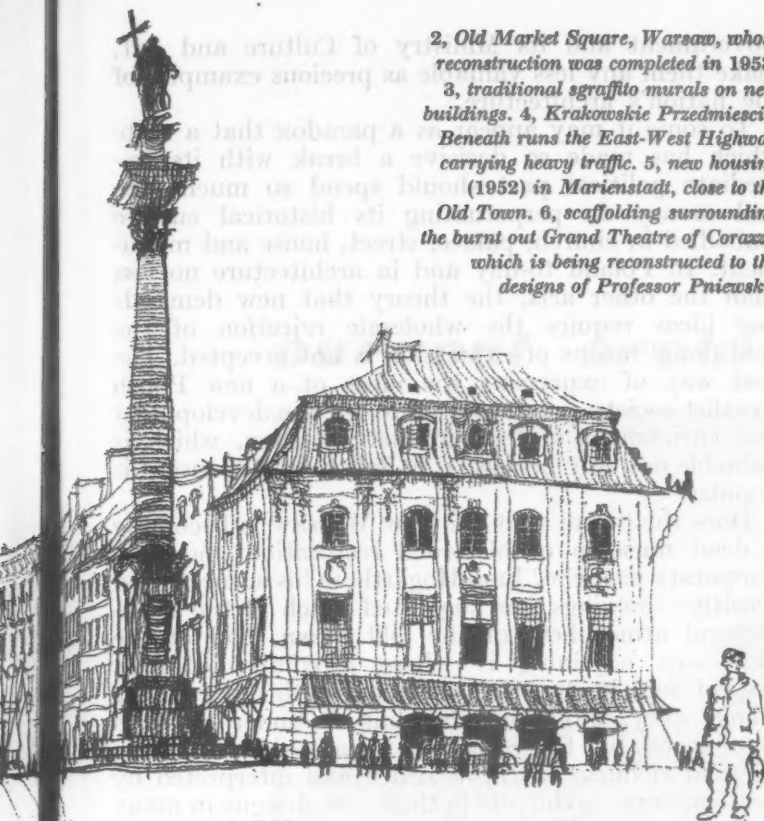
* Compare with the weak effect of pastiche employed in the reconstruction of Munster's Prinzipal Markt. (AR, December, 1953.)

when this alternative presented itself.

Hogarth's drawing, 4, shows the north end of Krakowskie Przedmieście close to where it meets the gates of the Old Town. In the foreground is the column to Warsaw's founder, King Zygmunt, which was one of the first things to be rebuilt after the war. Under this spot runs the new tunnel of the East-West Highway carrying the heavy traffic that formerly ran across this space clear of the area altogether.

In the shadow of the Old Town is the new housing area of Marienstadt. Here the problem was a different one; the creation of an entirely new layout of blocks of flats and the squares they enclose which would nevertheless be sympathetic in general character with the Old Town. 5 shows a block completed in 1952.

2, Old Market Square, Warsaw, whose reconstruction was completed in 1953.
 3, traditional sgraffito murals on new buildings. 4, Krakowskie Przedmieście. Beneath runs the East-West Highway carrying heavy traffic. 5, new housing (1952) in Marienstadt, close to the Old Town. 6, scaffolding surrounding the burnt out Grand Theatre of Corazzi, which is being reconstructed to the designs of Professor Pniewski



It is interesting to see how the handling of traditional character and forms in the detailing is becoming more confident and articulate.

Warsaw also has its great neo-classic monuments and compositions. The building drawn by Hogarth in its swaddling of scaffolding, 6, is the empty shell of Corazzi's Grand Theatre. Part has already been reconstructed, and when the new extensions are completed and the whole complex has been re-created to the new designs of Professor Pniewski it will house the new National Theatre of opera and ballet. The sketches I saw in Pniewski's office give promise of an imposing and original building. He is perhaps at the moment the country's most skilful designer, and is also the architect of the new Parliament building.

Hogarth's last view of Warsaw, 8, catches, as do all these drawings, the 'feel' of the city today, seen this time from across the Vistula. Careful thought has been given to the development of this panorama of the city spread out along its escarpment with its silhouette of stepped red roofs and gables punctuated by the spires of the churches. Hogarth's drawing shows how much of this famous view depicted by Canaletto and Dahlberg was already visible in the summer of 1953. Seen rising behind the Old Town is the steelwork of the central tower of the new Palace of Science and Culture, topped by its tower cranes; this remarkable building is now nearly finished.

Any account of Polish reconstruction that left the impression that it is only in Warsaw that large-scale works are in progress would be quite false. In addition to the new towns of Nowa Huta and Nowe Tychny and the great volume of industrial and civil engineering construction, important work of rebuilding is completed or is in progress on some of Poland's most famous buildings such as the medieval Town Hall at Wroclaw, the renaissance Town Hall and the medieval and renaissance houses at Stargard in Pomerania. Typical of this kind of work is the reconstruction of the Long Street of the shattered and beautiful seaport of Gdansk, 7. The rebuilding of the structure of the fourteenth and fifteenth century Town Hall, almost totally destroyed, we see from this drawing to be nearly complete, and its fairy-tale spire built by Dirk Daniels between 1559 and 1561 has been reconstructed, this time on a steel frame. Enshrined again on the topmost of its golden pinnacles is the gold statue of the same King Zygmunt, founder of Poland's merchant fleet as of its capital.

Hogarth's drawing on page 258 of the twin towers of St. Mary's, Cracow, illustrates perhaps the finest of Poland's great churches, with the flower and fruit sellers of the market square underneath their giant umbrellas. This particular church was fortunately undamaged, but the destruction suffered by Polish churches during the war has been equalled only by the magnificent efforts that have gone into their rebuilding. Fifty-five of Warsaw's 64 churches were almost completely destroyed, and most have now been rebuilt. The reconstructed Wroclaw cathedral was reopened in 1952, the Roman collegiate in the cathedral near Leczyca, St. Mary's, Gdansk, and churches in Poznan, Szczecin, Elblag, and many

Government and its Ministry of Culture and Art, make them any less valuable as precious examples of the nation's architecture.

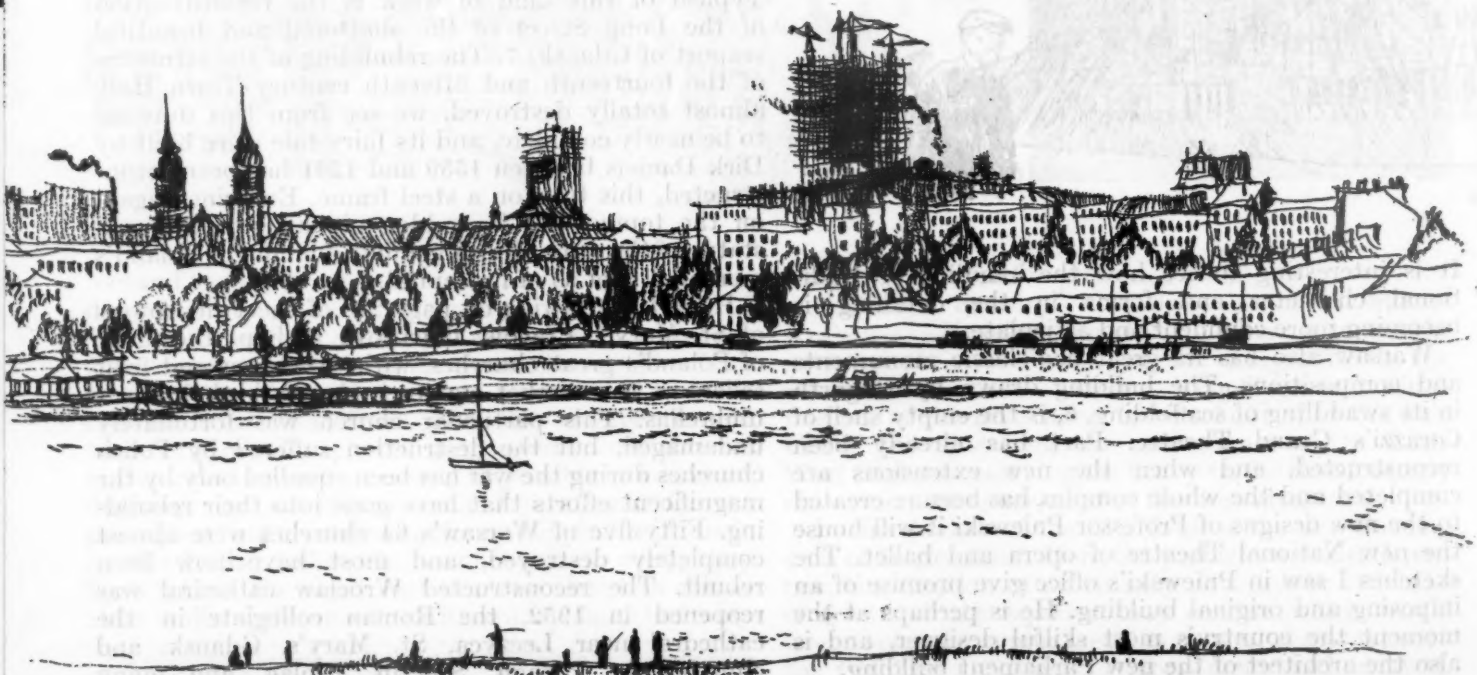
To some it may appear as a paradox that a state which has made so decisive a break with its immediate political past should spend so much care and money on perpetuating its historical culture embodied in church, palace, street, house and monument. In Poland to-day and in architecture no less than the other arts, the theory that new demands and ideas require the wholesale rejection of the traditional means of expression is not accepted. The best way of expressing the ideas of a new Polish socialist society is felt to be through the development and enrichment of the national tradition, which is valuable not only because it is Polish but because it is popular.

Does this mean that the new Warsaw is becoming a dead museum of historical restoration and contemporary pastiche? Paul Hogarth, in his accurate and sensitive drawings, has suggested much of the architectural atmosphere of the Old Town, and of the new area adjoining it where proximity compels respect for the tradition. Of course this is not the whole story; most new building is under no such compulsion, but this respect to a many-sided tradition of great richness is still accorded and interpreted by contemporary architects in their new designs in many different ways. Visiting Warsaw one can already see enough of these new buildings (which have so far received little serious attention in the architectural journals of the west) to state that they are original buildings of high architectural quality. It is the aim of urban reconstruction in Poland, moreover, to create modern cities served by modern civic engineering such as the East-West Highway and the new Underground; cities that are not mere display of period architecture, including that of the twentieth century, but are living works of art.



7, reconstruction of the famous Long Street of Gdansk, the former Danzig.

other smaller towns and villages have been reconstructed. Since the war the state has helped to rebuild, save or preserve over 500 churches throughout Poland. It should not be necessary to add that they are restored for use as churches and for the practice of the Roman ritual. This does not, in the eyes of the



8, view of Warsaw from the Vistula, 1953.

current architecture recent buildings of interest briefly illustrated.



1, rear elevation part of the terrace of eight houses.

TERRACE HOUSES AT BAUGHURST, HAMPSHIRE

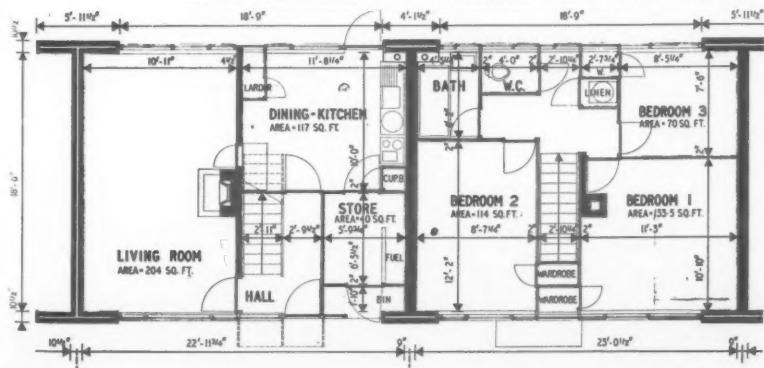
ERIC CHICK: DESIGNER. POWELL & MOYA: CONSULTING ARCHITECTS

The prototype pair of 'Highworth' Houses* were designed to show the possibilities of reducing cost and time in council house building by combining traditional and non-traditional materials and methods of construction. Later a terrace of four of these houses was built to the housing standards of the MOHLG circular 38/51. Illustrated

here is a terrace of eight similar houses for Kingsclere RDC. Work on them was begun in June, 1953, and completed early in November. It was found that the minimum figure of 1,565 man-hours given in a recent report for traditional brick-built council houses can be reduced by up to 23 per cent. The contract price for the eight houses was £9,200 or £1,150 per house including site works and normal external services.

Construction is as follows: woodwool slabs are placed in position and held by specially designed hook nails driven into the frame assembly consisting of door and window units bolted to the jambs. (Frame assemblies later form jigs for the load bearing brick walls.) Light gauge reinforcing wire is then passed over the hook nails and across the face of the slab in a continuous length. The nails are then driven in further to tension the reinforcing, which is stapled at convenient centres to the woodwool slabs. The faces of the slabs are plastered and the rigid wall acts, in effect, as a reinforced-concrete beam, but one which requires no shuttering.

* See 'Demonstration Houses in Wiltshire,' AR, April, 1952.



typical ground and first floor plans scale: 1/12 in. = 1 ft.

PRIMARY SCHOOL AT COVENTRY

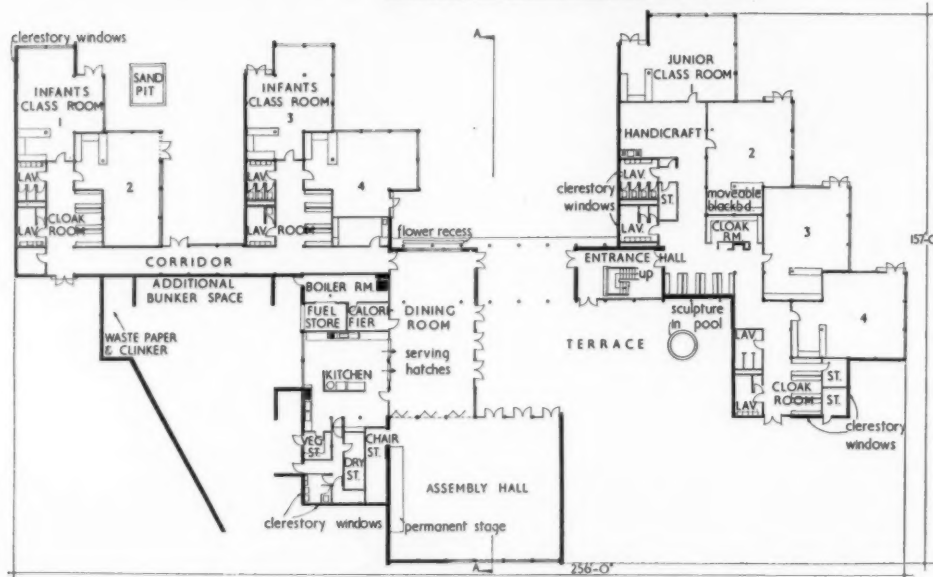
ARCHITECTS: A. M. GEAR, the late EDRIC NEEL
and RODNEY THOMAS (formerly ARCON)



2, staircase to the first floor staff-rooms constructed of steel tubes and rods with $1\frac{1}{2}$ " teak treads. 3, the terrace leading to the main entrance from the north-west.

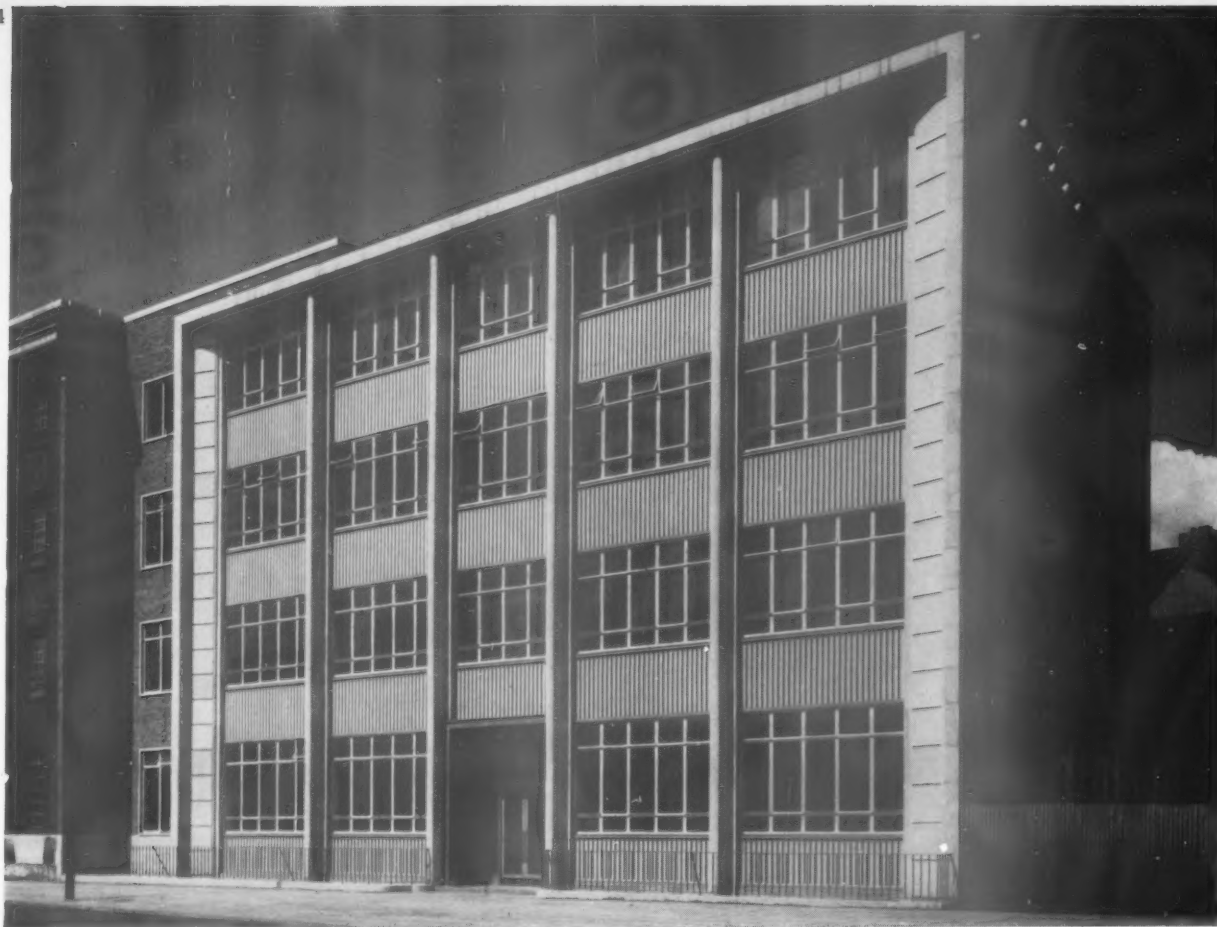
The primary school at Alderman's Green is the first section of a two-form entry school which will finally accommodate 600 juniors and infants and include a nursery school. The Coventry Education Authority required the construction to be as much as possible in non-traditional form as the lack of craftsmen locally was causing great delays in the erection of traditional buildings. A pleasant view to the east and the wish to get a southern aspect to all classroom areas influenced the layout of teaching space. All the single-storey areas are steel framed on an 8 foot 3 inch grid, and there are standard precast concrete roofing units. External walls are double-

skinned and faced either with alternate 8 inch and 1 foot 4 inch wide precast spar finished concrete units or mixed golden-brown rustic facings. The two-storey block is also steel framed, with tubular stanchions and reinforced concrete floor and roof. To provide contrast to the precision of the concrete external wall treatment, some Hornton stone is used for wall facings and linings to first-floor windows. Internally, all walls are painted and ceilings are of painted fibreboard. Floors are covered with linoleum in classrooms and staff rooms, missanda wood blocks in dining and assembly halls, quarry tiles in cloak-rooms and kitchen, and Hornton stone slabs in entrance hall and covered way. Roofs are finished with roofing felt three layers of grit and $\frac{1}{2}$ -inch insulation board.



ground and first floor plans (first floor rooms are over the entrance hall and part of the dining room) scale: $\frac{1}{48}$ in. = 1 ft.





