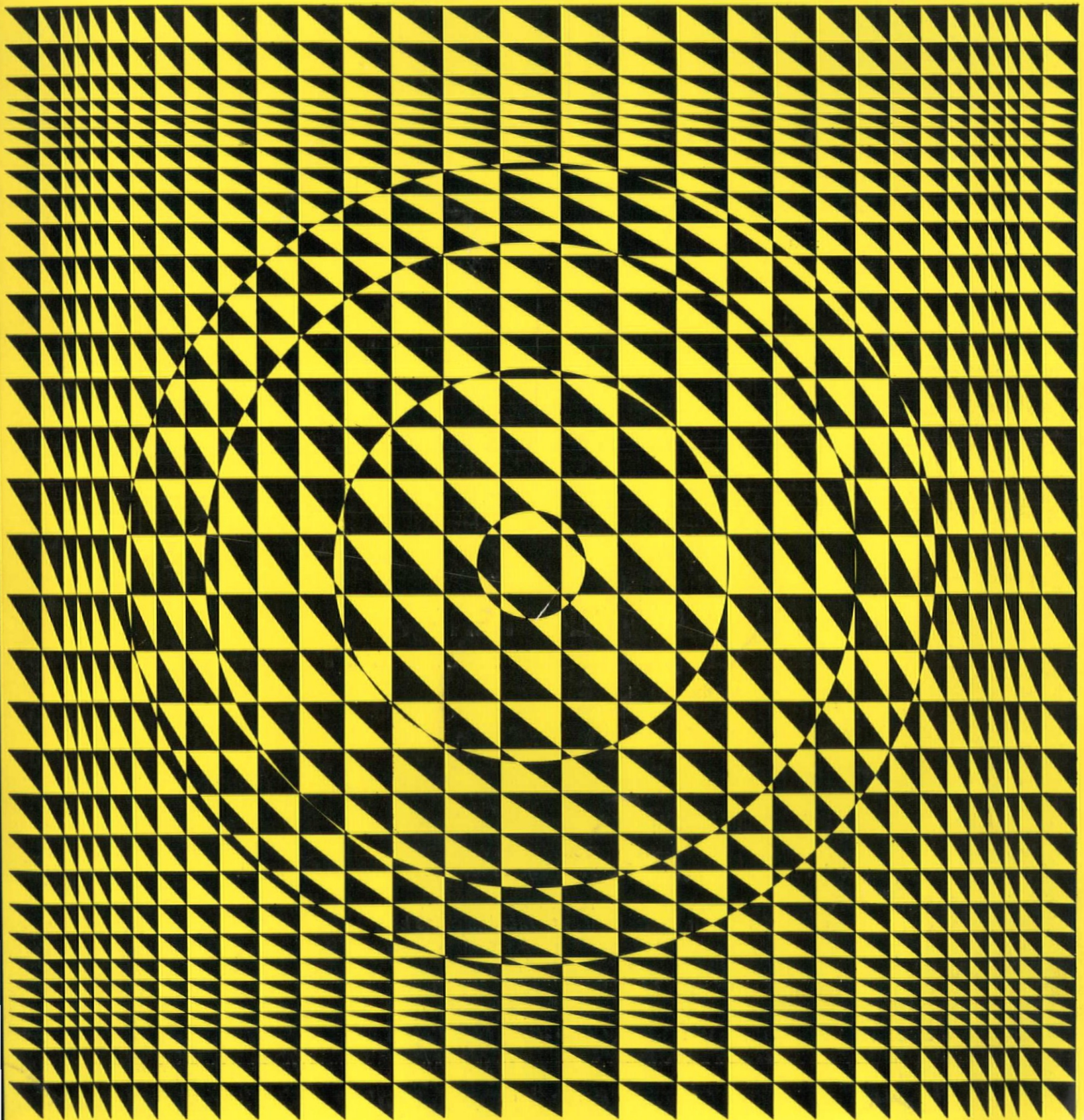
6 ARCHITECTURAL DESIGN

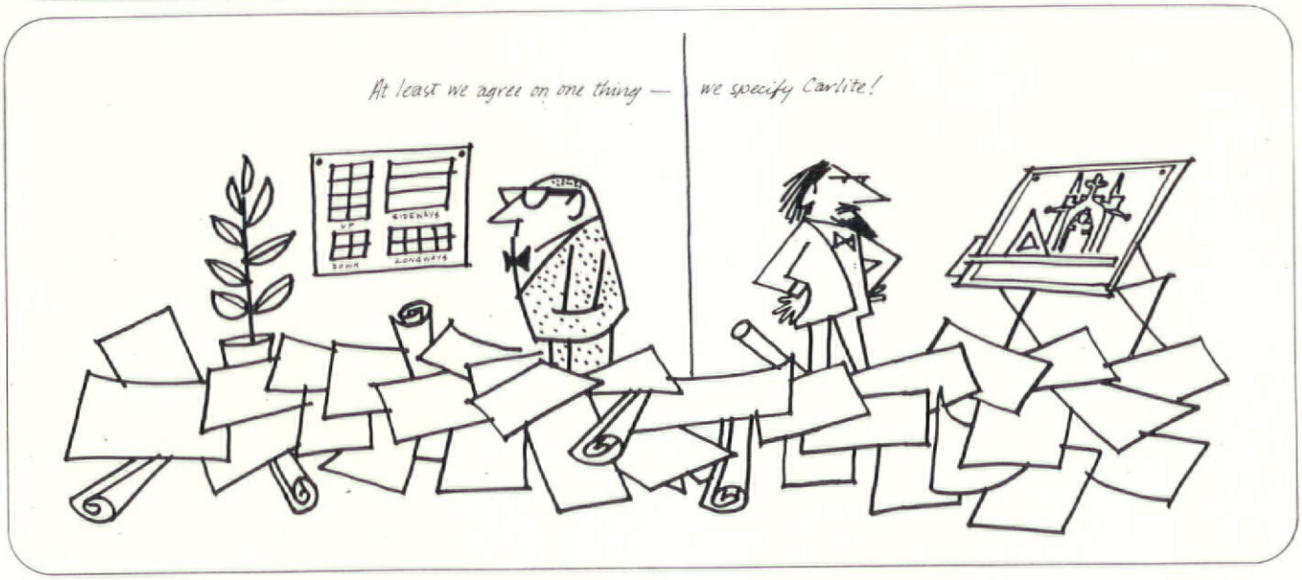
June 1965

Price 5/-









What's CARLITE PLASTER got that sanded plasters haven't?

Plenty. But let's put it another way.
What's in sanded plasters that's *not* in Carlite? Sand for one thing.
Weight for another. Complicated ordering, handling
and untidy sites for three others. Carlite is the factory mixed gypsum plaster
with the lightweight aggregate. It saves over 50% of the
weight of sanded plasters. Has a high fire rating. Gives better thermal insulation.
Has greater resilience to resist stress cracking. There is a grade
which adheres strongly to smooth concrete without keying. Technical service
backing Carlite really is *service*—from practical men with on-site help.
Write for technical literature giving facts and figures for these claimed advantages.

Carlite Plaster is now being used at the rate of over 4 million sq. yd. per month
on all types of buildings from better houses to prestige office blocks.

British Gypsum Limited

Ferguson House, 15-17 Marylebone Road, London NW1
Telephone: HUNter 1282 Telex: 24902 and 25242

Volume XXXV
June 1965

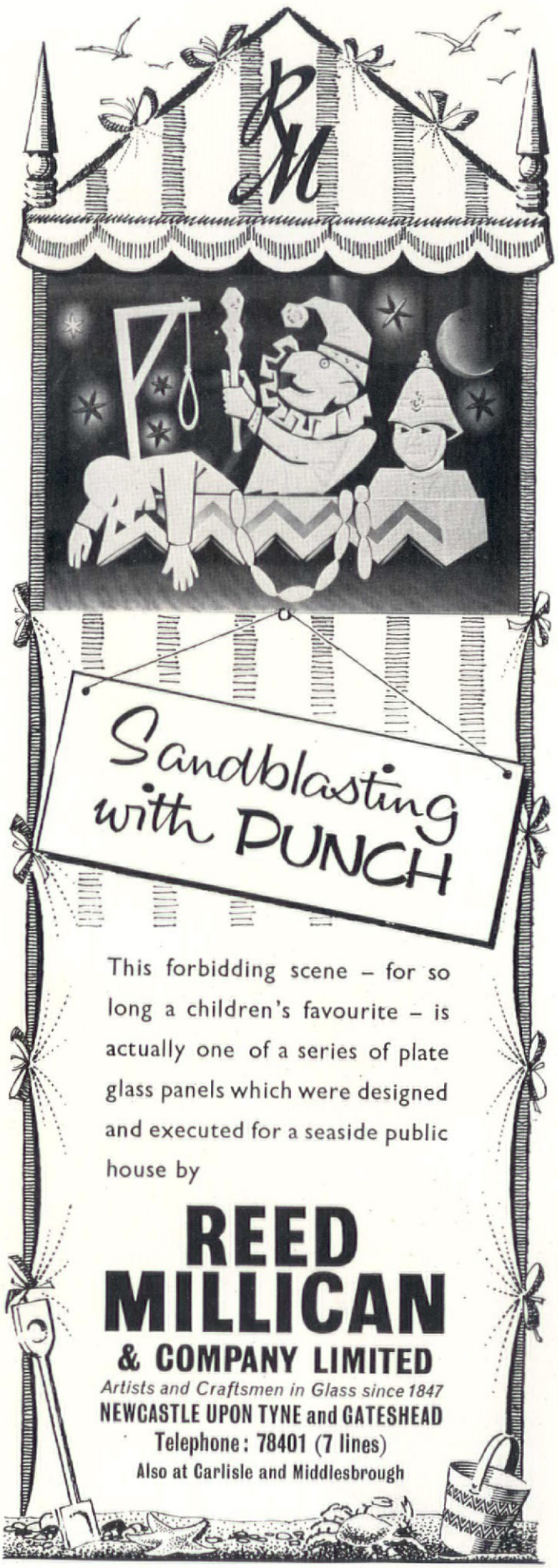
6

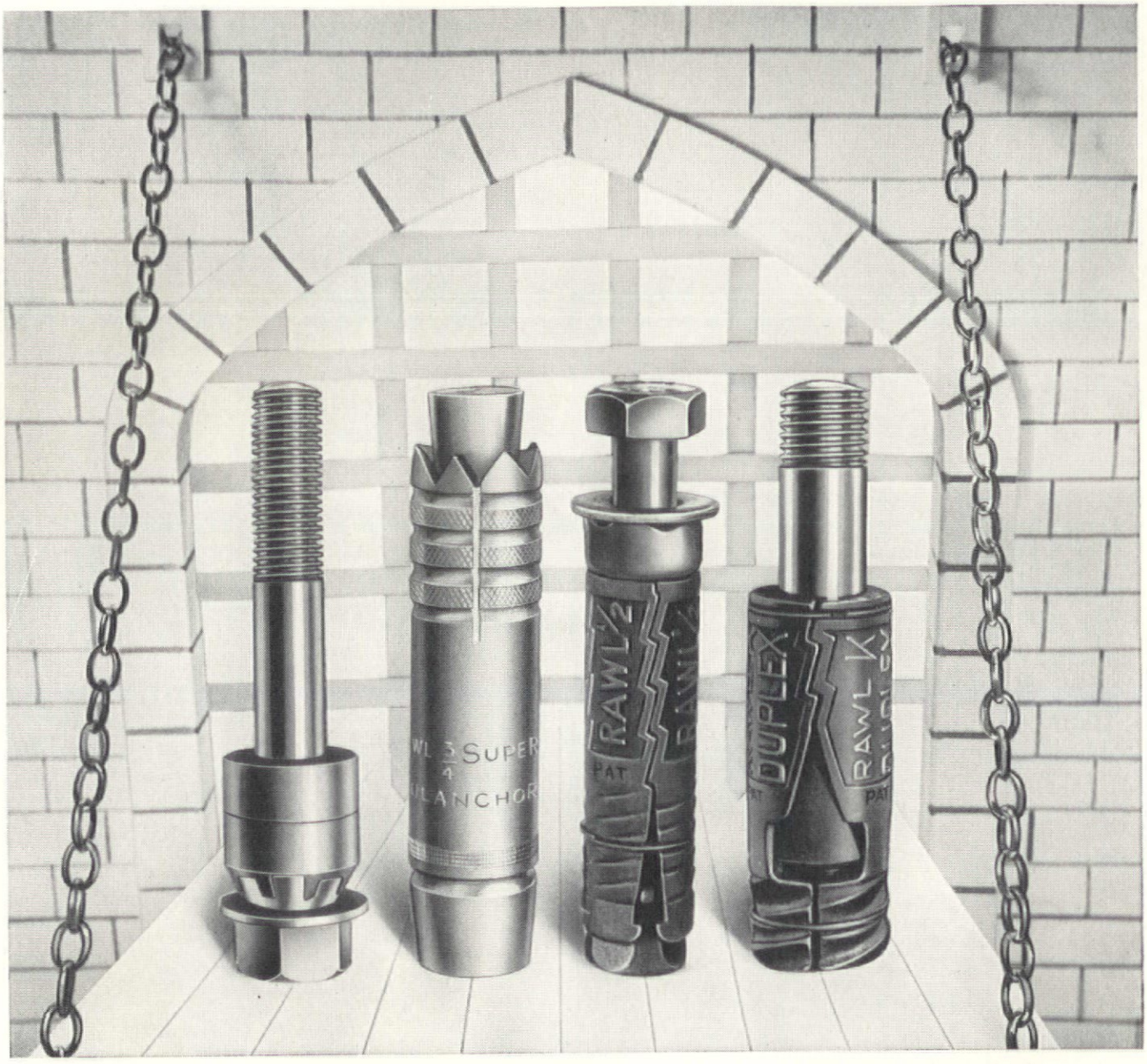
Editor Monica Pidgeon
Technical editor Robin Middleton
Editorial assistant Anthony Stockbridge
Editorial secretary Judith Wilkinson
Consultants Walter Bor, Theo Crosby, Kenneth Frampton, Ernö Goldfinger, Gontran Goulden, Denys Lasdun, Frank Newby, Peter Smithson.
Correspondents *Argentine* Gerardo Clusellas. *Australia* Mary Andrews, Andrew Young. *Austria* Wilhelm Schütte. *Belgium* Roger Thirion. *Brazil* Harry Cole. *Canada* Anthony Jackson, Blanche Lemco van Ginkel, Peter Oberlander. *Chile* Carlos Garcia Huidobro. *Colombia* Alec Bright. *Ceylon* Geoffrey Bawa. *Denmark* Christian Enevoldsen. *Finland* Olavi Kantele. *France* Bernard de la Tour d'Auvergne, Yona Friedman. *Germany (Berlin)* Peter Pfankuch. *Germany (West)* Hans Kammerer, Gunther Kühne. *Greece* Orestis Doumanis. *Hong Kong* Chung Wah Nan. *Hungary* Elemér Nagy. *India* Prof. Eulie Chowdhury, K. V. Satyamurty. *Israel* Olga Sims Tieder. *Italy* Panos Koulermos, Letizia Frailich Ponti, Teodora Olga Sammartini. *Japan* Nobuo Hozumi. *Kenya* Richard Hughes. *Malaysia* Stanley Merer. *Mexico* Jorge Gleason. *Netherlands* Jan Piet Kloos. *Norway* Bengt Knutsen. *Peru* Eduardo Orrego J. *Poland* Prof. Boleslaw Szmidt. *Roumania* Anton Moisescu. *Spain* Carlos Flores. *Sweden* Orjan Lüning. *Switzerland* Lucius Burckhardt, Roland Gross. *Uruguay* Ernesto Puppo. *USA* Arthur Baker, Peter Carter, John Fowler, Henry Hill, Burdette Keeland, David Lewis, Sy Mintz, Tim Vreeland. *USSR* Prof. N. D. Kolli.
Advertisement Manager David Dottridge
Subscription rates U.K. £3-0-0 p.a. post free. Single and back copies 5s. 0d. each plus postage.
U.K. Students 36s. p.a. post free for direct subscription with publishers. Name of School/College and Year of Study must be stated.
Overseas £4-0-0 p.a. post free. U.S. and Canada $11.50 post free. Single and back copies 5s. 6d. each plus postage.
Publication date Seventh of each month
Publishers The Standard Catalogue Co. Ltd.
26 Bloomsbury Way, London, WC1 HOLborn 6325.

CONTENTS

		Cover by A. Stockbridge
	AD5	**Book notes**
	261	**News. Notes. Translations**
Alvin Boyarsky	269	**The architecture of et cetera**
	271	**Denys Lasdun: his approach to architecture**
	274	Royal College of Physicians
	286	Royal Institution of Chartered Surveyors
	287	University laboratories, Cambridge
	288	University of East Anglia
Stillman and Eastwick Field	292	**Mackintosh Hall, Gibraltar**
James Gowan	294	**Schreiber house, Hampstead Heath**
Trevor Daunatt	309	**Hall of residence, University of Hull**
F. F. Longoria	312	**Madrid Opera House**
	314	**Trade notes**

The entire contents of this Journal are copyright; reproduction in part or in full without permission from the Publishers is strictly forbidden
© Standard Catalogue Co. Ltd.
The Editors will give careful consideration to articles, photographs or drawings submitted, but they do not undertake responsibility for damage or their safe return. All MSS., drawings, etc., submitted should be accompanied with a stamped addressed cover for their return, if necessary. The opinions expressed by writers of signed articles and letters appearing in this magazine are those of their respective authors and the Editors do not hold themselves responsible for such opinions.





Strong and Secure

Constantly besieged by tension, strain and corrosion, Rawlbolt fixings never yield. Their grip is stronger than the bolts they anchor, stronger than the strongest masonry. Shown here are, left to right, Bolt Anchor, Super Drilanchor, Rawlbolt, and Duplex Stud Anchor. There are several variations on these basic forms, and other members of this steadfast company are Roof Bolting Rawlbolts, Rawltamps, and Cement-in Socket—all recognised by engineers the world over as the fastest, strongest, most secure bolt fixing devices of all. For a sure stronghold, depend on bolt fixing devices by Rawlplug. Booklets, catalogues, samples and representatives—for these and *all* the Fixing Devices and Tools in the Rawl Range—are at your service on request.

RAWLPLUG BOLT FIXINGS

MADE BY THE RAWLPLUG COMPANY LIMITED · CROMWELL ROAD · LONDON S.W.7
B842

Book notes

Homes, towns and traffic

John Tetlow and Anthony Goss. Faber 45s.

The Buchanan report has set off a spate of town planning books. *Homes Towns and Traffic* takes some of Buchanans' arguments and expands them in the context of a general theory of town planning, its history and practice, mainly in Britain, in recent years. The techniques of vehicle/pedestrian separation are discussed in the light of the tremendous increase (and the even more tremendous projected increase of the next few years) of the number of motor vehicles. The authors have realized that this change in one of the factors of the equation makes all previous solutions obsolete. They examine current solutions politely and go on to a discussion of the problems of city centres and how they might be solved.

The authors are serious and aware, and offer no easy solutions. The book ends with a plea for political leadership and for money, a great deal of money to be spent on our environment.

Unfortunately a general discussion of this kind leaves one with an impression of a multitude of more or less insoluble problems. Planning cannot really be seriously discussed perhaps even for laymen, in the pep talk format.

Theo Crosby

The heart of our cities

Victor Gruen. Simon & Schuster $8.50

Victor Gruen is forthright and talkative, or at least one might judge him to be so from this book. His arguments are simple: city life is a good thing which America is missing and the answers are to be found in the development of the shopping centres with which his name is associated. And he is probably right. The familiarity with the automobile which the Americans enjoy, and its dominion over their lives and environment, is so complete as to make his arguments infinitely more coherent and trenchant than those of European planners. He is concerned to grow those urban values of compact European cities: visual dynamic, a coherent social organism created by an urbane environment. Everything is stacked against him. The mainsprings of the US economy are auto production and the building of super highways. The shopping centre idea: pedestrian precinct surrounded by car parking and serviced from below, has been recently applied to the regeneration of decayed central areas, and the results are similar to the latest projects here.

When the analyses are complete, however, he finds that it is impossible to build dense central areas and also to provide car storage on the scale required to make it economically viable. He therefore comes down heavily on the side of public transport. He makes a valuable analysis of the systems required and points out that the means should be adapted in size and capacity to the speed and distance to be travelled. This means small buses for short distances, and larger ones for longer distances and fewer stops. He also presses for investigation into the methods of moving pedestrians mechanically, for distances up to a mile.

Aimed directly at the public and future clients, *The Heart of our Cities* is an example of the kind of propaganda which planning very badly needs.

Theo Crosby

The view from the road

Donald Appleyard, Kevin Lynch and John Meyer. MIT Press $15 or 113s.

View from the road is a very technical book and a very hopeful one. It analyses the aesthetic problems of motorways, mainly from the driver's viewpoint. It sees the visual progressions as the raw material for a new and complex art form. The authors have developed a notation to describe the conditions and sensations of the road experience (which has something in common with the problems of recording movement in the ballet).

Their observations on the driver's experience on motorways, the need for a unifying ryhthm to the road to maintain alertness, the limited perception of the driver sealed in his capsule, etc., are all very accurately stated. And they are all highly relevant to today's planning problems. On the other hand one is staggered by their ambition. We tend to accept road engineers as inevitably producing the most logical and economical layout for an urban motorway, in which case the designer comes to it 'as found' and the notation records the existing situation. To start from the other end is breathtaking, to treat the city as scenery to be arranged for the driver's benefit.

Yet when more and more people use the highways this becomes a perfectly logical point of view. At least this book will make the engineer aware that his task is infinitely more complex and infinitely more interesting than we had assumed. For planners it is a claim staked in a new field, and one rich in promise. In the central areas of cities the new motorways are great, sizeable permanent factors in the urban situation. Their design is a major factor in the city: the views from them are as important as the views of them.

The view from the road is also a *very* beautifully produced book.

Theo Crosby

continued

how the ROYALTY RANGE of WILTON CARPET helps the ARCHITECT!

The Royalty Range of fine Wiltons offers you a unique service with four important advantages—maximum selection, greater economy, guaranteed longer wear, first class service backed by expert advice. Ten designs in balanced colourings satisfy every taste from the conventional to the contemporary. Each of these designs is made in three contract qualities — King Wilton for really heavy wear, Queen Wilton for average wear, Prince Wilton for where traffic is lightest. Designs are intermatching between qualities. All three qualities are woven with 80% pure wool, reinforced by 20% Bri-nylon, proven beyond question to wear longer than an equivalent all-wool pile. Early delivery of all designs in the range is guaranteed, with underfelt if required. New designs are regularly introduced to keep the range to date with the modern trend. Where special qualities and widths are called for, the advice of the company's experts is readily available. Specify the Royalty Range of Wiltons, and be certain of success! Enquiries should be directed to Kidderminster or branch showrooms in London, Bristol, Manchester, Liverpool, Leeds, Newcastle, Glasgow and Belfast.



Carpet Trades Limited
Kidderminster



EDA

MODERN ELECTRIC HEATING IN MULTI-STOREY BUILDINGS



HOT OFF THE PRESS!

A unique summary of the latest ideas . . . with facts and figures (systems, loads, costs) on many recent installations . . . fully illustrated with photographs, diagrams, charts . . . free from your Electricity Board, or the Electrical Development Association (M/AD/2), Trafalgar Buildings, 1 Charing Cross, London, SW1.

Published by the
Electrical Development Association

New houses

Penelope Whiting. Architectural Press. 30s.

Compared to the number of one-off houses that actually get built there seems to be a voracious market for house books.

These books obviously titillate the appetites of frustrated house builders and even to them it must be depressingly clear that of the one-off houses built only a marginal percentage constitute architecture.

There are thirty or so houses in Miss Whiting's book, and half of them have already been published before, and in most cases some years ago. Of the remainder one or two barely deserve their space in the book. This is certainly not the author's fault. She has collected her material widely and given an interesting slant to the book by concentrating on the client-architect relationship. This reveals how true it is that a successful house (or any building) requires a good client as well as a good architect.

The conclusion that the book involuntarily provokes is that England is sadly thin on the ground for good modern domestic architecture—and the blame for this cannot only be for the lack of good clients.

Michael Manser

Architecture without architects

Bernard Rudofsky. The Museum of Modern Art, New York. 55s.

Bernard Rudofsky is an enigma; a nimble and enlightened traveller who has gathered together an unrivalled (*pace* the unacknowledged Gutkind) collection of pictures of what he has called natural architecture—caves, scooped-out rock faces, trees and terraces for cultivation—and non-pedigree buildings, which means variously that they are vernacular or that historical research has not yet and will probably never reveal the names of their authors. Yet he has no notion of how to comment on this material and reveal its evident felicities. He has a frank distaste for contemporary architects, which is not surprising in view of the turn that architecture has taken in the USA, though what is astonishing is that he has been able to use the halls of the Museum of Modern Art to make plain this distaste in an exhibition that serves as the basis for the book. His text is a ponderous and fitful diatribe aimed, apparently, at the Philip Johnsons and Paul Rudolphs of this world. He moralizes, censures and complains about the exhibitionism and egotism of architects today, but his thrusts are wild and neither his ideas or emotions are ordered. He has missed the opportunity for a strong and persuasive attack, which is greatly to be regretted. His passion has spurred him only to roisterous outbursts. So enamoured is he with the concept of anonymous architecture that he absolutely refuses to acknowledge that most of the buildings or constructions that he illustrates are the creations of architects, whether they be called mud-hut-builders-in-chief or simply tent-makers. No one viewing the great theatres of Muyu-uray or the nearby (and curiously unmentioned) sundial in Peru is likely to believe that a powerful design talent has not been brought to bear on their making. They are the works of what must be considered architects. Similarly, many of the vernacular buildings shown derive ultimately from individual and painstakingly considered prototypes that have been lost or destroyed—to take a case in point, the dated pigeon-towers outside Isfahan are infinitely superior to the scruffy, late, 'vernacular' specimens illustrated here. But it is as wearisome to carp at Dr Rudofsky's sententiousness as it is to read his text. One takes his point. Many of his sentiments are sound and his expression of them sufficiently vigorous. Absolutely, his illustrations rejuvenate the architectural imagination, and creative powers, one hopes, might be revived.

R. M.



Ba Ila village, Zambia

Photo: Mary Light (from 'Focus on Africa' by R. U. Light, American Geographical Society)

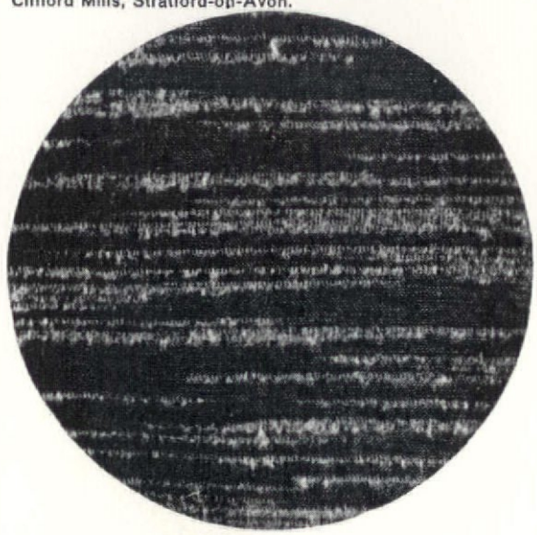
Courtesy of Museum of Modern Art, NY

Amphitheatre near Cuzco, Peru

Photo: Wenner-Gren Foundation for Anthropological Research

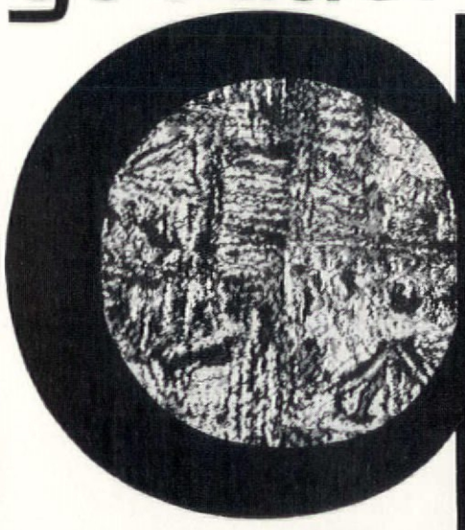


The versatile and individual hand of Tibor Reich embraces fabrics for tightly budgeted schemes as well as specially designed and constructed cloths for important projects which call for a fresh approach to furnishings.
Focusing on Binton below—this is an example from the new extensive Tibor range currently on exhibition at 30 Sloane Street, S.W.1.
Call in and see our latest fabrics or we can bring them to you. Write for samples and illustrated leaflets to:— Tibor Ltd, Clifford Mills, Stratford-on-Avon.



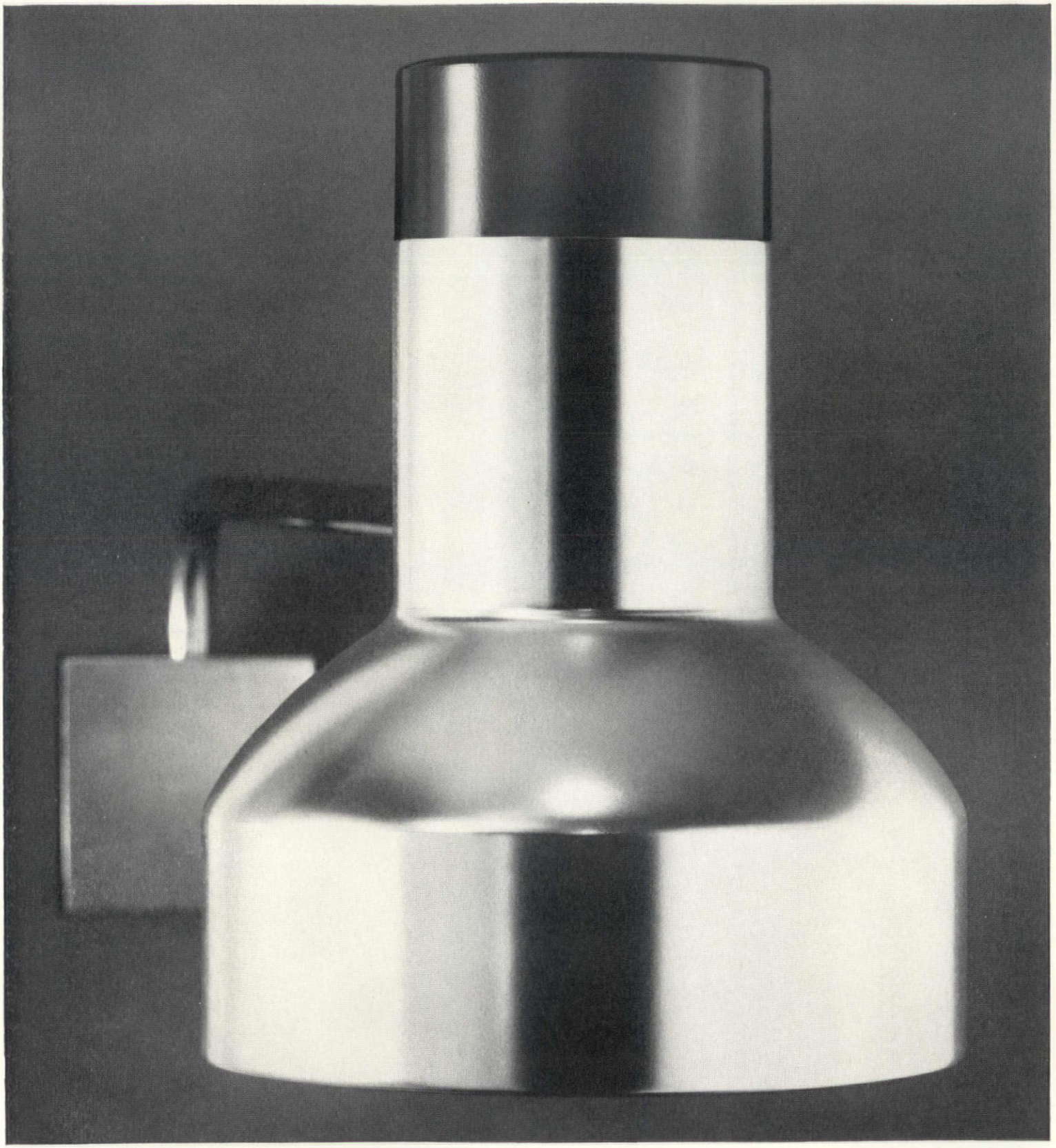
tibor

goodacre



Tibor Reich designs have created a new 'contract' look for Goodacre carpets—design and quality wise. Interesting, discreet plains and textures. Bold receding patterns for hard duty in public places. Goodacre Carpets. Produced by Wm. Goodacre of Kendal. When visiting Stratford-on-Avon see our new colour exhibition centre at TIATSA, 60, Ely Street, Stratford-on-Avon.

Atlas lighting fitting gains a Design Centre Award

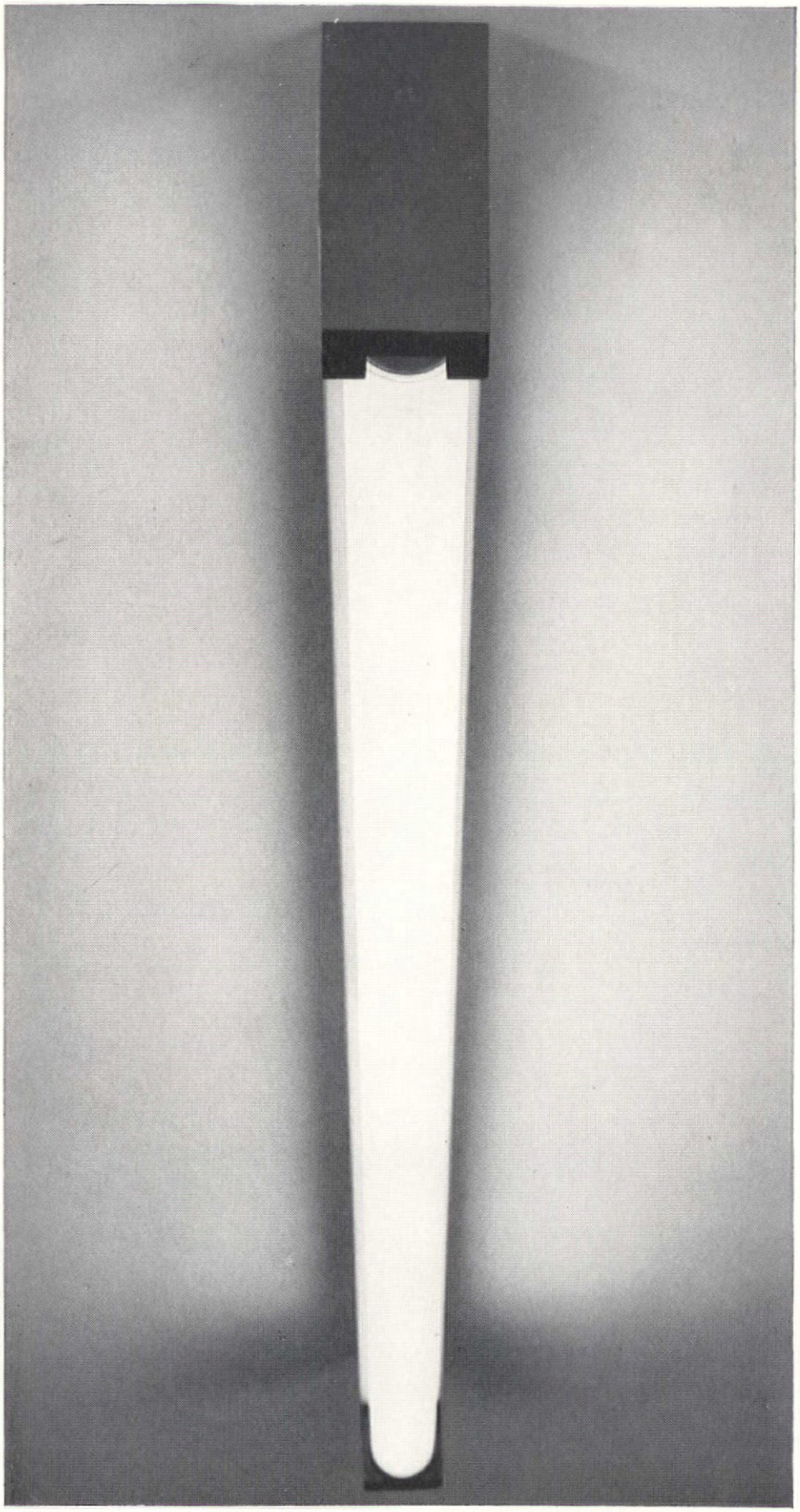


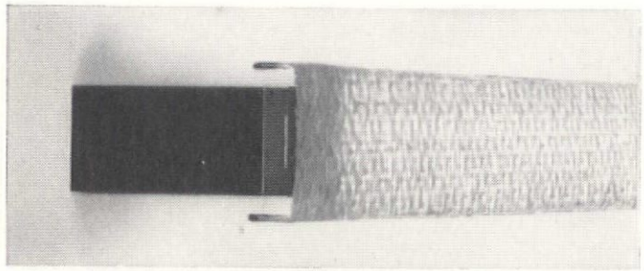
atlas

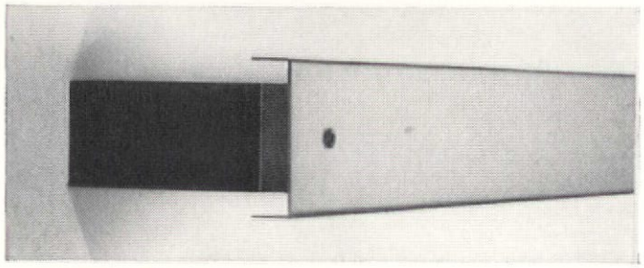
Atlas Lighting Limited
a subsidiary company of British Lighting Industries Limited
Thorn House, Upper Saint Martin's Lane
London WC2

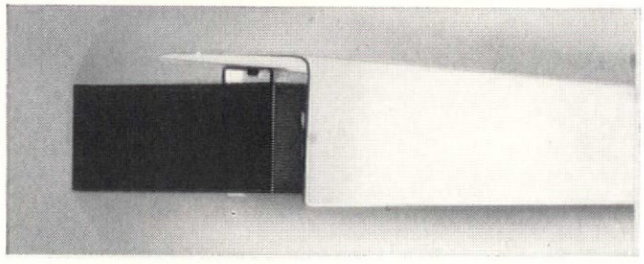
This Atlas hospital bedhead incandescent lighting fitting has been selected by the Council of Industrial Design as one of the Design Centre Awards for 1965

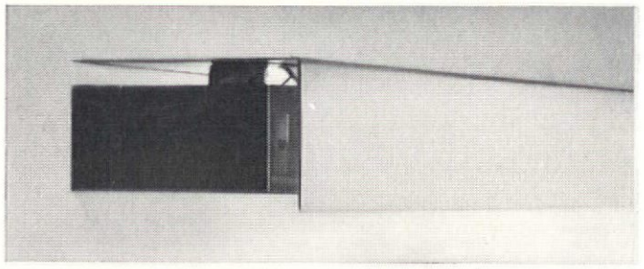
Atlas lighting range gains a Design Centre Award

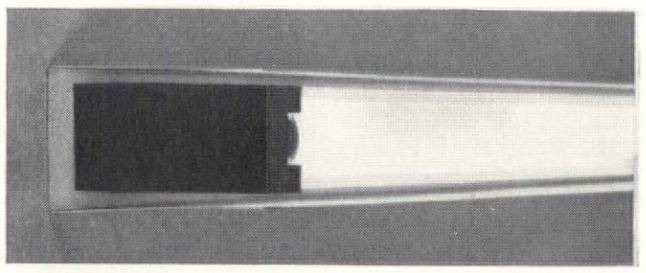


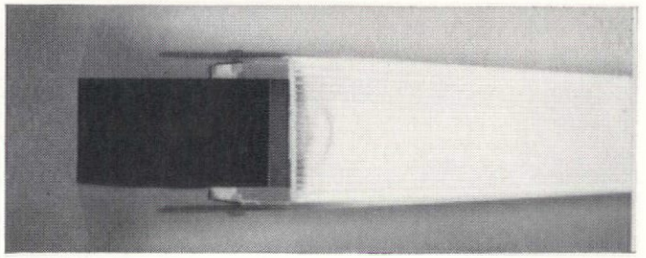












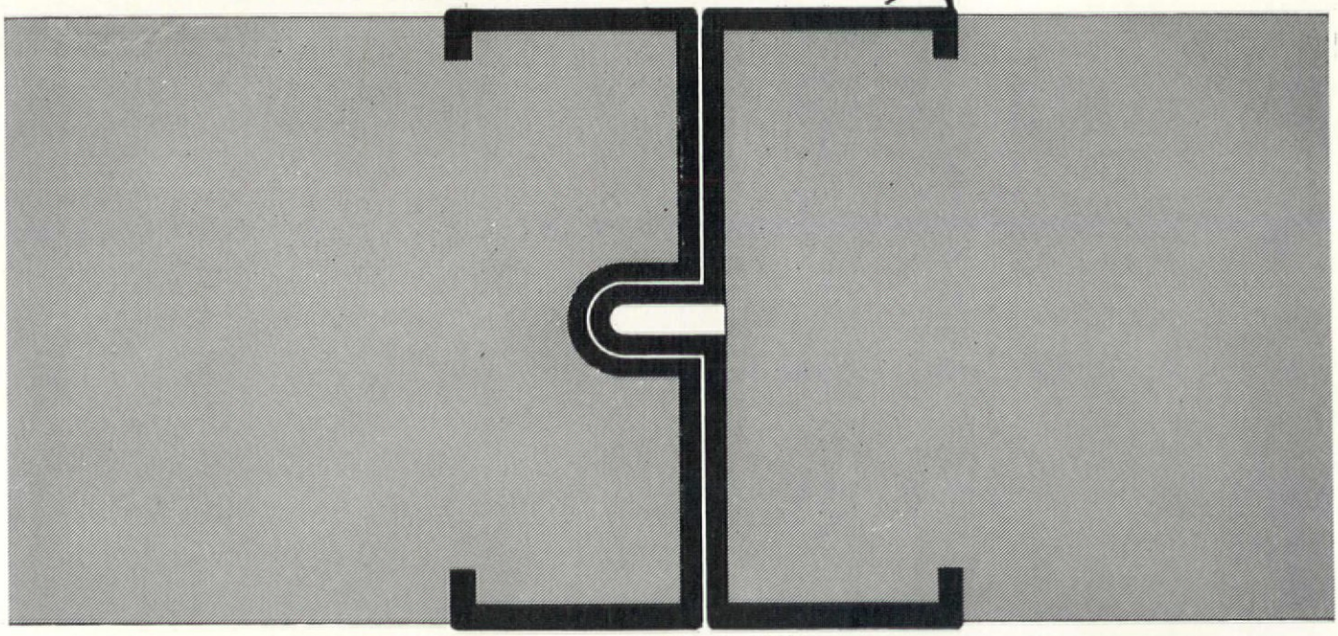
atlas

Atlas Lighting Limited
a subsidiary company of British Lighting Industries Limited
Thorn House, Upper Saint Martin's Lane
London WC2

The Atlas Arrow-Slim range of fluorescent fittings has been selected by the Council of Industrial Design as one of the Design Centre Awards for 1965

A BOND MORE BINDING THAN 007

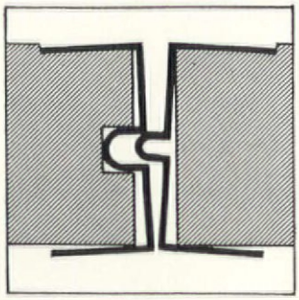
BEWARE OF IMITATIONS THAT DO NOT PROVIDE THIS IMPORTANT LOCKING EDGE

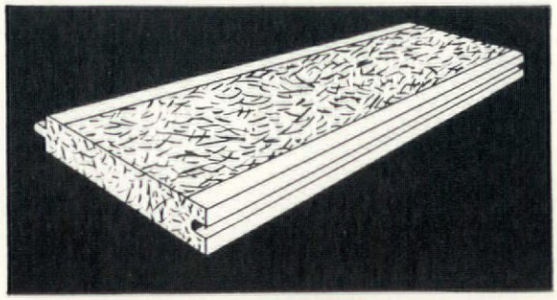


British Patent No. 715/770

Imitations of Unilith I.S.E.R.S. can suffer unfortunate results.
Steel edges can come adrift in transit (see illustration) or at a site resulting in damaged slabs.
Steel can ride off sufficiently to prevent thorough interlocking of adjacent slabs resulting in unequal load carrying value of the slabs.
If you specify Unilith I.S.E.R.S. or **equal make sure they <u>are</u> equal.**
Some contractors will buy an inferior imitation to save a few pence at your expense.

Full documentation of specifications, detail of applications, test reports and prices will be sent on request.





UNILITH (ISERS)★

Interlocking Steel Edge re-inforced cement bound wood wool roof slabs.

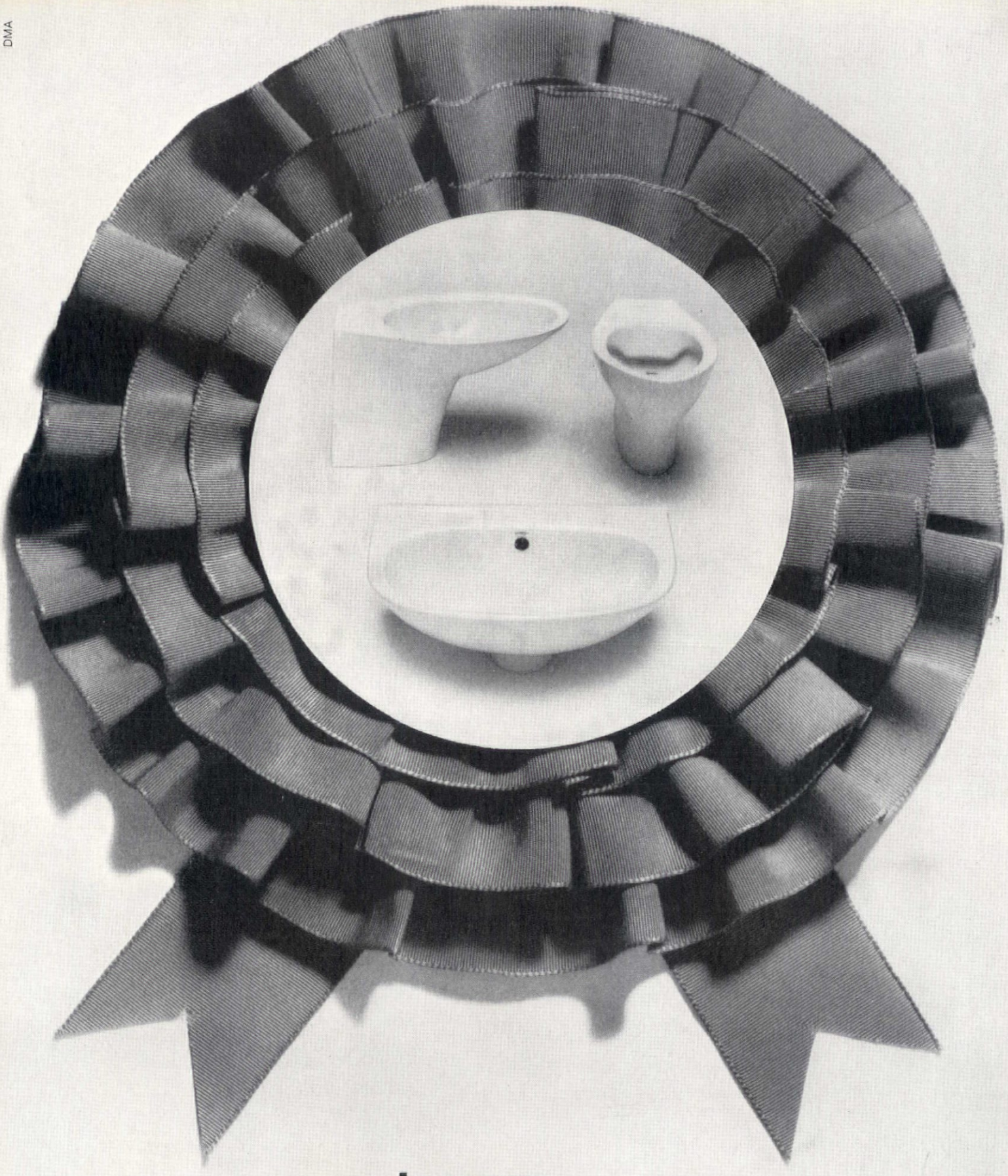
UNITON LTD.,

BOUNDARY HOUSE, 91-93 CHARTERHOUSE STREET, LONDON, E.C.1. TEL: CLERKENWELL 0646/7

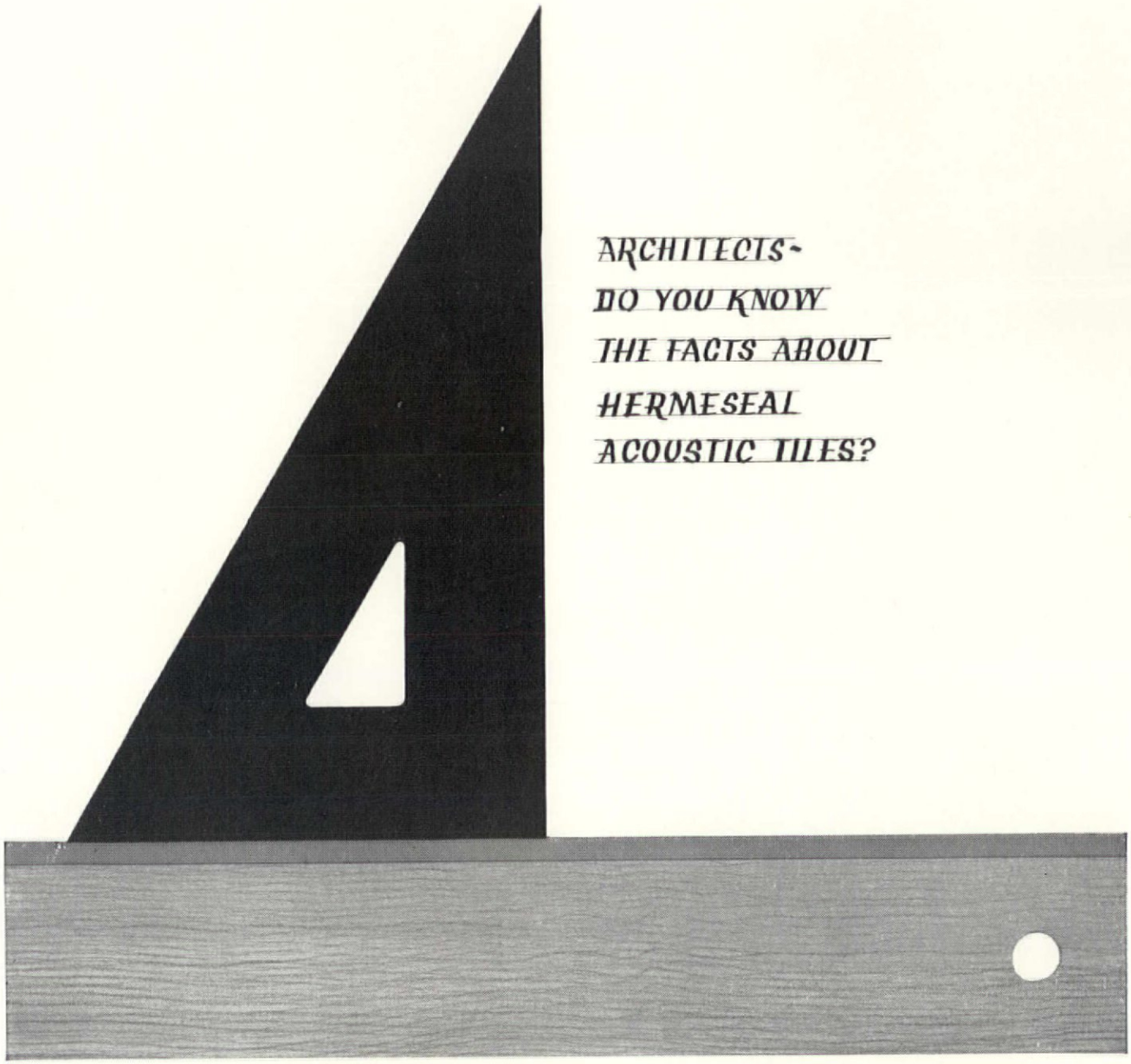
ISERS, INSUL-EDGE & UNILITH ARE THE REGISTERED TRADE MARKS OF UNITON LIMITED

ONE OF THE BROCKHOUSE COMPANIES

DMA



Award for 'Meridian One'—by **adamsez** who are proud to announce that their new sanitary suite designed by Knud Holscher MAA and Alan Tye Dip. Arch ARIBA (in association with Alan H. Adams) is one of the 16 Design Centre Awards for 1965. Designed for use with a duct — or similar concealed services space — the backs of the fittings align with a 6″ tile module and all unsightly connections are concealed. For an A4 data folder on the 'Meridian One' range, ask Adamsez Limited, 75 Victoria Street, London SW1 (Tel: Abbey 5846) or Fireclay Works, Scotswood-on-Tyne.



ARCHITECTS- DO YOU KNOW THE FACTS ABOUT HERMESEAL ACOUSTIC TILES?

Q. What is the average cost of these materials supplied and fixed to a prepared surface?
A. For say ⅝" x 8' x 2' rilled boards from approx. 32/- per yard.

Q. Can the materials be suspended?
A. Yes.

Q. How do their sound absorbtion co-efficients work out?
A. They increase progressively over the frequency range of 250-4000 c.p.s. giving a balanced absorbtion.

Q. How about installations?
A. Our own skilled staff can carry out any type of installation, or if it is required the materials can be supplied for others to fit.

Q. If you are asked to supply only what is delivery like?
A. All materials are ex-stock, and despatch can be arranged within 7 days of an order being received.

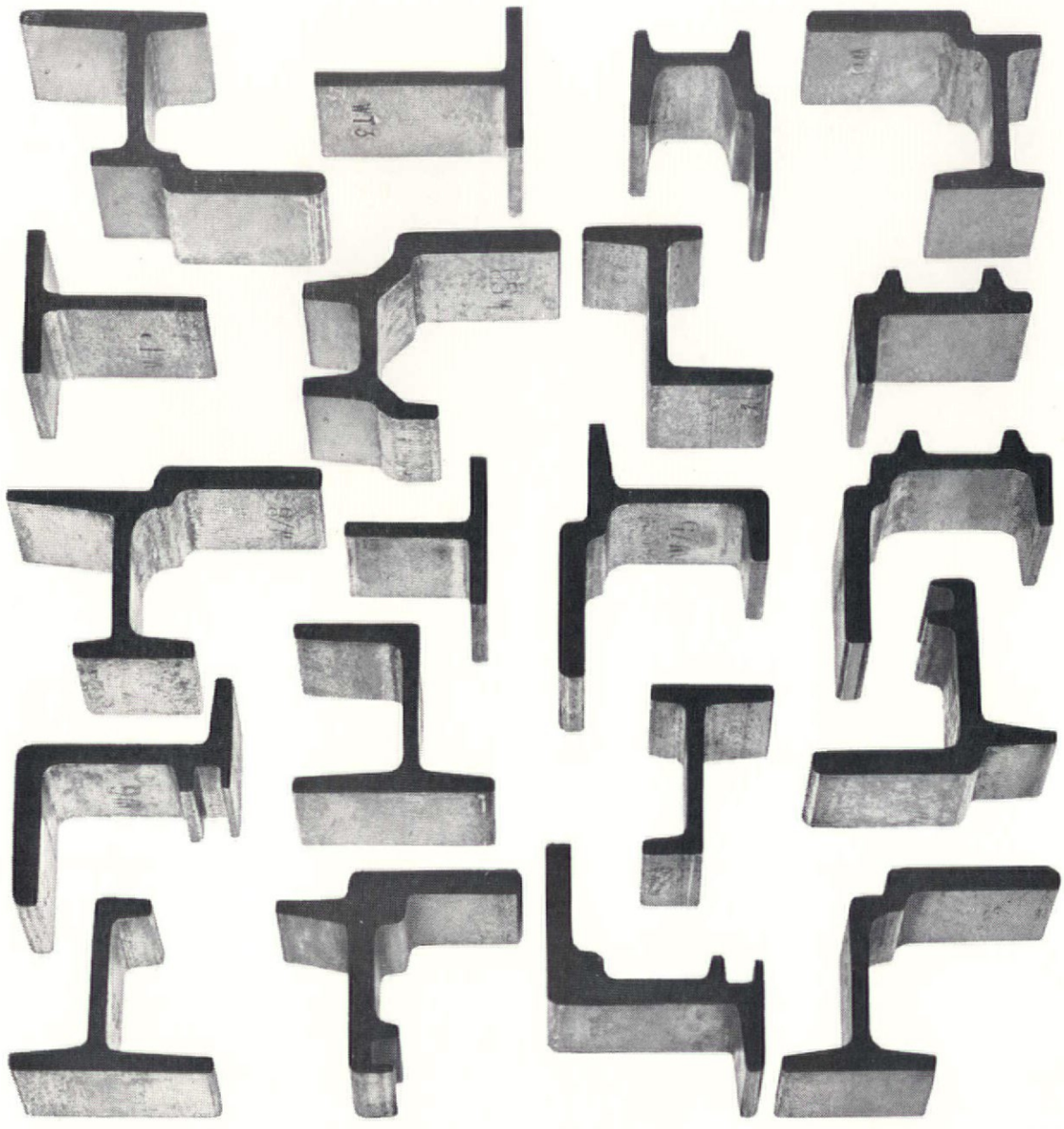
Q. Do you carry out any other type of work?
A. Yes—sound proofing of doors, walls, machines etc., including manufacture of Acoustic Hoods.

Q. Do you erect only your own materials?
A. No, we erect a wide variety of materials to suit the requirements of the Architect.

Q. How can I find out all the details?
A. Prices, designs and surveys without obligation from *Hermeseal Acoustics Limited*
4 Park Lane, London W.1 or phone us at Grosvenor 4324

SPECIFY **HERMESEAL**

HER/3



This is all there is to the W.20 steel range

(apart from greater economy, efficiency and elegance)

Just 20 sections in the new W.20 range of purpose-made steel sections introduced by the Metal Window Association. But anything the old range of 46 could do, W.20 can do better!

W.20 is a compact versatile team of 20 sections planned to meet every window application now or in ten years time.



This is weatherstrip at work

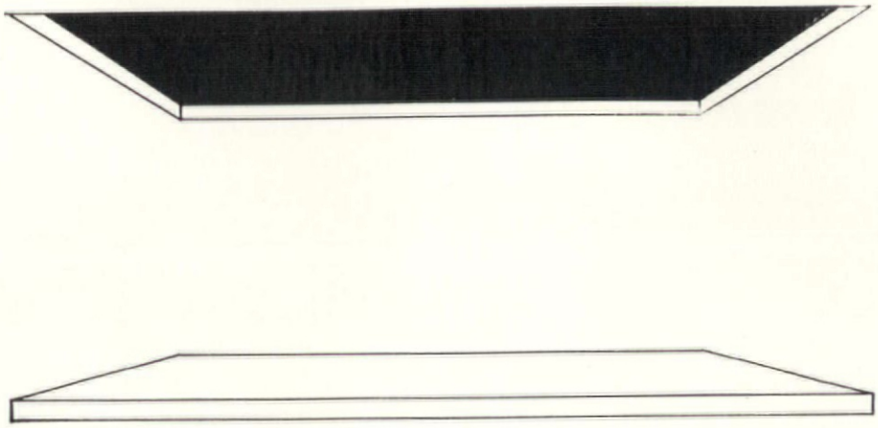
Costs are rising constantly. This radical decision will help the steel window manufacturer to combat these rising costs.

W. for What? The W in W.20 stands for Weatherstripped. Because these window sections really do improve heat conservation.

All can be quickly and effectively weatherstripped. All are specially designed to make double-glazing more practicable. And all are galvanized or zinc-sprayed, and are absolutely rustproof.

Elegance with a purpose. W.20 sections are designed with precision and imagination to make windows in which screws and fittings can be concealed. And there is a very wide range of fittings. All this means elegance coupled with reliability.

Write for a factual and informative data sheet on the W.20 range to:
The Metal Window Association Ltd.
Dept. No.PJ9, Burwood House,
Caxton Street, London, S.W.1.



fix it with magnets

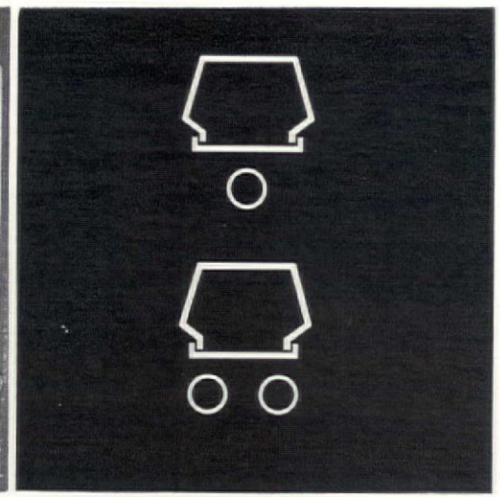
Arelec magnets provide a simple, invisible and inexpensive method of fixing side panels, wall or ceiling panels. Any panel can be fastened invisibly and removed easily for maintenance or rear access. The magnets are simple to fix and provide full adjustment to take up unevenness, misalignment or warping. Doors and cupboards of all sizes can also be conveniently held open or shut; heat resistant models and models for metal furniture are also available. For details of the complete range, write or telephone Magnet Applications Limited, 323 City Road, London EC1, Telephone Terminus 6222.



ARELEC

magnets



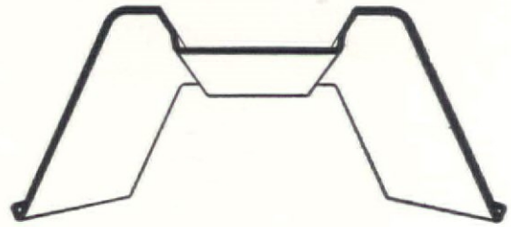


2′ 4′ 5′ 8′ single or twin batten fittings with angle or full reflectors and decorative diffusers / Epping 5′ single £4 / basic units shown above / code names of fittings below: Evesham Ealing Eton 11 Edgware









Epping range of fluorescent fittings

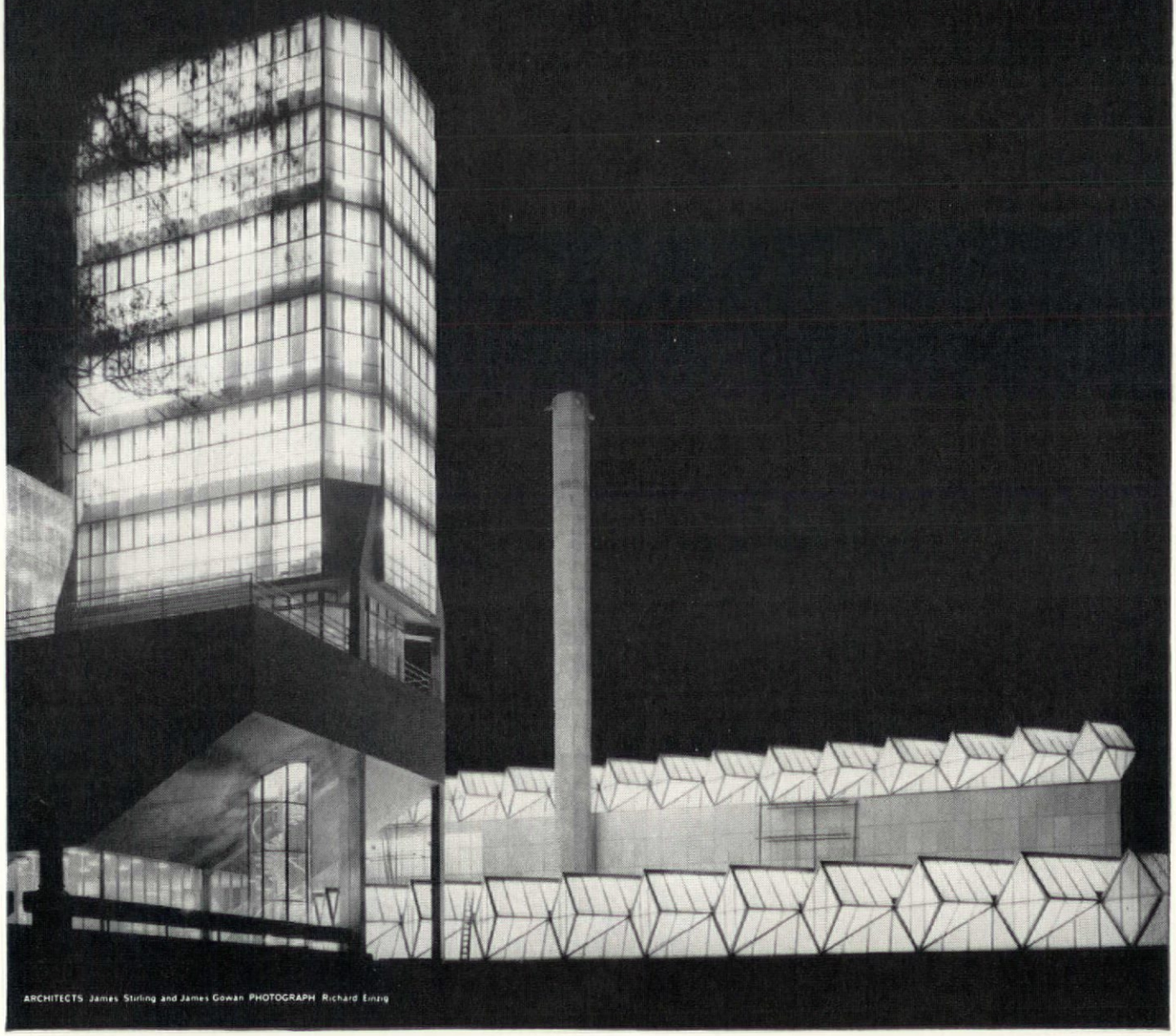
SEE BARBOUR INDEX

lumitron

New range of lightweight aluminium rust-proof fluorescent fittings with quick fix attachments. Tough vinyl enamel finish control gear manufactured to BS2818. Guaranteed 3 years. Stocks at our trade counters. Catalogue on request from Lumitron Ltd 33/34 Alfred Place, W.C.1.

PLYGLASS

AT LEICESTER UNIVERSITY



ARCHITECTS James Stirling and James Gowan PHOTOGRAPH Richard Einzig

Plyglass Diffusing Double-Glazing Units are usually glazed in roofs, to reduce heat gains and direct penetration of the sun's rays. In Leicester University's new Engineering Laboratory, however, they have been used very effectively not only in roofing but in the side walls as well.

Manufactured by the largest independent makers of Sealed Double-Glazing Units in the United Kingdom, they incorporate glass fibre in the space between the glass sheets and are available with leaves of sheet, rolled, cast or wired cast glass.

Plyglass Clear and Refracting Double-Glazing Units and Plyglass Diffusing Double-Glazing Units are backed by fifteen years experience and a five year warranty.

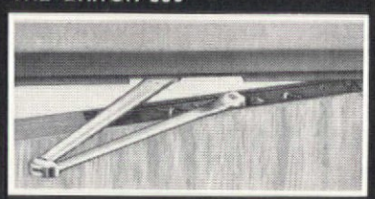
EDINBURGH PLACE · TEMPLE FIELDS · HARLOW · ESSEX
TEL: HARLOW 24271 · CABLE: PLYLUX HARLOW

PLYGLASS

concealed within the rotunda



THE BRITON 500



The Rotunda building designed by James A. Roberts, A.R.I.B.A., is part of the City Centre of Birmingham redevelopment plan. As good design and appearance of fittings was a first consideration, the interior doors throughout the building were fitted with the Briton 500 concealed overhead door closer. The closer which measures only 13″ long x 1⅜″ wide x 2⅜″ deep, is mortised within the thickness of the doors leaving only the slim arms showing (see small illustration). It is suitable for interior single action doors weighing up to 112 lbs. and is provided with a hold open device which may be brought into action if required.
The Briton 500 which was supplied for the Rotunda by Parker Winder & Achurch & Co. Ltd., is one of a fine range of door closers and other Architectural fittings manufactured by:
WILLIAM NEWMAN & SONS LTD.,
Hospital Street, Birmingham.

NEWMANS

The Rotunda Building:
Developer: Property & General Investments Ltd.
Structural Engineers: Charles Weiss & Partners.
General Contractor: George Wimpey & Co. Ltd.

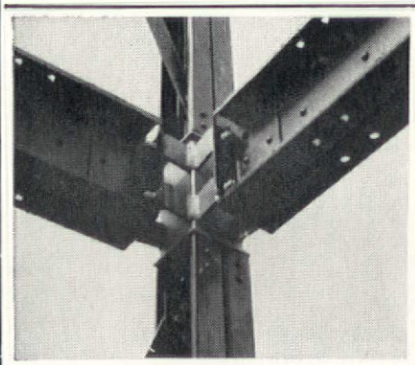
CHAIRMAN, TRUSTEEL CORPORATION (UNIVERSAL) LIMITED



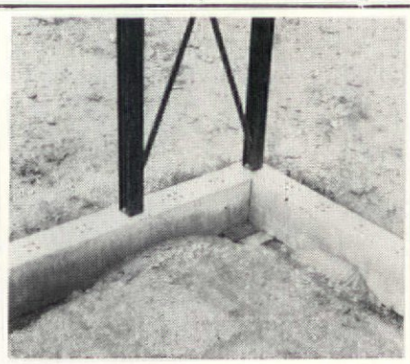
G.J.Sell tells why new, advanced 3M Trusteel makes all other industrialised building systems appear old-fashioned

3M Trusteel is the world's most flexible industrialised building system.
3M Trusteel is a completely new 'open' system based on the use of a modular lightweight steel frame.
3M Trusteel allows architects freedom of design provided that the basic modular discipline is observed.
3M Trusteel is designed primarily for use in permanent low rise housing of one, two, three and four storeys.
3M Trusteel uses dry construction techniques, and the majority of components are made in the factory under controlled conditions.

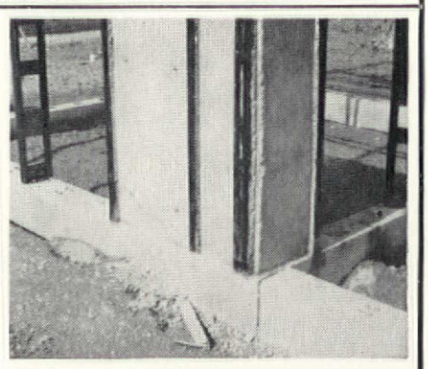
For these reasons **3M Trusteel** is helping to shape the building trends of the future.



Intersection of main stanchions and main beams showing use of 2-way connector unit.



Precast concrete ground beams and braced panel of steelwork.



Demonstration corner section of concrete party wall as used on interlocking 'L' shaped plans.

TRUSTEEL
CORPORATION (UNIVERSAL) **LIMITED**
Gate House · The High · Harlow · Essex · Telephone: Harlow 21511 (10 lines)

SfB Ac7
UDC 72 01

GLASS IN MODERN AIR CONDITIONING

The purpose of this advertisement is to bring to the notice of architects, engineers and other members of the building team, the 26-page report of a symposium on "Glass in Modern Air Conditioning Practice" organised by Pilkington Brothers Ltd., at the Lathom Laboratories, near St. Helens and published May 1964. Before outlining its contents, however, it may be useful to refer to other recent findings having a bearing on windows and air-conditioning.

Ventilation problems

Probably the most directly relevant statement is the one by the Building Research Station[1] that, according to recent surveys into environmental conditions in modern office blocks, bad ventilation is the main cause of complaint from the occupants.

On the other hand, it has also been established[2] that the conditions of lighting nowadays, both natural and artificial, give rise to comparatively little complaint. That this should be so is probably due as much to the use of big windows as to deliberate concern in recent times with the establishment of proper lighting standards in office buildings. However, it is also noteworthy that, outside a few specific investigations in recent years, the last official attempt to assess properly the lighting needs of modern offices is contained in "Post-War Building Study 30, The Lighting of Office Buildings", issued by H.M.S.O. in 1952. Most of the information in this study is, in any case, based on work carried out in the mid 1940's.

An even wider gap exists between available research and design applications when office environment as a whole is considered. Some 108 million square feet of office space has been built in England and Wales in the last 20 years. In addition, there are some 3,000,000 office workers in this country. Yet, despite all this, no scientifically organized comprehensive investigation into the *fundamental* requirements of office building as such has so far been made in Britain.[3]

Not enough research

Considering the enormous cost involved in Britain's office building programme, this is surely a surprising situation? Against such a background it is not too improbable to suggest that a great deal of modern office design is based on assumptions which careful research may well prove to be incorrect.

Two very full investigations into office conditions, are now fortunately in the course of publication. One, a precise, analytical report based on observations on some new office buildings appeared in May as the study on office environment by the Pilkington Research Unit of the Department of Building Science, University of Liverpool. The other, based on a survey of some two thousand offices built in London since 1948, carried out by the Building Research Station, is now being printed. Some findings have been published.[4]

Among these findings, it is stated that the greatest number of complaints in the offices visited were directed against noise and the conditions of the thermal environment. In listing levels of complaints, the report says that "in summer, for instance, the major factors governing internal temperatures are: (a) the amount of fenestration, (b) the orientation, (c) the presence of heavy traffic within 200 yards".

Traffic upsets ventilation

"Heavy traffic causes overheating in offices because the noise it generates interferes with proper use of windows for cooling and ventilation". In south-facing offices with window walls, for instance, the survey found that traffic noises, which dictate the closing of windows, push complaints of summer overheating up to 66% compared to 47% for similar buildings away from heavy traffic. Where offices face north, noise still causes windows to be closed but the overall level of complaints against overheating fell from between 48 - 23%—presumably due to the lack of solar radiation.

In offices generally, where 90 – 100% of the external wall above the sill is glazed, it was found that an average of 44% of the occupants complained of summer overheating. With between 60 – 90% of glazing this figure fell to 38%, and with 40 – 60% of glazing to 30%.

But, at the same time, in offices with minimal fenestration (60 – 40%) only 44% of the occupants generally were satisfied with the amount of light they had to work by. However, in offices with 100% glazing, the average satisfied did not rise higher than 55% as one might have expected because complaints against glare had now risen to over 14%.

Very likely these reports will attract considerable debate when issued. While it is not our intention to anticipate such debate, we do however feel that some of the preliminary conclusions in the BRS report demand further consideration.

North facing

It is said, for instance, among other things, that "the high degree of fenestration in modern office buildings—over one-third being continuously fenestrated—is responsible for a considerable proportion of overheating complaints . . . For optimum daylighting, full fenestration is justified only in north-facing walls . . . While it is evident that increasing fenestration causes a complex of thermal problems, it is doubtful whether it necessarily achieves a declared aim of improved daylighting".

Bad design

In the conclusion that traffic noise causes overheating because windows have to be closed, criticism of big windows is implied but there is no accompanying implication that it is manifestly bad design to specify opening windows as the main, or sole ventilation source, which are however kept closed against outside noise. No proposals are evident in this interesting and informative preliminary report favouring the use of fixed windows, single or double, in air conditioned buildings as a logical necessity in our present day urban environment. It may well be that to look for objective counter measures to problems of unsatisfactory thermal conditions in offices, in a report that is predominantly historical, is to ask too much? Were it not for the implicit criticism of large windows that these conclusions contain, we would, perhaps, have welcomed without reserve so useful a report. But, when it is suggested, that big windows only cause complicated thermal problems without actually improving daylighting, we are bound to protest.