4, the south facade. The vertical fins are of cast stone and panels between windows of fluted cast iron.

5, the geography classroom which has walls painted beige, woodwork ivory, grey and venetian red.

COLLEGE EXTENSION AT LIVERPOOL

RONALD BRADBURY: CITY ARCHITECT

The original College of Commerce, which was erected about 20 years ago, is on the corner of Tithebarn Street and Smithfield Street and the new extension, illustrated here, is the first instalment of a large scheme which will later occupy the Tithebarn Street-Vauxhall Road corner site. The extension will alleviate the shortage of teaching accommodation brought about by the considerable increase in the number of day and evening pupils. There is provision for approximately 300 new pupils.

The site was formerly occupied by buildings which had been

5



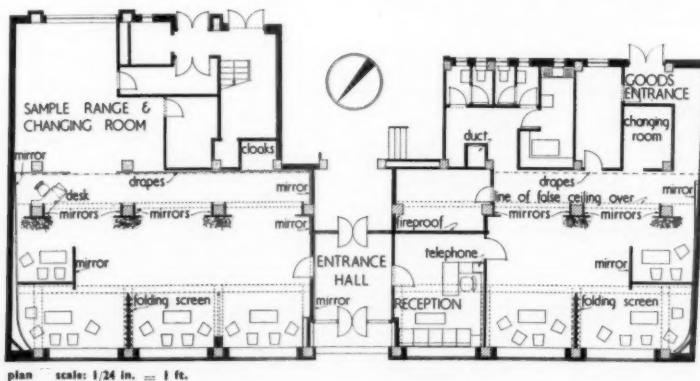
demolished by enemy action and the land was compulsorily purchased. The extension comprises lecture room, four general classrooms, special classrooms for book-keeping, accountancy and geography (situated on the first and second floors), staff and students' common rooms, library, study cubicles, cloakroom and lavatories. Corridors on all floors give access to the original college building.



6, view in the easterly showroom with one of the sliding-folding screens on the right.

SHOWROOM IN CONDUIT STREET, LONDON

ARCHITECTS: B. KATZ & R. VAUGHAN



7, desk in the reception office west of the entrance hall.

This showroom was designed for a manufacturer of women's coats and suits. The premises, which are on the ground floor of a new office block on the south side of the street, are used as a West End showroom for buyers from retail stores. As several buyers from different retail stores may be selecting their goods at the same time, a flexible subdivision of the showroom was required. This is achieved by a number of sliding-folding screens, which form separate bays.

The floor in the entrance lobby and reception area is of black terrazzo, in the showroom area close carpeting, in the stockroom greenish-grey composition flooring divided into squares by 1-inch wide white lines in the same material, and in the basement are tiles laid in alternate grey and black stripes. The suspended ceilings in the showrooms are of fibrous plaster and contain recessed spotlights and indirect fluorescent lighting. The wood used for all the joinery is waxed mahogany.

HISTORY

THE CERTOSA DI SAN LORENZO AT PADULA

On the main facade of the Certosa di Padula there is an inscription *FELIX COELI PORTA ANNO DOMINI MDCCXIII*, but a marble tablet, in Italian, in the first cloister reads, or read in 1942:

This Charterhouse, abandoned in 1866, was used by Austrian prisoners of war in 1915, was destined to become an agricultural college in the year XX of the Empire. In 1942 it housed British officers. And for the future who knows?

The future was not long hidden; for it was used first as a prisoner-of-war camp by the Allies and then as a concentration camp for Fascists and others awaiting screening. It is now a national monument. But in spite of that, probably because of its situation, it is almost unknown. Yet the grand staircase, the entrance front, and the immense forlornness of the main cloister are, if only thanks to their assault on the emotions (which is the essence of Baroque), as exciting as anything in Italy. Behind the stretch of coast between the Salerno and Gulf of Policastro lies the Val di Diano bordered on one side by Monte Alburno, the awesome snow-capped hill mentioned by Virgil. In the valley south of Sala Consilina and close to the east side a vast mass of grey brickwork rises, out of proportion to the landscape, cypress-studded, austere and terrible. It is the Certosa di Padula, laid out as a gigantic gridiron appropriately dedicated to Saint Lawrence and above it on the hillside is the village of the same name.

The central cloister, 1, which is its main element (measuring 104 by 149 metres) has a perimeter only twenty metres shorter than the Colosseum. This forbidding cliff without windows is itself surrounded by the walls of the domain and has on the south side a grand entrance hidden within a courtyard. This facade, 2, is of 1718–23 and was designed by Domenico-Antonio Vaccaro. It has affinities with Vanvitelli's



1, the main cloister of the Certosa di Padula. On the right is a small garden surrounded by a balustrade topped with stone skulls.

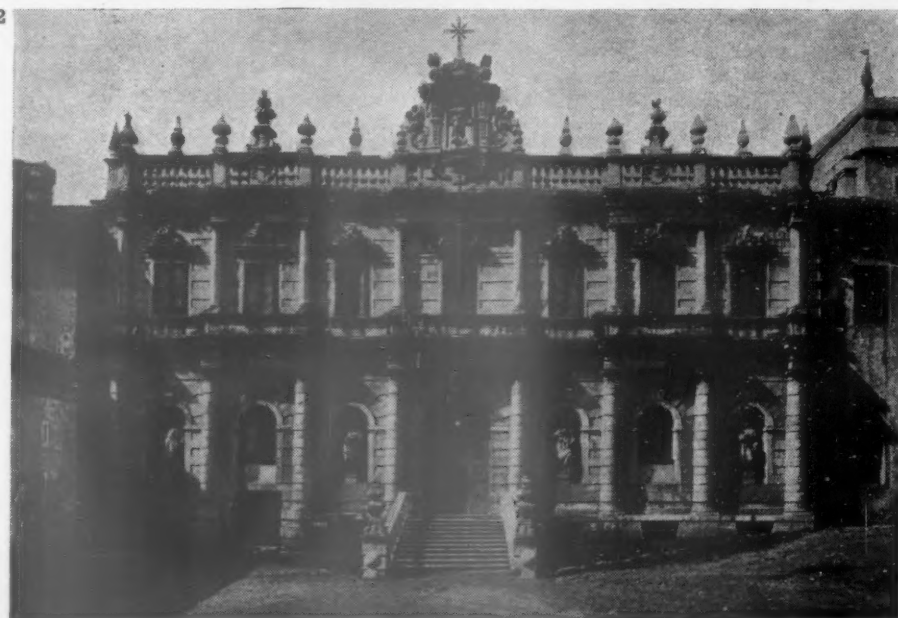
façade for the Pitti and his project for the palace of Principe Tarsia, and, to an English eye, remoter affinities with Vanbrugh. However, even Vanbrugh never dreamed of lunettes above the upper windows, with demifigures looking out of them, nor of niched statues nearly double lifesize.

But in the main cloister one is surrounded by an arcade of eighty-four piers supporting a pilastered gallery of stone and stucco. In the centre of the cloister is a Berninesque fountain of 1641, and a little to the south a new cemetery, a small square formal garden intersected by paved paths and surrounded by a balustrade with stone skulls set at intervals upon it. An obelisk with a crucifix stands in the middle.

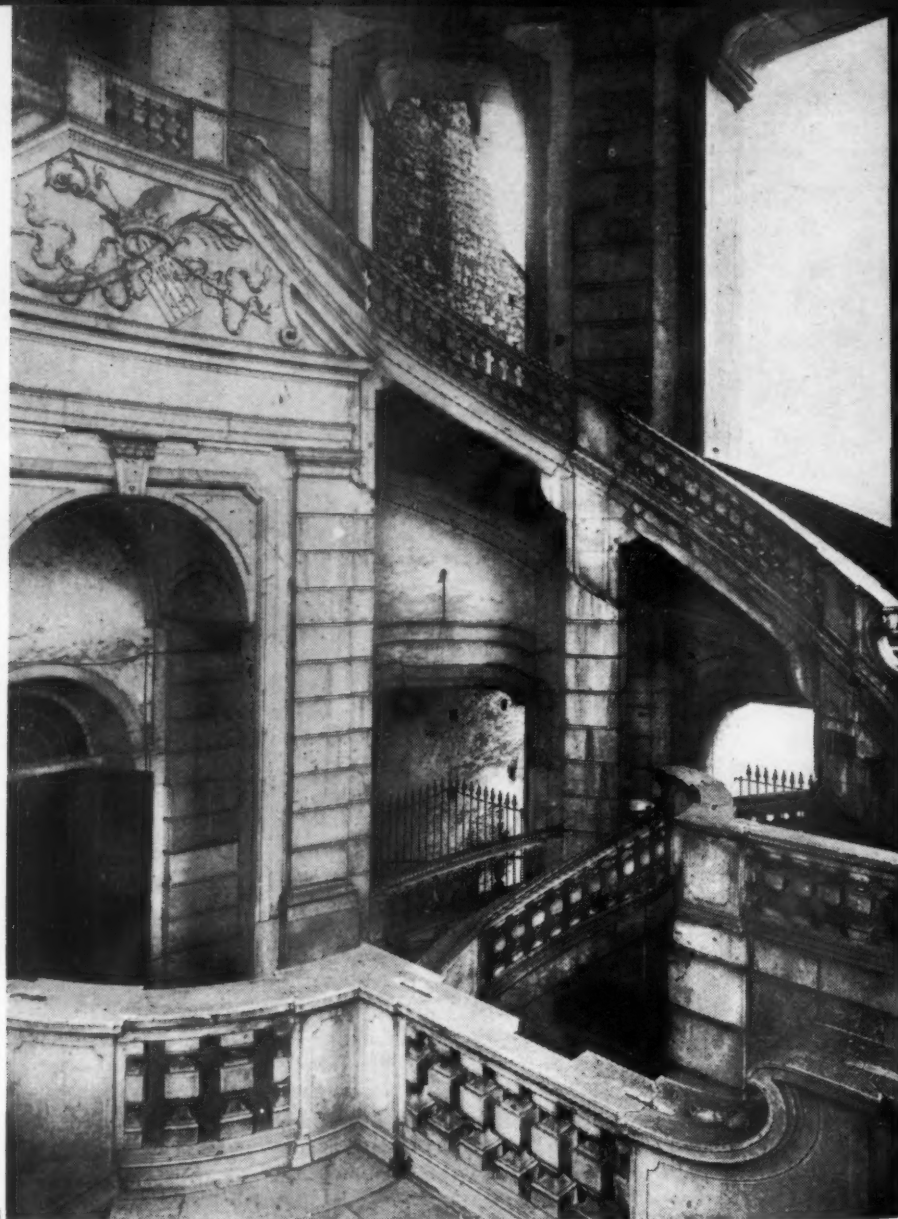
The architect of the cloister, as has been established by Armando Schiavo in *L'Arte*, is Cosimo Fanzago, 1591–1670, whose speciality was the carved rosettes which adorn the entablatures alternating with

different emblems of the Passion or the gridiron device of the Saint Lawrence. The gallery was added between 1761–3 by Gaetano Barba. Access to it is at the north-west corner by a grand openwork staircase, 3 and 4, in the manner of that by Sanfelice for the Palazzo Serano-Cassano at Naples. It is perhaps to be expected that Sanfelice should have been taken as a model; for he was without any doubt the most striking of the architects of the Neapolitan Baroque.

This elliptical staircase, opening fanlike and symmetrically from one end of the long arm of the cloister, permitted the monks to walk above in the gallery where before they had walked only in the inadequate shelter of the colonnade. Its chiaroscuro stone-work of pietra padulese, with a polished marble handrail, is more the work of an artist than an architect, and depends more on its dramatic than its architectural qualities. Not the least of these is the vista



2, the main entrance façade of 1718–23 designed by Domenico-Antonio Vaccaro.

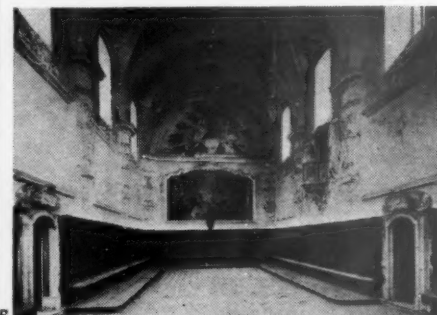


3
4



of the open valley displayed only here to the gaze of the enclosed and silent monks. Ascending, they looked down from the gallery into the cloister and the stone skulls of the cemetery garden opposite the refectory door.

The startling effect of this cold and empty splendour is more forcibly borne in upon the visitor from outside when he realizes that this great palace dedicated to death held only twenty-five monks whose cells, each with a small garden, colonnaded terrace in miniature and a suite of rooms surround the main cloister. Austerity demanded silence, but not that the eyes should be starved, and the wild plaster scrolling of the refectory, 5, and its flowing



3 and 4, views of the elliptical staircase leading to the gallery above the arcade of the main cloister in the manner of Sanfelice's staircase for the Palazzo Serano-Cassano at Naples. 5, the refectory with its elaborate plaster scrolling, and 6, the scagliola pulpit set high on the right of the refectory wall.

scagliola pulpit, 6, are nothing when compared with the richness of the church proper, with tarsie stalls in the ante-chapel dated 1571, 7, and marble scagliola altar frontals as bright as Sicilian carts.

Padula is the type of palace of the Church which asked for the dispossession of 1866. No civil authority could tolerate or even probably understand such rigorous grandeur, for to each monk were three lay brothers to serve and to work the gardens, only the Sunday meals being taken in the



7, the elaborately decorated choir stalls in the ante-chapel, dated 1571.

refectory and the others handed through the hatches to the hermits behind their carved, cold doors. The roll of names for the mass still hangs outside the chapels. The kitchens, tiled a little superstitiously perhaps with yellow and green to ward off flies, are still in order.

Nicolas Powell

LETTERING

SANS

Is Sanserif the modern letter? We think of it as a recent invention, as the letter-equivalent of the modern style and stream-line civilization.

Is that so? Sanserif has two characteristics. The line of the letter is invariable in width, and its terminations are abrupt without thickening or serif. Its strict standardization is, as far as I know, the work of an English type-designer of about 1816. But lettering which is essentially sanserif or even line, though not always so strictly logical as the moderns in the applications of these principles, is far older. It is indeed the rudimentary form of letter. The earliest inscriptions have no serifs because the cutting is not sufficiently articulated, and there is at all periods a tendency for unsophisticated and unskilled lettering to revert to this form. It was also used as a developed letter-form by the Romans in the early, and again in the late Empire. The inscription, 1, of the arch of Augustus at Susa must have been a magnificent example before the leading was torn out. One can still see from the shadowy relief which remains, the wide even-line, and sharp terminations, and the grand use of heavy line, quite

different in effect from 'classical' shading, particularly in the P. The Constantinian letter reproduced in an earlier article* is again sans which sometimes thickens terminations.

The Carolingians, too, used an inscribed



1 Sans lettering of the First Century A.D.: the inscription of the arch of Augustus at Susa.

letter which is sanserif in the same degree, 2. Unlike the modern school of formal lettering they differentiated between a painted and an incised letter, particularly



2 A ninth century Carolingian inscription on the tomb of Emperor Lewis II in the church of Sant' Ambrogio, Milan.

in the matter of serifs. Again in the sixteenth and seventeenth centuries sans-serif letters, usually heavy, with many variations in letter forms, were popular. We reproduce those incorporated into the architectural design of Felbrigg Hall, Norfolk, 3. One sees also, for instance, many



3 Sans lettering incorporated in an open Elizabethan parapet at Felbrigg Hall, Norfolk, c. 1600.

cut in relief in granite on the crosses of Brittany. Indeed in considering this history one notices that the form is natural to relief or square section letters. Painted serifs provide a neat and pleasurable finish to the execution of a painted, written, or triangular-section, chisel-cut letter, but they are not so convenient or so appropriate to letters cut in relief, still less so to those which may be cast or carved or built up as free-standing, three-dimensional letters. This is obviously a consideration of importance to the modern designer since so much of the large-scale lettering used today is of this

* AR, November, 1953, p. 300.

nature. Thought of in this historical way we might find many potentialities in this archetypal form of letter. Why should the even-line be rigidly unvariable? or the letter-forms so strictly normal? Perhaps it is misleading to suggest that such an idea would be within the meaning of the term 'sanserif.' But we have at present no other name. What, for instance, shall we call 4; incised lettering on Walcot chapel Bath, 1815. Or Berthold Wolpe's brilliant type *Albertus*? I would suggest that here is an idea which, unlike strict sanserif, opens up possibilities of great variations both in design and in mood. A thick even-line can give weight and



4 Incised lettering on Walcot Chapel Bath, 1815.

power and colour. One might recapture some of the rich magnificence of Gothic, without the associations which make its use almost impossible today.

Such an idea would be far removed in mood from the modern sans which is patently a rationalist, mechanist sort of letter with no romantic tendencies. Perhaps it is better to reserve the name sanserif for nineteenth and twentieth century standardization. One might call the wider category which admits of occasional thickenings and eccentricities Augustan-sans after that beautiful P. Yet even within the sanserif rationalism there is difference of mood. What more concise symbol of the early machine age than EUSTON, 5? Compared to the modern versions these heavy, rather awkward and ugly Victorian forms, 5, and 13 on



5 Incised lettering, the arched gateway of Euston Station, 1870.

page 271, though also strictly utilitarian yet have scale and a certain grandeur, like a steam locomotive in comparison to a tube train. The instinct which incorporated them in the Doric order was not at fault, 6.



Detail of the relief lettering on the Unitarian Chapel, Sunderland, 1890.

Again today how remarkable it is that a letter which seems so essentially non-committal can so easily, unmistakably,



Twentieth-century sans lettering on a shop fascia in Oxford Street, London.

express vulgarity, 7? or be so unmistakably French, 14? Yet do we want sans as an expressive letter today? I fancy that confident, utilitarian, rationalism has long ceased to be the contemporary mood.

But believers in sanserif make more objective claims for the form. Is it not the permanent norm upon which all other forms are built up; as Gill says, the bare body, and others the letter-clothes? Or again does it not correspond to the idea of modern architecture which sees that as a stripping off of the encrustation of irrelevant ornament and a revealing of the functional beauty of structure? If the function of lettering is legibility certainly serifs and shading add nothing but frills. But is function essence? That as we have seen before is an abstruse and highly debatable philosophical question. Even if we accept the idea that you can arrive at the essence of something by peeling off irrelevances, we are left at best with a minimum (is it a body or only a skeleton?).