Solutions

Precise examples abound, in temperate as much as in tropical regions to show that carefully studied solutions to daylighting problems do produce not only satisfactory windows, also windows which, because of their functional demands, are of necessity, big. It is entirely a question of good design. If the Building Research Station therefore, is moved to conclude after a survey of some two thousand recent buildings that full fenestration causes more problems than it solves, we feel that we must turn the question round the other way, and ask: Are architects of office buildings in this country, by and large, designing windows as they ought to be designed?

Leaving aside zoning or town planning factors, is it correct for instance, to specify opening windows for ventilation when traffic noise keeps them shut? Similarly, is it not better to seal facades completely and air condition buildings so as to use windows for light alone?

Sun control

As we believe, among others, that there is undoubtedly a stronger case *for* big windows than *against* them, is it not also reasonable to

expect that, where solar radiation is a problem, methods of sun control such as outside shades are more possible to design than generally seems to be accepted in this country?

Above all, apart from modern architecture being glass architecture, we are moved to say that we believe big windows are used nowadays because people generally, not simply a few architects, *want* big windows. Windows provide daylight and a view. As more and more, today, people are obliged to work indoors out of contact with nature, surely it cannot be reasonable that the link that they have with the outdoors, the window, should be restricted, or as sometimes happens, severed altogether? But then, this is probably as much a moral as an architectural problem. In this context, however, it is interesting to refer to the response to a very detailed investigation in the Co-operative Insurance Society's (C.I.S.) new tower in Manchester.[5] According to B. W. P. Wells, a psychologist, replies to questions to the 2,500 employees: "Have made it clear that people feel that daylight and a view from the building are exceedingly important factors in their working environment".

Seeing out

Answering the question whether it was important to be able to see out of the office, even if there was plenty of artificial light to work by, the response, says the survey, "was overwhelmingly that people felt this to be important. 65% replied definitely so, 24% moderately so (a total of 89%), 11% thought it unimportant and 1% thought it positively unimportant".

As two eminent authorities on lighting have observed in another context[6] "this kind of evidence is by no means conclusive, but if one wants to believe that daylight is necessary for human well-being, it reinforces that belief".

In another context too, are the comments on the extensive use of glass by James Stirling —one of Britain's most brilliant younger architects.

Speaking at the RIBA on February 23, 1965, on his approach to architecture, he said, among other things, that he thought that glass used on a large scale was a form of construction thoroughly appropriate to the English climate. "It keeps the rain out and lets the light in."

Function should decide shape

What could be more sensible, he argued, than deciding ideal room shapes by their function, putting them together to make up the building, and then covering the whole complex with glass which could be pushed in or out to suit the shape? He said, of course, that such an approach did imply the invention of new methods—particularly of window cleaning.

Before concluding this advertisement with the outline of our symposium* we should refer briefly to some of the findings of the extramural course on 'Office Design and Environment' held recently at the University of Liverpool by the Pilkington Research Unit, (7) Here it was considered that while flexibility of office space will demand a more considered approach to the design of heating, ventilating and lighting, it is particularly important to build-in means of replacement of service installations, whose life tends to be considerably shorter than that of the building fabric.

Pilkington symposium

The symposium Glass in Modern Air Conditioning Practice was held on October 9, 1963 and the findings published in May 1964. In the paper Condensation Control, A. W. Pratt of BRS, Physics Division, covered the process of condensation in general terms so that its actual incidence in particular circumstances could be predicted irrespective of the materials used.

In the paper Glass Insulation for Opaque Areas, A. Pimblett, Product Development Department, Fibreglass Ltd., dealt with the physical properties and practical applications of glass fibre products in air conditioning.

In the paper Heat Transfer through Windows, T. A. Markus, then manager of our Products Application Department, dealt with the calculation of heat transfer through window-blind combinations dealing simultaneously with a comprehensive body of the other factors involved in window design.

In the paper Economics and Optimum Positioning of Insulation, K. G. Colthorpe, Liaison Officer, Heating and Ventilating Research Association, dealt with the amount of insulation and its optimum location in a structure in terms of temperature gradients, non-steady state heat flow and intermittency of heating, showing how wrong assumptions can lead to over-estimates of heating energy up to 30%.

In his paper, Modern Air Conditioning Practice Applied to Windows, by Mr. L. C. Bull, Air Conditioning Manager, G. N. Haden & Sons Ltd., dealt with the impact of windows on air conditioning in a general review, from the standpoint of an air conditioning engineer. Making no claim for or against large windows, Mr. Bull considered that the most important effect of windows on air conditioning is the increase in cooling load they cause through solar radiation. In even a modestly sized window of only 40% of the wall area provided with venetian blinds internally, the sun on the glass accounts for no less than 50—63% of the total sensible heat gain into the room.

In his opinion the best way to reduce solar radiation is by external shades, even though they are often claimed as impracticable in the UK. Mentioned in the subsequent discussion on his paper, however, were the woven nylon shades, as an example, being fixed on the outside of Littlewoods new office tower in Liverpool which are claimed capable of excluding 80% of the solar heat gain.

In commenting that solar heat gain can be efficiently carried off by a properly designed air conditioning system, Mr. Bull made the point that it is often only by the provision of such a system that many modern buildings remain habitable in the warmest weather.

Easier Calculations

Dealing with the calculation of the air conditioning load from windows, Mr. Bull probably made his most important contribution. In noting that in the classical approach of calculating the position of the sun for the latitude, day and time of day is found first, he said that the whole calculation is tedious and must be repeated for each date and time of day if a full picture of the heat transmission through the windows is to be obtained. Even when all this has been done the air conditioning engineer cannot use the figures directly in making his estimates. The heat that enters in the form of radiation does not immediately appear as a load on the system but must first be absorbed by the structure and room contents, which are thereby warmed. This heat is eventually released to the room air, but the peak load is less than the maximum rate of insolation and there is an appreciable time lag between the two events.

As things stand today, if the engineer uses the classical approach, he must make an arbitrary reduction in the calculated instantaneous load and then guess the time lag in order to arrive at the air conditioning load. Obviously the whole process is too time consuming especially in relation to the accuracy of the results obtained.

He then suggests an alternative. In the main body of a very detailed table he gives the air conditioning load resulting from solar radiation through unshaded windows and windows with venetian blinds. The figures for other arrangements are easily obtained by applying other factors in the second part of the table. In order to make the table independent of temperature it is based upon the assumption that the absorbed radiation that enters the room is the amount that would flow inwards if the outside and inside temperatures were equal.

Thus it is only necessary to add to the figure in the table an amount of heat equal to 'U' times the temperature difference between outside and inside to arrive at the total load from the window in a given case. The table is largely based on data published in the USA for practising air conditioning engineers, but the presentation however is by the IHVE.

As a final comment, Mr. Bull reiterates a fact that is often heard today in many disciplines—that the architect very often does not consult the air conditioning engineer early enough in a project.

REFERENCES

1 Building Research, 1963, HMSO, 8s. 6d.

2 The Editors, *Architects Journal*, 17 February 1965.

3 Hard Facts on Research, Peter Manning, *A.J.*, 20 January 1965.

4 Thermal Conditions in Modern Offices, F. J. Langdon, report of a survey by the BRS, *RIBA Journal*, January, 1965.

5 Subjective responses to the lighting installation in a modern office building and their design implications, by B. W. P. Wells, *Building Science*, January 1965.

6 Lighting: the use of PSALI, R. G. Hopkinson and J. Longmore, *A.J.*, page 311, 1959.

7 Office Design & Environment W. White, *A.J.*, 21 October 1964

* See also: Better Offices/2, The Institute of Directors, Autumn 1964, 21s.

Copies of the air conditioning report are available free from Pilkington Brothers Ltd., 25 Dept., St. Helens, Lancashire.

PILKINGTON BROTHERS LIMITED St. Helens, Lancashire. Telephone: St. Helens 28882
London Office and Showrooms: Selwyn House, Cleveland Row, St. James's S.W.1. Telephone: WHitehall 5672

CITATION



Wherever the need was greatest,
the burden heaviest, the space smallest
the time shortest — by its adaptability
strength, convenience and simplicity
SPUR *distinguished itshelf*

Cover yourshelves with glory by
sending for information on Spur adjustable shelving to
SAVAGE & PARSONS LTD, WATFORD, HERTS. TEL: WATFORD 26071

Name _____

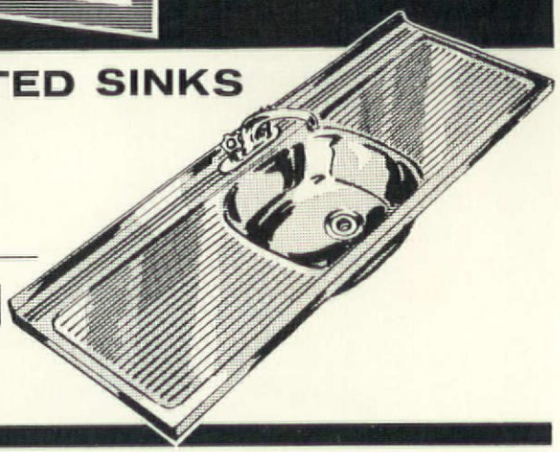
Company _____

Address _____

S39

WHATEVER SIZE & TYPE OF SINK YOU WANT FISHOLOW MAKE IT!

STAINLESS STEEL MULTI-FLUTED SINKS



Model L 18" x 36" £12.0.0.
Model W 21" x 42" £16.10.0.

Model DL 18" x 54" £24.0.0.

Model N 18" x 42" £14.10.0.

Model TL 18" x 72" £29.0.0.
Model TW 21" x 84" £35.0.0.

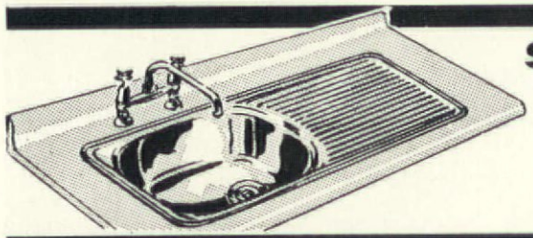
Model WL 18" x 54" £19.10.0.
Model WW 21" x 63" £24.0.0.

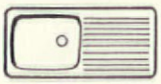
Model DN 18" x 63" £20.0.0.
Model DW 21" x 63" £21.10.0.

Model WN 18" x 63" £21.0.0.

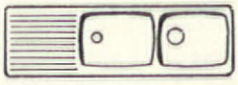
Model TN 18" x 84" £30.0.0.

STAINLESS STEEL INSET SINKS

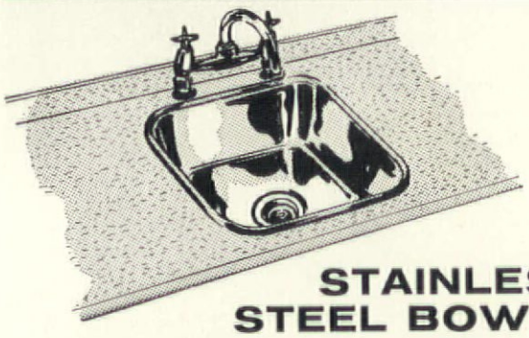




Model FL 16" x 36" x 7" deep £15.10.0.



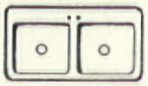
Model FDL 16" x 54" x 7" deep £25.0.0.



STAINLESS STEEL BOWLS



Model XOX 16½" x 45½" £32.0.0.

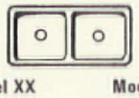


Model WXX 31" x 21" x 7" deep £17.0.0.

Model WZZ 19" x 35" x 7" deep £18.10.0.



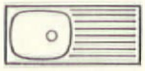
Model X 18" x 16" x 7" deep £7.10.0.



Model XX 31" x 18" x 7" deep £15.10.0.

Model ZZ 16" x 35" x 7" deep £17.10.0.

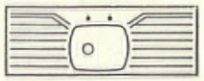
VITREOUS ENAMEL SINKS



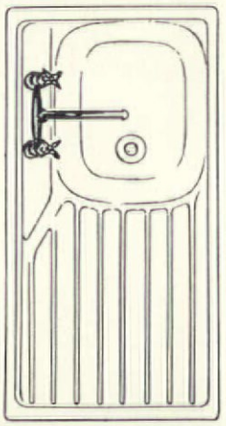
Model VA 18½" x 36" £5.10.9.
Model VN 18" x 42" £5.16.0.



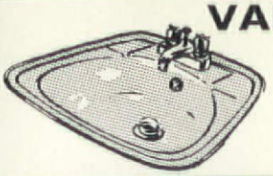
Model VB 18½" x 36" £5.19.0.
Model VW 21" x 42" £6.17.6.



Model V2 21" x 63" £9.15.0.



VANITORY BASINS



Standard 15½" x 24½" £5.15.0.
Ultra 17½" x 24½" £7.18.0.

Taps and waste fittings extra

FISHER & LUDLOW LTD (DEPARTMENT TD) BIRMINGHAM 24

FISHOLOW *For Life*



The modern prestige of an "Armourplate" all-glass entrance is something which all the world can see, the first thing they see as they enter the last as they leave. They go with the right impression of you—modern, spacious, confident, looking to the future. On the practical side, an "Armourplate" entrance can be incorporated in plans for any office or showroom building—old or new. The design of "Armourplate" assemblies renders them safe, and well sealed against draught. For full information on the potentialities and design requirements of "Armourplate" All-Glass Entrances, consult Pilkingtons' Technical Sales and Service department.

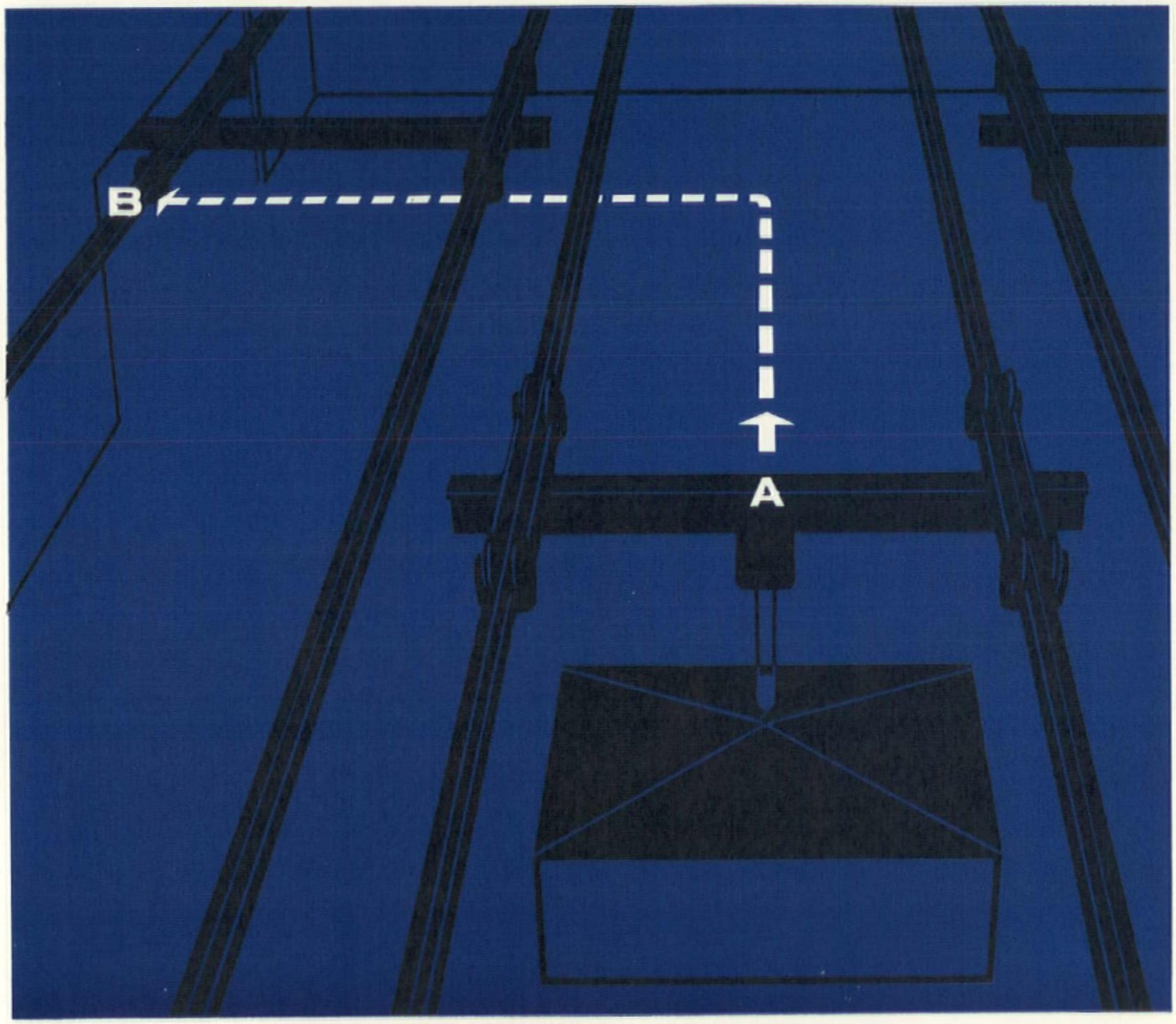
Entrée to big business

'ARMOURPLATE'

All-glass entrances

PILKINGTON BROTHERS LTD. Head Office: St. Helens, Lancashire. Telephone: St. Helens 28882. London Office & Showrooms: Selwyn House, Cleveland Row, St. James's, S.W.1. Telephone: WHItehall 5672. "Armourplate" is a registered trade mark of Pilkington Brothers Limited in many countries. Supplies available through the glass trade.

monorail eye view



OF FLOOR SPACE

GET YOUR PROBLEMS OFF THE FLOOR

Send for the man with the Monorail Plan

MONORAIL Overhead Underslung Cranes can solve the problem of shifting heavy components and materials from 'A to B' leaving the floor space free for actual production. Used as part of a complete MONORAIL system, with tracks, interlocks and bridges, these overhead cranes can transfer loads of up to 10 tons smoothly and efficiently to any part of your factory or even beyond. Get the MONORAIL viewpoint on your floor space problems. After a survey of your plant, we produce a tailor-made plan. This and the estimate are free. Write to :

BRITISH MONORAIL LIMITED, WAKEFIELD ROAD, BRIGHOUSE, YORKSHIRE. TEL: BRIGHOUSE 2244

A Member of the Herbert Morris Group of Companies

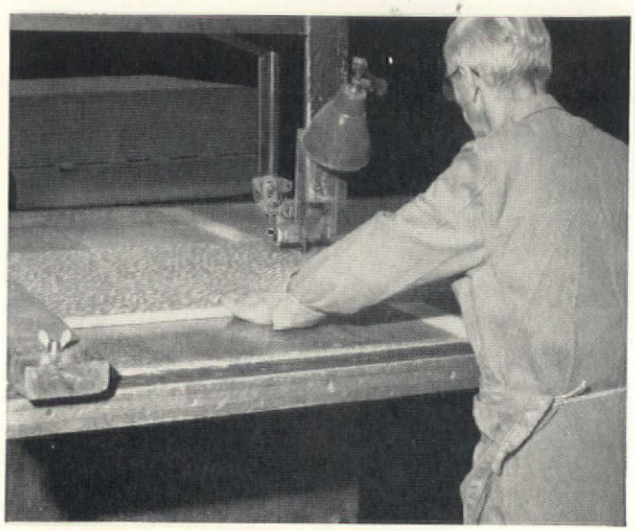
BM10

Four leaps forward!

Decorative, hard-wearing and versatile Weydec and Hardec boards have long been specified by architects and widely used by builders and contractors for a variety of interior applications. Colourful, scratch and heat-resistant, non-staining, maintenance-free, easy to clean and fix, these economical melamine-surfaced boards are excellent for wall linings, partitions, door facings, working tops and fitments of many kinds. Now—to keep pace with ever-growing demands and meet requirements more precisely—four important steps have been taken, resulting in further benefits to all users:



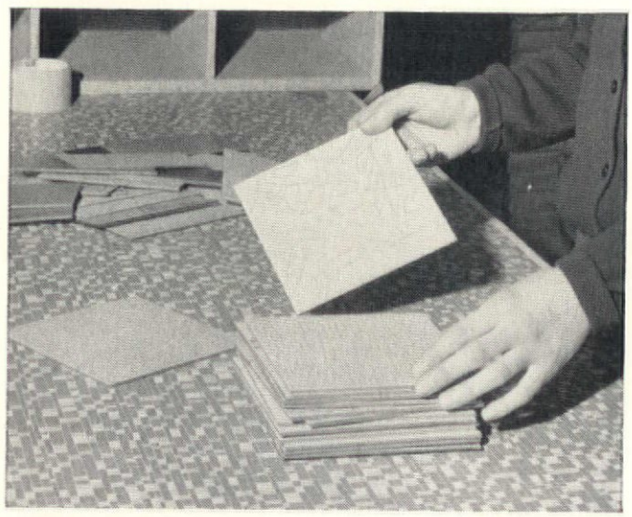
1. More production—The new plant at Hexham produces four times the total Weydec and Hardec output. This means that future orders will be met more speedily.



2. More facilities—In addition to existing technical and advisory assistance, two new services—cut-to-size and fabrication—are offered subject to contract.



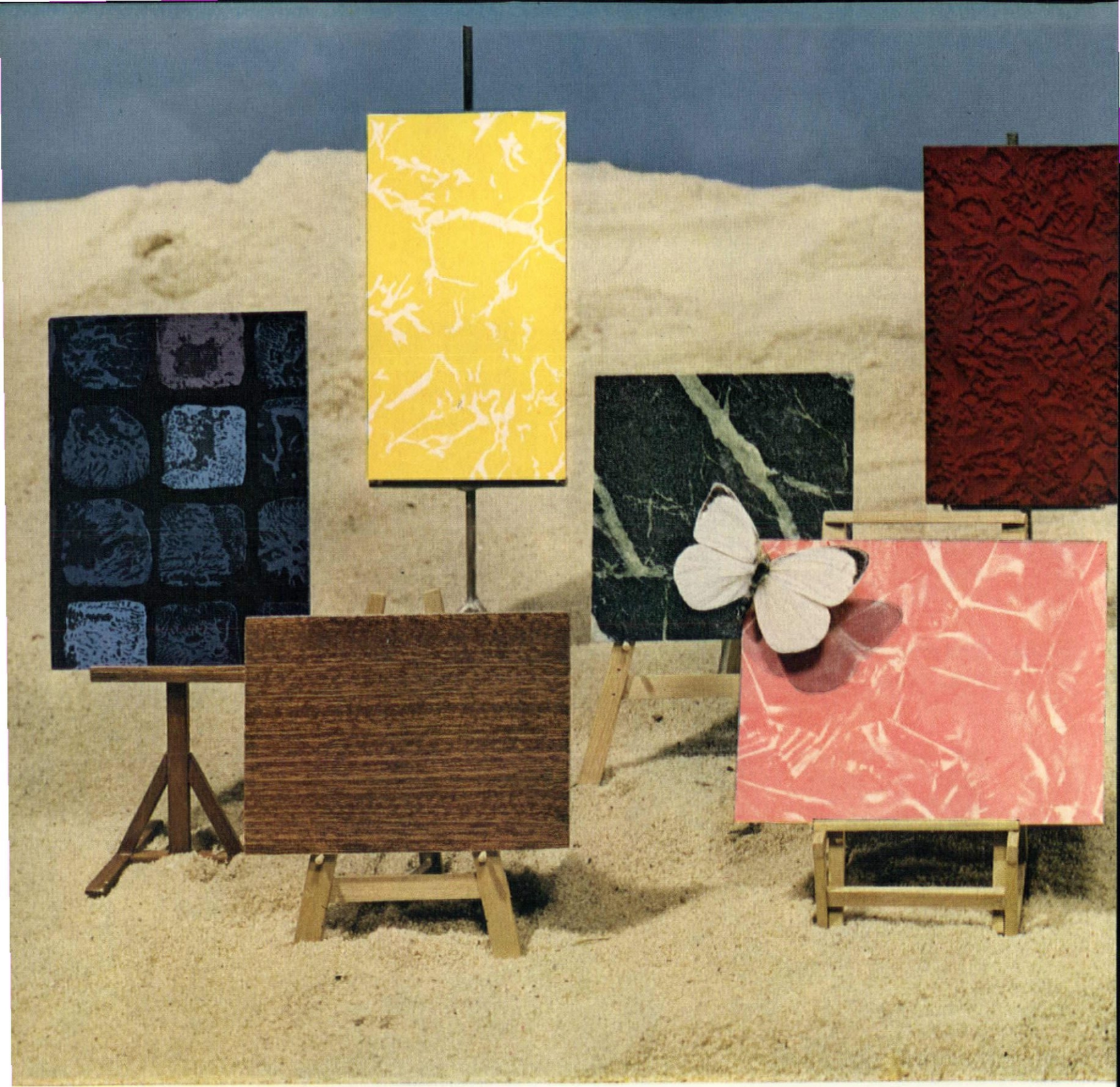
3. More sizes—Weydec and Hardec, previously produced in only one board size, 8ft x 4ft, are now obtainable in two additional sizes—9ft x 4ft ex stock and 10ft x 4ft to order—thus extending planning and constructional scope.



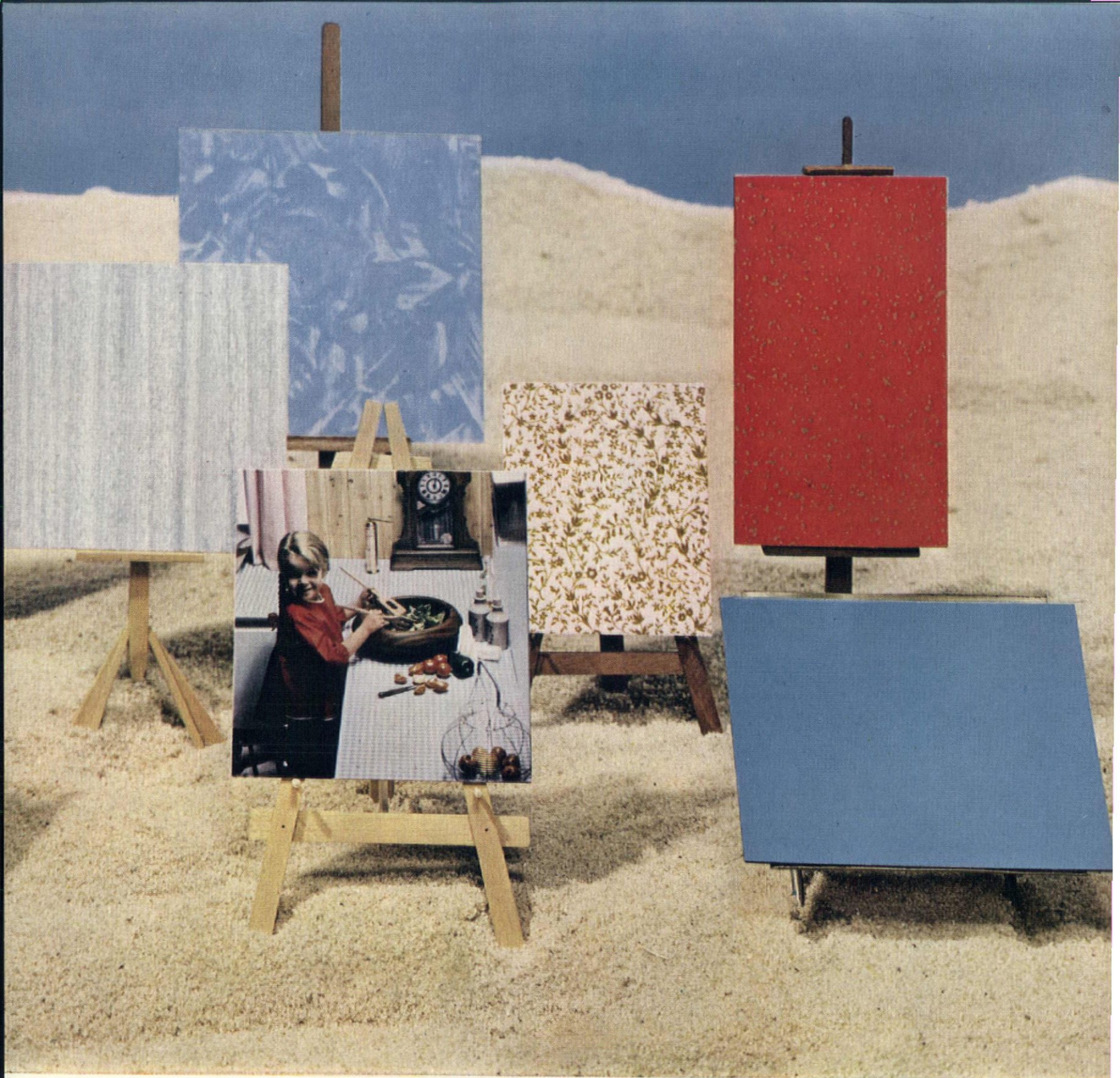
4. More colours—8 new finishes have now been added to the existing range of 38—giving designers and decorators a wider choice.

weydec and hardec

Write for full information and data sheets AIRSCREW-WEYROC LIMITED · WEYBRIDGE · SURREY



Today's most exhilarating choice of colours and designs... and only **WARERITE** has them all!



Ask our technical representative to show you the Warerite pattern compendium



Only Warerite decorative laminates offer architects so many advantages. A wide range of exhilarating colours and designs *and* a planned variety of grades and thicknesses. Warerite has a tough super-hard melamine surface too, that will stand up to years of hard wear without losing its handsome finish. On any consideration... aesthetic, functional or economic... Warerite is the best surfacing material of its kind.

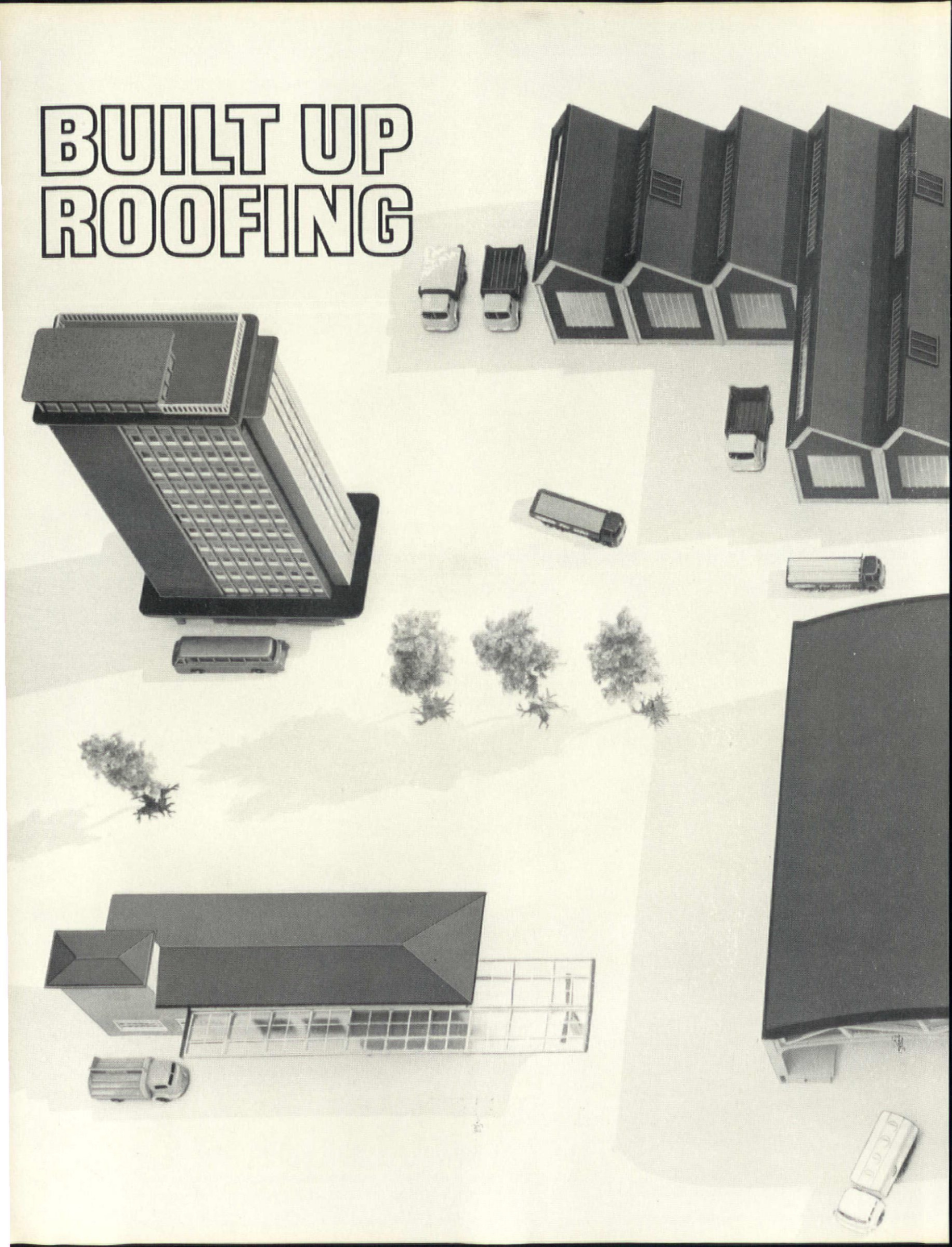
Write for technical data and colour brochure to the manufacturers: Bakelite Limited 12 18 Grosvenor Gardens London SW1 A Bakelite Xylonite Company

WARERITE

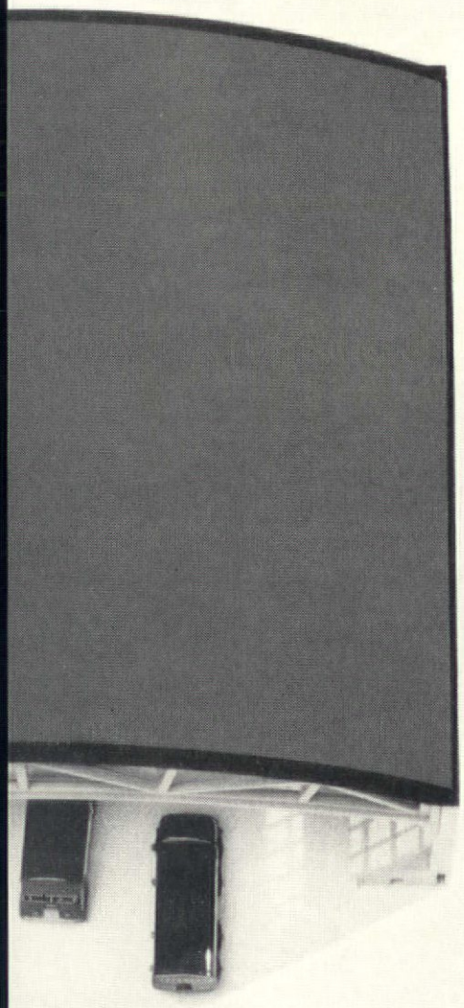
THE BEST OF THE DECORATIVE LAMINATES

W412

BUILT UP ROOFING







SURVEY OF ROOF SUBSTRUCTURES

The selection of a weatherproofing specification by the designer must be made in relation to the type of substructure and its shape —flat, pitched or curved. Other factors which have considerable influence on the long term performance of the roof covering are thermal or moisture movement, deflection under load, and the cycles of moisture vapour migration.

TIMBER BOARDED SUBSTRUCTURES

The finished timber thickness must be adequate ($\frac{3}{4}$" T and G or 1" close butted) and properly supported for reliable fixing and performance to be achieved. Normal humidity within a heated building will diffuse into the roof substructure, and since the weatherproofing is impermeable, ventilation must be provided between the roof soffit and ceiling to prevent timber decay and dry rot. Timber, being combustible, requires a weatherproofing specification which complies with the Building Regulations or with the stipulated fire test designation.

PREFABRICATED SLABS AND PANELS

There are many varieties of materials in this group, which have different physical properties. One characteristic is common to all—the panels abut one another; consequently, they may be subject to differential deflection under load and lateral movement caused by thermal changes and moisture content. Movement arising from any of these causes sets up severe local stress in the weatherproofing. The designer should reduce the effects of such movement by reference to manufacturers' data and fixing instructions, and by appropriate specifications of roofing materials and techniques to prevent failure of the weatherproofing due to fractures.

IN-SITU CONCRETES AND SCREEDS

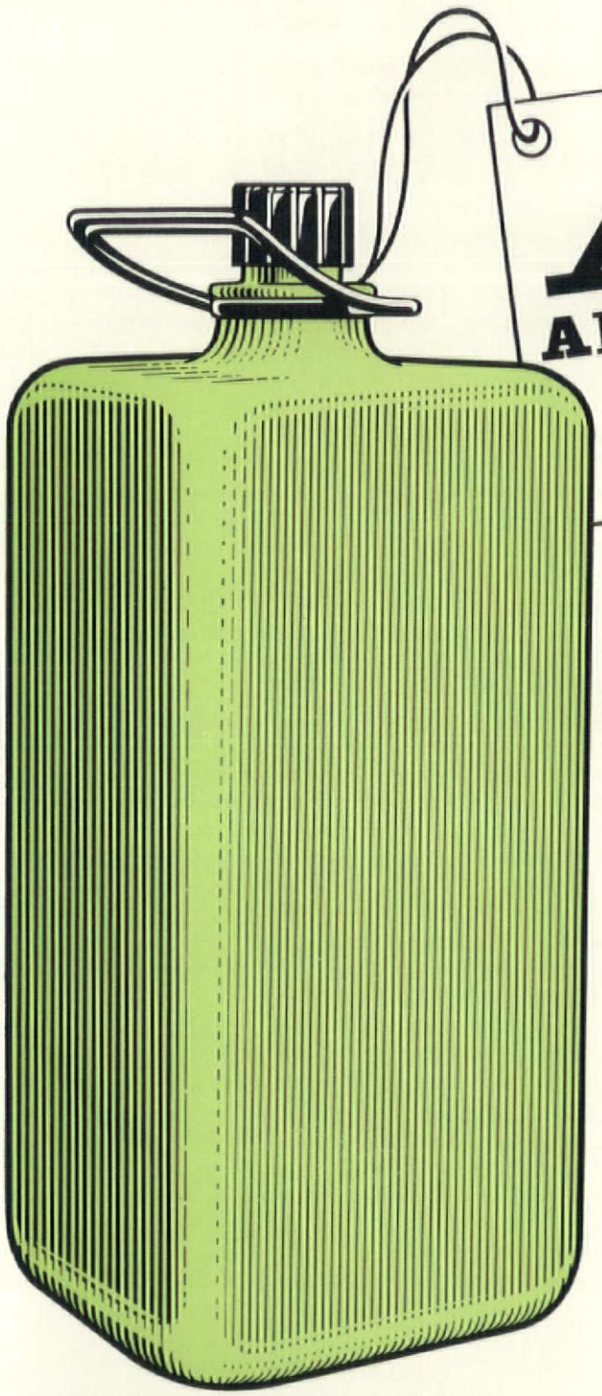
In-situ concretes with sand/cement or insulating screeds contain residual structural moisture in varying degrees; some lightweight screeds are very porous. Moreover, normal humidity within a heated building will diffuse into the roof deck. Solar heat vaporizes this moisture, and the consequent pressure weakens the bond between weatherproofing and substructure and a blister forms unless special techniques are used. Shrinkage hair cracks which may rupture the weatherproofing membrane present a further factor in this type of substructure. On large roof areas, thermal movement takes place according to the coefficient of expansion of the substructure material, and movement joints should be incorporated in the structure at points determined by the designer. These joints must be satisfactorily mastered on the roof.

As a result of an extended programme of research into the physical and chemical properties of roofing materials and their relationship with the substructure, Ruberoid can assist the designer in producing a more efficient, more economical roof. To quote but one example, the Rubervent system neutralizes the effects of minor movement and also of vapour pressure underneath the weatherproofing. Consultation at an early stage in the design will enable you to benefit from our research. The Ruberoid service is nationwide and readily available. The reference manual for your file is No. 1812—"Ruberoid Built-up Roofing"

RUBEROID

THE RUBEROID COMPANY LIMITED

WF COMMONWEALTH HOUSE · 1 NEW OXFORD STREET · LONDON WC1 · HOLBORN 9501



PUDLO A·P·A

ALL-PURPOSE ADMIX

THE ADMIX WITH THE BUILT-IN MIXING GUIDE

NEW

FROM THE PUDLO GROUP

The latest development from the Pudlo Group of Companies is A.P.A., the All Purpose Admix. Suitable for a wide variety of applications with concrete or cement, A.P.A. is the ideal Admix for:

- Reducing water in all cement/concrete mixes.
- Dustproofing all concrete floors and screeds.
- Oilproofing and increasing resistance of concrete to chemicals, etc.
- Frostproofing all concrete and sand/cement mixes.
- Waterproofing concrete, renderings, boiler-houses, basements, tanks, pools, pits, etc.

The correct quantity of A.P.A. to water can be quickly estimated by comparing the gauging water with the colour of the container label.

THE 'PUDLO' RANGE INCLUDES:

Cement Waterproofing Powder,
Liquid Waterproofer,
Waterproof Cement Paint,
Multi-Purpose Additive,
Mortar Plasticiser,
Concrete Plasticiser,
Silicone Waterproofer,
Cement Bonder,
Plaster Bonder,
Bitumen Membrane,
Permanent Cement Colours,
Dustproofer,
Frost Protector,
Quicksetter,
Cement Supa-Mix,
Air Entrainer,
External Waterproofer (Silicone Based),
White Waterproof Cement.

PUDLO CEMENT WATERPROOFERS

KERNER-GREENWOOD & COMPANY LTD., KING'S LYNN, NORFOLK

Telephone: King's Lynn 2293 Telegrams: Greenwoods, King's Lynn

The word 'PUDLO' is the registered Trade Brand of Kerner-Greenwood & Co. Ltd. by whom all articles bearing the Brand are manufactured.



Trees grow old . . .
'ARMOURCLAD' colours stay young

You can't tell the age of a building by its looks when it is faced with 'Armourclad' toughened glass cladding. The colours are fired into the glass for permanence, and with simple cleaning always look new in the way that belongs exclusively to glass. There are 10 standard and 40 non-standard colours in the 'Armourclad' range and many others can be matched if the footage required is sufficiently large. Contact Pilkingtons' Technical Sales and Service Department for details and also of 'Vitrolite' glass for cladding.

GLASS|CLADDING

PILKINGTON BROTHERS LTD St. Helens, Lancashire Tel: St. Helens 28882 London Office & Showrooms: Selwyn House, Cleveland Row, St. James's SW1 Tel: WHItehall 5672. Supplies of 'ARMOURCLAD' and 'VITROLITE' ('Armourclad' and 'Vitrolite' are registered trade marks of Pilkington Brothers Ltd. in many countries of the world) are available through the usual trade channels.

DESIGN WITH FORT IN MIND

It is possible to obtain considerable benefits in efficiency and economy by the use of Fort Sheets in a wide range of applications. These benefits can be obtained, in most cases, by the use of standard sheets and fitments but Architects are invited to discuss any problem with our Technical Department. The use of Fort Sheets means that purlins can be spaced at 5′6″ centres (Universal sandwich construction—6′6″ centres). Economies in building frames are always possible when lightweight asbestos cement sheets are used, but, with Fort, costs can be even further reduced.

Fort Sheets are specifically designed to span increased purlin spaces. As a result, the cost as laid is remarkably low.

LOW COST · GOOD LOOKS · STRENGTH

COMPREHENSIVE RANGE OF FITMENTS

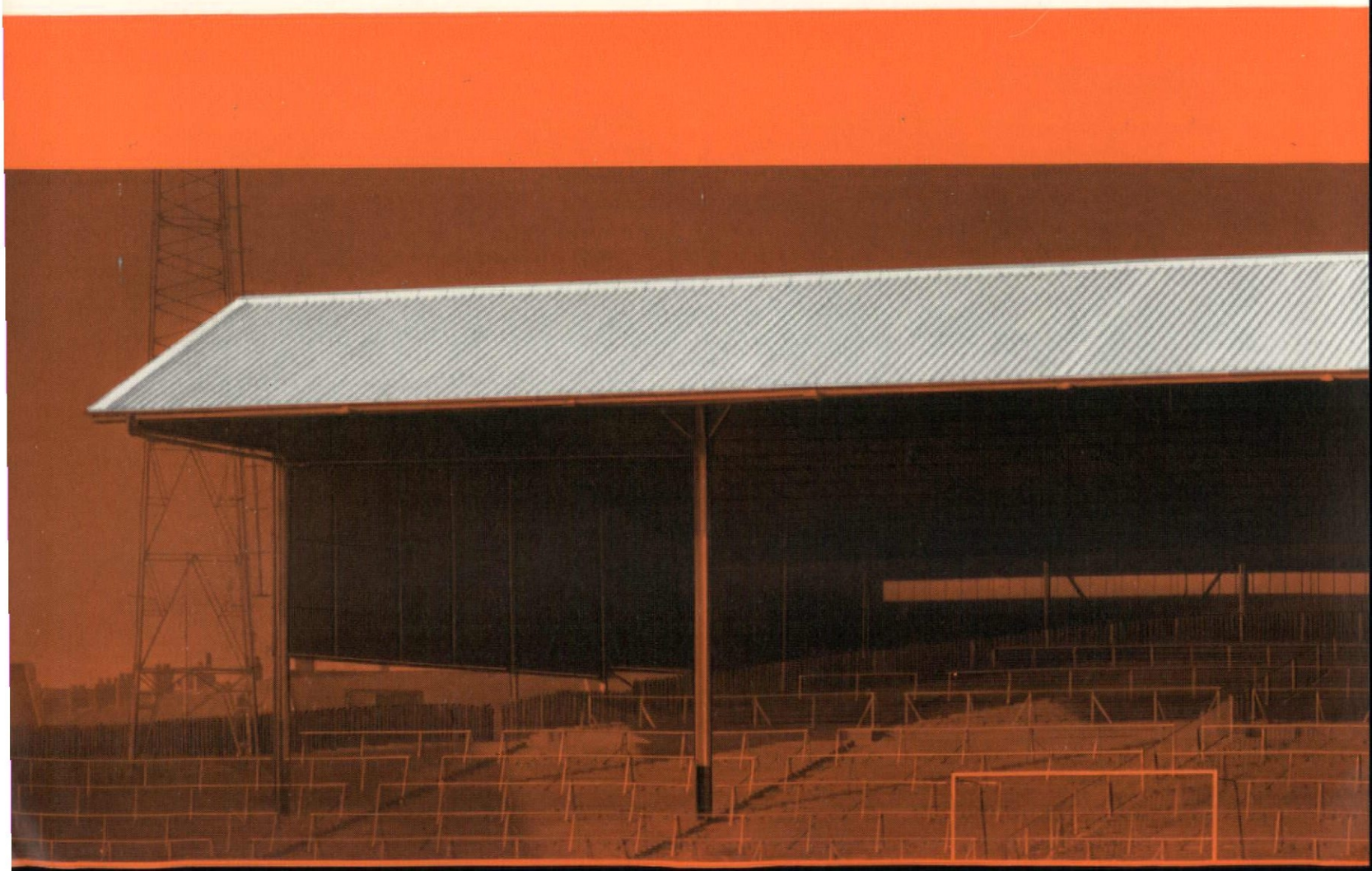
PURLINS CAN BE SPACED AT 5′6″ CENTRES

COMPLETE SYSTEM OF SANDWICH CONSTRUCTION ALLOWING PURLINS TO BE SET AT 6′6″ CENTRES

Sunderland F.C. plan Super Stadium for 1966 World Cup

Roker Park has been one of the leading centres of soccer since it first opened its gates to League football in September, 1898. The selection of this ground to house the World Cup games in 1966 has given impetus to the development schemes which have been under consideration for a number of years. A new grandstand at the Fulwell end has been roofed with Fort Sheets, and will accommodate nearly 20,000 spectators in comfort, whatever the weather conditions.

The Architect:
E. M. Lawson & Partners
Jesmond House, 89 Osborne Rd., Newcastle
The Constructional Engineer:
Lambhill Engineering Ltd
119 Jesmond Road, Newcastle, 2
The Main Contractor:
Sadler Bros. (Builders) Ltd
Byker Village, Welbeck Road
Newcastle, 6
The Roofing Contractor:
W. Tilley (Roofing Engineers) Ltd
11 Windsor Terrace, Newcastle, 2



fort

makes a grandstand finish!

The UAM Technical Service Department exists to help the Building Industry in its present and future needs. It may be approached through the Head Offices at Watford, through the Group's Area Offices or through any of the Group's Representatives.
Please make use of this service which is available to help you.

UAM

The Universal Asbestos Manufacturing Company Limited
Tolpits · Watford · Herts · Tel: Watford 34551

London & S. E. Region
8 Upper Grosvenor St., Grosvenor Sq., London, W.1 Tel: Grosvenor 5411

Midland & S. W. Region
61 Park Street, Bristol Tel: Bristol 20739

Northern Region
196 Deansgate, Manchester Tel: Blackfriars 2466

Scottish Stockyard
Quay Road, Rutherglen, Lanark Tel: Rutherglen 4246/7

Please send me a copy of your
FORT SHEET CATALOGUE & PRICE LIST

Name .....

Firm .....

Position .....

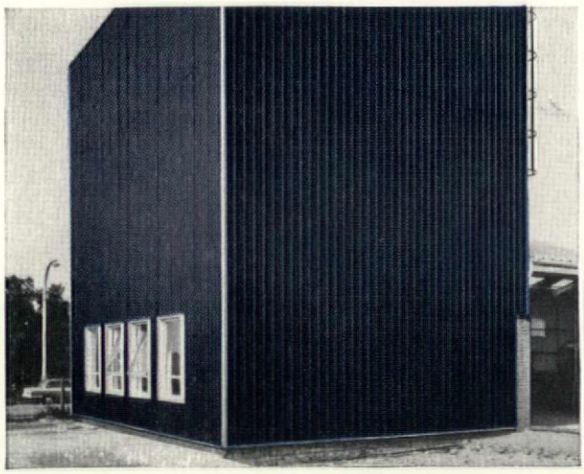
Address .....

.....

The Universal Asbestos Manufacturing Company Limited
Tolpits · Watford · Herts AC 4

UNIVERSAL fort SHEETS





Clifford's Dairies Ltd., Bracknell.
Architects: Dodge and Reid,
Brentford, Middlesex.

Dodge and Reid required

for Clifford's Dairies Ltd.,
a lightweight, colour-coated cladding
that would keep the building weight
at a minimum (reducing cost of
foundation work),
that could be quickly attached
to the steel frame
(reducing labour costs),
and would require a
minimum of maintenance...

They specified:



Can you?

Durable, versatile Duralcote*—the lightweight colour-coated aluminium from James Booth. Available in each of four profiles and in lengths up to 35 ft. and in a range of 6 standard colours.

Write to . . . James Booth Aluminium Limited,
Kitts Green, Birmingham 33.
Telephone: Stechford 4020.

** Duralcote is a registered trademark*



Photograph by courtesy of Wates Built Homes Ltd.

THE GLIKSTEN MARK 12 VENEERED FLUSH DOOR

An elegant room designed for a pleasant awakening; a room that by its very simplicity is restful, quiet and dignified. Fitting into the picture so easily is the Gliksten Mark 12 door, put there by the designer who needed something rather better than usual to harmonise with the well-thought-out colour scheme.

Gliksten Mark 12 doors are, in fact, at home in most surroundings and will give an air of quality to a lounge, dining room or an entrance hall just as well. Have you considered using Mark 12 doors in your own housing schemes? It's well worth looking into, especially as the extra cost per house is very little. If, however, the call is for painted doors, there is none better than the 'Silkstone' door. Write to us for details of either or both these types.

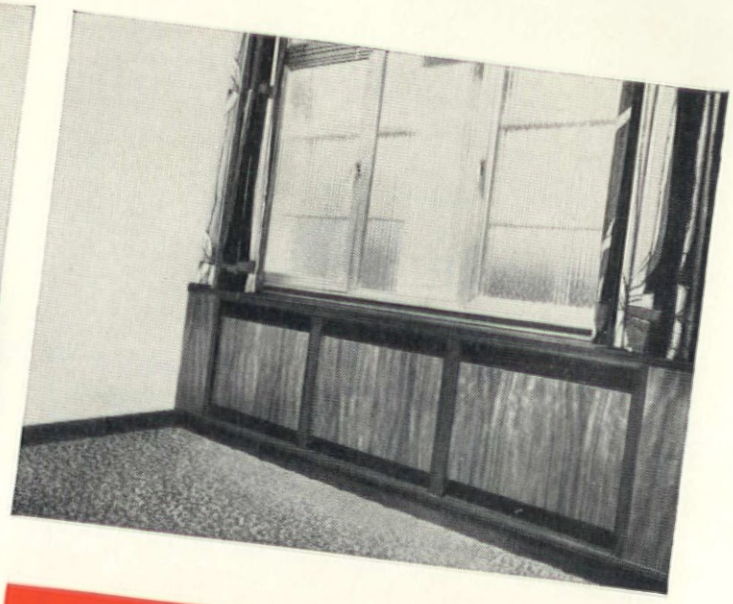
FOR PAINTING USE THE GLIKSTEN 'SILKSTONE' FLUSH DOOR

GLIKSTEN

GLIKSTEN DOORS LIMITED, CARPENTERS ROAD, LONDON, E.15. TELEPHONE: AMHERST 3300
87 LORD STREET, LIVERPOOL, 2. TEL: CENTRAL 3441 ☐ LEADS ROAD, HULL. TEL: HULL 76242.

weyroc goes into the Bank



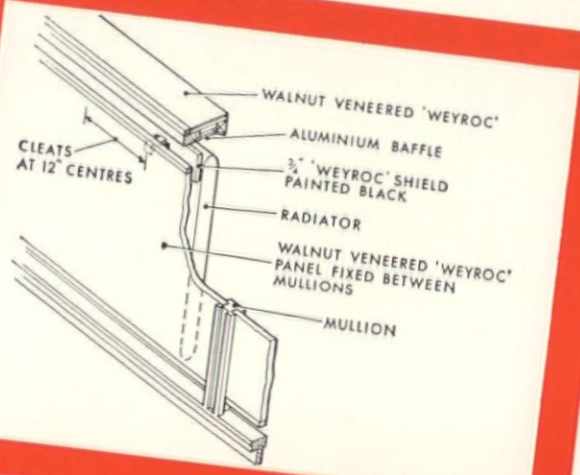


Weyroc, veneered with European Walnut, is used for radiator fascia panels at a bank in Staffordshire. Weyroc baffle strips—set back at a depth of 1½" and painted black—conceal the top sections of the radiators.

The rigidity, stability and smooth, close-textured surface of Weyroc make it particularly suitable for high quality veneered panels.

Architects: Hollins, Jones, Oldacre & Partners, Newcastle, Staffs.

Contractor: Gaskell and Chambers, Birmingham.



Veneered weyroc

A PRODUCT OF AIRSCREW-WEYROC LIMITED, WEYBRIDGE, SURREY. PHONE: WEYBRIDGE 45599

BARBOUR INDEX FILE No. 252

AP196

wincilate

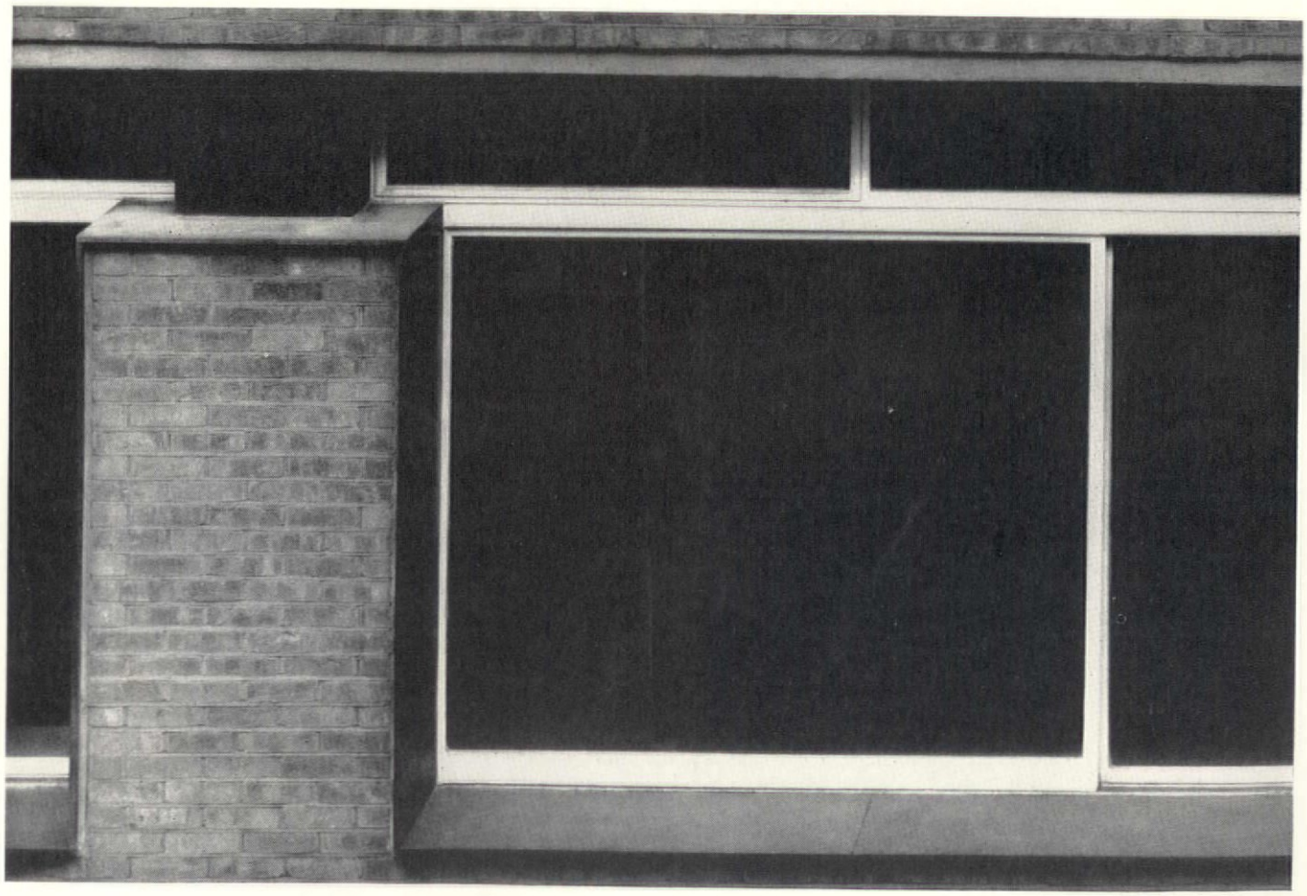
For the new restaurant and offices in Frith Street, London, W.1. Architect: William H. Robbins used two colours of slate for crisp trim lines.
Green slate for window surrounds, jambs and cills – blue slate for recessed facings.

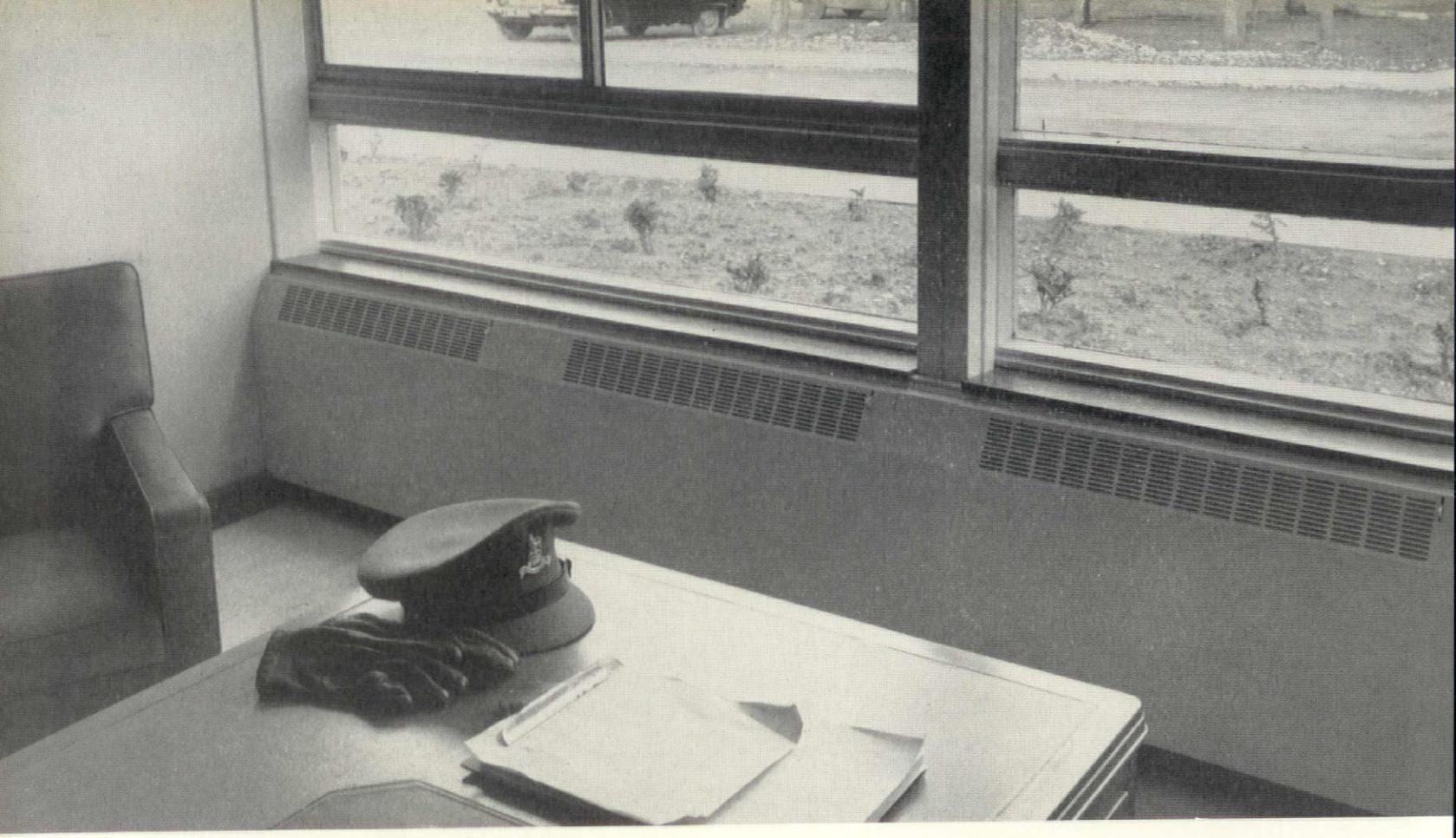
All the slate is WINCILATE: – the finest slate; quarried by craftsmen, selected by experts and precisely fabricated to the most exacting demands of modern detailing.

The Wincilate Group*
The Town Hall, Bow Rd London E3
Telephone Advance 2203

*The Wincilate Group:
The Bow Slate and Enamel Company Ltd,
Aberllefeni Slate Quarries Ltd,
The Slate Fixing Company,
Lloyd Quarries Ltd,
Goddard & Son, Manorian Ltd.

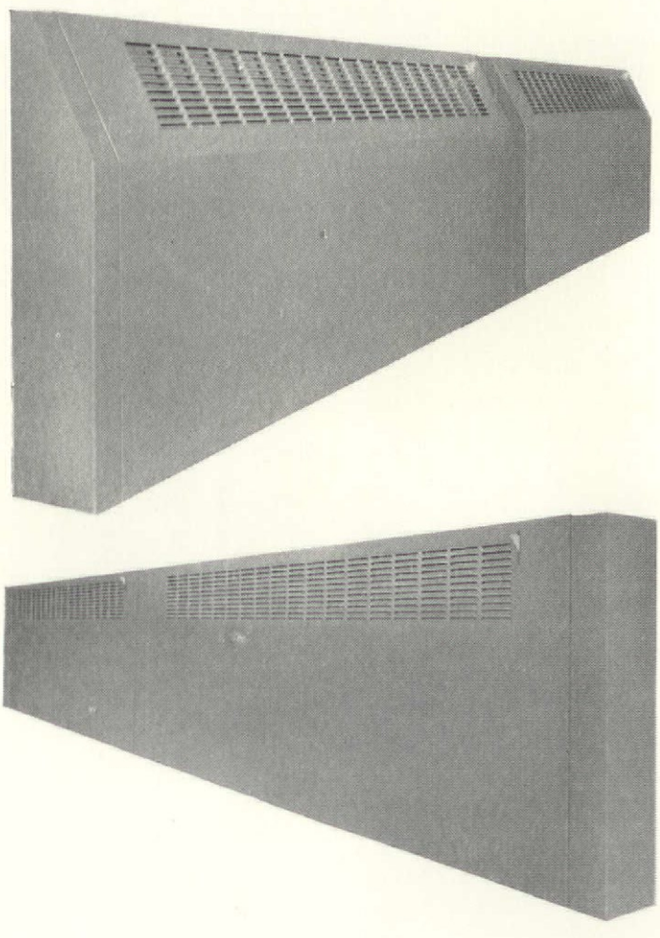






Warmline...

...in two smart styles



Warmline gives you perimeter heating at its very best

Smooth and neat in appearance, both styles offer you an adaptable, highly efficient method of heating ideally suited to modern building design.

Warmline skirts the perimeter of a room to supply unobtrusive warmth. The heat is evenly distributed over the run so that partitioning can be put up anywhere without interfering with output. A damper can be provided in each panel length for individual room temperature control.

Available in three heights (12½", 16½", 20½"), Warmline is suitable for various heating mediums and provides a high heating emission per foot run, inexpensively.

Warmline is perfect for long straight runs and fits around corners smoothly. It is easy to install and maintain and arrives on site in grey primer to BSS 2660 colour code 9-097, ready for painting as you wish.

You can obtain further information and technical data from our area representative or direct from us.

biddle

F. H. BIDDLE LTD., 16 Upper Grosvenor Street, London W1. **Hyde Park 0532-9**
(British Trane Co. Ltd.—Manufacturing Division)



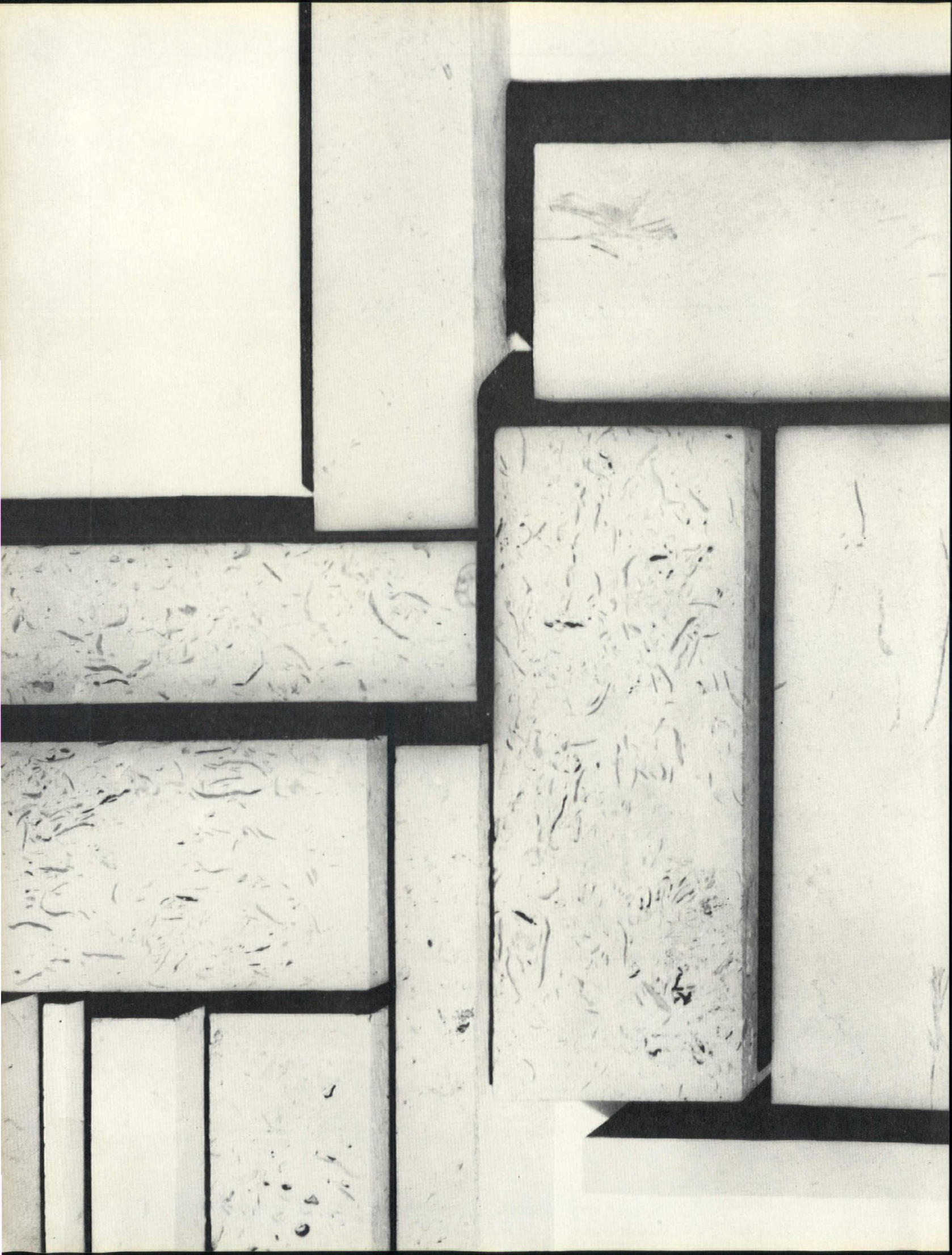
Sixty thousand people walked through this showroom last year!

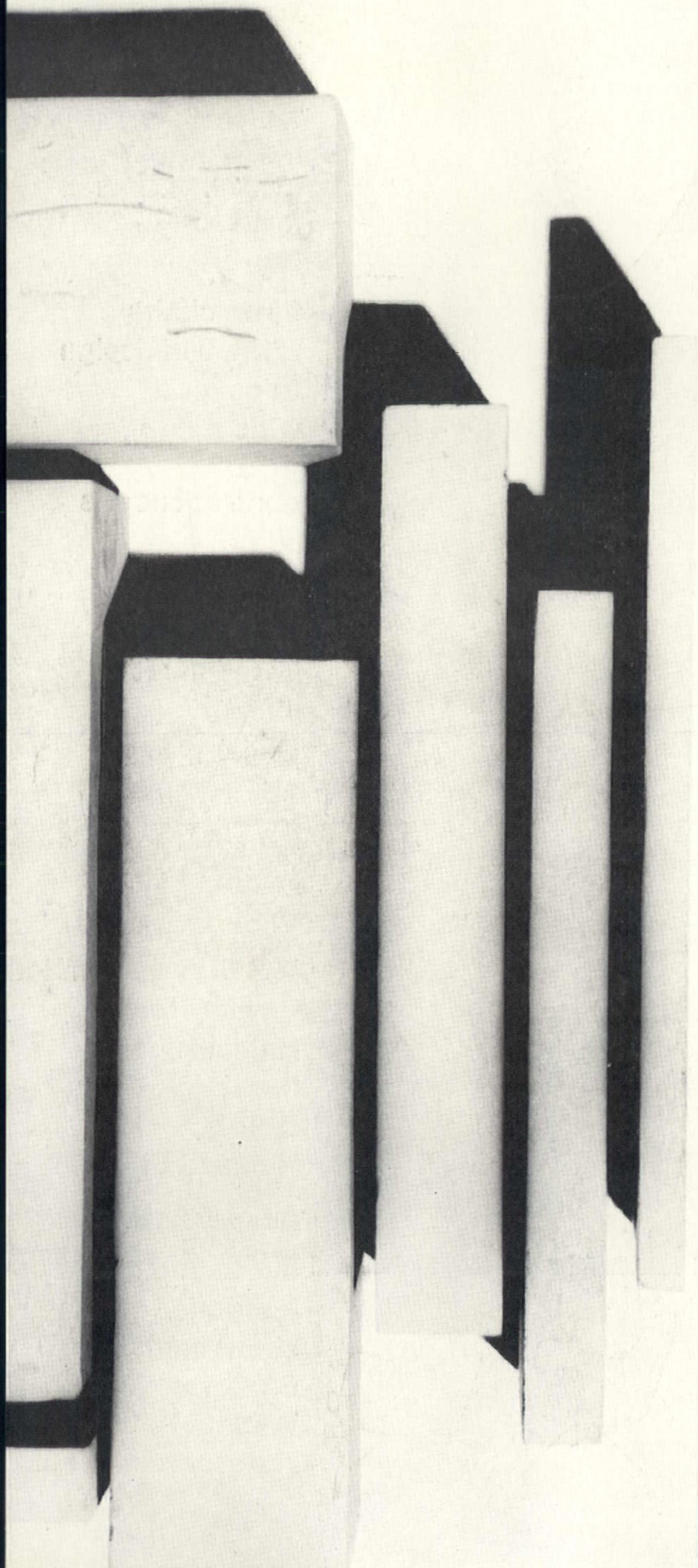
The showroom being Ryman-Edgley Ltd. of London and the carpet being Country Cord sisal. It doesn't look any the less colourful, attractive or modern—it won't, even after ten more years and six hundred thousand more people. That's because Country House Sisal lasts three times as long as ordinary carpeting — the surprise comes when you find it costs just half as much.

Available in 39 shades and weaves. For complete information please contact:

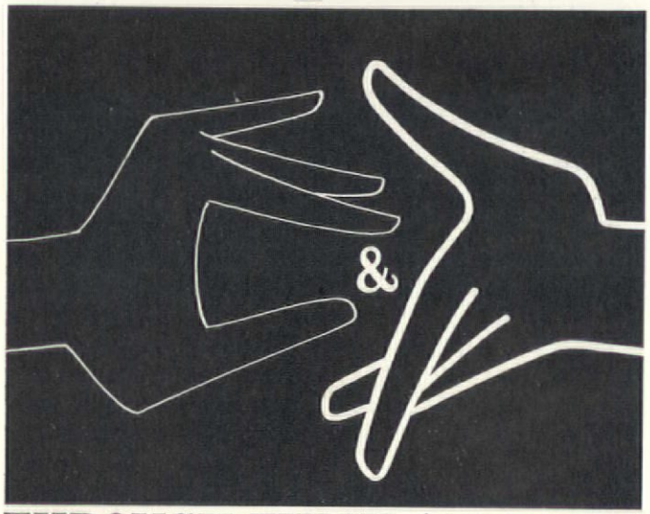
COUNTRY HOUSE

BOYLE & SON LTD, CLAYTON WOOD CLOSE, WEST PARK RING ROAD, LEEDS 16. Telephone: Leeds 59135 (4 lines)
London Showroom: 39 King Street, London, W.C.2
Telephone: TEMple Bar 5375





STONE
is competitive



THROUGH THICK AND THIN

The revolution through which stone production has passed has ensured that Stone maintains its superiority within the context of pace and flexibility in industrialised building. Stone faced precast panels can be designed to meet virtually any requirement.

The truth about Stone costs

The stone construction forms most usually adopted specify 4-inch and 3-inch Portland stone or 1-inch as a facing to a precast concrete panel.

On these terms Stone can and does compete with most genuinely comparable forms of construction. It competes with the exposed aggregate panel, with insulated glass, even with reconstructed stone; and it does so within the frames of reference of first cost, maintenance, suitability, flexibility and in terms of the floor area available for renting after completion. On all counts Stone *is* competitive.

If you would like further information on Stone prices or Stone work, get in touch with The Stone Firms.

Head Office:

The Stone Firms Ltd.