Let us be quite clear that on this theory we are then seeking not a perfection, but an irreducible minimum. And after all, that minimum has been found. Edward Johnston's underground letter, 8, and Gill's type design leave little room for improvement, or for variations. Here are forms which have the beauty of logic, and precision, and normality. One can go no further, do



An example of the sans designed in 1916 by Edward Johnston for the London Underground.

no better, add nothing. Variations usually only show a lack of one or other of these qualities, and with nothing to compensate. Sans is an exacting and not very repaying letter to design. If we accept it as an ideal we are affirming that lettering is a utility (its essence being function) and not an art, an affirmation which it is the whole object of this series to refute.

But what about the connection between sans and modern architecture, does it lie merely in stress on function? There is, I think, another basis. Sans lettering, however unexceptionable in design, if stuck on to a building does not necessarily look well—far less inspired. Look at 9. The back-



Sans lettering on St. Bridget's House, Bridewell, London, 1953.

ground is made up of geometrical forms, so too are the letters, but they are not related. In particular the verticals of the facing material are not related to those of the letters imposed upon them. But here is a vital connection. Sans is geometrically the simplest sort of letter, particularly as a three-dimensional letter. It is therefore surely most easily integrated into architectural design, if only it is thought of as it materially is, not so much

an A, as a figure of a particular size, proportion, texture, etc., having scale and, if it is in relief, as articulating space.

On the simplest level how complete BUFFET, 12, is! The smaller second line and arrow provide compensating horizontals and make an enchanting abstract design. 10 shows how positive scale and placing can be; one remembers that it is chiefly in such uses—particularly in small scales emphasizing the typical neatness of sans, that typographers have been most



A condensed sans on a shop fascia in Kingsway, London, 1953 (see *Five Typewriter Showrooms*, A.R. March 1954.)

successful with sans founts. Real three-dimensional use seems to me hardly to have been begun; 11 suggests a possibility. But the application of all this is not of course confined to sans lettering; in some ways it has advantages in being so elementary, but only if it is used as such, as



Three dimensional sans on a fascia in Tottenham Court Road, London, 1953.

combinations of real verticals and circles and curves. As letter, rather than geometrical forms, the larger the scale the more its weakness becomes apparent. Its verticals are, in themselves, indeterminate, the Egyptian is a far stronger and more finished letter. One sees too the function of serifs in leading from one letter to the next, creating a running rhythm, which is entirely lacking in a large sans. The small letters have their own neatness and compactness, the eye sees each word as a rectangle, but on a large scale modern architects are wise in preferring an italic or compressed design. Sans has been called foolproof, so perhaps it is if your standard is utility. As an art form it is dull, or extremely tricky.

Nicolette Gray

EXHIBITIONS

PAINTING AND SCULPTURE

The most sensitive and gifted of the new realists resemble those people who have to stamp their feet or bite their hands to assure themselves that they are in the flesh. Gruber's wraith-like nudes lean forward to out-stare us, the figures in Giacometti's paintings are so anxious to make their presence felt that they grow as long and narrow as a reflection in the back of a spoon, and Francis Bacon's phantoms are of course famous for their screaming fits. Paul Rebeyrolle, a young painter as coarse as Vlaminck and professional as Derain, is a realist of another kind. When one first heard of him he was painting Picasso's chimeras as if they were naked middle-aged women with stomach trouble, warming themselves at the studio stove. A year or two ago he invented a fearsome impasto that could make a nude or a dog or even a bottle look jumpy with fleas. But these nerve-tling works, which caused many critics to make hasty preparations for the thunder and lightning to come, would now appear to have been a deliberately hoarse shout intended to command attention for the arrival of yet another dab hand at Parisian picture-making.

The pictures in his recent exhibition at the Marlborough Fine Arts seem to argue that the subject is immensely important, but that any subject will do because the only thing that matters is good painting. In his seemingly literal studies of landscape the same pale green smudge of foliage lights up each scene, and with wearisome persistence attempts a sparkling flirtation with one's sense of the well-placed accent. In his seemingly obsessive concern with a brick wall and a budding fruit tree, the raw and ugly smear of new plaster on the wall is 'transformed by the brush' into a very pretty splash of colour. The picture called *Still Life with ladder* is an even trickier example of his coquettish approach to the blunt statement. It depicts a stumpy ladder against a wall (more earthy and real than a tall one), with a basket perched on the top rung (the untidiness of reality), a bit of cloth draped from another rung (the arch-cliché of pure painting) and a pot on the floor (symbolically waiting to ascend). It has

lettering: sans

12, bathing hut at Menton, and
13, bank at Lowestoft, Suffolk.
14, shop at Sète, Southern France.





the air of being a corner of a peasant crucifixion. Add to this the thick, sensual application of paint that gives the onlooker the vicarious pleasure of mud-smearing, and every possible requirement of the lover of Van Gogh has been synthetically supplied. The picture called *Two Cocks*, 1, is probably the best in the show. These two birds, in their *Moulin Rouge* underwear, are not in a vital relationship; they are placed one above the other to compose a decorative panel. The white hope of Realism has become a slight case of *belle peinture*.

David Russell has been making a strenuous attempt to fabricate actuality behind the hermetically sealed door of his studio, and the results have been on view at the Hanover Gallery. (It was his first show, and he is twenty-four years old.) Like others before him, he has solidified some of the elements of the sign language of modern painting into studio properties, and the forms lose their life as they change into objects. Russell seems to have assumed the role of pseudo-alchemist with some deliberation, for he places his inventions in dark lumber rooms, 2,

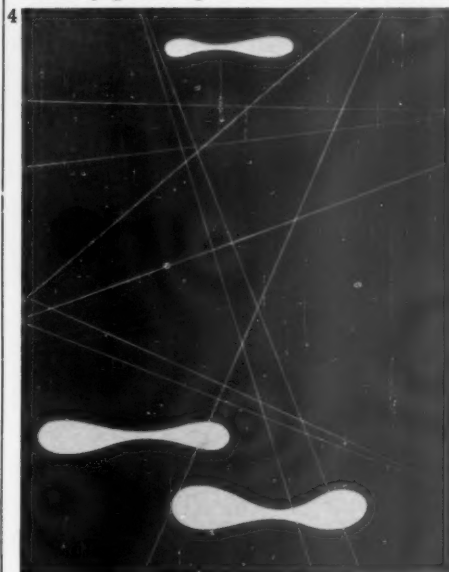
where they clank out their leaden echoes of lively biomorphs with a sinister absence of meaning. He paints with assurance but will have to endure agonies of tedium if he is to achieve that final ice-cold perfection of finish that might ring from us the horrified exclamation which images of negation and alienation have some right to expect from us.

Henry Moore's exhibition of recent sculpture at the Leicester Galleries was a kind of three-dimensional private journal, for he is in the midst of a slow breakaway from the sculptural object, and some strange, confused and even hateful forms have been thrown up by the process of change—emblems of sudden misgivings and nostalgic longings for his own past. Two dreadful, quacking creatures have been attached to the lap and nether limbs of one of his giantesses to form a *Mother and Child*, and his *Three Standing Figures* is an uneasy, uncommunicative excursion into Sutherland's world of metaphorical beings. But a profoundly subtle feeling for the human presence is steadily prevailing, and all his creative vision is concentrated in those works which disclose his response to appearance. The torso of the large version of a reclining figure in bronze, 3, is arbitrarily twisted and lumpy, but the figure as a whole is a remarkable study of the pathos of human nakedness.

At the same Gallery, Paule Vézelay has exhibited a group of small constructivist pictures, in deep box frames, which explore the poetically decorative relationship between taut threads and wires strung across the surface of the box and the shadows they cast on to the background. Some of the thread patterns are more

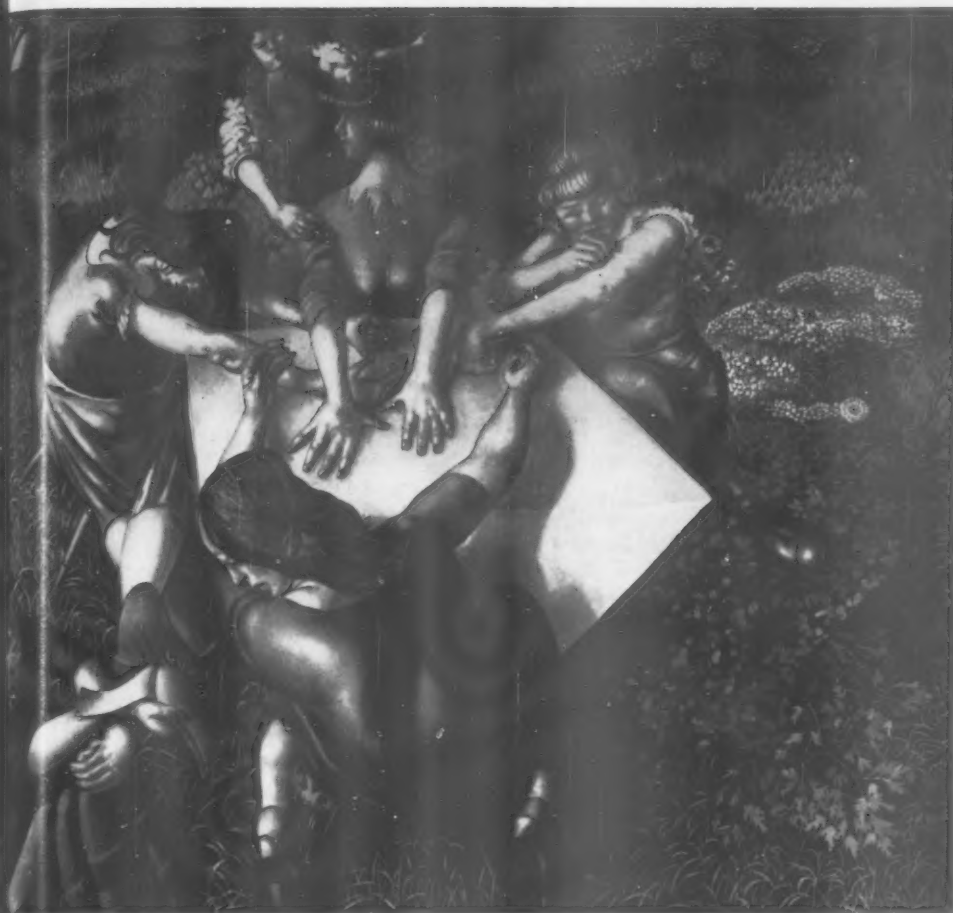


web-like and complicated than the example illustrated, 4, but in this picture she has made further play with the three dimensions by gumming white fabric cut-outs to



the inside of the glass, and black ones to the background, so that the latter operate very charmingly as false shadows.





An exhibition of nineteenth and twentieth century French paintings at Reid and Lefevre, accompanied by some fine Renoir bronzes, contained so many first-rate works that one can only make a deferential acknowledgment of the Gallery's collective eye for quality. The large painting of a nude by Delacroix didn't line up very comfortably with the other exhibits for it was almost forbiddingly monumental, but it had the effect of revealing the fundamental painterliness of the Renoir bronzes. The very small landscape called *Paysage*



du Midi, 5, painted in the lovely browns and greens of early cubism, provides the opportunity to reproduce a work by Roger de la Fresnaye. His place in twentieth century painting is difficult to assess; he died in 1925 at the age of forty, and his

work, which is rarely seen in this country, is suffused by the magic of immense promise.

Arthur Tooth's mixed show of contemporary English painters included two pictures from Stanley Spencer's Cookham Regatta series started in 1953. When his eccentricity admits no limits and the virtuosity of his technique gives him the belated leadership of the Pre-Raphaelite Brotherhood, his work is a great flowering of insularity, as exotic as the novels of T. F. Powys: the second of the Regatta pictures, called *Girls Listening*, 6 (presumably to the word of Christ) with its enamelled, New Jerusalem brightness of colour, and its possessed and avid figures, is one of the most absurd and enchanting pictures he has ever painted. Robert Melville

CRITICISM

FLATS ON DOVER WATERFRONT

Few recent projects have been so widely condemned as the scheme for building multi-storey flats along the water-front at Dover. It emerged from a competition held in the summer (promoters, Dover Corporation; assessor, A. W.

Kenyon; first prize, one thousand guineas). The winners were a London firm, Dalgliesh and Pullen, architects in 1938 of the tall block of flats known as the Marina, erected on the seafront at St. Leonards.

This is not a case where the critics unite to preserve a famous site unbuilt-on. There is no objection to using this site for housing; indeed it was previously so used, being occupied by groups of very agreeable early nineteenth-century houses which, damaged during the war, have to many people's regret since been razed to the ground. This has left an open site offering great possibilities but at the same time requiring skilful handling because of its key position in the panorama of the Dover waterfront, famous for its chalk cliffs crowned by the medieval castle.

The competition brought forth designs embodying many forms of layout, all including blocks that rose to a fair height since 300 flats were required, involving a high degree of density. The winning design, 1 (p. 274), places most of them in a continuous narrow nine-storey block with staircase towers at intervals, running parallel to Marine Parade (and therefore to the waterfront) and the remainder in a curved fifteen-storey block at the eastern end of the site. It has three clear defects: the tall cliff-like slab of building, placed thus lengthwise on the site, would form a barrier between the town of Dover and the harbour. Its size is such that it would not only dwarf its surroundings but throw out of balance the view of Dover from the sea, which includes the harbour, cliffs and castle—Dover Castle, especially, which stands on the cliff near the point where the flats rise to their greatest height, would suffer severely from so overpowering a neighbour; and the architecture shows a clumsiness of conception and insensitivity in the handling of detail quite unworthy of so fine a situation.

The design was brought before the Royal Fine Art Commission in January, who roundly condemned it, giving as their reasons the first two of the defects enumerated above. Subsequently the County Planning Officer for Kent announced his refusal to give the scheme planning consent, stating that his reasons were the same as those of the Royal Fine Art Commission. It is hoped that the Dover Corporation will give the architects the opportunity of modifying the design and satisfying the critics.

Whether they will succeed in doing so remains to be seen. In theory it should not be difficult to improve the quality of the architectural treatment—that is a question of taste and sensitivity. To remedy the defects of planning and massing needs thought and calculation as well, but that a satisfactory solution is possible



is indicated by other schemes submitted in the competition. Several of these succeeded in getting the required accommodation on the site while using a more open type of planning, which preserved views of the sea and harbour from the direction of the town between blocks set at right angles to Marine Parade or between small courtyard blocks with one side open to the sea. By planning in depth, high building masses were avoided.

The justification of the plan arrangement used by the architects of the winning scheme is that it provides a frontal view of the sea from the living-room, and at least one bedroom, of every flat. But this advantage must be set against the defects to which the Royal Fine Art Commission and the County Planning Officer (as well as a large body of public opinion) are agreed in deploring. An oblique view of the sea, such as Regency terraces provided by the use of bay windows, would have been almost equally agreeable.

The question at issue is primarily one of scale, and it is to be regretted that the competition conditions did not call attention to the need for new buildings on this site to accord with the scale of their surroundings. They might even have imposed specific restrictions on height and building mass. A design like this, and the objections it arouses, does no good to the reputation of the competition system as a means of discovering the best solution to a given problem.

J. M. Richards

FUTURE

THE NEW BRUTALISM

Reactions against the tendency to over-refinement and dry academic-abstract geometries which lurk in the International Style have taken different forms in different countries, but the most positive one so far, and the only one whose roots do

not lie outside the Modern Movement, is the attitude taken by certain younger English architects and artists, and known, half satirically,

as the New Brutalism. The term was first used in public by Peter Smithson to describe a small house project for a site in Soho. In the statement which accompanied this design he said: 'It is decided to have no finishes at all internally, the building being a combination of shelter and environment. Bare brick, concrete and wood. . . . In fact, had this been built, it would have been the first exponent of the New Brutalism in England, as the preamble to the specification shows: "It is our intention in this building to have the structure exposed entirely, without internal finishes wherever practicable. The Contractor should aim at a high standard of basic construction, as in a small warehouse."'

The project and the accompanying statement aroused considerable comment, and below are printed a letter from Kenneth Scott in Accra, and a further statement of aims from the designers of the house, Alison and Peter Smithson:—

'A great debt is owed by the profession to the Editor of *Architectural Design* for having the courage to publish in the December number the Smithsons' project for a House in Soho. For the first time, as far as I am aware, the Smithsons have been given space to outline their new theory. Is this, I wonder, an omen? Is this the glimpse into the future of English Architecture?

'Someone has said that the Smithsons build caves for men rather than houses. This idea comes from the feeling that one gets inside their buildings, of being in touch with the very nature of which the building is a part. This feeling is characteristic of all their work, though particularly apparent in their most recent ones. It is a feeling quite unlike the undefined, accidental quality of the romantic school, which incorporates imitation nature effects. On the contrary, the Smithsons' houses emphasize the intimate feeling of shelter. One is in a space that represents all space,

oneself orientated to the matter within which the house stands and out of which it is built. Every part of the house seems in balance with the essential brutality of man.

'A similar feeling of intimacy may be found in the house in Soho, one of the artists' highest poetic achievements. The plan alone reveals that reciprocal tension between inside and outside is a main theme of the structure. The walls seem placed along the lines of potential energy. They are concentrations of solid matter, emitting beams of force according to the nature of the various materials; they seem to extend their power into the enclosing shell of the house, thus determining the positive unity of the interior. The inner space, without definite stops or tangibly enclosed areas, is given identity as a void and definite unity by the way the wall masses are placed, the juncture of weight and energy creating concentrated space with a rich variety of expression. Everything in the interior that meets the eye is co-ordinated—air, light, glass, the dynamic, tense horizontal planes in ceiling and floor, create a sense of space at once definitive and infinite. Within everything contributes to the balance of space, equilibrium embodied in greater and lesser volumes, re-establishing a sense of intimate brutality at the very moment of participation in surrounding nature. Nature itself contributes to the architectural effect; in fact, along with architecture it plays a leading role in the unprecedentedly full emotional impact that the Smithsons have created. Here the artists have given unity to their work by adhering undeviatingly to strict rectangularity—with direct, instant effect. Nothing else could have dominated the turbulence of the setting. The artists wanted to identify and immerse their work with and in this setting, selecting the most challenging site in an act of will testing the supreme power of their genius to which it always seems possible to dominate brutality, re-integrating it in the creation of new geometrized matter.'

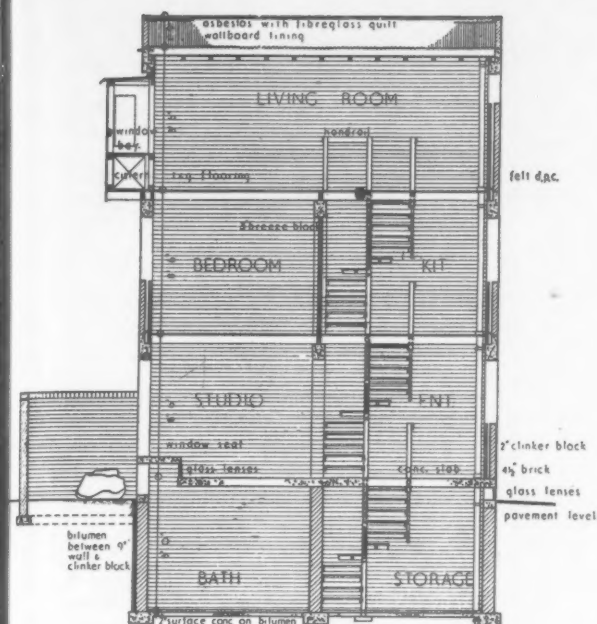
The statement by the architects reads:—

'It is necessary to create an architecture of reality.

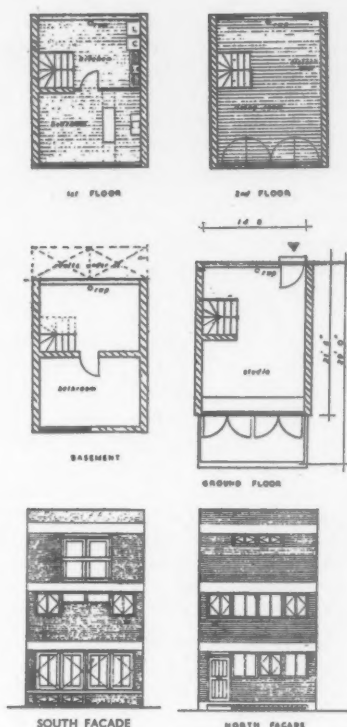
'An architecture which takes as its starting point the period 1910—of de Stijl, Dada and Cubism—and which ignores the waste land of the four functions.

'An art concerned with the natural order, the poetic relationship between living things and environment.

'We wish to see towns and buildings which do not make us feel ashamed,



Above, section and, right, plans and elevation of the project for a house in Soho by Alison and Peter Smithson, referred to by Mr. Scott in his letter quoted on the facing page.



ashamed that we cannot realise the potential of the twentieth century, ashamed that philosophers and physicists must think us fools, and painters think us irrelevant.

'We live in moron-made cities.

'Our generation must try and produce evidence that men are at work. A. & P. S.'

BOOKS

ELEMENTS AND THEORY

FORMS AND FUNCTIONS OF TWENTIETH CENTURY ARCHITECTURE. By T. F. Hamlin. Columbia University Press. London: Geoffrey Cumberlege. £25.

Professor Hamlin's *Forms and Functions of Twentieth Century Architecture* are in bulk and programme the most ambitious undertaking in architectural literature that has come out for many years. Its success is dependent on the use to which it can be put by schools and students. The following review is a joint enterprise of the staff of the Department of Architecture of the University of the Witwatersrand, Johannesburg.

These four volumes, running to some 3,200 pages and including a like number of illustrations, represent a considerable expenditure in time and energy on the part of its authors, and a considerable financial investment on the part of its purchasers. A thorough study of its contents, however, has left us with the unhappy conviction that what has been

accomplished is in no proportion to the effort which produced it nor the time expended in its reading.

If this judgment sounds hard it should be set against the ambitious aim stated in a foreword by Dean Arnaud. He writes that books on architecture 'however thorough and valuable they may be, eventually become obsolete, and must be replaced from time to time by new works which embody the ever-evolving science, methods and building types of their own times.' He then goes on to say that it is more than fifty years since the publication of the last major work on architectural theory, Guadet's *Elements et Théorie de l'Architecture*, and that while the editors consider it still to contain much of value—'for the basis of architectural composition is unchanging and holds good in the present as it did in the past'—yet 'it is woefully inadequate for twentieth century designers who must cope with new methods and new problems...'

Professor Hamlin has obviously conceived the book in terms of the inadequacy of Guadet for our own times, and has set about 'collating the available knowledge of architecture' in order to bring Guadet up to date; but he has not achieved the writing of an up-to-date Theory of Architecture, which is far from being the same thing. He has accepted and taken over *in toto* the framework of Guadet, and has re-written it in more modern terms; he has not analysed the contemporary scene, and evolved from it a new design philosophy. Professor Hamlin is sufficiently *au fait* with modern architecture to substitute new examples for old, and to use contemporary architectural terminology and phraseology to impart a gloss of modernity to the book. But this modernity is only skin deep; for his examination of the forms and functions of twentieth century architecture is in terms

of a nineteenth century analysis, based, if we may say so, on a nineteenth century *Beaux Art* vision.

The editor is completely faithful to the *Beaux Art* format. His subdivision of the volumes into *The Elements of Building*, *The Principles of Composition*, and *Building Types* is identical with the curriculum of the *Ecole* in 1890. His chapter headings would form a detailed syllabus of that curriculum, and are derived largely from Guadet. At times their relevance to the contemporary concept of architecture is slight, and where the editor finds himself committed to such chapters as *Arches and Vaults*, or *Doorways*, he is forced back upon a predominantly historical treatment. One is at all times aware of the contradictions and limitations inherent in this adopted framework as applied to twentieth century architecture. For example: to consider *pisé de terre* houses and Maillart's bridges as analogous mass structures ('so called because the materials which make up the walls [*sic*] are tied together by a binder so strong that the whole becomes a single or monolithic mass') is to misunderstand the essentials of Maillart's dynamic structures so completely as to render the whole chapter absurd. There is a patent confusion here between the mass nature of the material and the structural usages to which it may be put, which arises from a dated structural analysis. This confusion is especially evident in the section of Volume II, dealing with construction. There is a subtlety in grouping the log hut and the stone wall as similar (block or gravity) forms of construction, but finding an inherent and basic difference between stone and brick (mass), which these reviewers cannot grasp. And we are also baffled at the logic which classifies Perret's Museum of Public Works at Paris (f. 461, V. II) as Mass Construction, as against Otto Wagner's project for the Franz Josef Museum (f. 551), which is quoted as a framed structure.

These internal contradictions stem from certain paradoxes which are inherent in the basic conception of the book. The four volumes are based upon the theme of Utility, Strength and Beauty. This hoary triumvirate (which has been passed down uncritically from theorist to theorist, but never yet has its validity been demonstrated) is adopted with due recognition of the fact that 'consideration of these three factors is not successive but concurrent.' This concept of the wholeness of architecture, with which we at once concur, is further buttressed by the statement: 'a separate consideration of individual elements is in a very real sense artificial.' Yet, and here is the first paradox, although Professor Hamlin makes the very reasonable assumption of the simultaneity of the architectural process, and the indivisibility of architecture, he nevertheless constructs his book upon the contradictory thesis that the very 'sequence of the three basic aims—commodity, firmness and delight—has its own significance,' and determines the chapter sequences. He is, of course, not unaware of the thin ice upon which he is skating. He can do nothing about it, however, but cry 'Cave.' He exhorts the reader to bear in mind the dangers inherent in a detailed

consideration of one element. 'The architect,' he warns, 'must always see it not as an isolated detail but as an individual note in a great composition.' In other words, the editor, 'as a matter of convenience,' itemizes architecture, and then throws the fragments to the reader to re-integrate, by the application of an 'imaginative and critical mind,' an incredibly retentive memory for earlier chapters and intuitive divining of chapters still to come, and finally by an exhausting process of cross-reference from volume to volume. The flaw in the book is indeed that while it is concerned with separating, listing and analysing, it does not attempt the vital task of synthesizing.

This is to a certain extent understandable. The process of synthesis is the creative task of the architect and Professor Hamlin always strikes one not as an architect but rather as a critical spectator. In this respect, there is an important distinction to be made between *The Forms and Functions of Twentieth Century Architecture*—and what a misnomer that is—and its many predecessors in the field of architectural theory, which were written by active practitioners like Alberti, Palladio and Viollet-le-Duc. One feels the touch of the academic tar-brush in many parts of Professor Hamlin's book, where one suspects that he is tilting at windmills, and in chapters such as 'The Process of Architectural Practice' he is precious to the point of embarrassment. One feels, too, a certain remoteness from architecture evidenced in the choice of illustrations, which are amazingly uneven in quality and demonstrate an attitude which can only be diagnosed as galloping eclecticism. The deliberate selection of examples, however lacking in architectural quality, to demonstrate specific points in the text—although disconcerting to the sensitive architect—is legitimate when one considers that the book deals only with specific points, and never with their summation as architecture.

If Vols. I and II seem inadequate, being too detailed to have general value as the exposition of an architectural thesis or theme, and too dispersed to be valuable as an authoritative reference book, the final two volumes, dealing with Building Types, may be similarly criticized for falling between two stools. On the one hand they are, in many cases, condensations, often by the same authors, of material contained in specialized books on houses, apartments, hospitals and so on, and can replace these books to the extent that the Readers' Digest can replace a library. On the other hand, where they intend to survey what is being achieved in the many fields of architectural endeavour, they achieve less than any file of clippings from the architectural magazines, or special numbers of journals dealing with building types. In Guadet's day there was a need to analyse current building types, but to-day that need is adequately catered for by the architectural press, and we seriously question this sort of subject matter in a work which aspires to more than ephemeral importance.

If one believes that the basis of architectural composition is unchangeable, there seems little point in writing yet another book on

the Theory of Architecture. If, however, one believes that because we build to-day in different circumstances for different motives and with different techniques, and that consequently our buildings are in many respects different from those that have gone before, then one may assume that our theories of aesthetics have been so amended as to be worthy of re-assessment. This would call for a completely contemporary book, based upon a twentieth century concept of aesthetics and ethics, of psychology and philosophy, of space and time. It would call for a book based upon the realization that in architecture the discipline of the Academy has been replaced by the discipline of the mind and the eye; that architecture to-day is dominated by that scientific attitude of reason which is the hallmark of our times; and by a new concept of vision which is the aesthetic consequence of that attitude. A book is called for that sees as the basis of twentieth century form a twentieth century attitude to space and building technique, and that predicates as a basis of twentieth century function an intimate understanding of twentieth century needs and purposes. It is our regret that, although it contains much of incidental interest, *The Forms and Functions of Twentieth Century Architecture* is not such a book.

Professor John Fessler, N. L. Hanson, G. Herbert, W. D. Howie, E. W. N. Mallowes, J. Morgenstern, J. Shunn, U. Tomaselli.

Shorter Notices

BERKELEY SQUARE TO BOND STREET. By B. H. Johnson. John Murray. 30s.

A close study of the development of an urban area is always interesting, particularly in the West End of London where superimposed layers of ownership and exploitation lie between the original topography and the present scene. Mr. Johnson's study traces the development of the Berkeley properties down to the death of the last Lord Berkeley of Stratton in 1773.

Building on the property begins, properly speaking, in 1664, with Berkeley House, a known work of Hugh May, and the author has brought off a minor coup by producing from somewhere in the British Museum an unpublished water-colour of the house, which adds notably to our knowledge of May's work. From that date onwards development was a labyrinth of legal actions, sales, bankruptcies, legacies and prosecutions, through which the reader is guided with a sure hand, and introduced to a procession of eccentrics and business-men, sharp operators and broken-down peers, each of whom made some permanent contribution to the layout of the area. That the final plan should be rectilinear and fairly straightforward is, when one has read this book, almost inconceivable, but it is the great merit of Mr. Johnson's method that while we thread our way through a plot as complicated as a radio serial, the relation of the off-stage manoeuvring to the bricks and mortar is never lost. At the end, in fact, one begins to have some idea of the financial and administrative chaos that must underlie the planning of other, more complex, parts of London.

P.R.B.

EARLY ENGLISH WATERCOLOURS. By Iolo A. Williams. London, The Connoisseur, £5 5s. 0d. zzzii + 249 pp. CC plates, 1 in colour.

The fruits of Mr. Iolo Williams' researches during twenty years' intensive work are gathered

together in this volume, which is a monument of devotion to the subject.

Beginning his survey with the users of water-colour in the time of Henry VIII, the author wisely concludes it with artists born not later than 1785, that is to say with the first generation after Girtin and Turner. Within this field, he casts his net wide. Besides his 'main battalions of the landscape, topographical and figure draughtsmen,' he marshals 'the marine artists, the botanical and zoological draughtsmen, and the caricaturists,' and, in addition, renders tardy justice to the capable amateurs of the eighteenth century.

The 200 plates comprise 412 reproductions, incomparably the fullest general illustration of the subject available. They have admirable captions, giving dimensions, medium and signature, besides details of authorship and ownership, and, on occasion, other information of value.

J. W. Goodison

MODERN ARCHITECTURAL DESIGN. By Howard Robertson. New edition 1952. The Architectural Press, London. 25s. net.

In the twenty years since the first edition of Mr. Robertson's book was published, the technological revolution already in progress has gathered pace. This alone, apart from intervening changes of fashion and the tentative beginnings of a new vocabulary of details in architectural design, would render extensive revision necessary. The first edition text was lucid and persuasively argued, combining wide practical knowledge with sound aesthetic criticism—the work of an unusually clear mind informed by a well-developed sense of history and respect for tradition. Mr. Robertson has not ossified: the revision has been done skilfully, sensitively and above all very thoroughly, as a collation of the two editions and a comparison of their indexes shows. From beginning to end Mr. Robertson keeps firmly in mind the chief aesthetic problem confronting the architect today: '... technology in building construction, as in so many other scientific fields, has been for some time outstripping the cultivation of the "humanities", which appears to be of much slower growth. Architectural design... is lagging far behind. A great step forward is necessary if aesthetic developments are to regain a parallelism with scientific accomplishment.'

T.C.

ENGLISH MEDIEVAL SCULPTURE. By Arthur Gardner. Cambridge University Press. 55s.

Prior and Gardner's *English Medieval Sculpture* came out first in THE ARCHITECTURAL REVIEW in 1902-5 and then as a book in 1912. An abridged edition was published after Prior's death by Mr. Gardner in 1937. This has established itself so successfully as the standard textbook that it has now been re-issued with a revised text and the illustrations increased from 490 to 683. The new pictures are mostly of the late Middle Ages, especially from the Chapels of Henry V and VII in Westminster Abbey.

N.P.

Books Received

THE MODERN SHOP. By Bran and Norman Westwood. Architectural Press. 30s.

TIME ON THE THAMES. By Eric de Mare. Architectural Press. 18s.

BIRMINGHAM—FIFTY YEARS ON. By Paul S. Cadbury. Bournville Village Trust. 10s. 6d.

THE HISTORY OF BIRMINGHAM. By Conrad Gill and Asa Griggs. Oxford University Press. 63s.

REACTIONS BETWEEN AGGREGATES AND CEMENT. H.M. Stationery Office. 1s. 3d.

ATMOSPHERIC POLLUTION. By A. R. Meetham. Pergamon Press. 35s.

HOUSING COSTS TO-DAY. J. L. Womersley. Municipal Journal.

PAINTING AND ARCHITECTURE. By A. C. Sewter. Tiranti. 4s.

FLOWER ARRANGEMENTS FOR ALL OCCASIONS. By Marie Johnson Fort. Arthur Baker. 42s.

A MONTHLY REVIEW
OF BUILDING TECHNIQUES
& INDUSTRIAL DESIGN

Riverside railing, South Bank Exhibition, 1951.

Skill

DESIGN REVIEW

Gates & Fences

Mary Ward

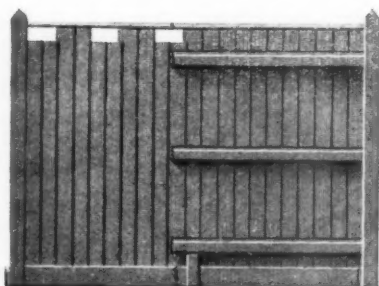
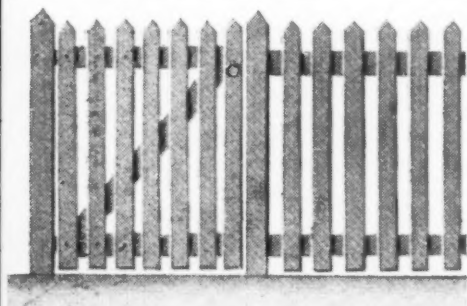
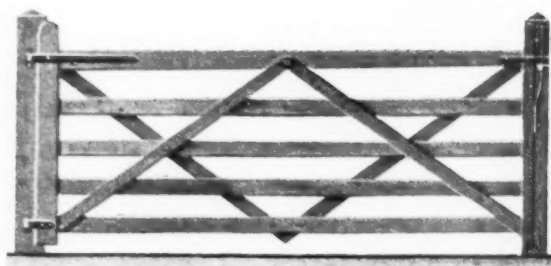
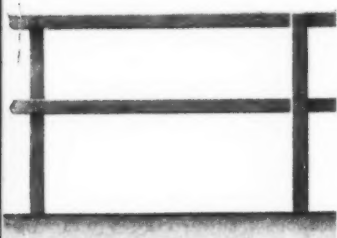
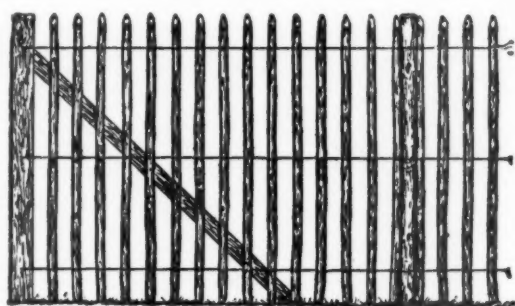
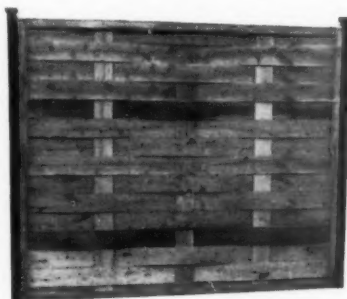
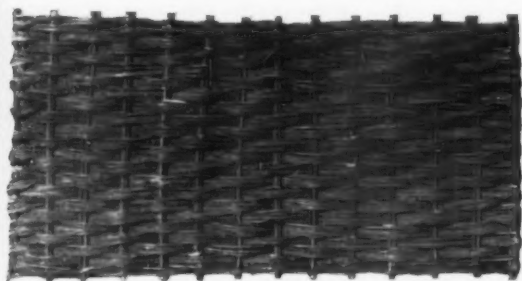
The use of fencing is clearly as longstanding as man's concern for self-protection, and in the countryside particularly, a large number of traditional forms remain which continue admirably to fulfil their function and to make the visual contribution that results from a simple job simply done.

The familiar chain link, wire mesh and concrete panel fences are the essentially new forms which have emerged in the last fifty years; generally they have the negative virtue of being fairly unobtrusive. It is symptomatic however that when a decorative railing is called for or a simple one suited to an urban scene, the discovery of the right kind of old one brings a sigh of relief; that when a catalogue reveals an old number, still available, which combines simplicity with the character appropriate to a contemporary building it is seized as a jewel and filed for future reference.

In this industry, as in many others, the demand for economical solutions to functional problems has been well met, but elegance and refinement are lacking in the product*. It seems that little thought is given to the visual role of railings, fences and gates as constituents of the everyday scene—with the unfortunate results that are all around us.