Horton Road, Colnbrook, Slough, Bucks. Tel: Colnbrook 4321 & 2946

Western Regional Office

Moor Park House, Moor Green, Corsham, Wilts. Tel: Hawthorn 456

Midland Regional Office

66/68 Hagley Road, Edgbaston, Birmingham 15. Tel: Edgbaston 6091



STEVENS

N2 CHAIR FROM THE REMARKABLY COMFORTABLE NORDIC GROUP

three chairs related in design to cover a wide range of contract needs

send for contract broadsheet illustrating whole group and complete

STEVENS

range of chairs to

R S Stevens Limited
Fowler Road
Hainault
Ilford
Essex
Hainault 6115

or see them in

STEVENS

London showrooms
63 Coram Street
WC1

N1 **N2** **N3**





Our fortunate friend, and his father before him, have been specifying Stelrad steel radiators for the last 27 years. Of course, in 1936 Stelrads were the only steel radiators available. They are still the only ones if you want the best for your client. Just the right rad. for any situation, domestic, industrial or institutional can be found from Stelrad's enormous range. MEMO. Send for catalogue. Most of the innovations in central heating over the years have been pioneered by Steel Radiators Ltd. The latest are the revolutionary Stelostat, a thermostatic valve similar in size to an ordinary valve which controls the heat output from a radiator to achieve a pre-set room temperature. Easily specified for existing or new systems. The Stelostat effects considerable economies in fuel and soon recovers its modest cost. Then there's Stelerator a new circulating pump, completely silent, very economic to run (less current than a 25 watt lamp) with lavish use of stainless steel and careful choice of accompanying metals and alloys to eliminate corrosion. MEMO. Don't send! Just 'phone for the catalogue. SOUTHALL. 2603 STEEL RADIATORS LTD

Southall · Middlesex · Telephone: Southall 2603 · Works also at: Dalbeattie · Scotland · Telephone: Dalbeattie 491

Breakthrough!



New paint..the best yet

British Paints Chemists have produced an entirely new paint for craftsmen. It will be known as **NEW FORMULA LUXOL**. It is emphasised that this paint is not a compromise, not a re-birth. It is an entirely new creation with a promise of performance surpassing anything the professional decorator has ever known before.

BRITISH PAINTS LIMITED

Portland Road, Newcastle upon Tyne, 2
Northumberland House, 303-306 High Holborn, London WC1
Mersey Paint Works, Wapping, Liverpool

Belfast, Birmingham, Bristol, Cardiff, Manchester, Middlesbrough, Norwich, Nottingham, Sheffield, Southampton and all principal towns

New Formula LUXOL incorporates many improvements, making the best use of the most advanced manufacturing techniques and the latest developments in high performance raw materials.

High opacity
New Formula LUXOL offers the best of both worlds—outstanding opacity without the loss of easy brushing properties makes it unique.

Non-sag . . . non-run
Using normal painting techniques 'curtaining' is almost impossible with New Formula LUXOL. Its full-bodied structure ensures a good even coat of uniform thickness without excessive brushing-out and adherence to difficult surfaces, such as mouldings, is excellent.

Even-flow application
Surprisingly easy brushing qualities are an outstanding property of New Formula LUXOL. To provide a paint offering so high a degree of opacity and at the same time to improve the brushability to the extent that has been accomplished, is a notable achievement.

Durability
In the light of present knowledge it would not, we believe, be possible to make a tougher, longer-lasting finish of the conventional type.

Appearance
The depth and richness of gloss provided by New Formula LUXOL add dignity and elegance to the surfaces which it protects. The shell-hard surface is highly resistant to dirt, which is easily removed.

Colour retention
The new oils and pigments now used to produce New Formula LUXOL are selected especially for their known colour stability. A truly permanent colour has yet to be made but New Formula LUXOL is as permanent as science can make it.

In the light of present knowledge NEW FORMULA LUXOL is the outstanding paint of the decade!

L19

UK News

Ian Brown

Piccadilly Circus 1

Last month saw the publication of the report by the working party set up by MOHLG and MoT to look into the redesign of Piccadilly Circus and its environs. The working party had taken over from Lord Holford, whose scheme for the pedestrian piazza and for limited increase in the flow of traffic the MoT found unacceptable. The working party shows respect for the best things in Holford's scheme, but concludes that any redevelopment must allow for not less than 50 per cent increase in traffic. Working in the afterglow of the Buchanan report, they nevertheless find impracticable the application to the area of the primary-network-principle. Feasibility studies convinced them that 'double-decking' (with pedestrians over traffic) would be a practical proposition 1. This could form a basis not only for the Circus but for the comprehensive development of this part of the West End, and would be a potent catalyst for the redevelopment of the West End as a whole.

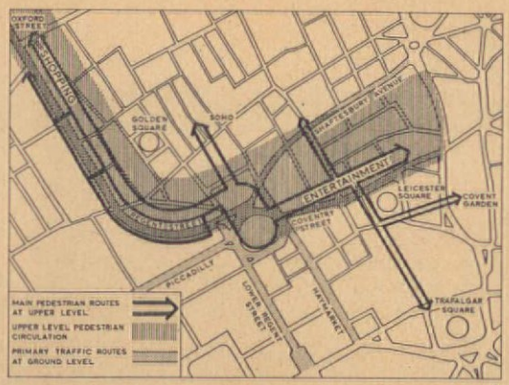
Concurrently, at the north end of Portland Place, the renovation of Nash's Park Crescent to house the International Students Trust has reached completion (architects T. P. Bennett & Son) 2. How long will it be before the 20ft high pedestrian walkway from Piccadilly makes nonsense of a preservation no doubt worthy in itself?

RIBA Bronze Medal 3

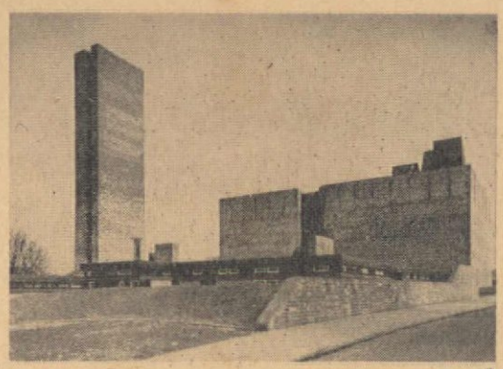
The fortifications wave in the UK has not at all spent itself. We have, probably, many years in front of us of castellated parapets, slit windows, battered bases and doubtless even a moat or two before we are through. It is true that the farther north one goes, the more tolerant one becomes of this quaint insular taste of ours. Of all the present-day practitioners of the 'stronghold' style, Jack Coia seems much the best. His buildings in Cumbernauld take second place only to the centre itself; and the movement fulfils itself with St Bride's Church 3, E. Midlothian, the winner this year of the RIBA Bronze Medal for outstanding modern architecture. The painted window frames seem the only false note in a marvellously austere assembly. The interior has the same high quality.

Officers' mess 4

For a church something military. For the officers' mess of the Montgomery Lines Barracks group by the Building Design Partnership, 4 some smoothed La Tourette. A breath of the monastic still floats about the ledging and bracing of the ground floor joinery. To the left, between the trees is the Educational Building, possibly the most successful, certainly the simplest, building on the site. Elsewhere texture runs riot. The pavements do not escape. The stylistic vacillation between block and block struggles through the unifying *décor*. The client is the Ministry of Public Building and Works, and it is claimed that the whole concoction is an industrialized system. Systems, it is true, tend to be regimented, and barracks must not look like barracks at any price. But is this what the messianic spiels of the MOPBW dimensional coordinators add up to in the end: each block free to be its own crack at the absolute, so long as it's homely?



1



3

Barracks 5

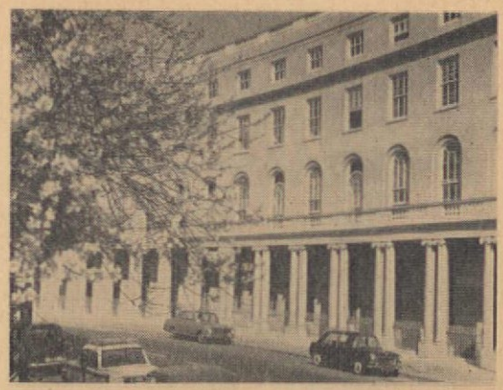
The 'new-style' barracks at Invicta Park, Maidstone, are by the MOPBW itself, and by its Directorate General of Research and Development, no less. The objectives of the project have been to re-examine, in collaboration with the army, the accommodation requirements of a major unit; to provide a building method that would meet the requirements of a variety of building types; and to evolve new means of selecting contractors and manufacturers to enable them to contribute fully in this technical development execise. Out of all this came that method known as 'Nenk'. Maidstone was used as a prototype development. The next stage is a £1¼ million programme incorporating 13 central government building projects throughout England. The stated objectives of this next stage are: to test design flexibility; to prove the Nenk organization; to develop administrative procedures. Take architecture as read, we hope.

The Jodrell Laboratory at Kew 6

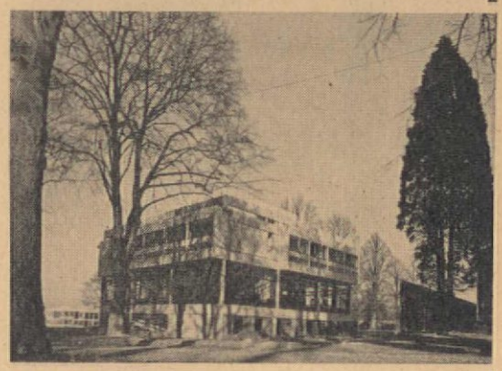
The new Jodrell Laboratory and Lecture Theatre at Kew Gardens is also by the Directorate General of Works and *should* therefore bring no less good news to systems men. But the structure is in-situ reinforced concrete, finished externally with white-painted ship-lap boarding 'above, between and below the continuous windows which are in dark brown afrormosia finished with clear varnish. For contrast, dark coloured Crowborough facing bricks have been used for part of the ground floor walls, with dark coloured exposed aggregate pointing slightly recessed to give a monolithic textured effect'. Mechanization takes command!

Thames-side offices 7

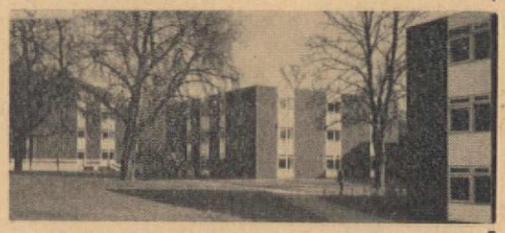
Riverwalk House, Millbank, London, by architects Farmer and Dark, is another addition to the Thames and to that school of thought which finds horizontal emphasis too horizontal and vertical too vertical.



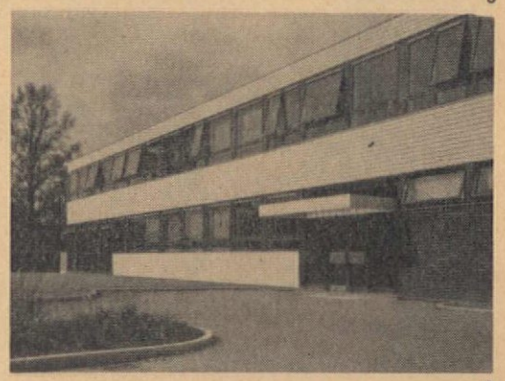
2



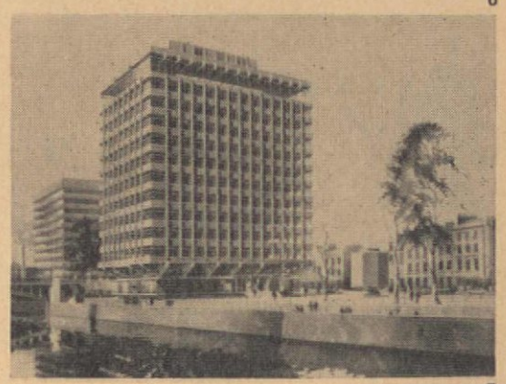
4



5



6



7

Edinburgh College of Domestic Science

The Council of the Edinburgh College of Domestic Science invited eight firms of architects to submit designs in competition for a new college at Clermiston. The assessor, Grenfell Baines, gave the award to Andrew Renton and Associates of London.

ALL YOU SEE IS THE DOOR CLOSE

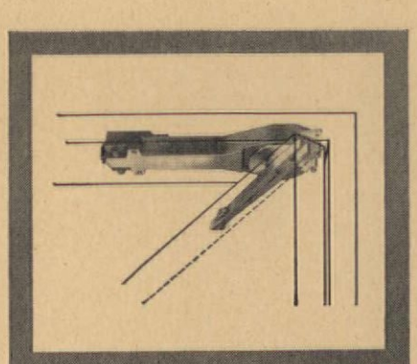




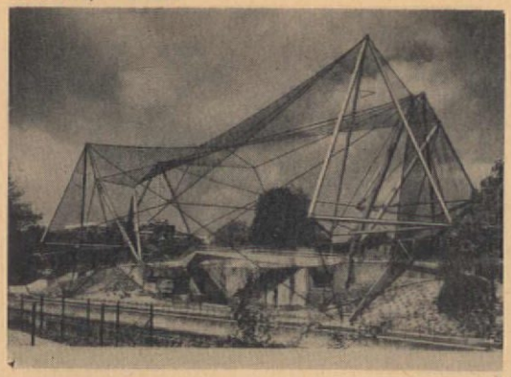
With the Briton 1100 concealed overhead door closer the surface of the door and its surround is left completely free from all visible fittings. The Briton 1100 is designed to be fitted into the soffit of either wood or metal frame doors with the arms concealed in the top rail of the door. The use of butt hinges is eliminated as the door is hung on a bottom centre. The Closer occupies a space only $3\frac{3}{4}''$ wide x $1\frac{1}{2}''$ deep x $12\frac{3}{4}''$ long. A special feature is that the dimension from the back of the closer to the spindle is only $2\frac{3}{8}''$ thus allowing maximum clear opening when doors are fully opened.

The closers may be used for either double or single action doors and can be supplied to open through an angle of 90° or 105° with hold open at 90° available if so ordered. The arm, fully concealed in the door, is adjustable both for centre alignment and for horizontal positioning. Adjustment is provided for general closing speed, and latch action in last 10° of closing. The Briton 1100 is a strong and efficient closer, capable of controlling doors measuring 7′ 6″ x 3′ 6″ weighing up to 200 lb. in either internal or external situations. It is supplied boxed, complete with adjustable arm, bottom centre and fixing instructions for wood or metal doors according to type ordered. The Briton 1100 is particularly suitable for aluminium framed doors.

briton 1100



NEWMANS WILLIAM NEWMAN & SONS LTD., HOSPITAL STREET, BIRMINGHAM, 19



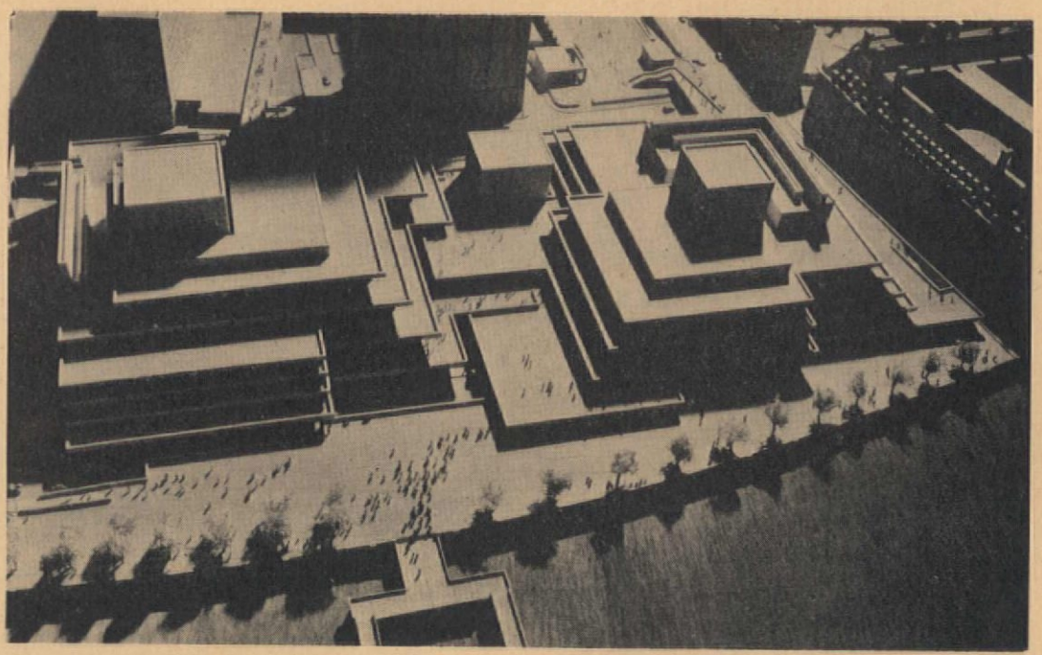
8

London Zoo birdcage 8
By Lord Snowdon with architect Cedric Price and engineer Frank Newby, the dramatic new birdcage seems primarily the solution to a problem in equilibrium between aluminium struts and tension wires; but it is also designed to take visitors for a walk over a bridge with Indian and African birds above and below them and landscaping to ornithological requirements. The total cost was £120,000.

Liverpool civic centre
Liverpool City Council has appointed Colin St John Wilson as architect for Phase 1 of its projected large-scale civic and social centre.

Civic award 11
Compulsory purchase of land for private developers was advocated by Neil Wates, director of Wates Ltd., at London's Building Centre recently in an illustrated talk 'Urban Renewal—A Challenge for the Sixties'. Urban renewal, in Mr Wates' opinion, is a tool for the restoration of declining residential areas. Meanwhile at Cranbrook Estate in Bethnal Green, his firm have erected 'Modling House' and others, which, incredibly enough, have received a Civic Trust award. Architects were Skinner and Bailey. We have come some distance from Highpoints one and two by Tecton, of which Skinner and Bailey were members. Is Cranbrook what compulsory purchase and Mr Wates would bring us, or is this just OK for Bethnal Green?

National theatre and opera house 9, 10
The Council of the South Bank Theatre and Opera House Board have received and approved in principle the first proposals of architect Denys Lasdun for the National Theatre and Opera House. Approval is now being sought from the Government and the GLC.
Preliminary estimates for the whole job are about £9½ million, the work needing six years to complete, starting in 1967.
The organization of the complex of buildings, including the handling of traffic, parking, pedestrian access and servicing, is deeply concerned with the creation of a cityscape on a metropolitan riverside site which can be enjoyed day and night all the year round by everyone whether they are going to the theatre or opera or not. Thus, the overall concept is based on a series of public terraces which cascade into a central valley and form a natural setting for open-air pageantry.
In terms of public transport accessibility the site is wonderful, served by many major public transport routes and systems. Three-level underground parking is provided for 500 private cars.
The theatre block contains a large open stage auditorium of 1000 seats, a smaller 750-seat proscenium theatre, and a small 200-seat experimental theatre. In the large auditorium, the audience is seated in a wide fan arrangement on two steeply raked tiers encircling the open stage through 90°. There will be provision for horizontal and vertical mechanical handling of scenery, including flying.
In the Opera House where, with a repertoire of about 200 classical operas, only one or two new works would be added each year, the traditional relationship between singer, orchestra, conductor and audience will be maintained. The exact form of the auditorium, to seat about 1650 people, is being studied. The stage layout will consist of main stage, rear stage and two side stages with provision for a power-operated flying system, stage lifts and trucks. Full provision has been made for the extensive production and workshop facilities. Both loading bays of theatre and opera are connected by a common service road.



9

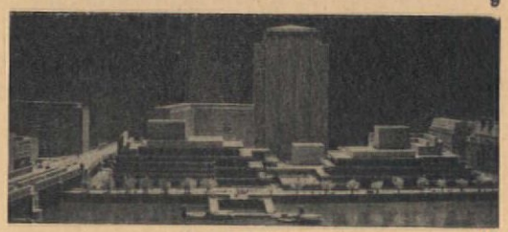
Distribution of work
Architects Challen and Floyd, announce the formation of a work distribution study group to examine how the future architectural work load can best be distributed amongst the profession. The first general meeting of the group was held at the RIBA in May.

Presidents
Viscount Esher has been elected President of the RIBA for the session 1965–66. James Cubitt has been elected the next president of the AA.

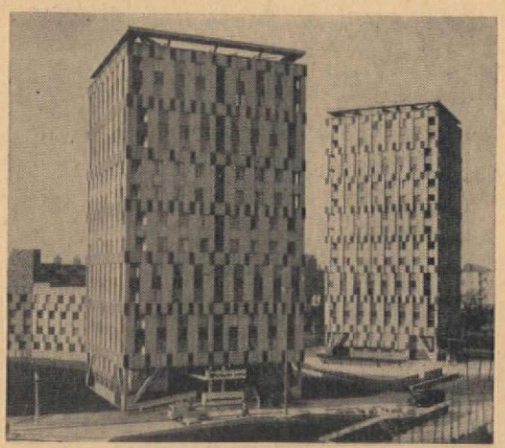
International awards

James Stirling and James Gowan are the recipients of the 1965 ninth annual £25,000 R. S. Reynolds Memorial Award, conferred for their design for the engineering building at Leicester University.* The award is the first to go to British architects.
*See *AD*, February 1964.

The International Union of Architects have awarded the Auguste Perret Award to Prof. Hans Scharoun. Also the Sir Patrick Abercrombie Award to Colin Buchanan and his team for their work on Traffic in Towns, and to Tibor Farkas for the planning of the Lake Balaton region in Hungary.



10



11

International conferences

Where will we live tomorrow? is the title of a 10-day conference to be held in Paris this August. The list of speakers already announced is impressive:
Germany: Doernach, Gunschel, Ruhnau, Schultze, Fielitz. *France:* Friedman, Grillo, Maymont, Schein, Schoffer, Bourbonnais, Di Teana, Gilioli, Martha Pan, Stahly, Partix, Polieri, Wogenscky. *Great Britain:* Quarmby. *Greece:* Zenetos. *Holland:* Constant. *Italy:* Nicoletti. *Poland:* Hansen. *Switzerland:* Hausermann, Jonas. *USA:* Le Ricolais.
Details from Actuel '65, 57 Rue Sarette, Paris 14eme.

An international conference on *Urbanism and Regional planning* will be held in Basle this September. Details from Secretariat du Congres, Rosentalstrasse 1, 4000 Basle 21.

A *NEW* CONCEPT IN SHUTTER DOORS



Henderson

SHUTTER DOORS

Over Forty years experience in every type of sliding and folding door has enabled us to introduce a new service in *SHUTTER DOORS*. Unique in design and appearance every door is custom built, assembled and tested before installation. Suitable for any width of opening. Technical assistance and Drawing Office service available without obligation. Send for List SD.

Barbour Index: File No. 49 Gorco Bureau: File No. 23/19

- **HALF THE WEIGHT**
  This door has been designed as a Shutter Door—not as an extension of a collapsible gate. *RESULT* 5 lbs. per square foot—easier operation—lighter lintel beams.
- **REMOVABLE LEAVES**
  Leaves can be removed in pairs without disturbing or dismantling remainder of the door. This enables quick repairs or replacement in the event of accidental damage. The Leading Post can also be removed.
- **GALVANISED THROUGHOUT**
  The entire door is made from **cold formed tight coated galvanised steel** —Leaves, Pickets, Hinge Strips, Posts, Top and Side Covers. Only the Lattice Bars are painted.

A WORTHY ADDITION TO THE WORLD-FAMOUS RANGE OF SLIDING DOOR GEAR

P. C. HENDERSON LTD. · (SHUTTER DIVISION) · ROMFORD · ESSEX · Telephone: Ingrebourne 41122 (P.A.B.X.)

H4/1

World News

John Donat

Three magazines are in the news this month: *Forum* is back. After the death throes, the burial and the warm, worldwide obituaries, the resurrection has taken place under the banner of Urban America Inc., 'a non-profit educational organization for a better physical environment'. The format is slightly reduced, the layout as familiar as an old friend. In an invigorating editorial, Peter Blake hints at future policy: '. . . we will be talking more about urban design and less about individual buildings served *à la carte*. The crisis in America, and in the world at large, is in the city; and we will try to take an extremely active (and sometimes aggressive) stance *vis-à-vis* that particular problem.'

The first issue illustrates more of François Dallegret's high-jinks 'le hot drug' **1**, Giancarlo De Carlo's small student-dormitory-town on the Hill of Cappuccini outside the historic hill town of Urbino **2**, a tapering steel tower by Bruce Graham of S.O.M., 100-storeys high containing apartments and offices **4**, and Bucky Fuller's proposal (commissioned by *Esquire*) to solve Harlem's slum clearance with fifteen 100-storey towers large enough to accommodate vehicle circulation in the core **3**.

Welcoming the return of *Forum* makes it all the more sad to record the last issue of *Casabella* to be edited by Ernesto Rogers after 11 years—though a new editorial group will revive it.

With the rise and fall of architectural publications, we are very pleased that *Edilizia Moderna* is to continue publication despite rumours to the contrary—particularly on the showing of its current issue: Design—a fascinating world round-up of design activity from cigarette packs to industrialized building.

Germany

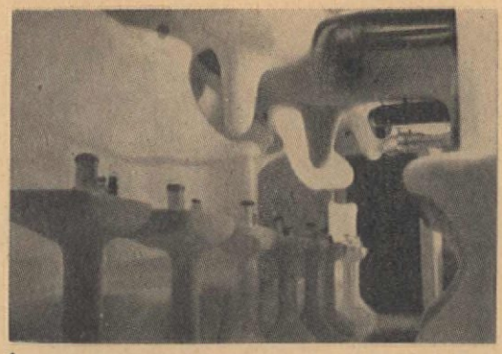
The March issue of *Bauwelt* is crammed with unusual bridges, the most daring of which are the early American ones—Albert Fink's Green River Bridge (1857–59) **5** and Theodore Burr's Mohawk River Bridge (1808) **6**—which deserve a prominent place in the annals of railroad functionalism.
Bauwelt, March 1965

Mehmet Tavas-Lioglu's ingenious solution to high-density patio housing **7, 8** manages to give light, air and privacy to each family without producing that built-up sprawl which is so wasteful. a feature of the usual patio house development in towns.
Baumeister, May 1965

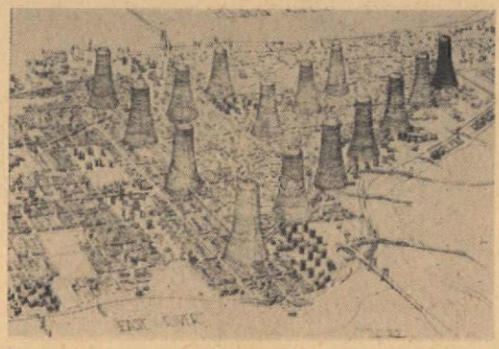
Italy

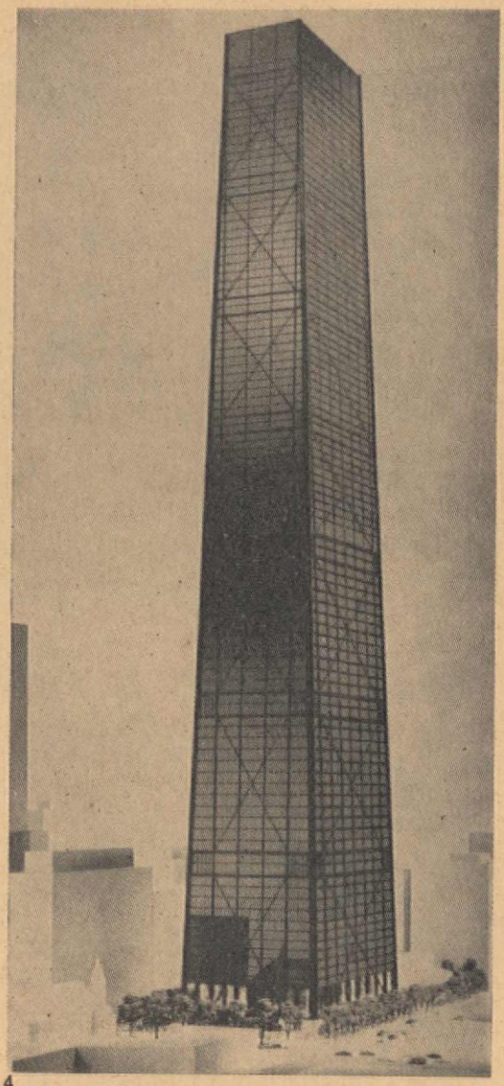
Le Corbusier has designed a new hospital in Venice **9** to replace that of Sts John and Paul—not exactly to replace, because the Renaissance building will remain. Corb will be given a site in the district of San Giobbe near the entrance to the city. He has designed a series of multilevel pavilions, supported on pilotis raised no more than 50ft above the water, so as not to impinge on the historic skyline. The first stage, for 1200 beds, is based on a modular unit of 25 patients, each within a partitioned space, top-lit only. Will Corb fare better with the Venetians than Frank Lloyd Wright whose modest proposal on the Grand Canal was turned down? San Giobbe, *Time* cynically reminds us, is, of course, St Job: 'for the sick as well as for an architect wishing to build in Venice, Job's patience is an ideal'.

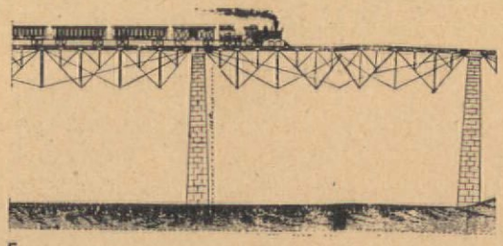
Photo: Afi

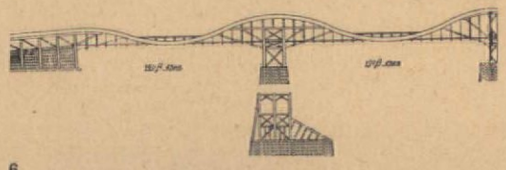

1

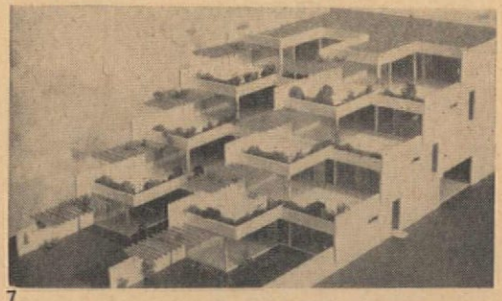

2

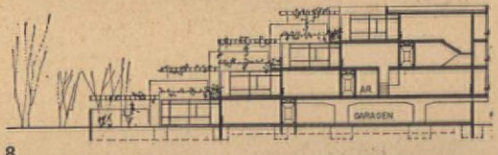

3

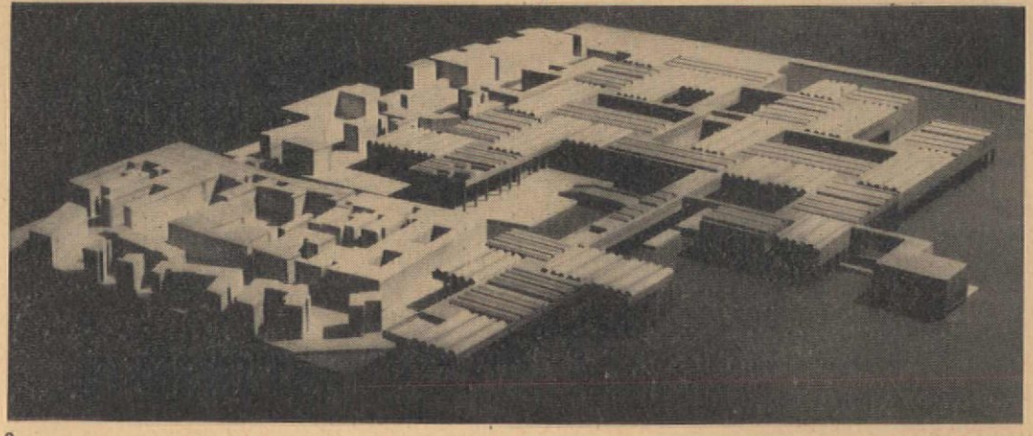

4

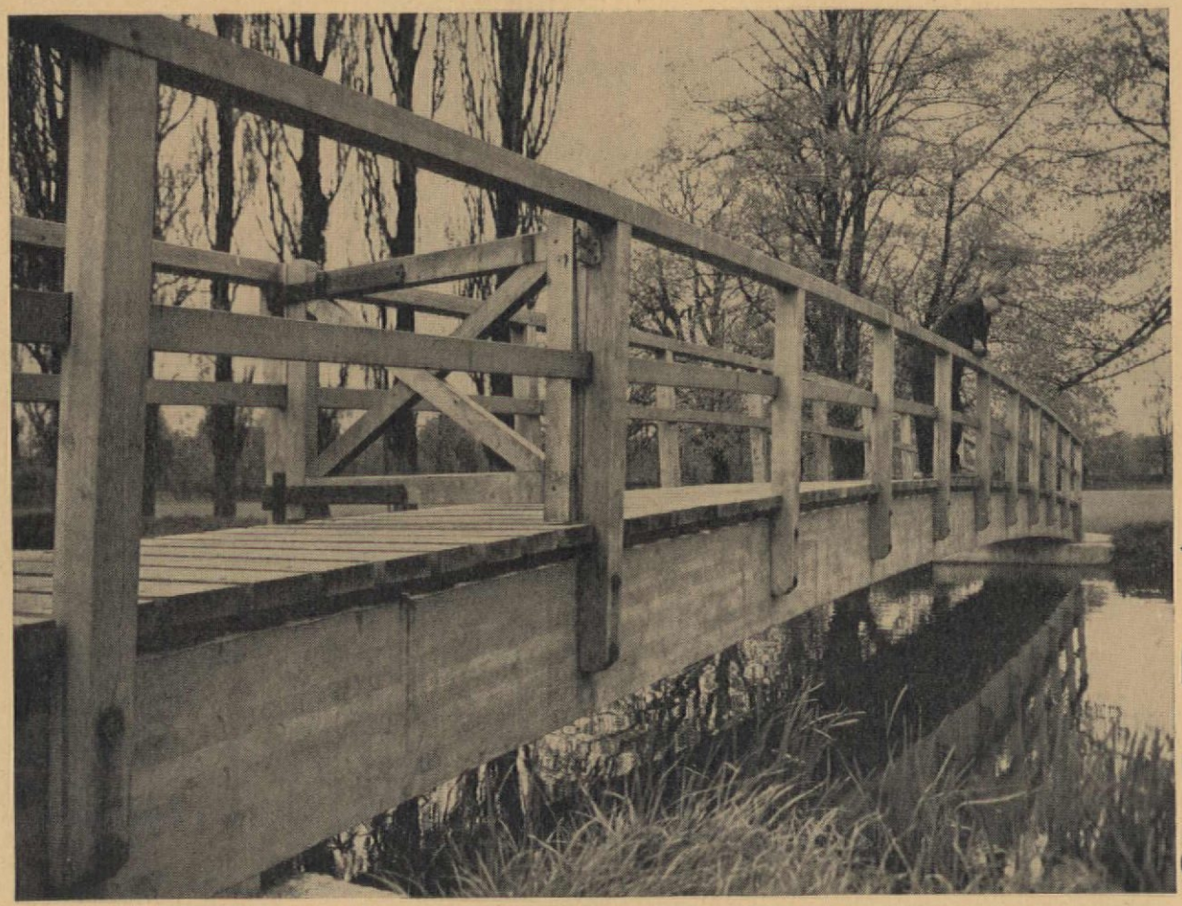

5


6


7

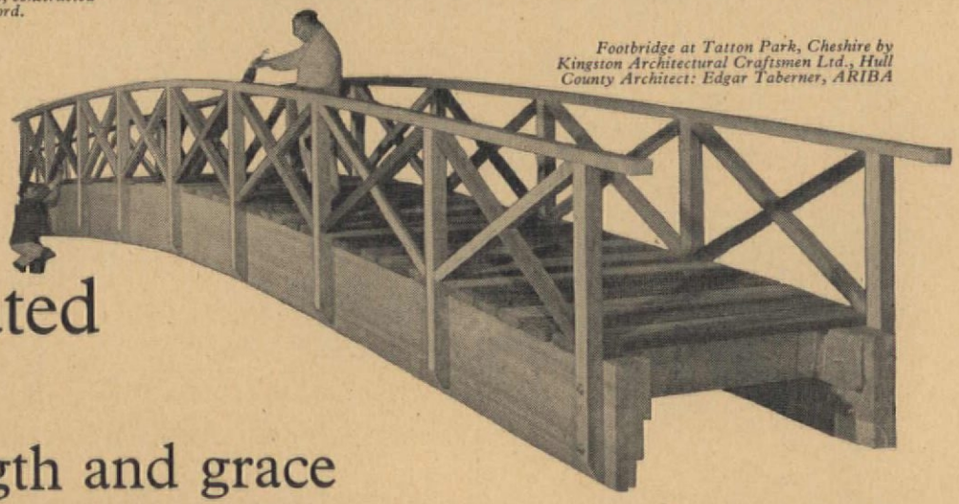

8


9



Footbridge at Winchester College, constructed by Laminated Wood Ltd., Bideford.

CIBA



Footbridge at Tatton Park, Cheshire by Kingston Architectural Craftsmen Ltd., Hull County Architect: Edgar Taberner, ARIBA

Laminated timber

for strength and grace

Wood alone provides bridges which blend so perfectly with their settings. To obtain the necessary strength and complete stability at reasonable cost, the beams of these footbridges were built up from Douglas fir laminates glued with Aerodux resorcinol-formaldehyde resins.

Aerodux is widely used for constructing large laminated beams for external use. It has excellent gap-filling properties, cures at shop temperatures and is very tolerant of the moisture content of the wood. Laminated beams glued with Aerodux may be used under the most exposed conditions. The glue lines resist all weathers, changes of temperature and humidity, and are not attacked by insects or micro-organisms.

May we send you a copy of our publication "Synthetic Resins in the Building Industry" ?

Aerodux glues for wood

Aerodux is a registered trademark

CIBA (A.R.L.) LIMITED · DUXFORD · CAMBRIDGE · TELEPHONE: SAWSTON 2121

AP855

A second, more wilfully stylized building awaiting planning permission in Venice is the residential block by Studio CFM (Iginio Cappai, Antonio Foscari and Pietro Mainardis) that was awarded first prize in the In/Arch Domosic competition **10, 11.** The site is one of the few surviving gardens in Zattere, overlooking the Guidecca. Not far from Gardella's equally idiosyncratic, carefully contrived piece of architectural conformism it is likely to receive all the fashionable support requisite for success. Gardella was one of the jurors.