*Only among specially made railings and gates is it possible to find examples where attention has been paid to these factors by architects and manufacturers working together to achieve an effect appropriate to the job in hand.

timber

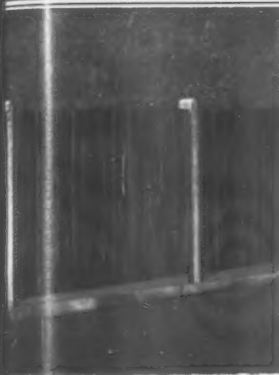
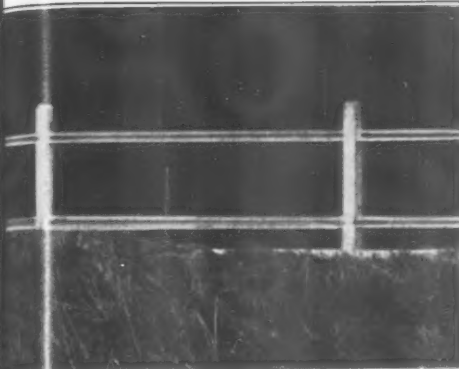


timber

Foundations to fencing posts are frequently specified much larger than necessary; indeed it may be very detrimental to dig a large hole to lay such foundations, disturbing, as it does, the earth around the post. The specialist is skilled in digging the small deep hole suited to the job. Specialist erection is important to the life and maintenance of the majority of fencing. One of the few exceptions to this rule is the willow hurdle. This is wired to wooden stakes driven into the ground. Davids Rural Industries have the familiar osier hurdle in Gloucester, Norfolk and Somerset willow. The Norfolk willow, 1, proves superior. This, like the others, is made in lengths of 6 feet, from 2 feet to 6 feet high, from 16s. to 45s. each; stakes 1s. 8d. to 3s. 4d. each. 2, the same fence with a trellised top, excellent as a backing for plant covered screens, made 5 feet or 7 feet high, 35s. to 49s. each, stakes 3s. 9d. each. 3, the less familiar reed screen, made 5 feet or 6 feet high, 35s. to 37s. 6d. each, stakes 2s. 11d. and 3s. 4d. each. 4, the interlace fence, made in 6 foot lengths, of selected hardwood such as ash, alder and birch, is 2 feet to 6 feet high, 24s. to 45s. each. The hazel panel gate, 5, 3 feet by 3 feet up to 3 feet by 6 feet, is a natural companion to the hurdles. For informal garden fencing and screens in rural or semi-rural conditions, these products could hardly be bettered for appropriate character, congenial materials and great textural interest. The wattle hurdle serves in many other capacities; enclosing livestock, training plants, horse jumps, coast protection and in sand drifts, to name a few. Creosoting these products is charged 15 per cent extra.

Cleft chestnut paling, which is perhaps discredited as a result of its use in cities to replace railings torn out during the war, is nevertheless, when properly erected in the right place, not displeasing, and it is cheap. 6 illustrates this fencing as made by Calders. At 4 feet 6 inches high with three wires the price is 4s. 7½d. per yard. The same firm makes a wide variety of field fencing. 7 is an example of the post and rail type; a two-rail fence frequently used for race horse paddocks, 4 feet 6 inches high, price 8s. 9d. per yard. Post and rail fences are obtainable with any number of rails and in various heights. 8 is a diamond-braced field gate (No. 30A), 10 feet long, 4 feet 6 inches high, one of many types, price from 60s. each; 9, a paling fence (No. 8), applicable to domestic use, height 4 feet, price 12s. per yard; 10, close-boarded fence (No. 15), height 5 feet, price 27s. 6d. per yard. Also supplied with a 'turreted' top with or without capping. Timber fencing must be protected from the weather by some kind of preservative. Calders specialize in pressure creosoting, which results in a deeper penetration of the preservative.

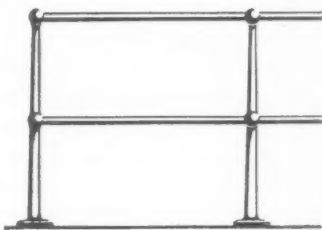
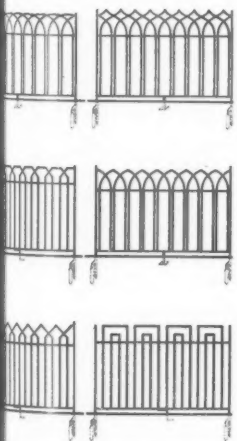
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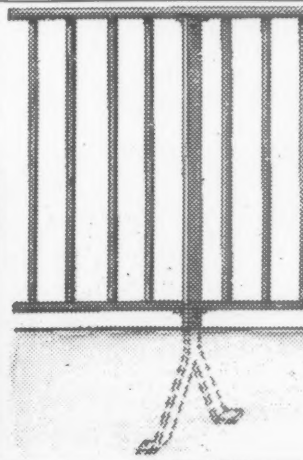
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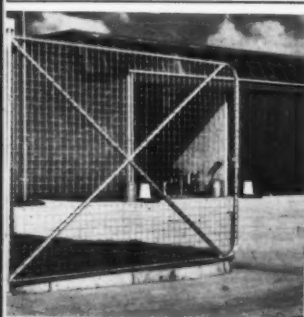
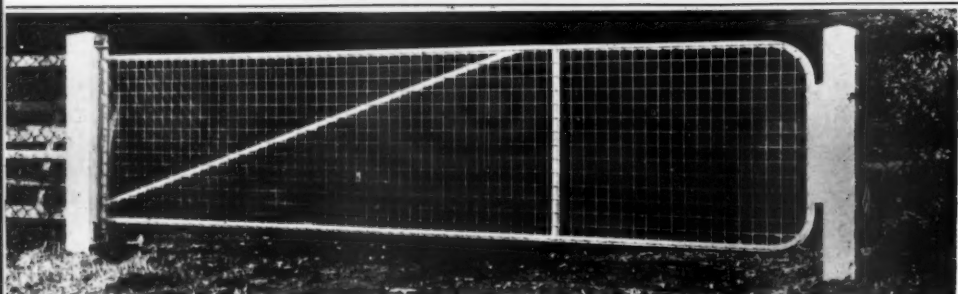
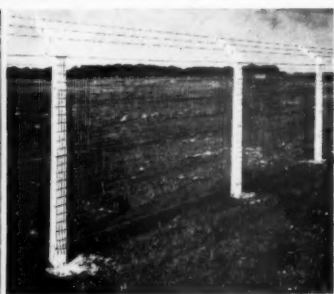
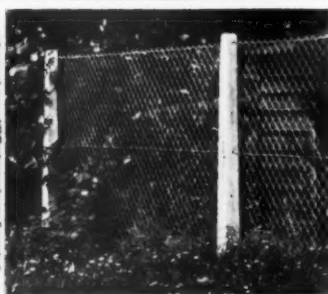
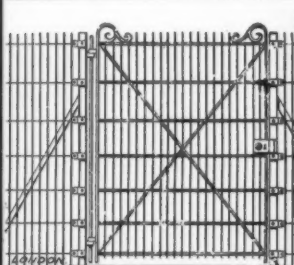
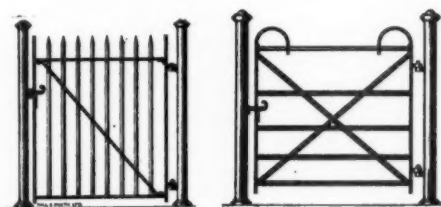
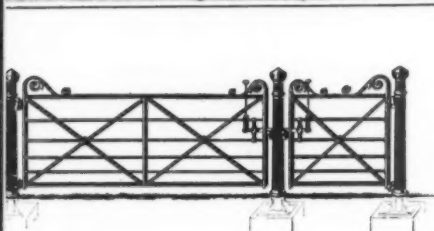
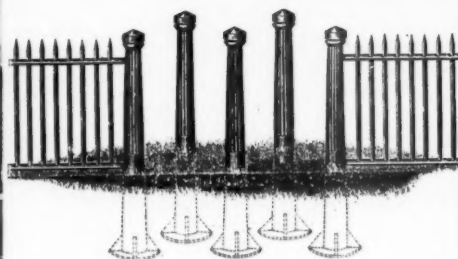
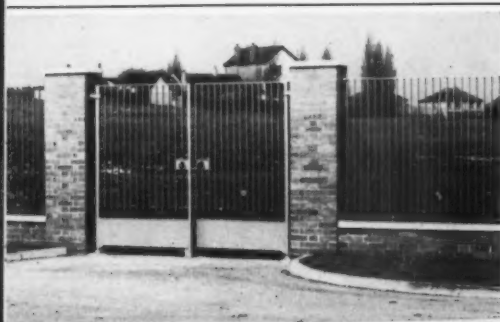
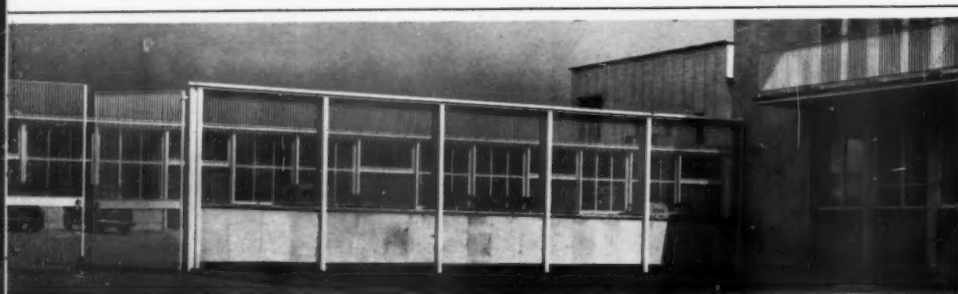
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concrete

Permafence make fundamentally similar forms, but with a patent design of reinforced concrete post, rail and gravel board. 11, plain post and rail (No. 14), 4 feet 6 inches high, price 18s. 6d. per yard; 12, open palisade (No. 7), all reinforced concrete, 4 feet 6 inches high, 55s. 6d. per yard; 13, oak close boarded (No. 2), 41s. 1d. per yard. All these prices are approximate and include erection. The pales are fixed to an impregnated core in the concrete rails. It is obvious that in this type of fence, where no timber is in contact with the ground, the life is longer, but since the concrete parts are fixed together by metal bolts and cleats these must be properly protected from rust. Metropolitan Concrete Works produce the 'Win-slot' unit fence, made entirely of reinforced concrete, 14, the solid horizontal panels being slotted into the post. This seems an excellent fence for certain industrial purposes, but the suggestion that it is suitable for housing schemes, in spite of sepia tinting and trellis tops, is invalidated by 15, which shows clearly that the parts are out of scale in relation to domestic architecture. The average price for this fencing at 6 feet high is 60s. per yard run, including erection.

metal

In metal, fencing has rough parallels to the timber forms, but the nature of the material allows smaller sections. The resulting designs are more sophisticated and urban in character. 16 shows a range of hurdles all 6 feet long and from 3 feet to 4 feet high, made by Hill and Smith. This sort of thing is often used for public park border fencing. Painted white, the lower hurdles seen against green turf could be both gay and delicate. Prices from 24s. 1d. to 25s. 8d. each. 17 is polished steel post and tube guard rail (237C). It is a parallel to the timber post and rail. Its use is mainly industrial for the fencing of heavy machinery such as that in power stations. Made by David Rowell and Company, 3 feet high, posts 150s. each, tubes 9s. 6d. per foot. 18, a footpath guard railing (750D) of sturdy solidity by Bayliss, Jones and Bayliss. Cast iron, 3 feet 6 inches high. The variety of designs in stock metal posts, mostly cast iron, is wide and it is rewarding to search through the catalogues of the firms established upwards of seventy years ago. In contrast, the design of concrete posts for use with tube rails varies very little from maker to maker. 19, a self-raking fence (285C), supplied with either steel or concrete standards, plain pointed, or ball bar tops. It is adaptable to gradients of 1 in 6 during the process of erection. Made by Rowells, 4 feet 6 inches high, 34s. or 38s. per yard, plus 2s. 8d. or 3s. 4d. for ball tops, the two prices for either $\frac{3}{8}$ inch or $\frac{1}{2}$ inch bars. 20, 'Nibal' railing by Bayliss, Jones and Bayliss, is also adaptable to



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slopes of up to 1 in 9, but adjusts itself, and is delivered in panels ready for erection, 4 feet high, price 22s. per yard. **21**, more urbane but not adjustable, is Hill and Smiths' railing of iron flats with convex top bar (No. 374). It is as well to remember that the spacing of flat bar railing must be carefully specified if a louvre effect is to be avoided from oblique lines of vision. As illustrated 3 feet 6 inches high, price £1 14s. 8d. per yard. **22** and **23**, a special job by Bayliss, Jones and Bayliss for G. K. N. Group Research Laboratories at Wolverhampton (Architects Lavender, Twentymen and Percy); a splendid example of the imaginative use of a simple bar railing in gate, fence and open screen, in full sympathy with the character of the building. **24**, Hill and Smiths' footway posts (No. 1195). They are an interesting reminder that gates are neither the only nor always the best way to control openings for pedestrians. This particular design is largely used in Hyde Park and Kensington Gardens. Made in fluted cast iron, 3 feet 6 inches high, price £7 each. **25**, handsome carriage drive gates (No. 1222) in cast and wrought iron, by the same maker, one 10 feet by 4 feet, the other 4 feet by 4 feet, price £29 11s. **26** and **27**, wicket gates (Nos. 1226 and 1232) by Hill and Smith, 4 feet high, price £11 12s. 6d. and £12 each.

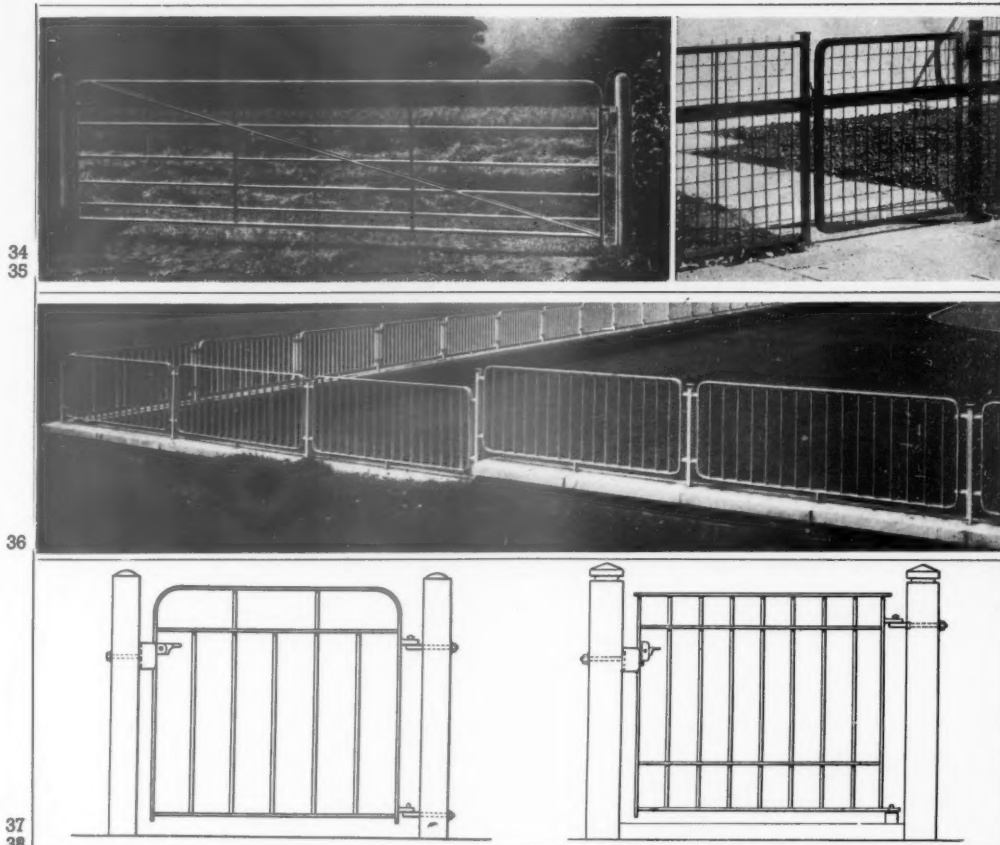
In wire fencing the simplest form is post and wire. **28**, an unclimbable strained wire fence (No. 211C), by David Rowell, made with either concrete or steel tee straining posts, 4 feet 6 inches high (price 10s. per foot with steel posts and 13s. with concrete posts). The Gate, 3 feet 6 inches wide, costs £16 excluding earthplates.

Chain link, a development of wire fencing, came into general use in this country about 1920. Though neither handsome nor luxurious it is comparatively inexpensive and unlike some metal fences provides an efficient physical enclosure whilst remaining no serious barrier to light, air and vision. It is also adaptable to slopes. **29**, chain link by Penfold with concrete posts (C.L. 3). A. J. Binns have recently produced an unclimbable welded galvanized mesh, **30**, shown here on concrete posts 6 feet high, price approx. 34s. per yard run, including erection. Gates designed for use with these fences are usually of tube. **31** is an agricultural gate, by Boulton and Paul, 14 feet wide, 4 feet 2 inches high, price £13 18s.; **32**, another gate by the same maker. The spot-welded fabric is arc welded to the tube frame, which is 20 feet wide, 6 feet high, price £30. **33** shows how, when reduced in size, this type of gate can be clumsy if the members are not scaled down accordingly. **34**, a field gate by Bayliss, Jones and Bayliss, showing a very nice adjustment of scale, 14 feet wide, 4 feet high, price £13 15s., posts £10 per pair. **35**, the Morliss fence, one of the few standard mesh panel fences produced, is made of $\frac{1}{4}$ inch diameter rods, welded into a mesh on angle rails connected to tee standards by 'U' clips. The panel is stiffened by two $\frac{1}{2}$ inch diameter bars. The standards have

[continued on page 28]

three slots at different heights, allowing adjustment to gradients up to 1 in 24. Whilst it is good to see a fresh approach to the design of a small fence, this seems only partially successful. A definite emphasis in the mesh, either vertical or horizontal, and the co-ordination of mesh spacing and the $\frac{1}{2}$ inch bars might be helpful. Also the mixture of right angled and rounded corners of the gate seems unhappy. Made by Bayliss, Jones and Bayliss, 3 feet 6 inches high in 6 foot lengths, price 19s. 6d. per yard. Gate 3 feet high for 3 feet $4\frac{1}{2}$ inches wide opening, price 48s. 9d. **36**, a special fence by the same firm, shows how smoothly stepping can be achieved in this type of fence. **37**, design C, price 36s., excluding posts, and **38**, design D, price 42s. 3d., excluding posts, two more small metal gates by the same firm and much more satisfying.

suppliers Calders, 194, London Road, Boston, Lincs. (London Office) 29-31, Regent Street, S.W.1. Davids Rural Industries, 128, Ebury Street, S.W.1. Permafence, 241A, High Street, Acton, W.3. Metropolitan Concrete Works, Imber Court, East Molesey, Surrey. David Rowell & Co., 66/72, St. John's Road, Clapham Junction, S.W.11. Hill & Smith, Brierley Hill, Staffs. (London Office) 300, Abbey House, 8, Victoria Street, S.W.1. Bayliss, Jones & Bayliss, 139, Cannon Street, E.C.4. Penfold Fencing & Engineering, Imperial Works, Watford, Herts. A. J. Binns, 29, Store Street, W.C.1. Boulton & Paul, Riverside Works, Norwich.



COSTING

FERTIGHAUS: an austrian experiment in costing

Under present conditions careful attention should be given to any improved system of costing. One such is the tabulating method developed for the Austrian *Fertighaus* programme (described and illustrated below and on the following pages) with its carefully considered style of documentation to reduce the strain on architect/client relationships by showing in more detail where the money goes.

Expressed in general terms this is no more than saying that the system of cost accounting we use is becoming steadily more intractable to our changing situation, that it is frustrating rather than clarifying the intercourse between consumer and producer. Suggestions for change, mostly about points of detail, have not been lacking in recent years, and the exigencies of practice have from time to time thrown up ad hoc methods for dealing with particular problems. But in general, these have had the limited aim of administrative convenience.

In this situation, a new concept which looks afresh at the fundamentals of costing should invite universal interest, and such a concept has, in fact, been embodied in a project initiated last summer by the Austrian Government. Their eventual aim is the creation of a prefabricated

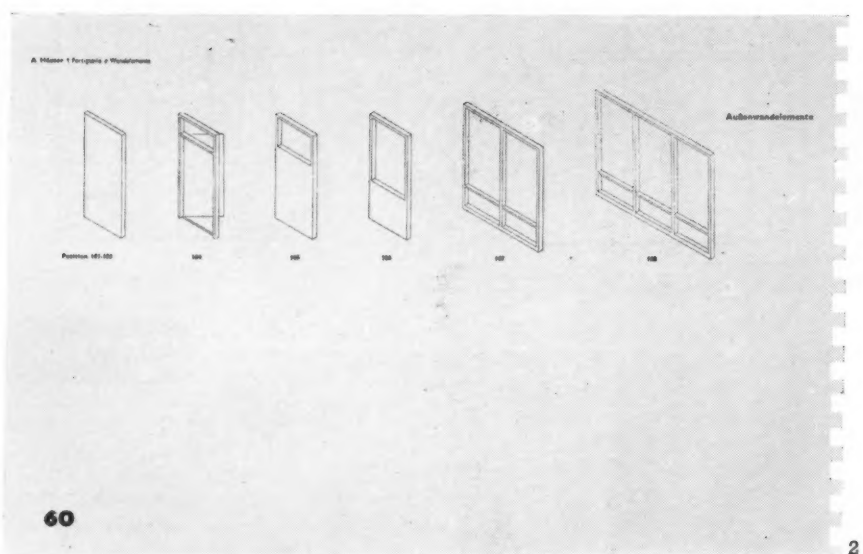
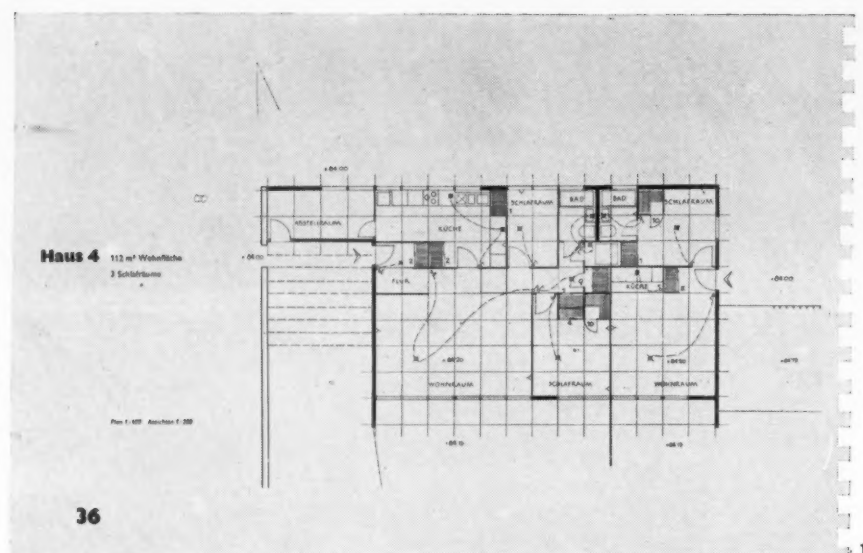
house (in German: Fertighaus) industry for home and for export to other European countries. The first step is to be the building of a hamlet of fifteen houses at Vienna—a pilot scheme for the purpose of studying prefabrication methods, costs and 'market preferences.' Later on, with the experience gained, larger schemes will be built in the provinces, and presumably export will begin. The Austrians appear to have taken a broad view, for one of their intentions is to sustain Austria's economic health by allowing as many contractors as are willing and able to take part. This, as distinct from the alternative (and perhaps more orthodox) courses of setting up a special organization, or of giving the job to a minority of the larger contractors, has presented two distinct but related problems. To make use of industrial method (which after all is what prefabrication is)

demand a contractual procedure in which designer and maker may collaborate in the evolution of ends and means, a procedure not easy to achieve when dozens, perhaps hundreds of contractors are engaged, each with differing resources. Not easy that is, if constructional design is to take account of those resources. That is the first problem. The second is to work out a pricing system which will reveal precisely those economies in which industrial method offers the greatest opportunity. It is the proposals for solving these problems that we are here concerned to discuss.

costing and tendering system

The method of tendering and the costing system (which is based on that of William K. Wittausch) operates broadly like this:

There are drawings, comprehensive and precise, but not to be described as working drawings as we understand the term. These show house plans and elevations, various kinds of internal and external wall unit (some with doors and windows), plumbing assemblies (serving both bathroom and kitchen), roof trusses, cupboard units and so forth. With these go specification notes referenced to each item, which describe what is required, not as definite materials and dimensions, but in terms of performance standards or of acceptable alternative materials. The intention is that the contractor who tenders shall be free, within carefully defined limits, to choose his own material or piece of



A Häuser 1 Fertighaus - Wandelemente

Position	Werk	Baustelle	Insgesamt
101 Außenwandelement voll, beide Seiten Außenansatz, ebenso eine Stirnseite als Außenseite ausgebildet, die zweite Stirnseite zur Verbindung mit den anschließenden Elementen, der Dachkonstruktion und Fundamenten vorgesehen	je Stück Material		
	Arbeit		
	Regien		
	Summe		101
102 Außenwandelement voll, eine Seite als Außenseite, die andere Seite Innenansatz für Wände oder Schlafraum, rechter und linker zur Verbindung mit den anderen Elementen bzw. Dachkonstruktion und Fundamenten vorgesehen	je Stück Material		
	Arbeit		
	Regien		
	Summe		102
103 Wandelement voll, zur Trennung zwischen zwei Häusern, eine Oberfläche als Wand vom Wohnraum, die andere feuerbeständig ausgebildet	je Stück Material		
	Arbeit		
	Regien		
	Summe		103
104 Außenwandelement wie Pos. 102, mit einer verbleibend ausgebildeten Haustüre, der Türschwelle 0,9x1,9 m mit Doppel- und Gummidichtung, außen mit lackierten 4 cm breiten Rahmen aus strukturiertem Holzwerkstoff verbletzt, beidseitig mit 2 Kragarmen und 2 Zylinderbolzen, grundiert und sticht mit Standardbohrer versehen sowie Befestigung von Handbohrbohrer	je Stück Material		
	Arbeit		
	Regien		
	Summe		104
105 Außenwandelement wie Pos. 102, mit eingebauten 75 cm hohen Verbindungsfüßel über die ganze Breite des Elements, oben abhängig, nach außen absteigend mit 2 Auspressungen und 2 Wellenstiftbolzen, grundiert und sticht mit Standardbohrer versehen sowie Befestigung von Handbohrbohrer	je Stück Material		
	Arbeit		
	Regien		
	Summe		105
106 Außenwandelement wie Pos. 105, mit eingebauten Verbindungsfüßel, jedoch 130 cm hoch	je Stück Material		
	Arbeit		
	Regien		
	Summe		106

Kosten bis zur Übergabe

Pages from the Fertighaus tendering book. 1, a typical house plan page. 2, a page of wall and window units. 3, a pricing page for wall and window units. TRANSLATION of table: Arbeit—Labour, Regien—Overheads, Werk—Off-site work, Baustelle—On-site work, Insgesamt—Total.

equipment, and to evolve his own fabrication method, provided it complies with the performance characteristics laid down. The principle is very much that of the 'deemed to satisfy' clauses of our new building byelaws, except that proprietary materials and components are mentioned by name, mainly as a guide to what is acceptable. Accompanying each drawing is a 'cash-lined' page for the tenderer to enter his price for each item.

To one accustomed—if not initiated into—the involutions of quantity surveying, the cost breakdown appears almost naive in its logic. There is a broad division between cost of manufacture (in the workshop) and of assembly (on the site); these two headings being further subdivided into costs of 1, material; 2, labour; and 3, overheads. Thus, for any particular component there are six separate costs representing precisely the separable aspects of its making and installation. This two-fold breakdown, besides revealing in detail where the money is spent, allows contractors to tender for making and supplying only, if they so wish. Then each section of the work—joinery, roofing, plumbing and so forth—has a summary page on which the items are to be moneyed out for each and for all of the fifteen houses. There is also a space on the summary pages for costs in quantities of one hundred and one thousand. Site works—foundations, services and landscaping—are, of course, separately priced. The conditions of tendering allow prices to be submitted by individual firms, or by groups of firms in association, for the entire project or for particular items.

Hence, when all the tenders are in, the Austrian Productivity Centre will have comparative breakdown prices for each item singly, for each house singly, and for the whole settlement. They will also have these figures for quantities of one hundred and one thousand. The system is logical and ingenious, and has been worked out with impressive clarity on pages which (they say) can be put into a typewriter. Much of the credit for this must go to the typographer, Ernest Hoch, who has improved greatly on the original cash-lined pages of Wittausch. Indeed the systematic order of the presentation is intentionally expressive of the order of the idea itself. There are three kinds of price entry table: The first for pricing each item, which has three horizontal columns (for 'work', 'material' and 'labour') which are crossed by three vertical columns (for 'off-site' work, 'on-site' work, and total). The second type of table, for totalling the costs in each section, has seventeen horizontal columns (for the fifteen houses, and two spare columns for the one hundred and one thousand costs) which are crossed by as many vertical columns as there are components in that section. 'Section' here meaning (a) wall components, (b) roof and ceiling components, (c) cupboard and fittings components and so on. The third type of table, for summarizing the cost of the whole project, has sixteen horizontal columns (for the fifteen houses and their totals) crossed by twelve vertical columns (for the twelve sections of the work). Each component is of course numbered, so that its cost figures do not always have to be accompanied by its description.

On the face of it, the completed tender document would seem a more complex thing than our priced bill of quantities—because of the greater subdivision of costs. But the preparation of a bill

CARPENTER AND JOINER...		2	3	4
Carpenter				
A.	10	Run Centering and supports to flat arch 14' on soffite.		
SAME SECTION.				
B.	1	Duke in plate (4" x 2" Scantling.)		
C.	15	" In rafters (4" x 2" Scantling.)		
D.	5	" In purlins (6" x 3" Scantling.)		
E.	10	Sprocket 12" long (out of 3" x 2").		
F.	11	Ditto 16" long (ditto.)		
G.	12	Ditto 10" long (ditto) nailed to backs of existing rafters.		
H.	2	Ditto 10" long (out of 3" x 3") ditto.		
WOOD SHIPMENT.				
I.	35	Run Small tilting fillet.		
J.	14	" 1" x 7" Ridge.		
K.	27	" 1" x 6" Barge board.		
L.	20	Roofing. Extra for shaped and played and 3' 0" long and 12" wide.		
M.	27	" 1" x 8" Capping to barge board.		
N.	15	" 3" x 9" Curb with played top edge including notching 1" ground wall plate.		
O.	21	" 3" x 9" Ditto and fixing on top of existing brick wall.		
ROOFING.				
P.	26.5	Run Extra labour in roof face to roofwood.		
Verde	36	" Approved about underwood roofing felt well lapped at joints and nailed to rafters at 16" centres with galvanised clout headed nails.		
To Collection Page 59 ...				

Wandelemente (außen)									
mit Isolierung außen		mit Isolierung außen		mit Isolierung innen		mit Isolierung innen		mit Isolierung innen	
101		102		103		104		105	
Stk.	Preis	Stk.	Preis	Stk.	Preis	Stk.	Preis	Stk.	Preis
1	23	1	23	1	23	1	23	1	23
2	20	2	20	2	20	2	20	2	20
3	13	3	13	3	13	3	13	3	13
4	23	4	23	4	23	4	23	4	23
5	12	5	12	5	12	5	12	5	12
6	2	6	2	6	2	6	2	6	2
7	12	7	12	7	12	7	12	7	12
8	31	8	31	8	31	8	31	8	31
9	35	9	35	9	35	9	35	9	35
10	28	10	28	10	28	10	28	10	28
11	19	11	19	11	19	11	19	11	19
12	4	12	4	12	4	12	4	12	4
13	4	13	4	13	4	13	4	13	4
14	23	14	23	14	23	14	23	14	23
15	29	15	29	15	29	15	29	15	29
Summe		346		39		29		29	

4, a typical page from English bill of quantities (Carpenter and Joiner), 5, a price summary page for external wall units from the Bertighaus book. TRANSLATION: Einheitspreis—Cost for single item, Stk.—Each unit, Preis—Price.

involves stages of computation—taking off, and abstracting, which are not part of the finished document. But the most significant difference by far between the two systems is in the clear distinction between labour, material and overheads which the Austrian system holds to consistently.

aspects of the idea

Obviously there are two parts to the Austrian idea which, though they complement each other, do not necessarily go together. There is the idea of contractor-participation, of allowing some freedom for the contractor to contribute to the constructional design. And there is the costing system. Either part, it seems, could be employed without the other, but the fact that they are used together in this scheme makes it all the more interesting, and it is the relationship between the two that I want to discuss. For what is involved here is something rather deeper than administrative convenience. The effect of both the costing system and the contractual procedure could be, if developed, to bring about a relationship between producer and consumer, rather different from the one we are accustomed to in this country. For by establishing a more reciprocal arrangement between the two, they unite the idea of cost to the idea of value. Indeed, in the introduction to their book, the Productivity Centre say (in effect) '... clear accounting is a condition of understanding between producer and consumer, with a product no family can purchase without long term credits. Such credits presuppose detailed proofs of the products value. ...'

Lack of adequate understanding between producer and consumer is often lamented in the architectural world—more frequently in aesthetic terms. But it is possible that the break is really due to incomprehension of the processes that lie behind the finished goods. The goods, the finished results, are seen as something in isolation, not as part of an order of events, thus aesthetics—or if you prefer it 'style'—becomes an autonomous thing. This malaise is not, of course, confined to

architecture, its presence in western culture generally has engaged the attention of several writers, notably T. S. Eliot and Ortega Y. Gasset, and more recently on the Third Programme of Mr. Christopher Salmon.

In this Austrian scheme, the producer of the goods, the contractor, has a share in determining what the goods shall be like; the problems and necessities of his part of the process can be represented within the framework of requirements indicated by the consumer. It happens in this case that the requirements belong to an old and widely familiar convention for living accommodation, and it may be that the new producer-consumer relationship would not work so well (if it does work well) otherwise. It is likely that familiarity with the relationship would prove to be more important than familiarity with the goods concerned. Any kind of working relationship between men must become absorbed, must become in the wider sense of the word conventional, before its full value can be employed.

To allow for this kind of contractor's share in the process, provides not only for a closer intimacy between process and result, but also for a wider scope in the deployment of labour and machinery. Motives towards cost reduction would be less frustrated, very largely because the costing system is more sensitive to improved organization on the part of the contractor. In this country, the costing system was evolved in days before the idea of economy—the exact and mutual adaptation of means to ends—was so pervasive as it is now. Hence in the bill of quantities labour costs and material costs are, in general, not separated. Brickwork, for example, is at so much a yard super 18½ inches thick, including cost of bricks, mortar and labour; the only separate labour costs are where work deviates from the 'normal'—so much a foot run for fair raking cutting, or plumbing to angles and reveals and so forth. In practice this means that efforts to devise for a particular building a constructional system which entails a straightforward and economical sequence of

operations are very imperfectly represented in the tender. Constructional design today is such that there is hardly any scope for reduction in the actual volume of material, thus economy is almost wholly a question of man-hours in the making and assembly of parts. And man-hours depend partly on the use of machinery and partly on the organization of the labour force. By making a clear distinction in all parts of the work, between labour and material, the Austrian costing system allows full representation of the economy vital to industrial method. The tenderer then has every inducement to make use of the freedom to evolve constructional expedients which the contractual procedure allows him.

To regard the Austrian idea as merely an improvement on quantity surveying would, I think, be a mistake, for it has possibilities which could reach to other levels of architectural thought.

Cost, nowadays, exercises such a decisive influence in the choice of technical expedient, it is therefore so vital a thread in the relationship between consumer and supplier, that it seems wrong to view it as a momentary but irritating hurdle in the path of creative activity. In admiring and striving for order and regularity in our buildings (or in any made object), economy is too rarely acknowledged as an integral part of our motive—which we prefer to think of as aesthetic. The cost surely, no less than the 'design' or the 'construction' of a building, is one of a number of aspects that we separate out for convenience, which cannot be placed in an order of importance. For their importance is relative—a matter of time and place. The total value of a building can only appear when all the ways in which it may be valued are accounted for—esthetic, technical, economic, social and the rest; each kind of value contributing to the others. The more closely these values are related to each other in the processes by which architecture is produced, the more unity there will be; the more completely architecture can both serve and express our culture.

The Austrian idea, it seems to me, does move in this direction. By making a broad division between site and off-site works, and dividing these again into material, labour and overheads, for every separate component, the costing system mirrors the actual process and classification of events in the making and putting up of the buildings. This precise financial knowledge may thus play its part in the assessment of technical expedient. A picture of the cost of a project, so divided, and so sensitive to the factors which determine cost, makes available to the consumer (both client and architect) a knowledge of the total process not otherwise to be had. Financial knowledge becomes an indissoluble part of technical knowledge, the more so since it is displayed in a comparative form—the build-up of cost being on the same basis for every part of the work. We have a clear, and (in theory) infinitely extendable language for exchanges between producer and consumer; in potential at least. One of the defects of our present recalcitrant system is the difficulty of fitting it to new methods of construction. The customary solution for any part of the work that is not 'traditional' is to put it in as a prime cost item—a figure quoted by the supplier which does not usually distinguish between different cost factors and which leaves the consumer only half equipped to assess or compare alternatives. The bill of quantities as a price system was evolved to meet a situation in which building technique changed little from generation to generation; a situation now rapidly disappearing. The Austrian cost breakdown seems, by contrast, applicable to any made article whatever, for it deals in fundamentals. It can also reveal (as it is here intended) the markedly different cost characteristics of mass—and individual—production, which the bill of quantities does not do.

The bill of quantities has only remained a valid method while the industry continues to use 'traditional' materials and expedients—that is, handcraft methods in which the cost falls only slightly with repetition; and while building projects themselves remain small and individual. Both these characteristics have, by comparison with other industries, survived for an astonishing length of time beyond their original historical contexts, but a progressive increase in costs and failure to 'deliver the goods' are at last, it seems, forcing a change. Most notably, of course, in our new schools. The more that improved organization and mechanical aids play a part in the industry, and the more that long term production or large scale projects become characteristic of producer-consumer activity, the more we need a universally applicable cost system.