Israel

The winning entry in the competition for Jerusalem Town Hall was designed by Al. Mansfield and D. Havkin **12.** Civic functions will take place in a floating horizontal slab spanning a service road. Offices and all the public services are located in the tower, with functions differentiated by changes in the width.
Photo: Keren-or

U.S.A.

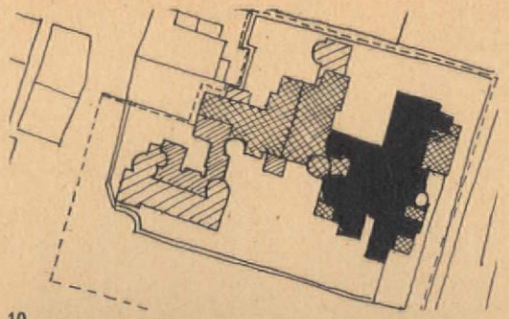
Gollins, Melvin, Ward & Partners have designed the BOAC terminal at the John F. Kennedy international airport in New York **13**—'fingers' and sprawl in an attempt to allow passengers to walk direct to their aircraft. Incoming and outgoing traffic is separated on different levels.
Photo: Henk Snoek

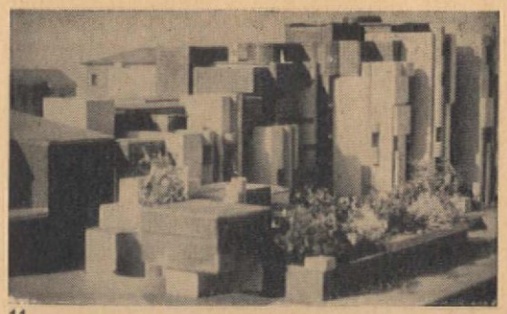
Mies Van Der Rohe, leading four associated firms, has just completed the first of three buildings for the new Federal Centre in Chicago **14.** The building contains court rooms planned either side of twin-core plan, with offices around the periphery. It will be followed by another tower of offices and a post office. The three buildings provide generous public open space on the ground but are separated by a traffic road that makes nonsense of the cluster grouping. Mies has completed another apartment block on Lake View Avenue Chicago **15.** Latest news of two of Mies' most famous buildings: the Tugendhat House at Brno in Czechoslovakia (for many years a nursery school) is being taken over by Brno architects to become a Museum of Modern Architecture; the Barcelona Pavilion, it is rumoured, is still crated up in a warehouse in Spain labelled 'unclaimed property of the German Government'.
Architectural Record, March 1965
Bauen und Wohnen, April 1965

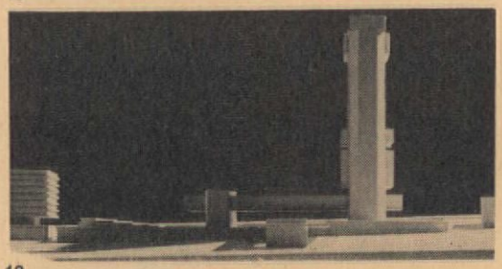
Japan

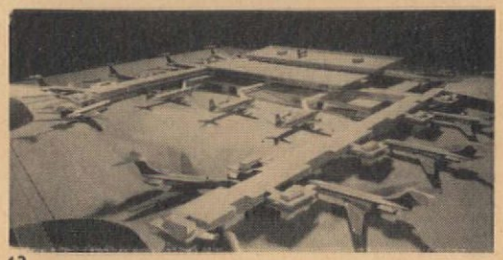
Fumihiko Maki's Chiba University Memorial auditorium **16** sited on a cliff edge in a grove of trees, is a simple rectangular space, sheltered by an A-frame structure, with each component part modelled with ferocious care to produce that most elusive architectural quality—a meaningful space. But what do you manipulate to create meaning? Form? Function? Space? The most 'significant' feature is the vertical tower that signals the entrance, which, the plan informs us, is 'staircase to projection booth'.

Two buildings by the Isozaki atelier have recently been published; one, the central library for the Oita Prefecture is designed on an obsessive horizontal duct theme—corridors, walls and beams are all reduced to tubes—the other, the Iwata Gakuen school **17, 18** has a similar duct-obsession but in this case the theme is given a vertical twist and is slashed open for ventilation.
Kenchiku Bunka, January 1965


10

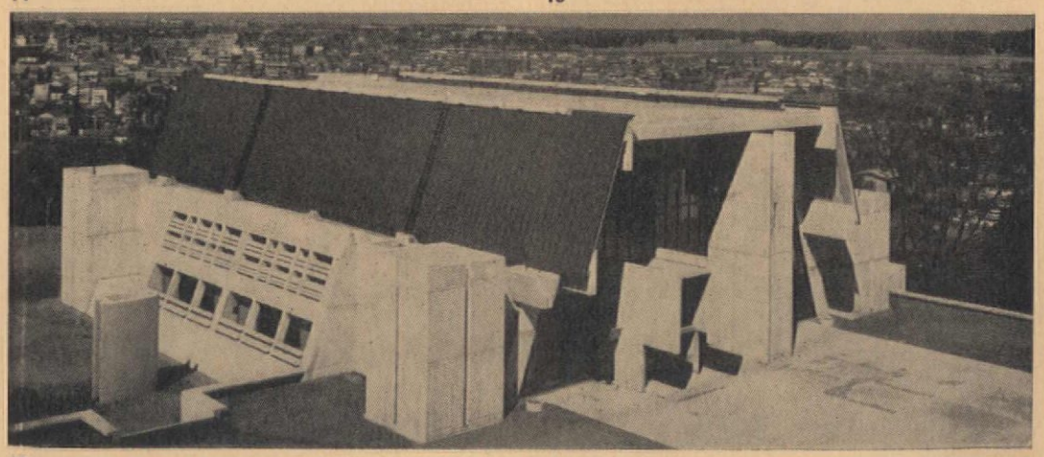

11

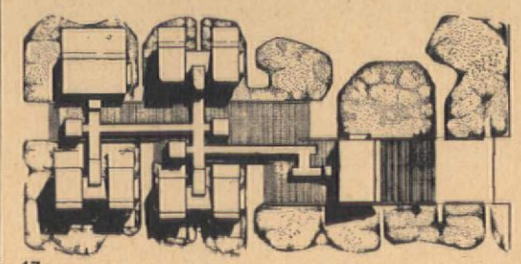

12

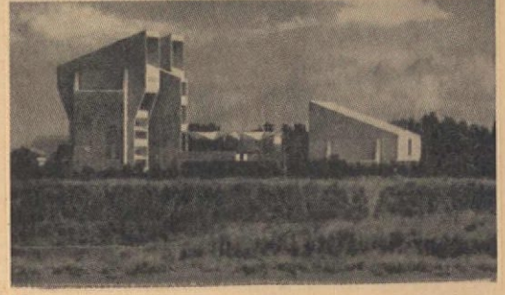

13


14


15


16

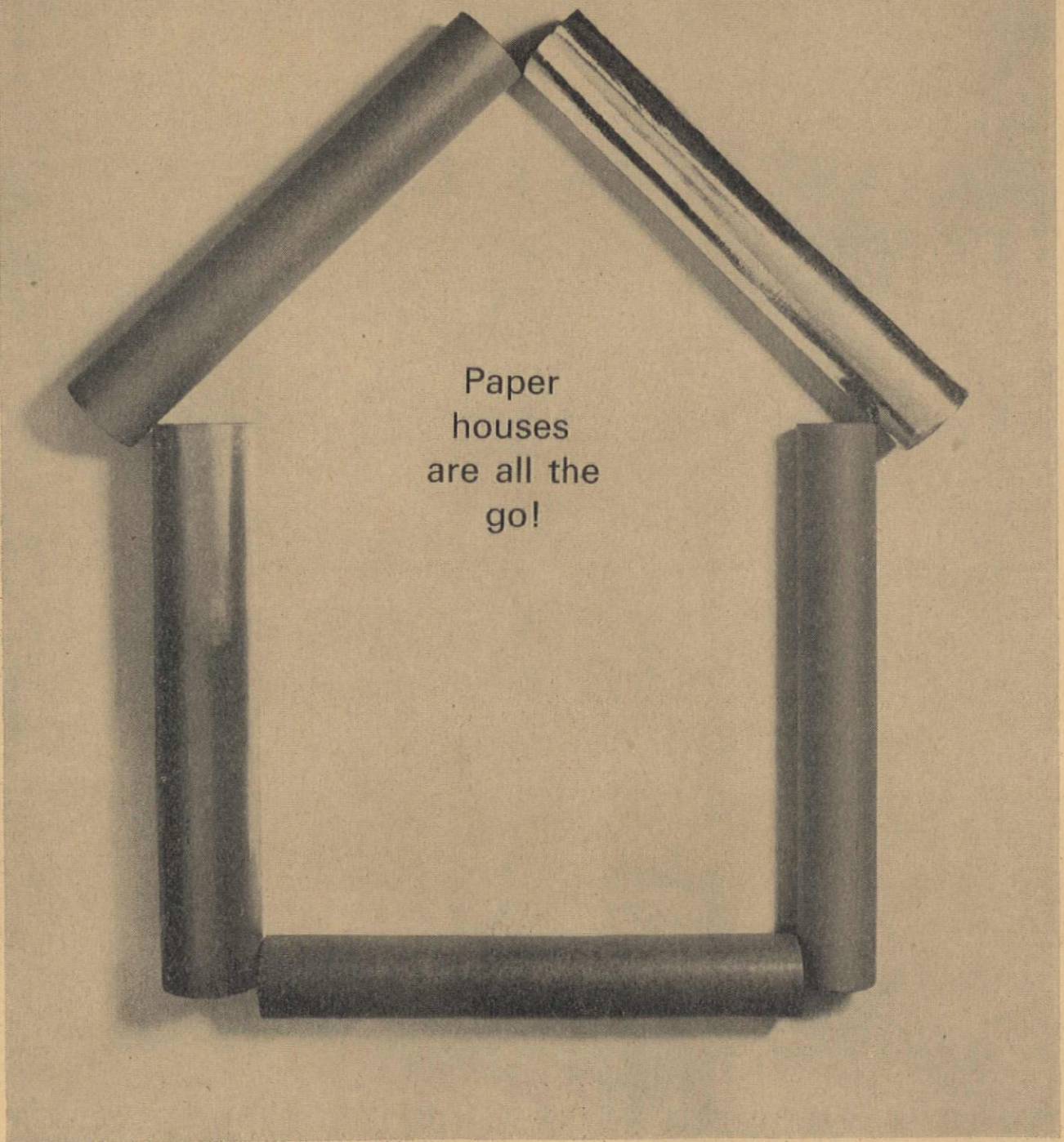

17


18

In the best buildings nowadays you'll find Sisalkraft building papers all over, and under, the place. Sometimes they are keeping things in, like heat. More often they are keeping things out—like damp and dirt; cold and fire; wind and wet. Occasionally they are keeping things apart: preventing bonding or chemical interaction. Shown here are five of the Sisalkraft papers widely used as building membranes*. For details of these and all other building grades of Sisalkraft, just ask British Sisalkraft Limited.
*Sisalkraft for sarking. Sisalation reflective insulation. Pyro-Kure fire resistant moisture vapour barrier and insulant. Copper Armoured Sisalkraft. Moistop polyethylene faced waterproof underlay plus slide layer.

SISALKRAFT

BRITISH SISALKRAFT LIMITED
BARKING, ESSEX. TEL: DOM 6666



Dans ce numéro

Denys Lasdun

Voici quatre édifices illustrant sa manière de concevoir l'architecture.

Le 'Royal College of Physicians'

Par rapport à la composition de Nash, la disposition du 'Royal College' sur la parcelle implique un jeu complexe d'espaces extérieurs. L'auditoire trapu faisant saillie du bâtiment principal conserve à la cour privée son échelle réduite. Une cour intérieure défini en termes spatiaux des éléments qui s'ouvrent sur l'intérieur et qui sont protégés du bruit de la rue. Un observateur reconnaît de l'extérieur trois parties distinctes dans la composition, chacune des parties étant signalée par un matériau différent: brique bleue de Baggeridge, revêtement de mosaïque blanche et béton brut de décoffrage. Les zones du bâtiment construites en briques peuvent être transformées; elles peuvent être changées, adaptées, agrandies au fur et à mesure des besoins d'un centenaire d'utilisation. Les éléments fixes et interchangeables revêtus de mosaïque leur font opposition, ce sont la 'Salle du Doyen' ornée de boiseries du XVIIe siècle sauvées du Grand Incendie de Londres et qui est située au centre de la composition, et la bibliothèque utilisée à l'occasion de manifestations et congrès importants. L'accès à sa collection de volumes historiques est contrôlé par le bibliothécaire et ses assistants à proximité de la salle de lecture. Seuls susceptibles de vieillir avec le temps, les éléments sanitaires et équipements divers sont exprimés en béton brut de décoffrage. L'édifice illustre clairement—à défaut de leur complexité—les besoins grandissants en volume des systèmes de contrôle acoustique, d'éclairage, de télévision en circuit fermé et surtout du conditionnement d'air qui inclu le filtrage, le refroidissement, le contrôle de la température et du degré d'humidification. Les propriétaires d'immeubles de demain s'attendront à des performances techniques de premier ordre, les spécialistes-conseil et l'industrie sont-ils préparés à fournir à l'architecte les services qu'il attend d'eux?

En considérant l'intérieur du bâtiment l'élément dominant, contrôlant la disposition du plan est l'espace liant entre elles les parties principales de l'édifice. Il s'agit du hall et de la gallerie des portraits qui s'étage par palliers successifs autour d'un escalier central. Les gens se rendant à l''étage noble' gravissent aisément les marches en un mouvement tournant dans le sens des aiguilles d'une montre. L'anatomie entière du bâtiment est révélée clairement durant ce parcours. On aperçoit la 'Salle du Doyen' qui d'emblée s'impose comme étant le point de mire de l'édifice. Il se pourrait bien que ce hall avec son escalier (indiqué dans le programme simplement par 'les escaliers nécessaires, etc.') joue un rôle décisif, non seulement en permettant au 'College' de fonctionner agréablement, démocratiquement et efficacement mais en étendant et sa fonction et son envergure à un centre mondial de congrès médicaux. Les gens qui se promènent dans cet espace font l'expérience visuelle des rangées de maisons de Nash du ventre même du nouvel édifice. Pour renforcer ces effets, les limites de ce qui se passe à l'intérieur de l'édifice et de ce qui se passe à l'extérieur ont été dissoutes par une étude approfondie des détails de fenêtre. L'étude du détail n'est pas de savoir si une chose est rude, douce, brillante ou matte, elle concerne la qualité intellectuelle et la suite logique du projet dans sa totalité.

Le second édifice est le 'Royal Institution of Chartered Surveyors' qui varie sur un même thème. Il remplacera un bâtiment près de 'Waterhouse' dans 'Parliament Square' en face de 'Big Ben' et à côté du monstre Victorien de Brydon situé au nord. Une coupe à galeries étagées permet à d'innombrables visiteurs de suivre les manifestations de Parliament Square et les cérémonies d'Etat. L'édifice peut s'agrandir latéralement et résoudre le problème de l'angle.

Le troisième example choisi est un projet pour de nouveaux laboratoires dans le centre de Cambridge. Ecrivant dans 'The Scientific American' en 1954, Kevin Lynch qualifiait les cités d'unités sociales de notre civilisation, possédant dimension, densité, grain, silhouette, dessin. Les hommes les façonnent et sont façonnés par elles. Aussi bien Kevin Lynch que Jane Jacobs ('La Mort et la Vie des Grandes Cités Américaines') haïssent, dans leur plaidoyer pour une 'diversité exubérante', la division des fonctions et activités dans la cité. Ils ne veulent pas voir la bibliothèque municipale située à l'écart dans un joli gazon et que personne n'utilisera. Je suis d'accord. Jane Jacobs écrit aussi 'une cité ne peut être une œuvre d'art'. Elle est pour moi la plus grande œuvre d'art que la civilisation peut produire et la plus révélatrice.

Les laboratoires sont situés sur l'emplacement du nouveau musée, juste à l'est de 'King's College'. Le projet préconisait trois tours dont chaque étage se divisait en petites ou grandes salles qui pouvaient se brancher sur les services nécessaires. Les services étaient disposés à l'extérieur de chaque tour, contenus dans des colonnes évidées préfabriquées en béton servant de structure; chacune d'elles pouvait servir de support à une grue permettant ainsi bâtiment de s'agrandir en hauteur plus tard. Ils devaient être situés à proximité du centre historique. La forme, l'élancement et le profil des tours avaient été soigneusement étudiés afin que dans la silhouette proposée les parties nouvelles se marient aux anciennes. Le projet aurait pu constituer le pivot où s'allient Cité et Université. Il fut repoussé.

Le programme du quatrième projet, l'université de East-Anglia, illustre l'effort de l'ensemble de l'université qui tend vers l'unité des connaissances et l'identité commune. Les collèges d'étude doivent définir les entités académiques et sociales. Les 'Cités résidentielles universitaires' ne peuvent trouver place dans un ensemble somme toute en accord avec les idées que le Dr. Chapman, Chargé de Cours en Sciences Sociales à l'Université de Liverpool exprime dans: 'La Génération Autonome'. Il parle des jeunes—de leur aversion pour tout formalisme forcé, de leur puritanisme romantique, de leur indépendance grandissante grâce à un meilleur logement, à une santé et une éducation meilleures. Ils regardent la vie néammoins comme arbitraire et malveillante et désirent choisir une éthique définissant leur propre ligne de conduite. Partant, le programme des académiciens pose très justement la question de savoir 'comment vivent les jeunes dans une nouvelle université?' Les directives pour l'étude du projet s'inspirèrent de ce programme. Des groupes de douzes studios au plus avec un local pour le petit-déjeuner devaient former l'unité de base de l'habitat. Ils devaient être disposés dans le terrain en respectant soigneusement la configuration du site et en s'intégrant à la pente. La compacité du plan et le fait qu'il n'y aura pas de cordon sanitaire autour de l'Université permettra aux gens de Norwich de continuer à jouir de leurs loisirs dans un paysage remodellé. La célérité de l'accroissement des étudiants implique le besoin de systèmes de construction rapides. Les bâtiments se composent d'éléments identiques dont la préfabrication est contrôlée soit sur le chantier soit en usine et qui sont montés à sec.

Ministry of Public Building and Works

Architects Required

in the Directorate General of Research and Development

(Director General: Sir Donald Gibson, PRIBA)

THE DIRECTORATE OF DEVELOPMENT has a large programme of development work for industrialised building and now requires staff to undertake research projects including user requirement studies for housing, Services and Post Office buildings, offices and prisons, and the design of prototype buildings to illustrate those studies. Technical development includes work on NENK, SEAC, and 12M.

THE DIRECTORATE OF RESEARCH AND INFORMATION requires an architect to work as a member of a multi professional team engaged in research studies concerned with current problems in the building industry, aimed particularly at improving the quantity and quality of building production. Age and experience are of less importance than above average ability and an objective analytical approach.

QUALIFICATIONS: Applicants should be Registered Architects and at least 25 years old.

SALARY: on scale from £1107 to £2237 according to age and experience. Appointments will be non-pensionable in the first instance but there will be opportunities for pensionable employment with a non-contributory superannuation scheme; five-day week; generous annual leave and paid sick leave.

Apply to
Director of Establishments,
Ministry of Public Building and Works,
Room 526, Lambeth Bridge House, London, S.E.1.

Code 52

Architects

Ministry of Public Building and Works

Directorate General of Works

Architects of imagination and skill required to plan, design and construct buildings of national importance for home and overseas with opportunity to travel.

The Directorate General of Works has vacancies in the following Directorates:—

Diplomatic and Consular
Post Office
Army
Navy
Air Force

Salary: £1606 - £2152 for experienced Architects and £947 - £1578 for recently qualified Architects. These scales are increased for staff appointed in London. Scales are under review and starting pay may be above minimum points.
Five-day week; generous leave allowances; excellent promotion prospects. The posts are not pensionable but there will be opportunities for pensionable appointments. Applicants (men or women) must be Registered Architects.
Apply to:—

Director of Establishments
Ministry of Public Building and Works
(526) Lambeth Bridge House
London, S.E.1

Code 53

IMPERIAL CHEMICAL INDUSTRIES LIMITED

challenge

new products - new building

The Building Development Group of I.C.I. is commissioned to study the changing needs of architecture in all its aspects and to develop new components and techniques to meet these needs.
The existing team of designers, economists and technologists invites applications from architects with new ideas and enthusiasm to join them in an expanding programme of work, developing new components with new materials and methods.
The usual conditions of employment apply, which include a Pension Fund, a Profit Sharing scheme and some assistance can be offered to married men towards the costs of housing and removal expenses.
Please apply briefly quoting A1524/BR to:—

C. H. Oakley,
Personnel Department,
Imperial Chemical Industries Limited
Building Development Group
Bessemer Road,
Welwyn Garden City, Herts.

Code 54

CLASSIFIED ADVERTISEMENTS

SITUATIONS VACANT

INNER LONDON EDUCATION AUTHORITY
LONDON COLLEGE OF FURNITURE

Applications are invited for Assistant Lecturer, Grade B, in TECHNICAL DRAWING AND DESIGN in the Furnishing and Interior Design Department. An interest in and a knowledge of furniture and interior design an asset. Teaching experience is desirable. Present salary £830–£1450, plus £45 or £60 London Allowance, with additions for qualifications and training; starting salary depends on qualifications and experience.
Full particulars and a form of application are obtainable from the Principal of the College, Pitfield Street, Shoreditch, N.1.

BLACKBURN EDUCATION COMMITTEE
BLACKBURN COLLEGE OF TECHNOLOGY AND DESIGN
DEPARTMENT OF CONSTRUCTION AND CIVIL ENGINEERING
FINAL RIBA

A part-time course for candidates taking the external examinations for the Royal Institute of British Architects will begin on Friday, 24th September 1965, at 9 a.m.
Day release will be necessary in addition to attendance in the evening and students must have passed the Institute's Intermediate examination.
Full attendance is expected and the course will be supplemented with periods by visiting critics and lecturers. Works visits and films will also augment the course and the excellent library and other facilities of the College are available.
Application for places on this course should be made to the Head of the Department of Construction and Civil Engineering as soon as possible.
COURSE FEE, 55s. per session

D. G. HARTLEY,
Chief Education Officer.

INNER LONDON EDUCATION AUTHORITY
LONDON COLLEGE OF FURNITURE

Applications are invited for the post of ASSISTANT LECTURER IN TECHNICAL DRAWING AND DESIGN in the School of Furnishing and Interior Design. Salary £830 to £1450, plus London Allowance of £45 or £60, with additions for qualifications and training; starting salary depends on qualifications and experience. Full particulars and a form of application obtainable from the Principal of the College, Pitfield Street, Shoreditch, N.1.

In dieser Nummer

Denys Lasdun

Seine Auffassung von Architektur

Das erste Beispiel ist das Royal College of Physicians. Seine Verteilung im Gelände ist, verglichen mit Nash, ein Schulbeispiel für den Gebrauch des äußeren Raumes. Der niedrige Vorsprung der Vorlesungshalle vor den Hauptblock bewahrt den Charakter des Abgelegenen, eines privaten Hofes. Ein Hof bedeutet und bezeichnet eine Lehrstätte, nach innen blickend und vor Verkehrslärm geschützt. Ein draußen stehender Beobachter würde drei Hauptschichtungen in diesem Entwurf feststellen, jede durch ein besonderes Material gekennzeichnet: blaue Baggeridge-Bauziegel, weißliches Mosaik und bloßer Beton. Die Ziegelstreifen des Gebäudes sind dem Wechsel unterworfen. Sie können in einem Jahrhundert der Benutzung geändert, angepaßt und ausgedehnt werden. Als Gegensatz dazu, mit Mosaik verkleidet, stehen die festen und unveränderlichen Bauteile, wie der Raum des Censors in der Mitte des Entwurfes mit seiner Täfelung aus dem siebzehnten Jahrhundert, die aus dem Londoner Brand gerettet wurde, und die Bücherei, die für wichtige Mitgliederversammlungen benutzt wird. Der Zugang zu der historischen Buchsammlung wird kontrolliert durch den Bibliothekar und seine Angestellten neben dem Lesesaal.

Die Versorgungselemente sind in einfachem Beton ausgeführt, dem einzigen Material, das sich durch Verwitterung der Zeit anpaßt. Das Gebäude gibt einen Hinweis auf die immer wachsenden Raumbedürfnisse, garnicht zu reden von den Verzweigungen, von Schallkontrollsystemen, Beleuchtung, geschlossenem Fernsehkreis, und vor allem Luftversorgung mit Reinigung, Kühlung, Kontrolle von Feuchtigkeit und Temperatur. Die Eigentümer des Gebäudes von morgen erwarten höchste technische Vollendung, aber sind die beratenden Spezialisten und die Industrie denn wirklich darauf eingestellt, den Architekten gute Dienste in jedem Sinn des Wortes zu geben?

Im Inneren des Gebäudes ist der herrschende Raum und die Haupttriebkraft für die Anordnung des Entwurfes die Verbindung zwischen den Grundelementen des Planes. Es sind Halle und Porträtgalerie, abschnittsweise in zurücktretenden Stücken, mit einer freien Mitteltreppe, angeordnet. Die Treppe geht, im Uhrzeigersinn, in bequemer Stufung bis zum piano nobile. Beim hinaufsteigen wird die ganze Anatomie des Gebäudes sichtbar. Man sieht und fühlt, daß der Raum des Censors der unbestrittene Mittelpunkt des Gebäudes ist. Es ist durchaus möglich, daß die Natur dieses Raumes und dieser Treppe, die im Auftrag als 'das übliche Treppenhaus' bezeichnet werden, sich als entscheidender Faktor herausstellt, nicht nur dadurch daß sie dem College eine freundliche, demokratische und zweckmäßige Note verleiht, sondern es vielleicht erweitert zu einem Zentrum für Medizinertreffen aus aller Welt.

Wer sich in diesem Raum bewegt, erlebt die Nash-Terrassen im Inneren des Gebäudes. Um das noch zu betonen, wurden die Grenzen zwischen Innen und Außen durch sorgfältige Fensterverteilung aufgelöst. Solch eine Verteilung hat nichts damit zu tun, ob etwas rauh oder glatt, glänzend oder matt ist. Es betrifft den gesamten inneren Gehalt eines Entwurfs und seine Konsistenz.

Das zweite Beispiel ist die Royal Institution of Chartered Surveyors, ein ganz ähnliches Thema. Es soll einen Bau von Waterhouse im Parliament Square gegenüber dem Big Ben ersetzen, neben den viktorianischen Hochbauten von Brydon gegen Norden. Ein Stufenabschnitt gibt die Möglichkeit, daß viele Leute das Geschehen im Parliament Square und bei Staatsfeiern beobachten können. Die Möglichkeit zur Ausdehnung nach den Seiten und um Ecken ist ebenfalls gegeben.

Das dritte Beispiel ist ein Projekt für neue Laboratorien im Herzen von Cambridge. In einem Artikel in The Scientific American, 1954, spricht Kevin Lynch von Städten als den sozialen Einheiten der Zivilisation, mit Größe, Dichte, Körnung, Umriß und Muster. Menschen formen sie und werden ihrerseits von ihnen geformt. Sowohl Kevin Lynch wie auch Jane Jacobs (Tod und Leben großer amerikanischer Städte) mit ihrer Forderung nach 'üppiger Verschiedenheit' wollen in den Städten keine Trennung je nach Zweck. Sie wollen nicht die Stadtbücherei abseits in schönen grünen Rasenflächen stehen haben, wo niemand sie benutzt. Ich stimme damit völlig überein. Jane Jacobs sagt ferner: 'Eine Stadt kann kein Kunstwerk sein.' Für mich ist es das größte Kunstwerk, das die Zivilisation hervorbringen kann, und auch das aufschlußreichste.

Der Standort ist das Gelände beim New Museum, östlich von King's College. Der Plan sah drei Türme vor, bei denen jedes Stockwerk in große oder kleine Räume unterteilt werden konnte, mit Verbindungen zu den Versorgungen. Dieser Plan hätte der Angelpunkt zwischen Stadt und Universität werden können. Er wurde abgelehnt.

Der Auftrag für den vierten Entwurf, die Universität von East Anglia, hatte als Hauptinhalt das Streben nach Allgemeinheit des Wissens und die Einheit der ganzen Universität. Die einzelnen Studiengruppen sollten soziale und akademische Einheiten sein. College und Wohnhallen konnten hierin keinen Platz finden, übereinstimmend mit einer Rundfunksendung von Dr Chapman, dem Senior Lecturer der sozialen Studien an der Universität Liverpool: Die autonome Generation. Er sprach über junge Menschen—ihre Ablehnung gezwungener Formalität, ihren romantischen Puritanismus, ihre größere Unabhängigkeit infolge der Verbesserung in Heim, Gesundheit und Erziehung. Sie sahen allerdings das Leben noch als willkürlich und böswillig an und wünschten ihre eigenen Grundsätze für die Lebensführung zu haben. Infolgedessen stellte der Auftrag zu Recht die Frage 'Wie sollen junge Menschen in einer neuen Universität leben?' Die Richtung des Entwurfs wurde durch diesen Auftrag festgelegt. Gruppen von nicht mehr als zwölf Wohn- und Arbeitsräumen mit einem Frühstücksraum sollten die Grund-Wohneinheit bilden. Sie sollten im Gelände mit liebender Rücksicht auf Umgebung und Landschaftsform, auf Ausblick und Ansicht verteilt werden. Sie sollten Gewölbe schaffen für alle Nebenbeschäftigungen der Studenten, Spielräume, Waschräume, Platz für Wagen und Fahrräder.

Das Erfreuliche soll in den Räumen zwischen den Gebäuden sein—ein umschlossener Hafen, die Rasenflächen, die schwingenden Terrassen und erhöhten Gehwege. Die Geschlossenheit des Planes und die Tatsache, daß um die Universität kein 'cordon sanitaire' sein wird, geben auch weiterhin der Bevölkerung von Norwich die Möglichkeit, nach ihrem Belieben die neugeschaffene Landschaft zu genießen.

Der schnelle Zuwachs in der Zahl der Studenten verlangt nach schnellen Baumöglichkeiten. Die Gebäude werden aus großen, immer wiederkehrenden Betonfertigteilen errichtet, die entweder unter Kontrolle auf dem Bauplatz selbst oder in der Fabrik hergestellt werden und dann zusammengesetzt werden.

RATES: 1/- PER WORD, MINIMUM 20/- BOX NOS. 1/6 EXTRA Final date for Classified Advertisements for July is June 15
Write enclosing your remittance to: The Publications Department ARCHITECTURAL DESIGN, 26 BLOOMSBURY WAY, LONDON WC1

MINISTRY OF HOUSING AND LOCAL GOVERNMENT
AND THE WELSH OFFICE
ARCHITECTS

Applications are invited from Registered Architects (men and women) to fill about 10 Senior Grade and about 20 Main Grade pensionable posts in:

London
Birmingham
Bristol
Leeds
Manchester
Newcastle
Nottingham
and in the Welsh Office, Cardiff

London Posts: include vacancies in the Research and Development Group—on 'live' projects; the Industrialized Building and Consortia Group; the Local Government Buildings Group; swimming pools, etc.—and in the Architects' Section of the Joint Urban Planning Group.

Regional Offices, the Welsh Office and other London Posts: include vacancies for housing architects to co-operate with local authorities on large-scale housing programmes and in the organization of consortia initiating joint contracts. The work may include the initiation of pilot schemes; and also advice on standards, design and costs.

The duties will entail some travelling.

Salary (Inner London): Senior Grade, £2380–£2725; Main Grade, £1691–£2237. Starting pay may be above the minimum. The pay of these grades is being reviewed. Promotion prospects.

Write (preferably by postcard) to Civil Service Commission, Savile Row, London, W.1, for application form quoting S/6114/65. Closing date 21st June 1965.

MAX LOCK & PARTNERS require ARCHITECT with not less than three years' post-graduate experience for their Bedford office. Interesting work in good working conditions. Fifty minutes by train from London. Salary by arrangement. Apply in writing to G. W. King, Esq., Partner in Charge, Max Lock & Partners, 5a Harpur Street, Bedford.

CANADA

Young progressive office in Ottawa urgently requires two qualified assistant architects to work on a wide variety of projects.

(1) An all-round capable architect with five to seven years' experience, interested in emigrating to Canada for a reasonably lengthy period.

(2) Architectural assistant capable of sensible sketch designing, some knowledge of practical construction and good capability with regard to perspective and presentation sketches.

Applicants for position (2) would be considered for periods of up to 12 months and single fare may be paid. Please write: Griffiths, Lewis, Goad, 43 Doughty Street, London, W.C.1.

ANNOUNCEMENTS

Important European company is looking for an exclusive representative specialized in the field for building materials, for sale of plastified marble granulates for external or internal wall facings. Exceptionally decorative. Highly competitive prices. Technical test granted by official laboratories. Granulite, 30 Rue Montéra, Paris 12, France.

Graeme Shankland and Oliver Cox announce that following the latter's resignation from the position of Deputy Chief Architect with the Ministry of Housing and Local Government, he will be joining the practice of Graeme Shankland Associates, Town Planners and Architects, at 28 Bedford Square, London, W.C.1. In future the practice will be known as Shankland, Cox and Associates, Planners and Architects, the address remaining unchanged.

SERVICES

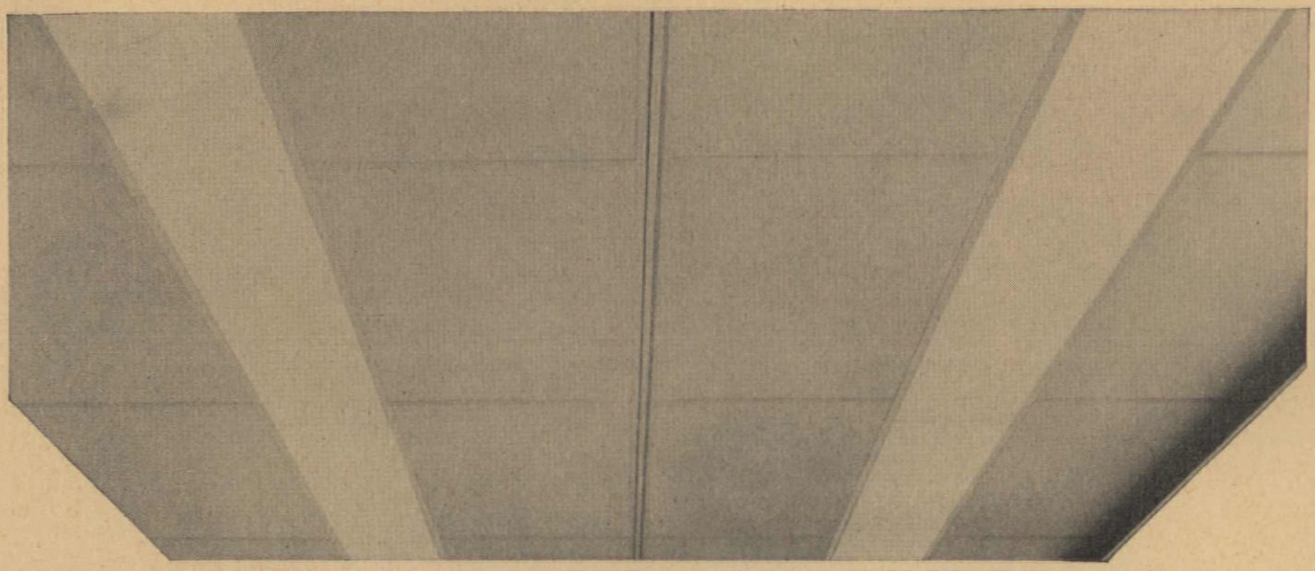
MODELS made: architectural and industrial. Realistic models at a realistic price. Good delivery. Send drawings or call at showroom MODULEX, 62 Brompton Road, S.W.3. KNI 9173.

Modular Laboratory Furniture from stock, also Bench Tops and Fume. Cupboards. We shall be pleased to quote for your requirements. E. C. Hodge Ltd., Norton Road, Stevenage. Telephone: Stevenage 2214.

INTERIOR DESIGN

DIPLOMA IN INTERIOR DESIGN AND DECORATION

Rhodec School now offers a complete home study course in Interior Design and Decoration. Course One for professional use. Course Two for personal use about the home. Send 4d stamp for details to Dept. ARD, Rhodec School, BCM/Rhodec, London, WC1.



UPPERMOST IN MIND
A FIBERGLAS *CEILING*

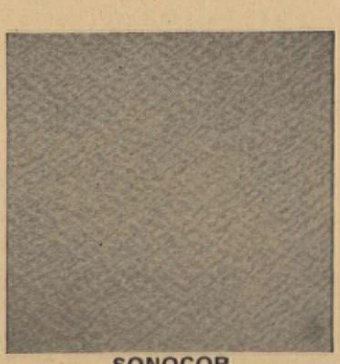
Sonocor and Sonoflex are lightweight and durable Acoustic Ceiling Panels made of Fiberglas which have the following advantages:

* Dimensional stability
* Five year guarantee against shrinkage, warping or sagging
* Non-combustible
* Easily washable surface
* Thermal/acoustic properties
* Complete accessibility

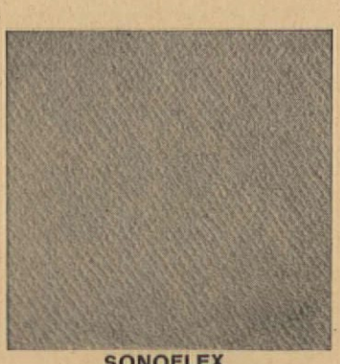
A Sonocor or Sonoflex ceiling installed complete with a Grecon Plastic Sleeved Suspension System (or similar), costs approximately 30/- per square yard dependent on area, size of panel and finish.

Sizes: standard sizes ex stock
metric sizes ex stock
special sizes to order

Overall weight: less than 1lb. per square foot.



SONOCOR



SONOFLEX

OWENS-CORNING FIBERGLAS

NOISE CONTROL PRODUCTS LTD

11 DUKE STREET, HIGH WYCOMBE, BUCKS
TELEPHONE: HIGH WYCOMBE 22331

POST THIS TODAY!