Not the least instructive aspect of the Austrian scheme is that while it provides for a kind of consumer-producer collaboration, the principle of competitive tendering is retained. In the production of any made article, the designer seems to be the equivocal figure—sometimes allied to the producer (as with the motor industry) and sometimes to the consumer (as with the building industry). This again appears to be a question of quantity and technique, for the former situation occurs where technique is complicated and highly co-ordinative, and the article or its parts are mass produced. There is indeed a minority opinion in this country that since building is fast approaching

(or, as some say, ought to approach) this situation, the designer can no longer afford to design 'from outside.' But the Austrian idea suggests an alternative. In our conventional practice it is sometimes justifiable for tenderers to complain that their estimates cannot be strictly competitive, because they have to guess at items not mentioned in the tender documents. At the same time, if an architect makes his plans complete to the last detail (and bills of quantities likewise), he finds himself having to decide matters much more usefully decided in consultation with the successful contractor later on. This is the kind of dilemma that the Austrian scheme tries to avoid, for while the tenderer has a margin of freedom to design according to his own situation and resources, he is left in little or no doubt as to what is required in the finished result. Were this scheme put into general application there would very likely be difficulties in determining the dividing line between architect's and contractor's responsibility in certain cases. As I have implied, the familiarity of the goods concerned might prove to be of significance, for the acceptable performance standard of a piece of equipment or a material cannot be wholly expressed in hard and fast terms. This is a problem intrinsic to competitive tendering, it hardly arises where designer and contractor collaborate from the start.

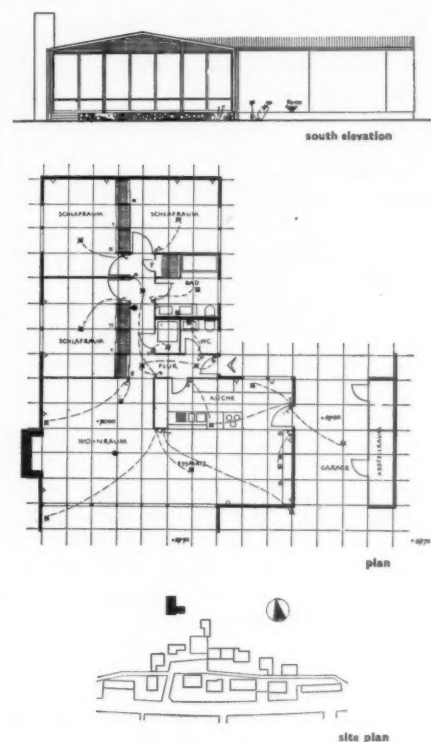
By retaining the competitive tender in this form the Austrian scheme, when it gets going, will presumably draw its components from a wide circle of sources. It may be looking too far to see the scheme as an instrument of social change, but possible implications are worth pondering. It does not seem that there would be a strong tendency for the industry to amalgamate into large unwieldy units, for both the large company and the small workshop with a handful of men would be able to contribute according to their situation. It is worth recalling here that Simone Weil in her report to the exiled Free French Government ('The Need For Roots') drew attention to the inhumanity of centralized industry oversteering personal relationships, and suggested the need for a new interpretation of the idea of cottage industries. By creating the opportunity of long term orders, the scheme offers some economic security to the 'small man,' who could make and supply only a few of the component types. He could take part in an industrial process without being swamped by it.

There is one other potentiality of the scheme, which it will be interesting to follow in future growth. That is, the opportunity offered for collaboration between different kinds of contractor; between the roof covering specialist, the joinery maker and the plastics fabricator, for example, or between these and the firms making heating equipment. Collaboration in the forwarding of a joint enterprise, is, I feel, the kind of thing necessary to make the 'imposed' collaboration of national standards or modular co-ordination come to life.

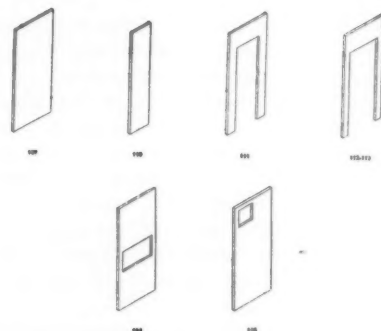
It may appear that I have interpreted the signs of this Austrian idea with too little caution—perhaps because of the inescapable comparisons with the English situation. The need for a new spirit and a new order makes one over-sanguine, but it would be exciting to see it tried out in our disillusioned country.

John Carter

Below are some of the details from the tendering book for the pilot scheme of fifteen houses to be built in Vienna. The scheme is comprehensive, for tenders are to include for landscaping, tree-planting and the construction of garages and a paddling pool.

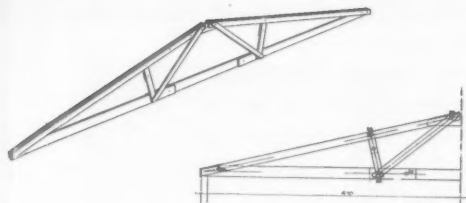


plans There are nine 3-bedroom, five 2-bedroom and one 1-bedroom houses, varying from 565 feet super to 1,140 feet super in floor area, all orientated for the sun. Internal division is in general, on the grid lines so that room sizes are in multiples of a metre (not quite 3 feet 4 inches), the ceiling height being 2.40 m. Since the actual sizes will be determined by the tenderers when working out the construction in detail, neither plans nor elevations are dimensioned. The contractor is merely obliged to keep to the metre grid.

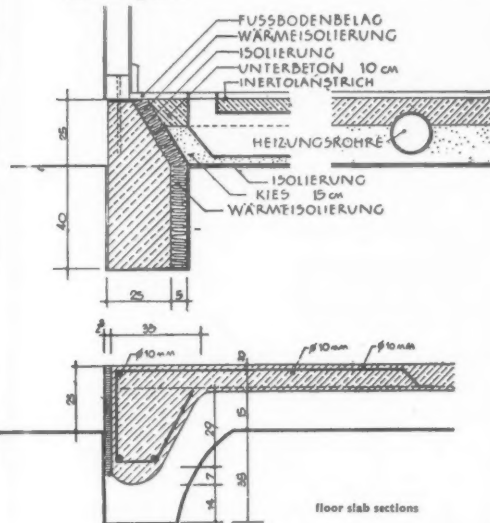


walls These are 1 m. wide, storey high, panels of timber framing impregnated against wet and dry rot, with a 'durable and nailable' cladding. No plaster is allowed in work on the site. External walls are to have a thermal insulation value equal to 51 cm. of brickwork (U: 0.24 approx.). Door and window frames are to be integral with panels on delivery. Windows are double glazed (in two sashes) and the doors have no locks. Internal walls are to be sound insulating equivalent to 25 cm. of brickwork (50 db. approx.).

SKILL



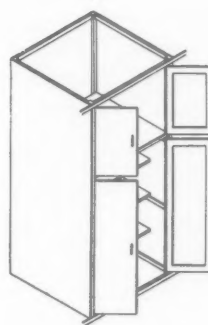
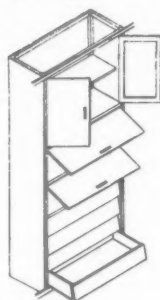
roofs Wood trusses at one metre spacing, with secondary supports at 50 cm. 'Fural' aluminium corrugated sheet, three layer bituminous finish, or asbestos cement sheet are mentioned as acceptable coverings. Gutters are galvanized steel, ceilings are a type of laminated fibre board, treated with fire resistant paint.



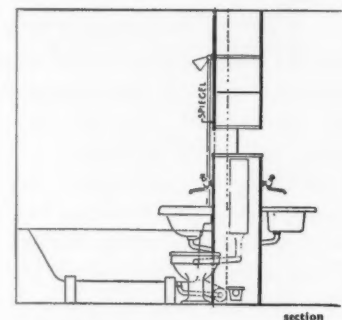
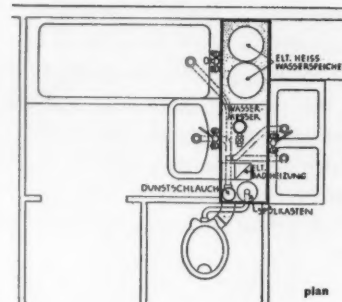
floors Oversite concrete and strip foundations are to be cast in one operation, with thermal insulation at the edges and damp proof membrane. Floor

finishes are to be laid after the external walls and preferably before the internal walls and cupboard units are erected. Beech, larch, pine, asphalte and terazzo are mentioned as acceptable finishes, the damp proof coverings being used in the kitchen bathroom and w.c. 'Tiles' should be in one-half or one-third metre squares. The 9 inch skirting is ploughed at the back for electric conduit.

heating Individual heating in each dwelling, to be calculated for temperatures of -15°C . outside, and $+20^{\circ}\text{C}$. inside, and an air change of 3 in living rooms and 6 in kitchens (which have separate fan extractors). The heating unit is to be room thermostat controlled, and may be electrical thermal storage using off-peak night time current, or oil fired, with the tank buried in the garden (a proprietary type is mentioned), or gas fired. Distribution is by air ducts in the floor discharging under windows. Tenderers must submit full information as to performance and efficiency.



furniture There are fourteen types of storey height fitting forming hall, kitchen, and bedroom cupboards; all of one metre width and varying depths. Shelving is included.



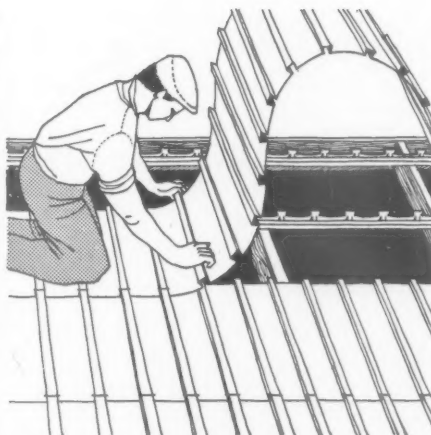
plumbing Houses No. 4 and 15 have 'conventional' plumbing, the others having a unit forming the division between kitchen, bathroom, and w.c. This presumably is for cost comparison. The unit contains an insulated 100 litre hot water tank with immersion heater (night time heating), 3 inch soil stack (specified in inches not mm.), waste branches and copper hot and cold water pipes. There is a plug and hose connection for a washing machine, a water meter and a 2 kW. convection heater for the bathroom with low level inlet and high level outlet. The upper part of the unit opens partly to the kitchen and partly to the bathroom (with mirror door) in the form of cupboards. Some units are to have an airing cupboard with 200 W. heater, opening off the kitchen and being vented through the roof. Kitchens have double sinks electric cookers and refrigerators.

TECHNIQUES

ROOFING

It is unusual to hear of a successful building technique being invented by an architect. But 'Fural,' a type of aluminium decking which has come to us from Switzerland and which is now being manufactured under licence by S. W. Ronald and Co., was originally thought out by J. Furrer, an architect practising in Altdorf, and even appears to commemorate his authorship in its trade name.

In the twenties it was enough for a new technique to give a better performance in use than the traditional methods it set out to replace. Today it must do this, but it must also prove easier and simpler of manipulation, and it is interesting to notice that it is often precisely this factor which lends it the elegance which was so lacking in the products of the earlier phase of building technology. 'Fural' is a case in point. Its physical performance, when in position, is at least comparable



to that of other roofings and claddings on the market, but its chief claim to attention is the ease with which it is fixed and the neatness and precision of the effect.

The principle involved is described as that of the zip fastener, but it is perhaps more readily grasped if thought of as the spring clip. The alloy sheets are formed into a sequence of corrugated ribs of dovetailed section. Each sheet is 27 inches

wide, and is rolled up like linoleum in 90-foot rolls weighing 100 lbs. apiece. Fixing strips with upstand dovetailed tongues are nailed to normal wood battens, and the corrugated sheets are then clipped down on to them. Flashings are worked



'Fural' aluminium sheeting on a house at Genfersee, Switzerland. (Architect: Le Corbusier).

on the same principle, and no nails are allowed to puncture the surface of the decking.

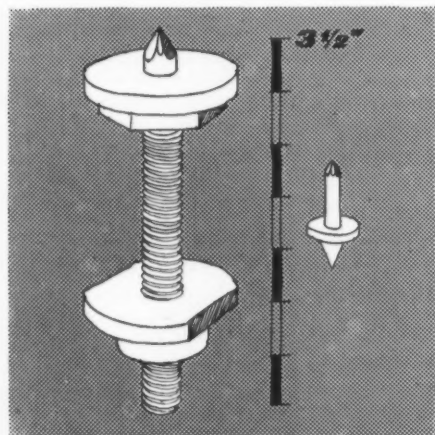
'Fural' may be used as roofing or as cladding, with the ribs running horizontally (as in le Corbusier's own house at Genfersee) or vertically. Though the odd shapes and

interruptions, which architects are accustomed to allow themselves in traditional roofing, present no special problems with this method, it is clear that the full advantages can only be gained by careful planning. Thus it may well be that this admirable constructional idea may lead to a tidying and a clarifying of roof design itself.

MOVABLE PARTITIONING

As in so many other technical developments in building, the interest in partition design has tended to shift from the qualities of the finished product (which of themselves no longer pose any insuperable problems) to the methods of putting it up and—even more important—of taking it down again: on how to re-use the partition and how to leave the original finishes of the room unscathed.

The interest of the 'Rebond' system which has been recently put on the market by British Plimber centres round the use of a new patent jack. The partition itself is made of Plimberite panels spanning between wood uprights. Each upright has a short metal spike fixed like a dowel into



its base and the jack—which comprises a bolt, with an upward pointing spike and a flanged nut threaded to it—fixed into the top. To erect the partition, the first upright is put in place, the nut is turned and the head of the jack is forced up into the ceiling until the upright is securely strutted. The panels are then run into grooves in this upright and are clamped in position by the second upright. To take down the panel the sequence is reversed. By this means the damage to floor and ceiling is limited to the small indents caused by the spikes and the partition itself has suffered no damage at all. Furthermore both the taking up and the taking down are rapid and relatively

noiseless—for there is no hammering. So typists can begin their day in a large open room and—without stopping their work—can end it in a series of cubicles.

The first application of this system was in the Ministry of Works' Offices in Whitehall Gardens, where doubtless the liberty to change one's mind without great expense was particularly valued.

MATERIALS

WALL COVERINGS

At Messrs. Sanderson's 'Three Arts' Exhibition are three wall coverings other than wallpaper which call for notice on 'architectural' as against 'decorative' grounds.

The first of these is 'Canotex,' a form of hessian which was very popular among contemporary architects before the war, and which is now returning to the market. It makes a particularly good textured background for pictures, and is manufactured in six colours: natural, light corn, tobacco, strawberry, alizarin green and egyptian green. It is made in 36 inch widths, costs 8s. per square yard, and is fixed to the wall with ordinary paste.

The second deserving case is Lincrusta Walton, which now emerges from historic odium in the form of close packed uneven vertical corrugations which build up into an impressive wall covering. In its natural oatmeal colour it costs 35s. a piece, but it can be painted in eggshell enamel at an additional charge, and must surely be the



'Rollywood' on a curved internal wall at Sanderson's Three Arts Exhibition.

most indestructible textured wall covering in the world.

Lastly there is 'Rollywood' which is an importation from Sweden. Evolved originally by the Swedish Decorator, Eric Matsson, it consists of slats of wood of veneer thickness bonded together by glued threads. It is made of a variety of woods; sometimes contrasting to give a striped effect and sometimes the same throughout to produce an even colour.

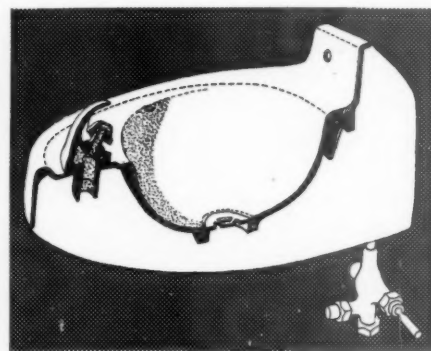
'Rollywood' costs about 2s. 6d. per square foot, and can be obtained in widths up to 12 feet (i.e., in the direction of the grain), and in lengths up to 165 feet. Normally it is applied direct to the wall by a glue (Bostic A3 being recommended). But it possesses an inherent structural strength which enables it to be used by itself, as a stiff, semi-transparent curtain.

EQUIPMENT

DRINKING FOUNTAIN

Though there are still people about who are sceptical concerning hygiene and who therefore see nothing wrong with the traditional captive brass cup, it is generally agreed that among drinking fountains the jet type is preferable.

The new 'Purita' Fountain of Messrs. Shanks' is of this kind, and is fitted with a special self-closing and non-concussive valve with a regulating device which ensures that the jet comes up to, but does not exceed, reasonable expectations. A



further refinement of functionalism ensures that neither the biggest mouth nor the longest tongue can accidentally come into contact with the spout.

When it is remembered that this fountain is likely to be used in schools, it will be realized that you cannot guard against every conceivable misuse. But this model—which stems from an admirable tradition of design—does seem proof against the most obvious forms of illicit fun.

[continued on page 288]



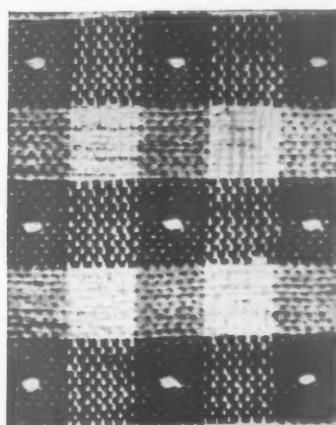
Tibor "Ardil" Blend Textures

Tibor Reich has designed a number of new Deep Textures and Texturedrapes incorporating I.C.I.'s protein fibre "Ardil." "Movemento" curtain fabric illustrated above is woven in black-white, flame, cherry, lemon, gunmetal, olive and forest with off-white motifs and is obtainable at Liberty's of London. To curtain and upholstery fabrics in brilliant new colours Ardil has added a warm, soft, silk-like touch giving crisp textures a lovely feel and improved draping qualities. The G-Plan unit furniture is upholstered in "Como," Tibor's black and yellow Ardil blend, contrasted with black "Henley" in wool and Ardil. "Harvest" Textureprint on natural Henley with yellow and dark grey motifs depicts the gathering of nuts and is suitable for upholstery and curtaining where durability for wear and softness for touch are required. The new Ardil blend textures are manufactured by Tibor Ltd., Stratford-on-Avon.

"PRINCE"



"COMO"



"HARVEST"



THE BUILDING INDUSTRY

HAYWARDS OF THE BOROUGH

It is a common practice for long-established commercial houses to publish a retrospective review of their fortunes. These publications are always interesting, both for the light they throw on what is sometimes called 'anonymous history' and for the insight they give into the



Advertisement for Messrs. Haywards' pavement lights circa 1895.

general workings of their undertaking. This second aspect is of particular concern as it affords an opportunity for architects to repair their hereditary ignorance of the background and point of view of those with whom they must learn to work.

From this aspect the new publication of Messrs. Haywards ('Years of Reflection, 1783-1953') is most fruitful. Though Messrs. Haywards can trace their origins

back into the eighteenth century they are characteristically a Victorian foundation, laying the basis of their fortunes with the 'Sheringham Ventilator' of 1849 and sealing their success with 'Haywards Patent Hexagonal and Semi-Prismatic Pavement Light' of 1871—sold at 15s. per foot super.