Please send me details of Sonocor and/or Sonoflex Acoustic Ceiling Panels

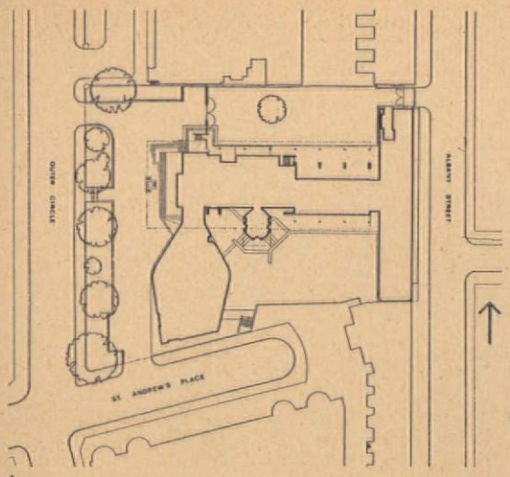
NAME .....

ADDRESS .....

.....

.....

Cut out and send to Dept. 14 Noise Control Products Ltd. 11 Duke St., High Wycombe, Bucks.



1



2

1
Royal College of Physicians site plan
2
Royal College of Physicians from Park Square East

The architecture of etcetera

Alvin Boyarsky

It has become quite fashionable today for architects to propose solutions to problems which are neutral, repetitive, mechanical and, in many respects, capable of being laid out far more efficiently by a computer. Perhaps the problems thrown up by society are increasing in magnitude and complexity. Perhaps there has been a failure of nerve. Refreshingly enough, three of Britain's leading architects (the Smithsons, Stirling and Gowan, and Denys Lasdun), working from separate points of departure, different yet principled, have recently shown that society's needs are still capable of fertilizing their imagination. They have demonstrated their unique personal skill as architects, and each, in his own way, has given us something which has great relevance at the moment when the architectural situation is so fluid and the mainstream has so many tributaries.

The Smithsons, like Alberti and Le Corbusier before them, have approached their problem from a conceptual or Utopian position. The Economist group of buildings could not have come about without reference to an intellectual structure, an image of an ideal society and a detailed consideration of all its parts. That such a cluster of buildings is urbane and full of historic references, making momentary concessions to the surroundings, is not to be confused with the real intent, which is that of a time bomb ticking away, waiting for the moment when it can exert, by its explosive example, a direction for the rebuilding and infilling of a city such as London.

Stirling and Gowan, in their Mechanical Engineering Building at Leicester, have produced a sculptural, brash and, in some ways, somewhat nostalgic structure. Unlike the Smithsons, they have been concerned with the distillation of a particular brief to its essential elements. A dramatic vertical circulation system has inevitably resulted, round which an articulated series of ideal volumes rotate, each taking the form its use demands, in optimum relationship to each other and to the ground. They have confirmed for us our faith in the potential of the Functionalist tradition of the Twenties, and I doubt whether the architects would take exception with Bruno Taut when, in 1929, he wrote: 'Everything that functions well looks well.'

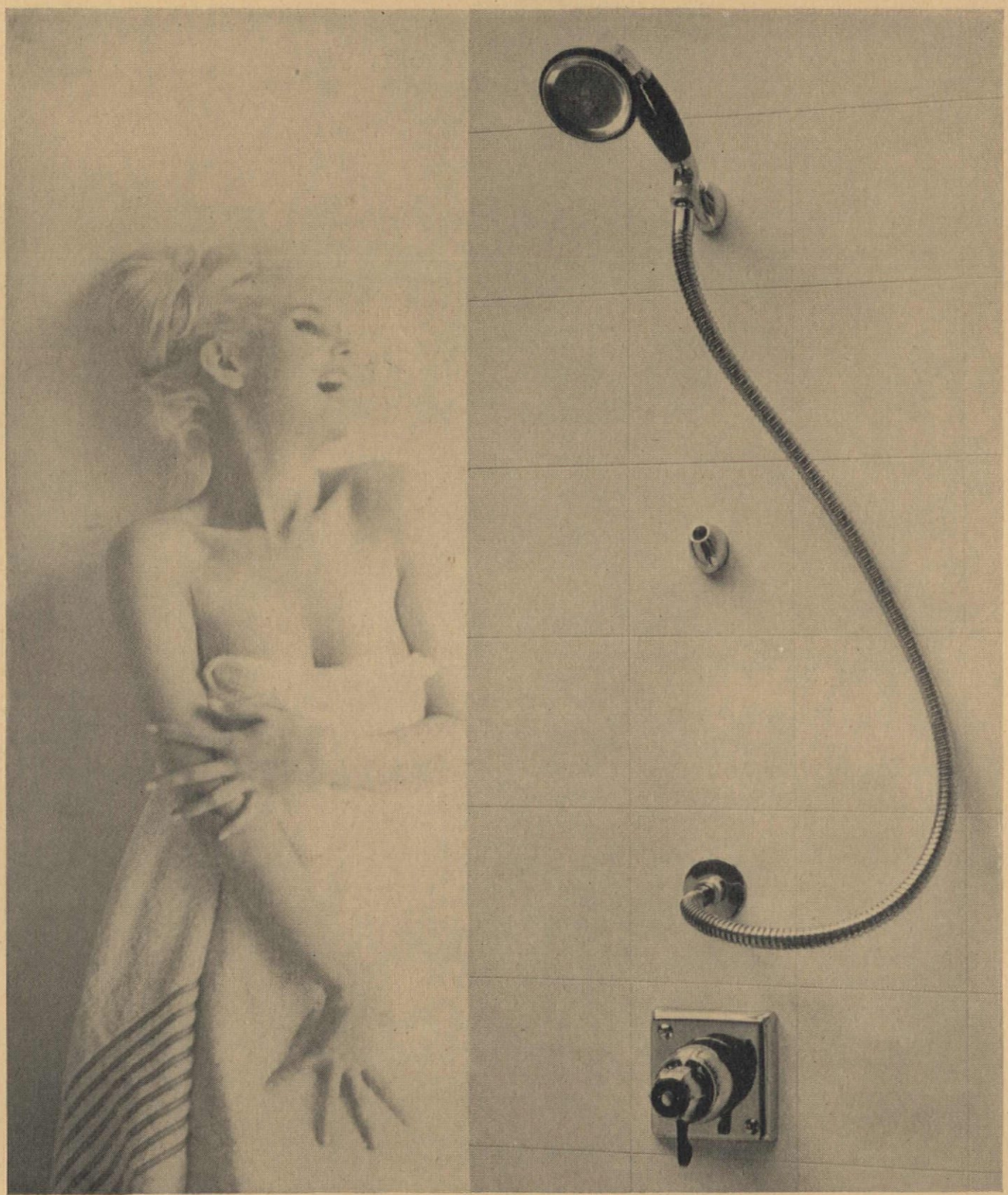
In the case of Denys Lasdun, although the Royal College of Physicians building has been widely commented upon and illustrated in the architectural press, it has baffled the critics, who have merely dicussed the visible aspects, the shape, colour, use of materials, articulation, and the traditions of the learned society for whom it was built. The essential determinant principles, the struggle Mr Lasdun has gone through to synthesize opposing elements in his own background, and the implications of this building have not been perceived.

It can be demonstrated that Denys Lasdun has, for some time now, been preoccupied with evolutionary and ecological ideas, and inevitably, perhaps, with the analogy between the organization of architectural forms and those found in nature. He has derived inspiration, confidence and new directions from these ideas, and there has been a corresponding amount of both literary (as evidenced in his recent address to the RIBA, published on page 271) and literal organizational fall-out. Thus, the Hallfield Primary and Infant School in Paddington (completed in 1955) may be likened to a branch with leaves; the block of flats at Bethnal Green (completed in 1960) as a cluster of four coupled pods rotating about a central core; and, more recently, at the University of East Anglia, Mr Lasdun has returned to the analogy of a central artery with bifurcated tributaries feeding secondary and tertiary organs, this time with greater conviction and interwoven with the grass swards and cascading terraces of the site to produce an organism in equilibrium with its environment, flexible and capable of growth in the unknown future. The expanding, square, spiral, master plan for Fitzwilliam College at Cambridge, with its central core containing the essence of the college and itself capable of growth as the rest of the college expands; and the proposal for the Royal Institute of Chartered Surveyors, which may be interpreted as an extruded section capable of extension in any direction and coded, perhaps, in an anticipatory way to spiral its way round the north and west of Parliament Square to unite the space and to act as a background for the plastic display of its architecture and the pomp of its ceremony, are further indicative of the themes he has been pursuing.

For an organism to survive in its context, in addition to being capable of adaptation and growth should the circumstances demand it, it must at any moment be in a state of equilibrium. Mr Lasdun's ability to intuite the essence of that complex orchestration of infinitely gradated shapes, colours, textures and the endless variety of rhythms and scales of an existing urban situation, has been demonstrated in his isolated solutions for the luxury flats overlooking St James' Park adjoining Spencer House, and the Peter Robinson Department Store at the Adelphi. While the projected Cambridge Science Laboratories, consistent in their own right, were designed to become an important plastic element in the mosaic of an emerging central Cambridge and, by extension, to complement the all-important King's College Chapel composition from the Backs. These essays must not be confused with sentimental, preservationist and picturesque instincts. They are vital to his ecological analogy.

This search for stability and equilibrium between organism and context reaches its maturity at the site of the Royal College of Physicians, where, in the full light of the public eye, he is faced with a textbook site planning problem in as challenging a setting as any architect is likely to encounter. Fortuitously for the learned body of physicians, a gap presented itself in the great line of Nash terraces enclosing Regent's Park at the intersection where the southern and eastern sides of the Outer Circle meet Park Crescent at an obtuse angle. The site—approximately an acre and a half—goes clear through to Albany Street and is bounded on the south by St Andrew's Place, which is a cul-de-sac extension of the line of terraces starting from Cornwall Terrace, York Terrace and Ulster Terrace, and the vista is terminated by a classical porch, complete with great Corinthian order, rusticated base and pediment.

The facilities for the learned body have been divided hierarchically into three elements; the ceremonial block; an auditorium; and an administration block. The ceremonial block, set at right-angles to the Outer Circle, screens the mews and gables of the Edwardian terraces to the north and looks south into the now enlarged St Andrew's Place. The administration block is disposed along the frontage of Albany Street, and thus provides closure for the site. In this way the Georgian scaled and matter-of-fact street architecture, and the directed space of Albany



Twenty-five years ago showers were temperamental gadgets for the few. Today, thanks to the **Leonard 72 thermostatic** valve, they are an essential feature of modern living for all. Leonard's precise, unvarying selection of water temperature and flow puts exhilaration and luxury at the whole family's fingertips. When you specify Leonard valves, you specify excellence. Write for literature.

WALKER CROSWELLER & COMPANY LIMITED · CHELTENHAM

Street, have been maintained. The run of terraces from the north is punctuated by the propped-up gable end of the ceremonial block, and the eye is, in a sense, continued round along its floating entablature, complete with triglyph and metope back into the site, turns the corner again, as it were, towards Nash's porticoed focal point at the end of St Andrew's Place, and continues along the bay-windowed, three-tiered, stuccoed, Mansard-roofed terraces to the south into Park Crescent and, by extension, to the heart of London. The auditorium mass itself is adapted to the micro context which has been established. It defines the limits of the site along the Outer Circle, and has been sunk into the ground with its walls battered so as not to interfere visually with the continuity provided by the entablature of the ceremonial block. Its southernmost wall acts as a perspective plane, pointing towards the portico terminating St Andrew's Place, and is best understood when approached from the direction of York Gate and Ulster Terrace, while the Outer Circle wall of the auditorium is shaped to guide the eye towards the entrance from the intersection of Park Crescent and the Outer Circle.

In a special sense Mr Lasdun has captured a private space and united its disparate elements in a gigantic spiral revolving around the prow of the auditorium block, while the space within unfolds itself and reaches out to encompass all of Regent's Park, a solution reminiscent, perhaps, of Fitzwilliam College.

Much has been said elsewhere about Mr Lasdun's use of scale, rhetoric, plastic effect and materials to rhyme with Nash—the cream of the Italian mosaic, the blue brick of the auditorium, which recalls the Mansard tiled roofs, etc. Surface, mass, external volumes and subjective space are in balance. The building and its context are at one.

Unlike the Smithsons' calm, prefigured approach to their site, and Stirling and Gowan's predestined, pragmatic articulation, Lasdun has remained cool and flexible, has reached out in all directions to embrace his setting, articulating his brief for symbolic and contextual reasons, with the chameleon-like, changeable elements of the auditorium and office block flanking and protecting the permanent mass of the ceremonial block. Mr Lasdun, describing the Royal College of Physicians in his recent RIBA address, said: '. . . it ceases to be a building with a capital B. It is more a piece of organization sensitized to its external context and capable of growth and change'.

Mr Lasdun in signalling to us in his address that he has attempted a 'shift from the notion "organization" to "organism" ', has perhaps tried to tell us that in examining the Royal College of Physicians building we must be prepared to look well beyond mere harmony between context and building, or even the assembly of parts and their mutual relationship, perhaps to some vital force independent of the substance of the building before we can properly understand it.

In organizing the entry sequence, a narrow axis of space has been articulated which penetrates the length of the ceremonial block and which appears to have been rhythmically sliced laterally into several shallow layers. So that approaching the gable end of the ceremonial block frontally we are off centre passing to the south of the three columns which prop the mass of the library above, and the longitudinal section of the building begins scaling down towards the horizontal canopy plane hovering above the glass entry cage.

Upon entry we find ourselves on a split section, and the whole of the internal organization unfolds. To the right, the space of the entry extends into the concave lobby of the lecture theatre. Below and to the right the blue brick paving of the members' room floor extends out and carries our eye to the green of the enlarged St Andrew's Place, which has hitherto remained unrevealed. Directly ahead on axis with the entry, the deep slot of space opens up and further explores the longitudinal section of the building, narrowing down above the half flight up to the main hall in the foreground where the weight of the library is felt, and then opening up vertically to reveal the full extent of the three-storey galleried hall. It is defined by the ceremonial staircase to the left, while in the middle distance, immediately opposite and to the right, the brightly lit profile of the Censor's office, with its twin columns and the soffit of the upper gallery above, offers a fleeting recapitulation of the profile of the gable through which we have entered. The eye is led to the rear white plaster wall of the centre hall by following the accent of the polished manganese bronze stair railings on black cellulosed steel of the half flight up to the main hall in the foreground, the railing of the main ceremonial stair in the middle distance, and by the detailing of the vertical slit which contains the glazed entrance to the double volumed dining area on the piano nobile, and through it to the furthest extent of the block.

Above and to the left can be seen the gallery connecting the ceremonial staircase of the main hall back to the library which is pressing down upon us. Immediately to the left, in a blue brick panel perhaps reminiscent of an earlier era, and complete with slits and openings, is set a stone, graven with the arms of the college, which received its charter in 1518 from King Henry VIII, and which has been charged with the maintenance of standards in medicine and the encouragement of friendship among physicians. The bronze and black tones of this plaque taken from the City of London home of the first president, Thomas Linacre, where the college met for over a century, permeate the entire space, accenting the white Sicilian marble floors and planes of the central hall.

Moving diagonally across the lobby to the left, as we must—and incidentally back on axis with the propped columns—we enter the restricted space of the half flight of stairs up to the main hall where the iconography of the college is further revealed: to the right are stained glass windows incorporating old heraldic glass of past practitioners, and to the left a bust of William Harvey, who expounded 'those original and complete views of the circulation of the blood which have made him the glory and the honour of English physicians'.

By this time we have entered the space of the central hall. The knife's edge of the gallery above us, centered on the half flight we have negotiated, and the body of the stair ahead, forces us to move diagonally to the right and back into the controlling axis of space. Vertically and laterally to the right, by virtue of the great plane of glass, we are offered our first glimpse of the architecture across the square in St Andrew's Place and are further introduced to the mass of the Censor's block, which appears to be floating in space.

Proceeding further, we are compressed between the body of the ceremonial staircase and the Censor's office—noting a further plaque on axis with the staircase—and finally the sequence ends with great release in front of the glazed panel beyond the Censor's office, which looks out over a view of the Corinthian porch which terminates St Andrew's Place.

To the casual visitor nothing remains but to explore the space of the hall and to circumnambulate the dimly lit space around the stair which fills the centre of the hall, browse through the many portraits of past presidents, etc., and slowly spiral back to the half flight down to the lobby. In this way Mr Lasdun has put us at our ease. He has explained the organization of the building; he has allowed us to examine its parts in sequence; he has oriented us back to the site and, incidentally, has enveloped us in the traditions of the learned body.

On the lower ground floor are to be found private facilities for the Fellows, which consist of a glazed gallery overlooking the enlarged St Andrew's Place, a small lecture room, a common room, and a polygonal fellows' sitting-room. Moving down the half flight of stairs, the calm and clarity of the public entry sequence at the ground floor have been disturbed. The twin columns, which we have experienced above in front of the Censor's office, are now directly on the centre line of the staircase. We have no choice but to move diagonally to the left or to the right, and then straight ahead, with a further parting of the ways before reaching either of the common rooms. Similarly, on exiting from the members' common room at the opposite end of the glazed hall, anyone attempting to leave the building via the entrance lobby is presented with the same dilemma. Entering the polygonal fellows' sitting-room—which is, incidentally, below the Censor's office and centred on the aforementioned colonnade—the bifurcating diagonal walls recapitulate physically the movement of by-passing the columns in the hallway, and upon moving further into the small space, the same diagonal bifurcating theme is repeated, this time by virtue of the extension of space looking across at the Nash terraces and towards the Corinthian porch at the end of St Andrew's Place. The edge of the paved terrace just outside further takes up this theme of movement ahead and parting to the left and right, movement ahead, etc. We are reminded of the various diagonal manoeuvres we have negotiated in experiencing the entry sequence. We also remember that from the north and from the south most visitors approach the building diagonally rather than frontally, as previously described, while in approaching the auditorium from the main entrance lobby one must part way, as it were, from the main visual axis of the space, move into the concave lobby, part way again to the left or the right around the circular staircase leading up from the check rooms below, and then, upon entering the auditorium, move to the left or the right to take up our seats.

It would seem, therefore, that perhaps Mr Lasdun has been striving to communicate with the learned members, perhaps to impress upon them an analogue between the distribution systems of an organism and architecture. As he said in his RIBA address '. . . architecture is an organism in which the architect is primarily concerned with routes, focal points and the enclosing fabric'. If one substitutes for 'routes' 'circulatory system of an organism', for 'focal points', 'organs', and for 'enclosing fabric', 'membrane', perhaps his analogy is complete. Returning to the tranquillity of the central hall, and negotiating the main spiral staircase, we are once again in a controlled situation: movement and vision are coordinated. The quality of light, surface, mass and plane are cued in sequence. Approaching the stairs, we look back

towards the entrance lobby, where the green and shimmering light of Regent's Park are framed by the section of the building. The first flight familiarizes us with the subdued light of the expanding galleried halls above. The next flight, clockwise, brings us into full view of the dining-room, where, since the opening of the second house of the college, during the reign of James I, the Fellows take turn in providing for the President and Fellows a 'frugal yet fitting and sufficient dinner'. Subsequently we are overlooking the floating mass of the Censor's office, which is within 'wainscotted in the most elegant manner with fine Spanish Oak' designed for the college's third home on Warwick Lane by Robert Hook in 1675, and preserved by Smirke in the nineteenth-century Pall Mall East house before being duly enshrined by Lasdun. It is here that the four Censors, who are amongst the chief officers of the college, meet, and where students receive their traumatic final oral grilling before being admitted to the college. Then, with sufficient momentum, we are propelled towards the library itself, which was originally built by Harvey at his own expense as a repository for 'simples and rarities' in 1654. While the Great Fire of London destroyed his collection, his portrait was recovered, and now presides over the library, together with a gift of 3000 books by the Marquis of Dorchester, given in 1658 to replace the original collection. Thus we trace the ceremonial sequence from Censor's office to library, when the four Censors meet and, together with the President, slowly walk around the spiral stair, observed by the members, on their way to Comitia, the meeting of the governing body of Fellows.

The two-storey galleried library is subdued and anticlimatic. The corner slit windows take up the now familiar bifurcating theme, and offer a vantage point for the browser to look back over the park.

Moving on to the gallery, to pay homage to Harvey's portrait, we come face to face with four wooden panels prepared in the seventeenth-century in Padua, upon which are dried, mounted and glazed human artery systems, and which are said to have been used by Harvey in preparing for his famous Lumleyan lecture to the college, when he announced the startling discovery of the continuity of the human circulatory system. There are the major arteries, the bifurcations for the limbs, with their secondary and tertiary tributaries; there are the overlapping spirals connecting the organs to each other and to the central spine. Reflecting on the circulation patterns as we have experienced them, it would appear that Mr Lasdun has been engaged in an enormously witty game. He has paid tribute to Harvey, abstracting from the traditions of the institution the discovery of this one man, whose teaching has meant so much to him, as we have already seen.

So that all is now clear. Standing on the gallery of the piano nobile, with the library double volume to the right and the dining hall double volume to the left, and focusing on the Censor's office, which dominates the space, there is a sense of calm in this white marbled hall, which changes subtly with the quality of the light and the movement of people below. The crisp detailing of the glazing surrounding the box of the Censor's office, the empathy of the perspective mosaic side walls of the Censor's office and of the projecting piano nobile gallery, dissolve the boundaries of the space and reach out to embrace the panorama of Nash's terraces. The square spiral staircase directly below unfolds itself and engulfs us in a vertical vortex of ever-increasing spirals, recalling the great Harveyan analogy, and we imagine ourselves in the bowels of an organism, with its interconnected vital organs spiralling around us and with a sea of space rushing in from St Andrew's Place to envelop us, while below the pulsating rhythm of movement along the main artery, with all its tributaries, connects the first approaches of the site, through the hall and beyond to the heart of the college where the principal officers sit, and beyond that again to the brain of the administration. A reconstruction of the Anatomical Tablet has been achieved.

Mr Lasdun, with his dense architectural language, which reverberates in multiple meanings and clusters of metaphors, has been able to inject his set of values over a whole environmental situation, and by his careful handling of focus and route, and extension of space, has involved us in a series of voluntary, vivid intuitions, so that by funding our successive perceptions we are able to reconstruct it, architects, medical practitioners, scientists and the lay public, each in our own way. The building, the context, and those who must use it are at one. From the particulars of the site, the working parts of the building and the traditions of the learned society, we have been brought into contact with the general laws governing nature, the correspondence between life and architecture, and the worthy Fellows as they explore the anatomy of their college are in perpetuity reminded of the essence of their craft.

In his RIBA address, Mr Lasdun modestly referred to the description of the circulation space given in his brief as the 'provision for the usual staircase, etc.'. We are most grateful for this architecture of etcetera.

It is necessary at this point, however, to remind Mr Lasdun that his intense intellectual and illusionistic preoccupations have blinded him to many of the realities of his building. Unfortunately the blank enigmatic quality of the college, and its over-articulation from the Regent's Park side, tend to set it apart from its setting in spite of the heroic battle fought to make it fit. The auditorium mass is frankly awkward, while the junction between ceremonial block, administration block and the Corinthian porch is doctrinaire rather than sympathetic to the theme of continuity of surface which he set out to achieve. The clutter of the courtyard itself, with its metal fences, brick walls and landscaping produces at best a pleasant garden from within, but is a far cry from the fine square such a secluded position could have supported and which the continuity of external space perhaps demanded. While inside the ceremonial block, both the library and dining halls are disappointingly dull.

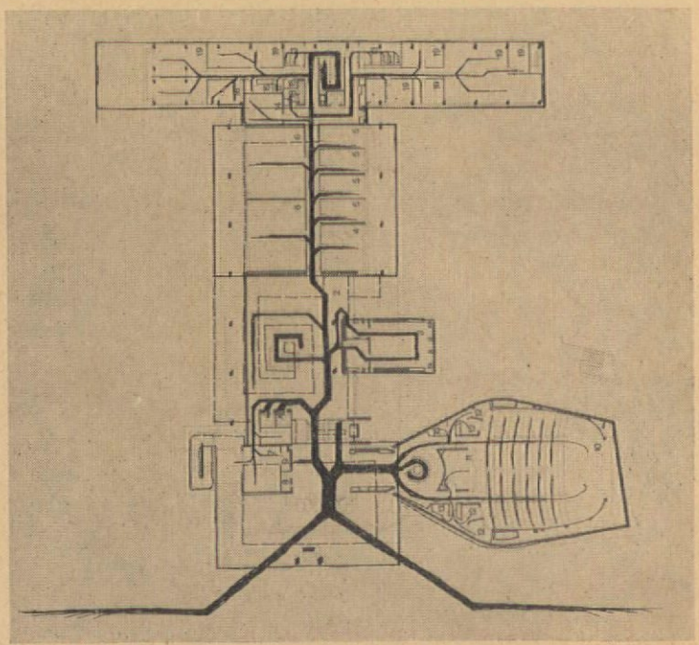
More important, perhaps, we must urge Mr Lasdun to reflect on the built-in contradictions in his approach. In order to produce an anthropomorphic architecture in which all the parts are regulated according to an ideal anatomy of man, many *a priori* decisions have been taken which do not correspond with facts of a functional and technical order. For example, the library is, to say the least, inorganic, with its stacks in the administration block, its working library interrupting the volume of the dining hall, and its rare books and gallery across the main hall above the entrance and entered one level down. The general absence of structural components from his major spaces—except when required for expressive or hierarchical reasons as, for example, the three suffering structural supports in the groin position supporting the massive load of the library, or the colonnade framing the Censor's office, and service elements which have been discreetly tucked away within the volume of the ceremonial block when absolutely essential, or else tacked on to the roof of the block for symbolic reasons—are further instances which undermine his theme of integration and consistency. He has produced, therefore, something less than the controlled orchestration of all the systems of which he, of all architects practising in England today, is most capable.

It is, however, very encouraging to find that Mr Lasdun has at last been able to funnel the two successive architectural traditions which have nourished him into a single channel: his training with Lubetkin and his worship of Le Corbusier on the one hand, and his preoccupation with evolutionary ideas on the other. From Lubetkin he has learnt about parti and symbolism. From Le Corbusier, particularly from the Villa Garches period, he has learnt about central planning, the layering of space, the movement through space diagonally and in spirals, etc. For some time now he has been involved in a diagrammatic architecture emulating the organization of natural forms. With the Royal College of Physicians he is once again back in the mainstream of architecture, but with a new-found sense of purpose.

His sketch proposals for the New National Theatre are shown on page 263.

'We are only at the threshold of an attitude to architecture vvhich, when properly understood, may be as formative an influence as were the re-discovery of the Vitruvian norms to the Renaissance'

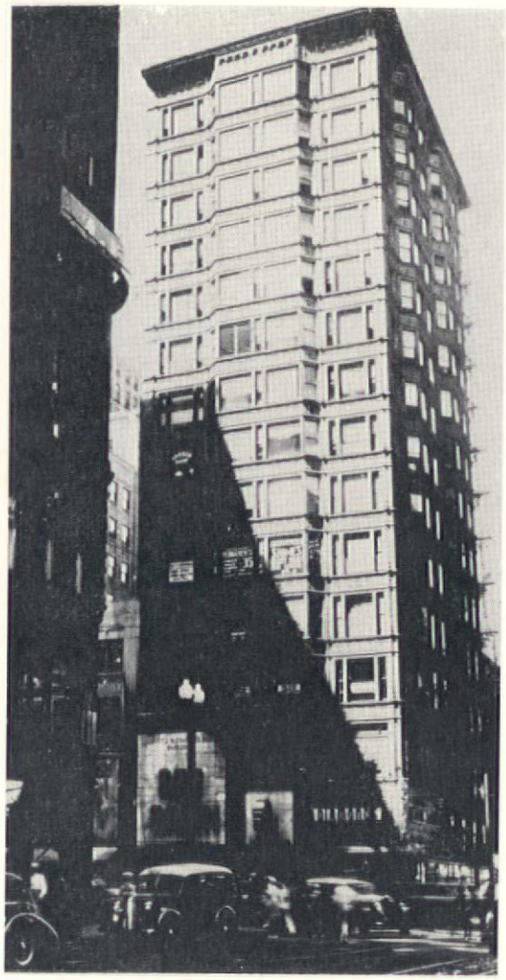
Denys Lasdun



Alvin Boyarsky's interpretation of the Vitruvian man based on the circulation pattern of the Royal College of Physicians.

Denys Lasdun

His approach to architecture



1



2

1
Reliance Building, Chicago, by Daniel Burnham and Associates (1890/94)

2
'Le pavillon Suisse' in the Cité Universitaire, Paris, by Le Corbusier and Pierre Jeanneret (1930-32)

3
Whitleigh footbridge designed by D. Lasdun and Partners (1953) in conjunction with Alan Harris of Prestressed Concrete Ltd.

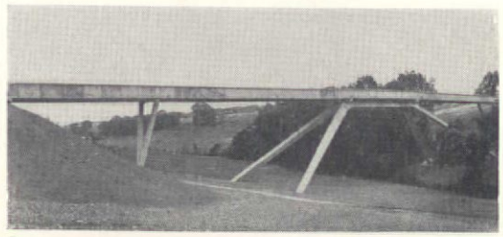
*In addition to the partners, Denys Lasdun, Alexander Redhouse and Peter Softley, and the three associates, Graham Lane, Peter McKinley and H. W. Pugh, the following architects have contributed to the work illustrated on the following pages:
C. Baden Powell, D. Ball, M. Brawne, E. Cullinan, B. Dammann, T G. Elson, G. M. Forbes, D. D. Glennie, I. Habarfeld, S. J. Howard, G. John, A. Kawecki, S. Kuszell, A. J. Matthews, D. Mill, M. J. Minjoodt, D. Oldham, A. Ponis, D. Potter, M. A. Roseberg, D. A. Russell, P. M. W. Stoughton-Harris, M. Taylor, M. Tebbs, J. R. G. Thomas, J. Toovey, W. Ungless.
Model makers: R. W. F. Kirkman and P. J. Wood.

A talk given at the RIBA on 9 February 1965, and four recent designs which exemplify this thesis.

The Reliance building (1890), completed within two or three years of the birth of Le Corbusier, is an example of the work of the Chicago School of Architects—an important chapter in the early history of modern architecture made memorable by Hitchcock. It was the period of Sullivan, a student of biology ('Form follows function'). It is a reminder to you and myself that modern architecture is a tradition barely one hundred years old and we belong to that tradition, though each of us, according to our age group, constitution and temperament, interprets that tradition in a different way. One of the reasons why we interpret things in a different way is also due to the moment at which each of us comes into this tradition. I came in about 1935 and went to the AA, where the burning question was whether it was morally right to use Chinese ink manufactured in a bottle as against grinding it down from the solid in order to produce an architectural drawing. I had, of course, read Pevsner's *Pioneers of the Modern Movement*. I had read *Towards a New Architecture*, translated by Etchells, and my first false feelings about Corbusier were that he was a 'dreamer'. I read Ozenfant's *Foundations of Modern Art*, but the polemical situation that had been brewing in the Bauhaus ten years previously was not crystallized for me until I saw Corbusier's Pavillon Suisse building for students in Paris. The 'dreamer', I now realized, could really build. The detractors were quick off the mark. 'Poor little dears,' they said, 'frying like hot cross buns behind all that glass.' But it was a building that changed the course of architecture for the whole of my generation.

Just as architecture for me oscillates between reason and feeling so this building made me aware of two qualities—that which is unique; that which is universal. What is unique is the magnetic attraction of the particular skill of the architect. We can applaud and celebrate; maybe we cannot copy. What is universal has relevance to the moment and is what we can all learn from. This building presaged a vision of a city and how to deal with mass housing. It was antithetic to the obsolescent slums of the nineteenth century. It demanded to be set in space with sun and air between it and its neighbours. The landscape was liberated by poising it on 'pilotis' with a lightweight standardized superstructure over. It has rightly been described as *the* academic building of the 'thirties.

I cannot begin to tell you what effect that building had on me and many others. And, at the same time, there was something else—a substance; a muddy mixture of marl, clay, lime, sand, gravel, water, heavily laced with steel-reinforced concrete. I began to get very excited, so excited that I could not get out of the AA fast enough, and leapt into the arms of Wells Coates. From Wells Coates I learned a great deal. I am glad that soon he is to be remembered in a retrospective exhibition. I learned a great deal



3

from Lubetkin. From Samuely, and more from Arup, I began to understand the nature of reinforced concrete, first heard of about 1850. From Alan Harris I later learned more about the potential of precasting and prestressing in bridge design, a technique less than 35 years old.

I had also read another writer who informed and inspired me and who wrote about the founding fathers of the modern movement at a time when he would have been old enough to be James Bond's father.

A most precise writer, he was known affectionately in the architectural press as '·001'. Shortly before his death, at the end of the 'fifties, he had this to say: 'I have frightful nightmares, and no wonder, for I am haunted by a gnawing sense of guilt in having, in however minor or obscure a degree, helped to bring about, anyhow encouraged and praised, the embryo that has now materialized into a monster which neither of us could have foreseen—contemporary architecture'. Name, Morton Shand. The war had been and gone, but the Pavillon Suisse was repeated by others in different contexts *ad nauseam* throughout the world. Meanwhile, life itself had changed.

As a practising architect I have one foot, perhaps, in the future, but basically I am concerned with the present. I draw my conclusions from what I am involved in with my colleagues and clients. I make no apologies, therefore, for showing you work that has come out of the office and this brings me to the beginning of this talk.

I am going to discuss three, for me, important single buildings. They have certain characteristics in common in that they are in the middle of cities. Each of the three are what has come to be a dirty word, 'one-offs'. In the last project I am going to try to relate the intellectual connexion between a 'one-off' and working for the greatest number. I would therefore implore you to disassociate from your minds entirely the word 'prestige' from the fact that these buildings happen to be on important sites. There is no such thing as a prestige building except the one that you wish to make a prestige building, however small, or wherever it may be; and all buildings should be thought of in that way.

The first example is **the Royal College of Physicians**. You can go and see it, and the building, if it has anything to say, will have to speak for itself.

The function of the college is to maintain the highest standards of medical practice. It forms an independent body of opinion which governments and universities can consult. It is concerned with the standards of undergraduate and post-graduate education. It is a centre for meetings of specialized societies within medicine.

It may, however, be helpful if I isolate certain

points which have interested us in the building. Its disposition on site relative to Nash is a key exercise involving the use of external spaces. The low projection of the lecture hall from the main block preserves the character of a small-scale backwater, a private court. A court defines in physical terms a scholastic body, inward looking and protected from traffic noise. An outside observer would be aware of three primary stratifications in the design, each signalled by three specific materials: Baggeridge blue engineering bricks, off-white mosaic and exposed concrete. The brick zones of the building are susceptible to change. They can be altered, adapted, extended through a century of occupation. In opposition to this and faced in mosaic are the fixed and unchangeable elements of the building such as the Censor's Room at the heart of the plan with its seventeenth-century panelling preserved from the Fire of London, and the library, used for important meetings of the Fellows. Access to its historic collection of books is controlled by the librarian and his officers adjacent to the reading room.

Service elements are left externally in concrete —the only material likely to weather with time. The building gives an indication of the increasing space demands, let alone complexities, of systems of sound control, lighting, closed circuit television and, above all, air handling, including filtration, refrigeration, control of temperature and humidity. Tomorrow's building owners will expect top technical performance, but are the specialist consultants and industry really geared to offering architects a viable service in both senses of the word?

Coming to the inside of the building, the dominant space and prime mover in the plan arrangements is the connexion between the main elements of the plan. It is the hall and portrait gallery designed on section in receding galleries with a free central stair. Movement of people up the stairs involves a clockwise journey in easy stages to the *piano nobile*. During this journey the whole anatomy of the building is made visually clear. The Censor's Room is seen and felt to be the unchallenged focal point of the building. It may well be that the nature of this space and stair, originally described in the brief as 'provision for the usual staircase, etc.', will be the decisive factor, not only enabling the College to do its work in a friendly, democratic and efficient way, but increasing its scope and function to a world centre for medical meetings. As one of the Building Committee members said during a visit to the job in progress, 'But, of course, we shall hold informal lectures here from the quarter-landing' (sometimes function follows form). This kind of space needs people. Without them, it's like the City on a Sunday. People moving about this space experience the Nash terraces within the belly of the new building. To assist this feeling, the boundaries between what is inside and what is outside have been dissolved by careful detailing of fenestration. Detailing is not a question of whether a thing is rough, smooth, shiny or matt. It is concerned with the intellectual texture of the whole design and its consistency. Architects working on this or any other aspect need to have been involved with the design directive leading up to the whole conception and thereafter with the system to which this building responds.

This is by no means a perfect building—that would be boring. In fact, it seems to me, looking at it, that it ceases to be a building with a capital 'B'. It is more a piece of organization sensitized to its external context and capable of growth and change. It is, therefore, an organism in which the architect is primarily concerned with routes, focal points and the enclosing fabric. In its own way, it speaks across time, it matches and rhymes with Nash.

It probably contains, like life, contradictions and ambiguities. We are only at the threshold of an attitude to architecture which, when properly understood, may be as formative an influence as were the re-discovery of the Vitruvian norms to the Renaissance. At any rate, before I forget the bloody struggles of its design, I shall have to return and feed back to myself the devastating lesson that all of us have to accept—that the great art of architecture is the art of concealing the art of architecture.

The decision to commission a modern building was taken over five years ago in a mixed spirit of trepidation and unenthusiasm. The clients are now said to be won over because the organism ticks—it works.

Handbooks will tell you that the job of an architect is to give the client what he wants. That is not your job nor mine. Our job is to give the client, on time and on cost, not what he wants but what he never dreamed he wanted and, when he gets it, he recognizes it as something he wanted all the time.