It was their exploitation of the Pavement Light—the Deus ex Machina of the Victorian basement—which determined the firm's character. Nevertheless despite the bias towards metal glazing they remained 'Hardware Manufacturers' and ministered to an extraordinary variety of up-to-the-minute wants, as witness their spiral staircases, their 'Arnot's Chimney Valves,' their 'Cheerful Gas Stove' (1875), their 'Jhilmil Patent Metal Lathing,' and, indeed, their 248 page catalogue of 1893—to carry their story no further.

The story does, of course, go further, reflecting as it moves the changing circumstances of building: 'Copperlite Glazing' (c. 1905), the heart-rending change-over from iron to concrete pavement lights (c. 1930), down to such familiar present-day items as Fluorescent Lighting Reflectors (1945) and Aluminium glazing bars. The moral for architects is that they should notice the inherent dignity of such a manufacturing organism and its

alarming, versatile power. It is the genie with a lamp.

THE INDUSTRY

Messrs. Concrete Limited announce that they have recently appointed two qualified architects as Technical Representatives.

Mr. R. R. J. Tasker, MBE, ARIBA, will be in charge of Lancashire, Cheshire and North Wales, relieving Mr. F. W. Hulme, who has been with the Company since its inception in 1919.

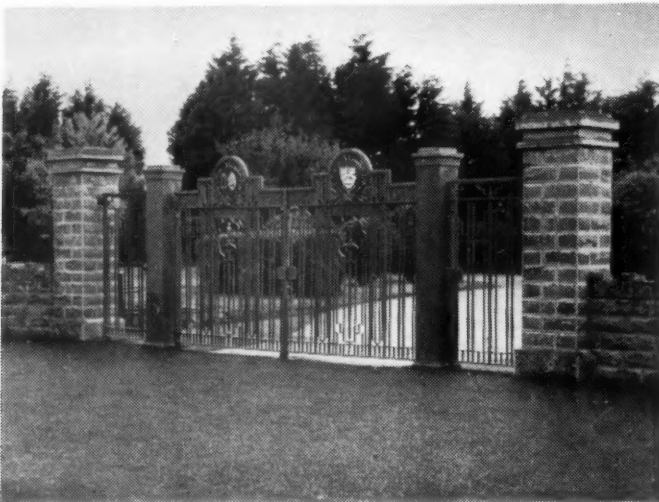
Mr. R. Protheroe George will be responsible for Berkshire (east of and including Reading), Hampshire, Isle of Wight, Sussex, Buckinghamshire, Kent, Surrey, and London, South of the Thames, jointly with Mr. W. V. Kilner, who has been with the Company since 1929.

These appointments have been made in order to give better technical service to architects, which has become even more desirable since the firm started the manufacture of prestressed beams and complete frames.

BODY CARPETS

In the article 'Body Carpets' in the February issue, page 139, the repeat pattern Ottawa 3/60 10, illustration 14, was called in the caption an Axminster weave. This was incorrect; the carpet is in fact a W.1 Wilton quality.

[continued on page 290]



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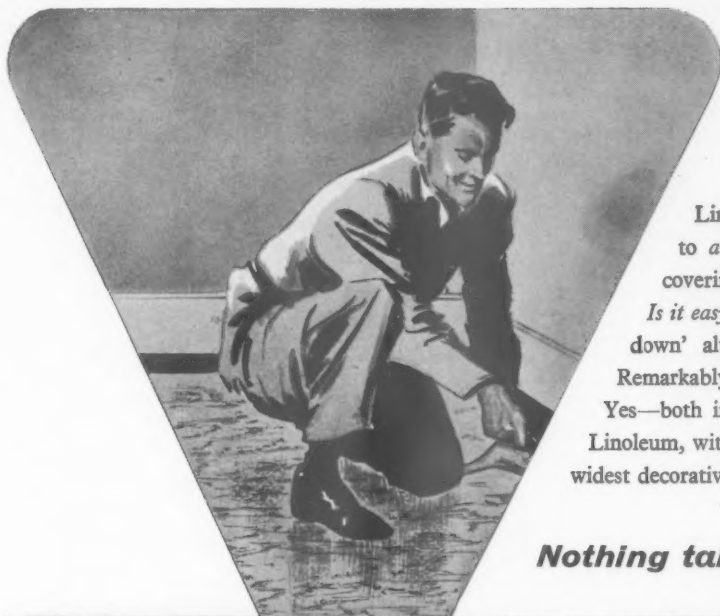
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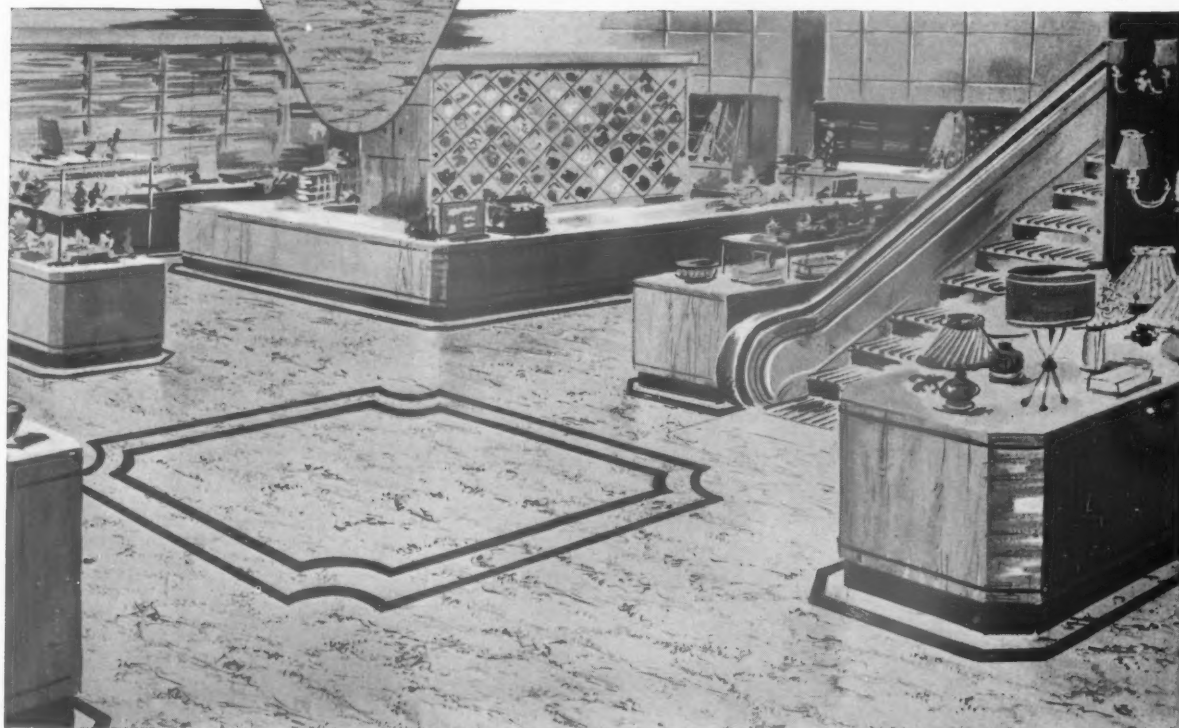
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CONTRACTORS etc

The manufacturer of the 'Difulite' cellular ceiling lighting panels illustrated in the February issue is Metal Sections, Broadwell Road, Oldbury, Birmingham.

Church Hall at Stevenage. Architects: Clifford Holiday, lately Chief Architect Stevenage Development Corporation; L. G. Vincent, Deputy Chief Architect; Architect in charge contract: D. Stirling Craig; Assistant Architect: J. H. R. Stevenson. General contractors: William Sindall. Sub-contractors and suppliers: concrete consultants: Twistell Reinforcement Ltd. Precast concrete coping: Low Giddings Ltd. Wood block flooring: Hollis Bros. Thermoplastic tiles: Semtex Ltd. Terrazzo: W. B. Simpson & Sons. Cedar shingles: W. H. Colt Ltd. Felt roofing: The Cambridge Asphalte Co. Timber windows: Herbert E. Taylor & Co. Folding doors: The Sliding Door Mfg. Co. Kitchen fittings: Duncan Tucker Ltd. Ironmongery: Alfred G. Roberts Ltd. Metal windows: Williams & Williams Ltd. Bell bracket: B. Finch & Co. Bell: John Taylor & Co. Sanitary fittings: John Bolding & Sons. Gas installation: The Eastern Gas Board. Electrical installation: The Stevenage Electrical Engineering Co. Light fittings: Hume Atkins & Co. Heating engineers: Weatherfoil Heating Systems Ltd. Lettering and notices: Drakard & Humble. Fencing: Supreme Fencing Ltd.

Dublin Bus Terminus and Offices in Dublin. Architect: Michael Scott. Contractors and suppliers: reinforced concrete structure: John Sisk & Son. Heating and plumbing contractors: Matthew Hall & Co. Instruments: Cambridge Instrument Co. Oil gauges: Simmonds Aeroaccessories Ltd. Sanitary fittings: Shanks & Co., supplied by Smallmans Ltd. Hot water calorifier: David Tod Ltd. Oil burners: Clyde Fuel Systems Ltd. Pumps: Rhodes, Brydon & Youatt Ltd. Boilers: Dansk Stoker, Copenhagen.

Radiators, valves and sanitary fittings: Ideal Boilers & Radiators Ltd., supplied by Davis King Ltd. Convectors and grilles: Copperad Ltd. Control panels: Rheostatic Co. Copper tube: Irish Metal Industries Ltd. Insulation: M. A. Boylan, Esq. Oil tanks: Engineering Products Ltd. Pumps: Harland Engineering Co. Control starters: Brookhirst Switchgear Ltd. Electric motors: (Agents) Industrial Equipment of Ireland Ltd. Chrome plating: Irish Nickel Plating Ltd. Copper fittings: Fyffes Ltd. Electrical contractors: Doherty Ltd. Distribution switchgear: A. Reyrolle & Co. (Local Agents) Hughes & Coyle Ltd. Main switchgear: English Electric Co. Fluorescent fittings, electrode boilers: General Electric Co. Fluorescent lamps: Thorn Electrical Inds. Ltd. (Local Agents) Brownlee Brothers. V.I.R. cables, conduit, accessories, etc.: Walsall Conduits Ltd. Other cables: Baxendale & Co.; Standard Telephones Ltd.; British Insulated Cables Ltd.; Siemens Schuckerts Ltd. Emergency lighting equipment: Tudor Accumulator Co. (Local Agent) R. W. Eaton & Co. Special equipment: E. C. Handcock Ltd. Cable trunking: Power Centre Co. Special telephone convenience sockets: Julius Sax & Co. Pumping, scaffolding: John Sisk & Son. Asphalt work: South of Ireland Asphalt Co. Bronze windows: Staalvindue-Centralen, Copenhagen. Bronze windows: Williams & Williams. Ventilation: F.K.M. Ltd. and Nordisk Ventilator Co. Cinema sheathwork, suspended ceilings, stair balustrading and welding: Engineering Products Ltd. Louvre panels on office floors, steel furniture and shelving: Sheet Metal Engineering Ltd. Glass and glazing: Dublin Glass and Paint Co. Floor and wall tiling, glass mosaics: Flynn Bros. Blue floor tiles: Alfred Regout. White glazed 'Rako' tiles: C. P. Glorney & Co. Concrete floor tiles: Kilquade Tile Co. Concrete tiles: Contile Ltd. Glass mosaics: S.A.R.I.M., Venice. Faience: Hathernware Ltd. Bronze windows and ironwork: J. & C. McGloughlin. Boundary railings: Smith & Pearson Ltd. Travertine, marble and granite: C. W. Harrison & Sons. Terrazzo: Verso Bros.

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[continued on page 292]



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continued from page 290]

Steel Holdings. *Marble*: Earley Studios Ltd. *Polished granite*: Anselm Odling & Sons. *'Don' stairtreads*: Small & Parkes Ltd.; Tenax Ltd. *Mills' scaffolding*: Mills Scaffold Co.; J. P. Corry & Co. *Other scaffolding*: Dublin Erection Co. *M.S. angles*: Mannex (Ireland) Ltd.; Henderson Glass Ltd. *Expanded metal lathing*: The Expanded Metal Co. *Bricks*: Shale Bricks (Kingscourt) Ltd. *Pumps*: Ames Crosta Mills & Co. *Bronze framing*: A. H. Bex Ltd. *Carpets*: Kincora Carpets. *Gates, railings and steel windows*: Onslow & Randel Ltd. *Holland blinds*: Nolan & Sons. *Limestone*: Maguire & Short. *Collapsible gates*: Potter Rax Ltd. *Nosing tiles*: The Adamite Co. *Kitchen equipment*: Electricity Supply Board. *Fibre mats*: St. Joseph's Asylum for the Blind. *Veneered panels*: William Mallinson & Sons. *Tiles*: Excel Tiles Ltd. *Acoustic panels*: Burgess Products Co. Supplied by: Hendry Bros. *Chairs, tables, seats*: J. V. Bowden & Co. *Bronze and stainless steel tubing*: Cooke's (Finsbury) Ltd. *Signs*: Signal Signs. *Gates and railings*: City Engineering Works. *Restaurant balustrade*: Jas. Ryan (Dublin) & Co. *Stainless steel*: Drawn Metal Ltd. *Steel handrail*: Tonge & Taggart. *Metal faced plywood*: Flexo Plywood Inds. Ltd.

Terrace Housing at Baughurst, Hampshire. *Designer*: Eric Chick, of Highworth Processes Ltd. *Consulting architects*: Powell & Moya. *Quantity surveyors*: Davis, Belfield & Everest. *General contractors*: Holland & Hannen and Cubitts Ltd. *Sub-contractors: facing bricks*: The Cotswold Brick & Tile Co. *Composition tile flooring*: London Flooring Co. *Fabricated carpentry and joinery units*: J. Long & Sons (Bath). *Doors*: W. S. Fry & Sons. *Ironmongery*: Kennedys (Bournemouth) Ltd. *Sanitary fittings*: John Bolding & Sons. *Electrical installation*: The Newbury Electrical Service. *Coke grates*: W. N. Froy & Sons.

College Extension, Liverpool. *Architect*: Dr. Ronald Bradbury, Ph.D., City Architect and Director of Housing, assisted by John Patterson,

Deputy City Architect, S. E. Mahon, B.Arch., Principal Architect, A. T. Ashworth, First Assistant Architect, J. J. Moore and N. T. Evans, Assistant Architects and H. Hill; A. M. I. Smith, Structural Engineer of the Department. *City Coat of Arms*: H. Tyson. *General contractors*: Wm. Hall & Son. *Sub-contractors: structural steelwork*: McIntyre & Sons. *Metal windows and dome lights*: Rea Metal Casements (1932) Ltd.; Williams & Watson Ltd. *Hollow tile suspended floors and flat roofs*: Diespeker & Co. *Cast stone*: Forticrete Ltd. *Lift installation*: The Express Lift Co. *Heating installation*: Young, Austen & Young Ltd. *Electrical installation and fire alarm system*: The Merseyside & North Wales Electricity Board. *Electric lighting fittings*: Courtney, Pope (Electrical) Ltd.; Falk, Stadelmann & Co.; The Merchant Adventurers of London Ltd.; Troughton & Young (Lighting) Ltd. *Patent flooring*: Semtex Ltd.; The Granwood Flooring Co. *Floor and wall tiling*: Bingham & Fleming Ltd. *Staircase balustrade, fire escape, railings and grilles*: George Lowe & Sons. *Sanitary fittings*: Rowe Bros. & Co. *Library shelving and fittings*: Tyson (Contractors) Ltd.; D. Matthews & Son. *Curtain rails and ironmongery*: Campbell & Mabbs Ltd. *Flat roof covering*: Permanite Ltd. *Rubber flooring*: Pollards. *Terrazzo partitions in lavatories*: Conways (Tiles & Terrazzo) Ltd. *Cloakroom fittings*: Parker Winder & Achurch Ltd. *Roller shutter grilles*, Haskins Rolling Shutters. *Westmorland green stone facings*: John Stubbs (Marble & Quartzite) Ltd. *Main entrance doors*: Joseph Rawlinson & Sons. *Suspended ceilings*: The Trussed Concrete Steel Co. *External lettered signs*: D. Matthews & Son. *Terrazzo flooring*: Harold Westwell (Tilecraft) Ltd. *Internal lettering*: Quiggin Bros. Ltd.; London Industrial Art Ltd.; Butler Jones (Nameplates) Ltd. *Clocks*: The Synchronomatic Time Recording Co.

Primary School at Coventry for the Coventry Education Authority. *Architects*: A. M. Gear, the late Edric Neel and Rodney Thomas (formerly Arcon). *Partner in charge*: A. M. Gear. *Assistant*

architect: J. T. Briars. *Sculpture*: W. L. Freeth. *Consultants (heating and electrical)*: Brandt & O'dell. *Quantity surveyors*: Davis, Belfield & Everest. *Clerk of works*: J. S. Dixon. *General foreman*: G. Perks. *General contractors*: Higgs & Hill Ltd. *Sub-contractors: reinforced concrete*: The Kleine Co. *Bricks, stone, artificial stone*: Supplied by London & Sussex Merchants Ltd. *Roofing felt*: William Briggs & Son. *Concrete blocks, structural steel, casements, sunblinds*: Hills (West Bromwich) Ltd. *Partitions*: Bellrock Gypsum Industries Ltd. *Glass*: Supplied by Pilkington Bros. *Woodblock flooring*: Hollis Bros. *Patent flooring*: The Resilient Tile & Flooring Co. (Ealing). *Central heating, boilers*: A. G. Manley & Co. *Gasfitting*: Ministry of Works. *Electric wiring*: The National Electrical & Engineering Co. (Birmingham). *Electric light fixtures*: Hartley Electromotives Ltd. *Plumbing*: W. O. Baker. *Sanitary fittings*: Adamsez Ltd. *Door furniture*: Comyn Ching & Co. (London). *Rolling shutters*: Haskins. *Iron staircases, metalwork*: Light Steelwork (1925) Ltd. *Plaster*: George Nicholls & Co. *Fibrous plaster*: C. E. Pinn & Co. *Joinery*: Batty & Co. *Tiling*: Carter & Co. (London). *Paint*: Leyland Paint & Varnish Co. *Suspended ceiling*: The Trussed Concrete Steel Co. *Shrubs and trees*: Coventry Corporation. *Cloakroom fittings*: B. Finch & Co. *Clocks*: Gent & Co.

Showrooms at Conduit Street, London. *Architects*: B. Katz and R. Vaughan. *General contractor*: Westminster Joinery Ltd. *Sub-contractors: stone*: Empire Stone Co. *Woodblock flooring*: Vigers Bros. Ltd. *Central heating, boilers, electric heating, ventilation*: Norris Warming Co. *Electric wiring, light fixtures*: Fluorel Ltd.; Thorn Electrical Industries Ltd. and Smith Electric Ltd. *Door furniture*: Comyn Ching & Co. (London). *Sunblinds*: J. Avery & Co. *Plaster*: C. E. Pinn & Co. *Furniture*: Horace Holme Ltd. and S. Hille & Co. *Plants*: Westminister Flower House. *Joinery, shop fittings*: Westminster Joinery Ltd. *Clocks*: Baume & Co.



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