The second example is **the Royal Institution of Chartered Surveyors** which has a similar theme. It is to replace a building by Waterhouse in Parliament Square opposite Big Ben, adjacent to Brydon's high Victorian pile-up to the north. What I have previously said about the client affects the methodology of design. At each stage in the examination of the problem a simple demountable cardboard model is made which illustrates floor by floor the volumetric and circulatory requirements of the space. Random information of the brief is sifted and sorted. The organization is selective and is made to respond to criteria outside the brief. It distinguishes between the permanent and changeable elements of the programme, e.g. a council chamber, with its clobber of ancestral memories, is separated from the more fluid zones of administrative offices. Value judgements, made beyond the reach of a computer, respond to the sense of belonging to time, place and people—to the present and to the future. There is a shift from notion 'organization' to 'organism'.

In this example, a stepped section allows many people to enjoy the happenings of Parliament Square and State occasions. It has the capacity to extend sideways and turn corners. All this can be demonstrated by a skeletal model to a committee, including lay people who may not be able to read plans. They will have participated in all the arguments. A trustworthy rationale is built up. In their minds, and don't forget it is a collective mind, each member of the committee will be dressing that skeletal model up as he thinks it is going to look, some in stone with mouldings, others in steel and glass. Only the architects won't quite know what the building looks like at this stage.

The rationale may take six months or a year or more. It has to be impeccable. It will have to sustain the concept when the shock of its final appearance is made known. There will be questions asked and no longer by the client alone but in that House opposite—'Will my Right Honourable and learned friend try to find time in the near future for discussion of this perfectly appalling building which the Royal Institution of Chartered Surveyors propose to erect in Parliament Square?' The Leader: 'I will consider what my learned friend has just said.' A good non-committal answer. The rationale must indeed be impeccable to deal with this sort of thing.

The third example was a project for **new laboratories in the centre of Cambridge.** Kevin Lynch, writing in *The Scientific American* in 1954, talked about cities as the social units of civilization, possessing size, density, grain, outline, pattern. People shape them, and are shaped by them. Both Kevin Lynch and Jane Jacobs ('The Death and Life of Great American Cities') with her plea for 'exuberant diversity', dislike segregation of use in a city. They don't want to see the civic library set apart in a nice green sward where nobody will use it. I agree. Jane Jacobs also says: 'A city cannot be a work of art.' It is, for me, the greatest work of art that civilization can produce and the most revealing.

Mumford says about a city that the crucial break-through in a city's evolution on which both its own and humanity's survival now depends is that it should acquire and consciously exert the faculty of reproducing itself as soon as it is big enough.

In the two previous examples of buildings you have been looking at there is an attempt to invest their design with a quality which will not inhibit growth and change—just as a city has to grow and change, though there will have been nothing in the past demanding such ruthless change as our desire for mobility. Planners and architects need to understand each other's disciplines and not try to do each other's work. We should come together in a creative alliance which understands the nature of change, tradition and preservation.

The location of this third example is the New Museums Site, just east of King's College. It is a constricted and mostly slum area where some of our top scientists have done their work with machinery and equipment stuck together with Scotch tape in hazardous conditions where you could not see or hear yourself speak. We were asked to analyse the detail requirements of the various sciences and to formulate a comprehensive plan realizable in stages. The solution envisaged three towers, each floor of which could be arranged in little or big rooms which could plug into necessary services. The services were brought to the outside of each tower. They were contained in hollow structural columns in precast concrete, each of which could produce in itself the conditions of a tower crane, so that they could extend vertically at a future date. They were to stand close to the historic centre. The form, girth, grain and profile of the towers had been carefully assessed so that the anticipated change in skyline would be sympathetic as between old and new. The scheme could have become the pivotal point where town and gown merged. It was rejected. Go too far beyond society's sanction and you may prophesy, but you'll not build! Which reminds me of one of the key figures teaching at the Bauhaus and a close friend of M. van der Rohe—Paul Klee. It was he who said that the final source of power in an artist was given to him by society. I could add that it is society's needs which fertilize the architect's imagination.

I want now to talk about human relationships.



Leo works very well at work...



is perfectly at home, at home

In fact Leo has the sort of strong but well mannered personality which people everywhere find attractive and relaxing. Designed by Robin Day, it is the latest addition to the Hille range of easy chairs and one of several in the range which have proved equally successful in working and domestic environments.

Generous proportions, soft latex cushions and the reclining angle make this an extremely comfortable chair. It is available on a five pronged swivel base or on a shaped metal support (both bright chrome plated). The upholstery is leather, pvc or fabric and the chair is knock down in construction for easy transportation. The Leo chair can be seen at our showrooms: London: 41 Albemarle St. London, W.1. Tel: Hyde Park 9576-9 Watford: 134 St. Albans Rd., Watford, Herts. Telephone Watford 42241 / Birmingham: 24 Albert Street, Birmingham 4. Telephone Midland 7378/Edinburgh: 25a South West Thistle Street Lane, Edinburgh 2. Telephone Caledonian 6234/ Manchester: Sackville St. Manchester. Telephone Central 6929.

hille

take this track
(or up to a mile of it)



take this spot
(or any of 50 different fittings)



Quartet Major for 300 watt. Wide, medium or narrow sealed beam lamps.



snap them together
(anywhere along the track)



and you have Rotaflex-Lytespan

an advanced new lighting installation system that puts light exactly where you want it- when you want it

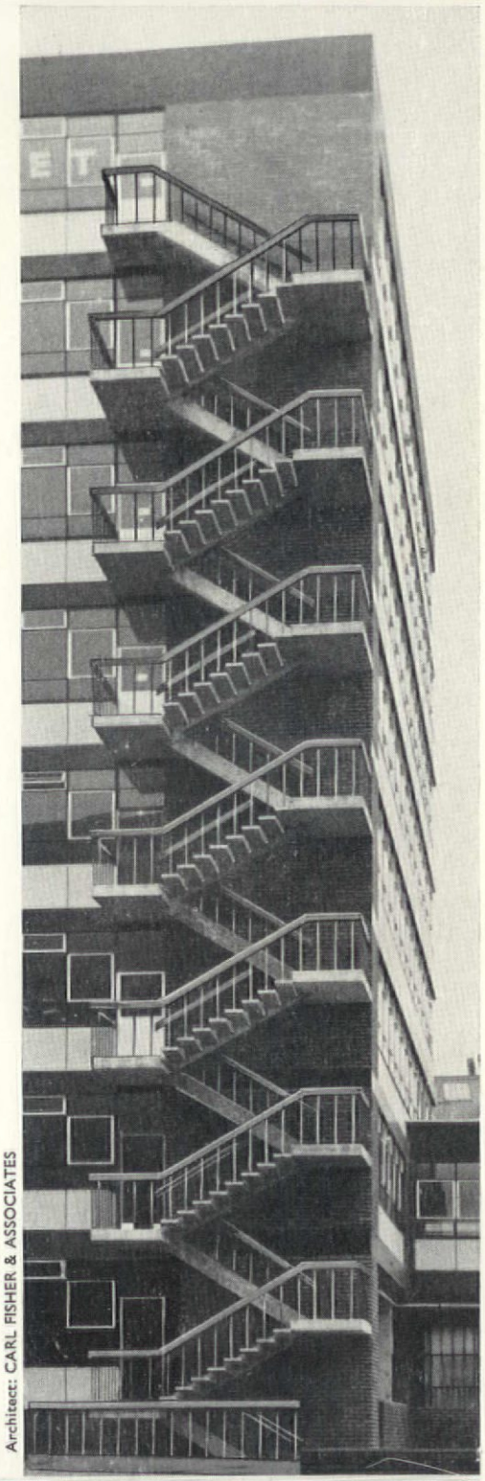
Rotaflex Lighting Limited, 4-10 Nile Street, London N.1.
Telephone: Clerkenwell 8371
Showrooms: Rotaflex House, Princes Street, London W.1.
Telephone: Hyde Park 7611
and 24 Albert Street, Birmingham 4. Telephone: Midland 4878
Lytespan - manufactured under licence from Lightolier of America - fully patented.

Code 58

FOR WROUGHT IRONWORK SPECIFY RANALAH

SRBM Society of Railing & Balustrade Makers

STAIRWAYS · BALUSTRADES · PANELS · GATES · RAILINGS



Architect: CARL FISHER & ASSOCIATES



Write for A4 size catalogues Specifile SfB 15/34

RANALAH
GATES LIMITED
43 DEVONSHIRE PLACE · BRIGHTON · SX. Tel 63266-7-8

Code 59

After that, I'll get back to the question of building for the greatest number. Human relationships in architecture concern mostly more or less human beings like architects; sometimes less than more human beings like technocrats and bureaucrats, and super human beings like tomorrow's clients.

A young architect has no difficulty in identifying who the client is when he has got his first house; it is the housewife, and she is the most exacting of clients. A house is a very difficult thing to do, probably the most difficult of all. With bigger buildings the client becomes a committee, but it is a committee with money in its pocket—teeth—and can say things and give executive decisions. You still know who they are; but when you move on into jobs involving expenditure of public money, certainly there are the users of the buildings, but you never discover quite who the client is—it's all dealt with by a chain of agents. Mention the word 'university', for instance, and you open the floodgates of opinionation and incipient bureaucracy. The architect has to fight his way through a battery of building officers and estate managers, often busy undermining the sacred relationship between the user, the architect and the builder. Any responsible architect accepts cost control, but it is not an end in itself.

The truth about how architects work is never, never given as I am trying to give it to you here. You have to come to the office and hear the infighting, the differences of opinion, experience the rhythm of design, see how the discipline of architecture has the miraculous power of reconciling differences between young people, middle people and old people. We are not a happy little band who go around agreeing about every problem we are working on. We argue, discuss and absorb information from many different skills.

I have signalled that I have learnt from the old; God knows I have learnt a great deal from the young as well who express themselves all day long. I bend over backwards to let the younger members of the office have their say, and not only their say, but when necessary to prove me and my colleagues wrong. What does it matter who did what, provided the building is responding to its own system. Le Corbusier once said to Fry: 'The difference between a good architect and a bad architect is a matter of centimetres.'

It is also a matter of time and working together and the thing that keeps the office together is that the balance of sympathy outweighs the balance of antipathy; but there must be both. The young architects who have been through the office and are fledged may want to get on with their own practices. They should leave with a blessing and a building to do. The architects who stay and throw their lot in with the office achieve the full sovereign rights of an architect. But they subscribe to a principle, an attitude, a process, because without these there can be no intellectual foundation for consistent development over a whole corpus of work.

And there are those in the industry. Team work for me is exclusive to architects. But I want creative collaboration with all who are involved with planning and building and will not tolerate any interference between client and architect, or between building contractor and architect. The contractor has his job to do; we have ours; and in the name of good relations as a profession we do ourselves a disservice each time we send, in the name of supervision and management, some inexperienced architect, wrapped up in his platonic cocoon, to handle a contract on site as though it were unimportant. In France a site is called a *chantier*—a place of joy and celebration. Believe me, the sweetest music you will ever hear is 'concrete' on your own site. I reject a profession which divorces ends from means. No single man can know the whole game. But we have an obligation to the building industry to see that they receive their information at the proper time.

What I think I am trying to say is that whereas Wootton would have said that excellence in architecture depended on the right mixture of firmness, commodity and delight, today we are in an exploratory situation. We will fail if we do not submit to the following four pressures, and so far as our particular little office is concerned, in this order: 1. Research. 2. Relevant insight. 3. Awareness of what is going on technologically. 4. Just because I can't think of a better word—management.

The research that is above all sacred to me occurs between me, my colleagues and those who are going to use the building. My biggest fear is that if you cut the umbilical cord—the life blood of exchange of information with the building user—we could not operate. If you want to see the worst work that our office has ever produced you have only to look at the competition work where there is a programme which is half-baked and there is no exchange of ideas. That does not mean to say that I accept what the user tells me. We listen to the biologist without becoming biologists, and we listen very, very carefully and we also coax him into thinking what is tomorrow's biologist. This is research for us, and it goes on all the time; at all levels. I touched on esoteric levels of research, and how you feed back your own formative vocabulary, how you use other architects' buildings. But a private practice takes on a colossal burden of research. You may argue that this would be far better done at a centralized level. Provided it does not cut me off from the people for whom I am working I think I will go along with it. I only know of one document that ever had this human content, and that was the Ministry of Education Bulletin on Primary Schools. It never went too far. It gave inspiration. It did not lay down laws.

Relevant insight; what can one say except go and look at Bob Maguire's church at Bow.* Never mind whether he does it in blue brick with a tin roof. The fact is that it will come to be thought beautiful in proportion to the depth of relevant insight which informs its design. If the Church—the most conservative of bodies—wanted to start a prefabricated programme they would have to go there and study what it means. It would not have come into being without intensive research into the question of 'what' to build and the question 'what' precedes 'how'. So far as technology is concerned, it is for me a repository of knowledge, an operational tool. Use it, but do not make it an end in itself. And what is called management has already been deeply studied by this Institute.

I come now to the last part of the thesis—the connexion between 'one-off' and building for the greatest number. **The University of East Anglia** is one of the most important projects that our office has been called on to do. It has involved the orchestration of many skills and many architects.

The site—itself an organism: water, marsh, slope, trees, meadow-parkland—is set in East Anglian landscape: and Norwich is close by to the east. If Repton had been asked to do this university on this landscape, he would have said, 'Keep it that way', just as Luis Sert, briefing his 4th Year students for the re-planning of Times Square, New York, said, 'It is brash, it is vulgar, it is dangerous. Keep it that way, but make it safe.'

Our academic brief was concerned with the striving towards unity of knowledge and the common identity of the whole University. Schools of Study were to be the social and academic entities. Colleges or halls of residence could have no place in this concept which seemed in line with a broadcast, 'The Autonomous Generation' by Dr. Chapman, Senior Lecturer of Social Studies, Liverpool University. He spoke about young people—their dislike of forced formality, their romantic puritanism, their greater independence due to better homes, health and education. They nevertheless saw life as arbitrary and malevolent and wished to choose their own ethic by which to live. Thus, the brief from the academics rightly posed the question, 'How should young people live in a new university?' The design directive was inspired by this brief. Groups of not more than twelve study-bedrooms with a breakfast room were to form the basic 'habitat'. They were to be disposed on the site with loving respect for the configuration and contour of the landscape, its prospect and aspect. They were to provide undercrofts to deal with all the backyard mess of undergraduate activities, games rooms, laundries, cars and bicycles. Cullinan's response to this particular zone of the exercise is an ingenious compact section solution, with a pedestrian deck linked to the whole University and separated from cars. Why separate?—not because of accidents but because every moment of walking is a moment of thinking. In planning jargon, 'concentration' and 'linkage' permeate the concept. The difference between the first and second drafts of the development plan is that the latter eliminates boundaries between teaching faculties. The 'wall' of teaching contains little and big rooms with backyard space. It ensures closeness of departments; economy of services; facilitates exchange of ideas and equipment and can cope with disciplines not yet born.

The joy will be in the spaces between buildings—the 'landlocked harbour', the grass swards, cascading terraces and elevated walkways. Compactness of plan and the fact that there will be no *cordon sanitaire* round the University, will enable the people of Norwich to continue to enjoy their leisure in a recreated landscape.

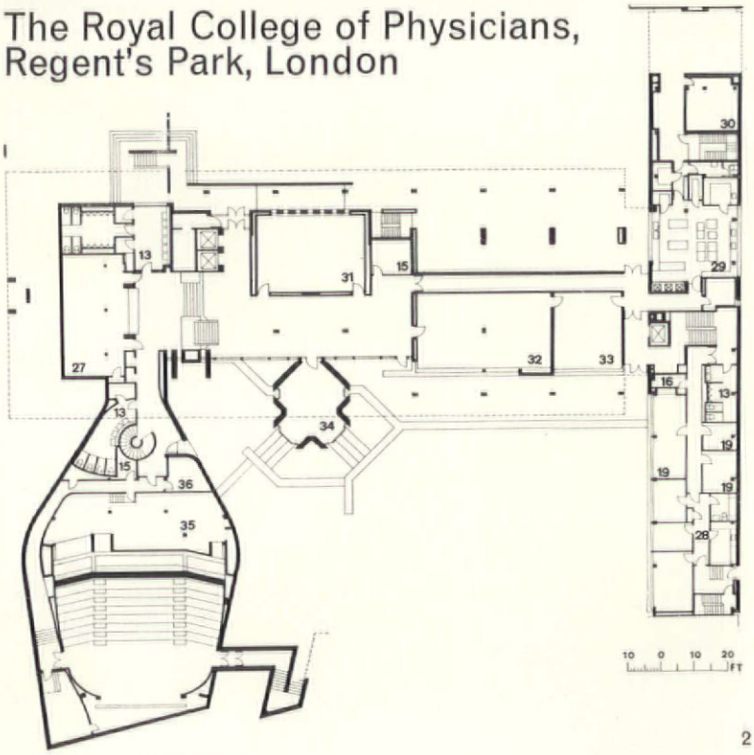
The speed of student intake demands use of systems of quick construction. Buildings are made of large repetitive precast elements manufactured under controlled conditions on site or in factory and dry assembled. They are 'one-off' systems appropriate to quantity and task. There is no dichotomy in the architectural design process between 'one-off' and 'system-built'. What we shall build in East Anglia is an organism which is architecturally complete and incomplete, which can grow and change but which does not produce a wilderness of mechanisms.

*See *AD* June 1961, page 273

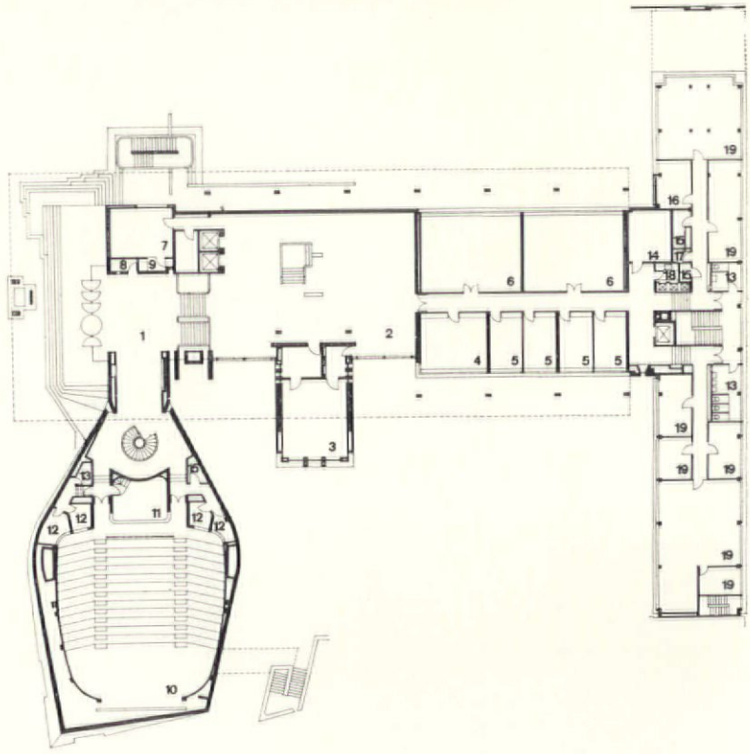


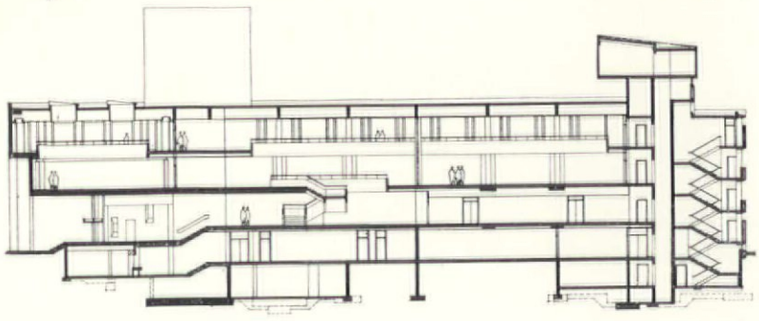
1

The Royal College of Physicians, Regent's Park, London

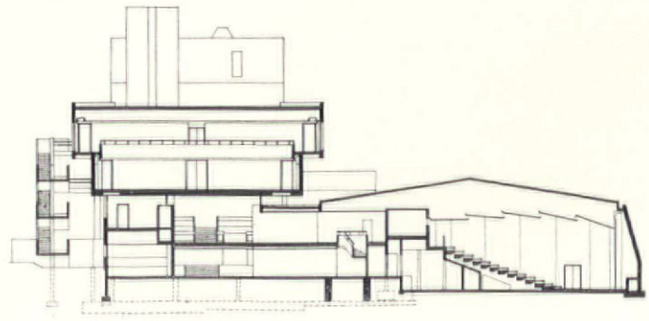


2



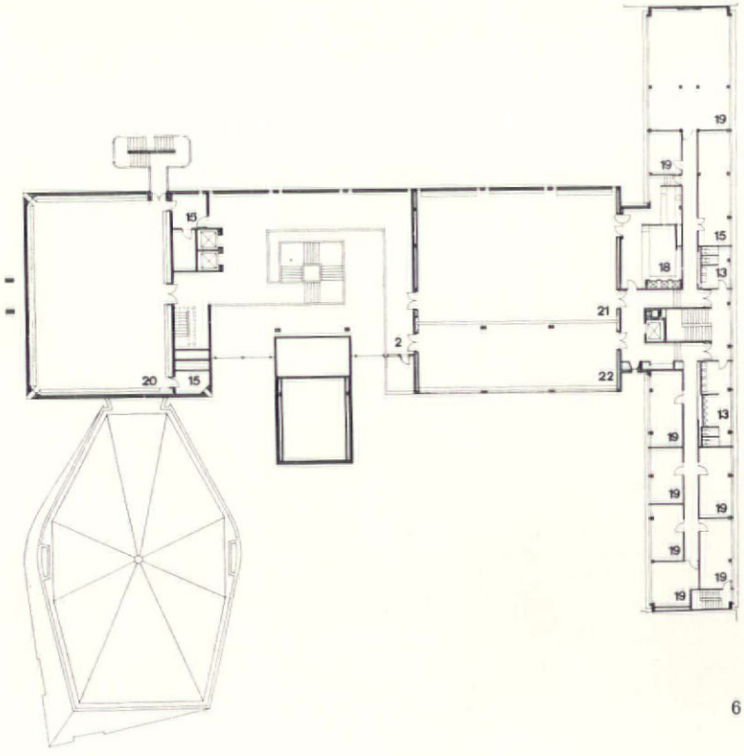


4

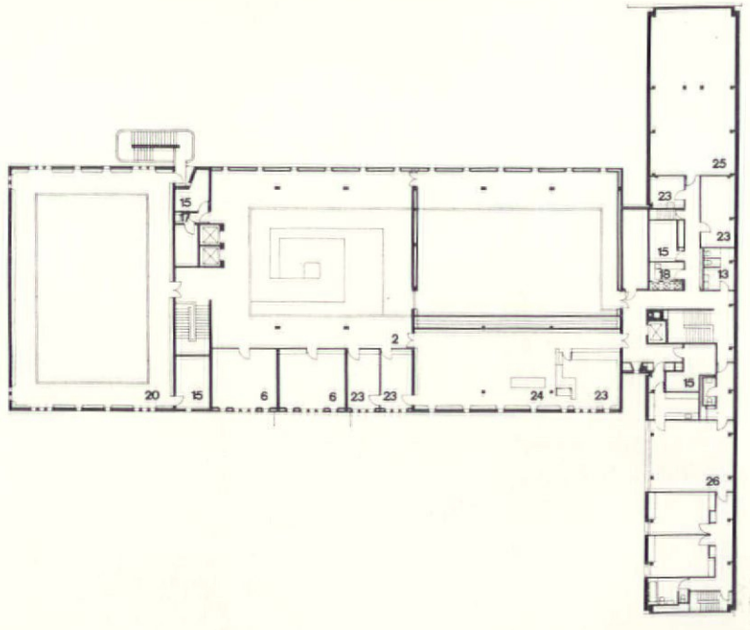


5





6



7

1
The west side of the Royal College of Physicians seen from Regent's Park. *Photo: John Donat*

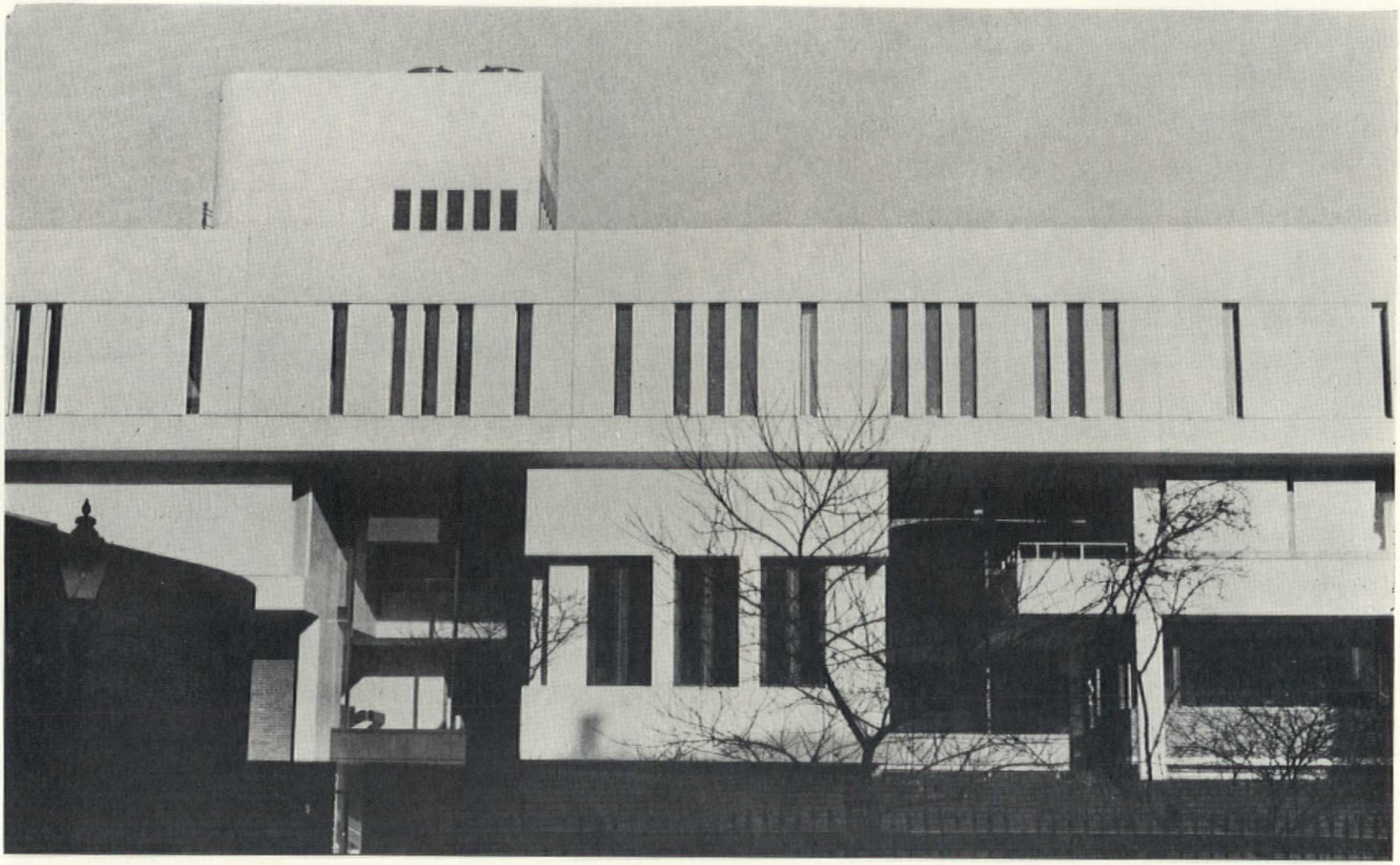
2 & 3
Lower ground and ground floor plans

4
Longitudinal section through library, entrance hall and dining room

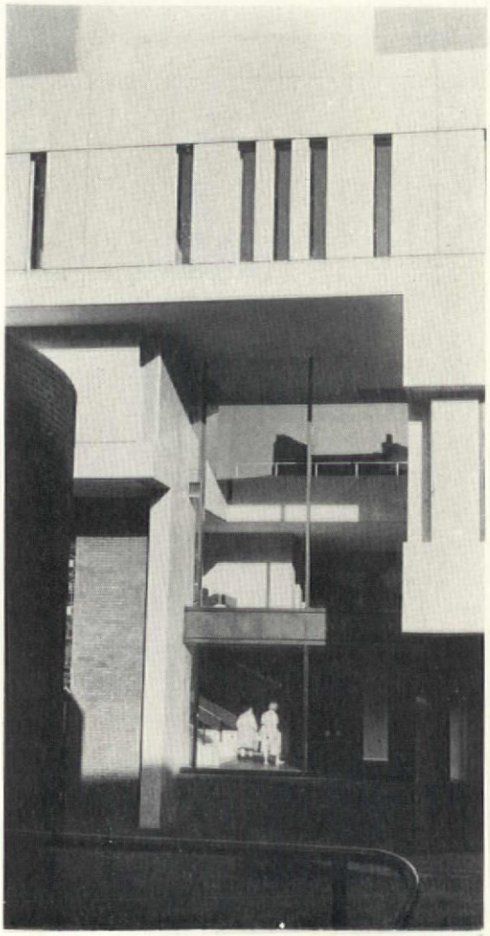
5
Cross-section through library and lecture theatre

6 & 7
First floor and second floor plans

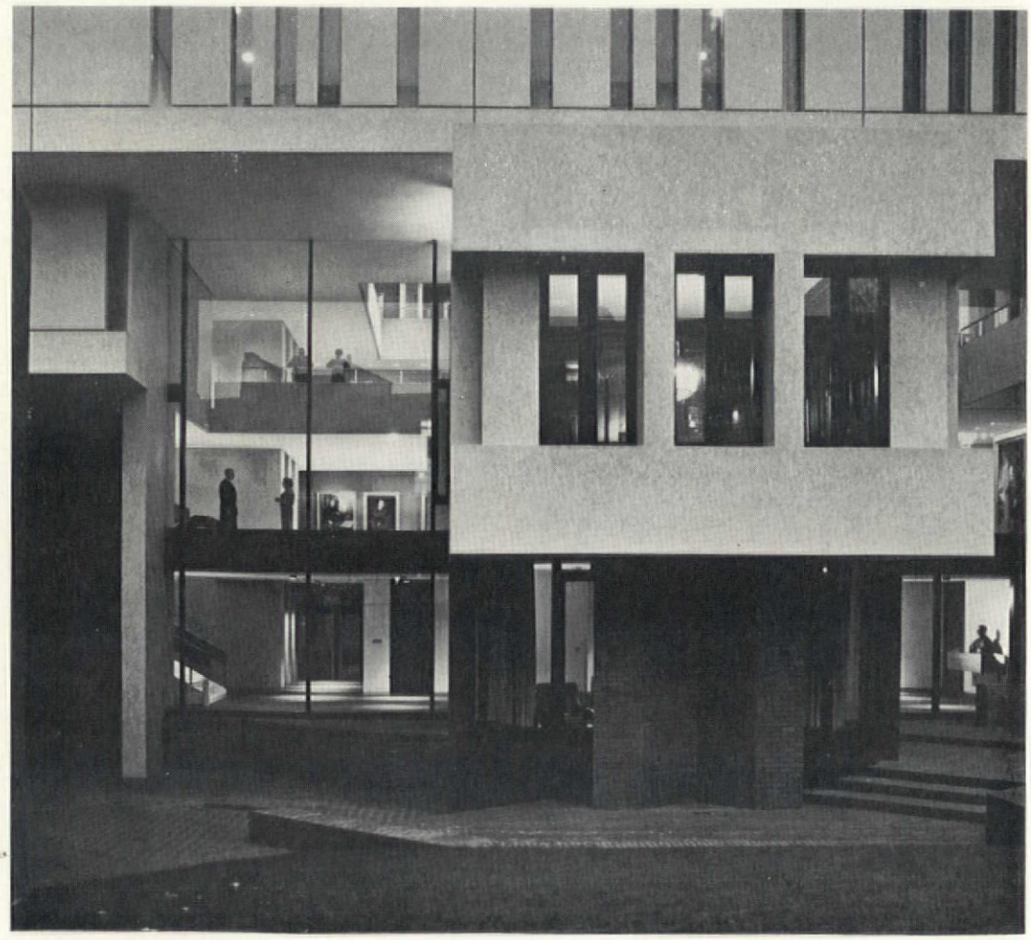
Key to plans
1 entrance foyer
2 staircase hall
3 censor's room
4 president's room
5 principal officers
6 committee room
7 membership office
8 porter
9 telephonist
10 lecture theatre
11 projection room
12 translation room
13 lavatories
14 strong room
15 stores
16 lockers
17 cleaners
18 servery
19 offices
20 library
21 dining room
22 long room
23 library offices
24 reading room
25 book stack
26 second floor flat
27 cloakroom
28 porter's flat
29 kitchen
30 fuel store
31 lecture room
32 common room
33 staff dining room
34 Fellows' sitting room
35 plant rooms
36 PABX
37 wine cellar
38 incinerator



1



2



3

This building replaces the previous college premises at the corner of Trafalgar Square and Pall Mall East which were designed by Smirke and have now been taken over by the Canadian Government.

Someries House, designed by Nash but subsequently much altered, was demolished to make way for the new building, the Government having decided on the basis of the Gorell Report in 1947 that it need not be preserved. The building has been fitted into the surrounding architectural landscape by ensuring that its height, scale and colouring conform to those of the Nash buildings. Care has also been taken to enhance the vista along St Andrew's Place and preserve its atmosphere.

The main rooms overlook a garden on the south side of the building and are planned round a central staircase which is reached through an entrance foyer facing the Park. Above the foyer is the two-storey library which houses a fine collection of historical books. The Fellows of the College hold regular meetings here.

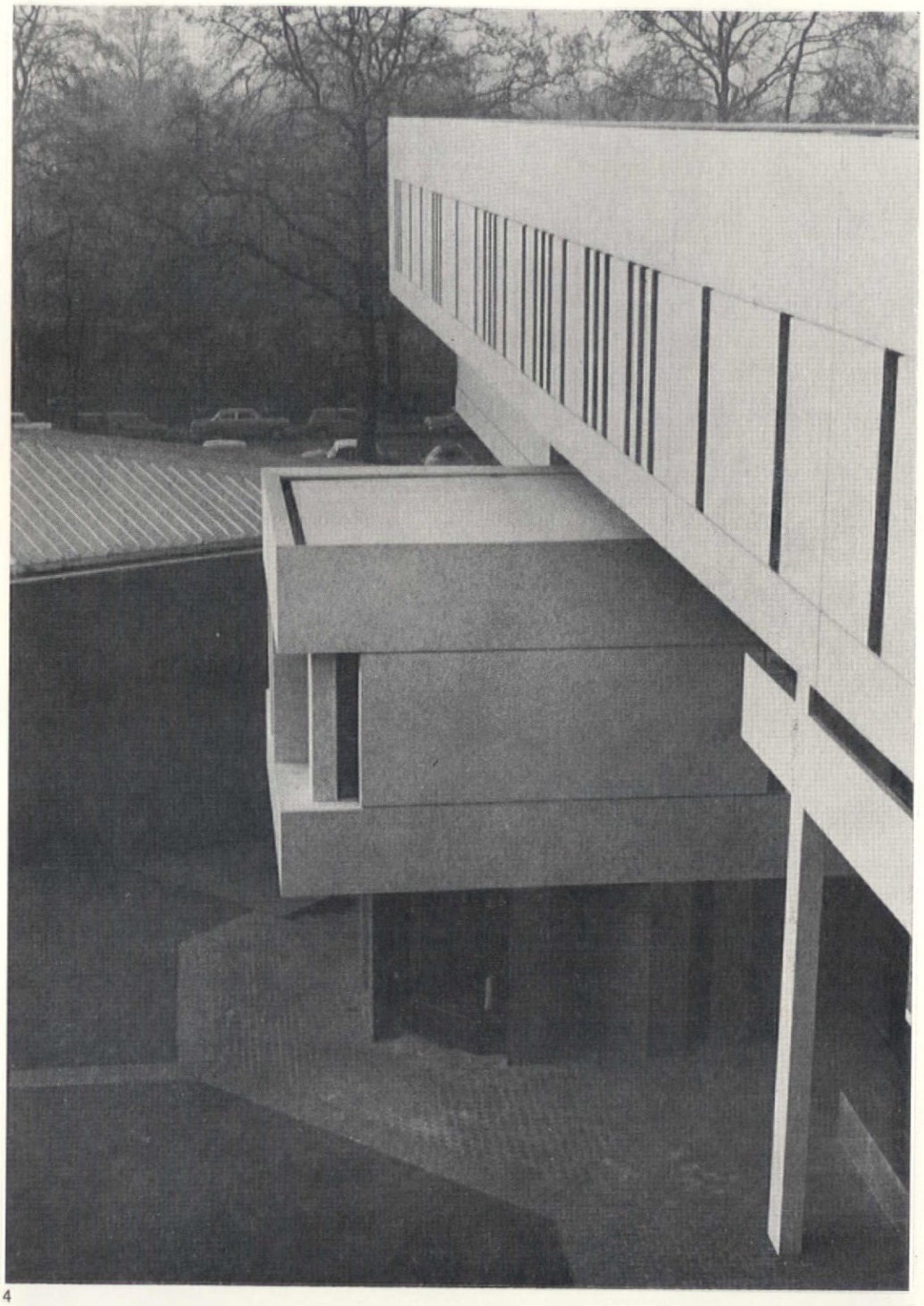
Facing the library on the other side of the main staircase is the dining room. This is another two-storey room holding 200 diners. A reception room alongside is separated from it by a 60ft long wall which can be raised hydraulically to form one space extending across the full width of the building.

Facing the garden, at the foot of the main staircase, is the Censor's Room. The internal furnishings of this room, including its seventeenth century oak panelling, have been preserved intact so that it forms a link with previous College buildings. The special significance which this room holds for the College is emphasized by its position at the heart of the building.

The ceremonial aspects of the life of the College are centred on the library and Censor's Room with the main staircase forming a processional route between them. This part of the building is expressed as its main permanent element and its facing of light coloured mosaic contrasts with the dark blue brick facing of the remainder which is intended for future extension.

The lower floors of the central block contain rooms for the principal officers, committee rooms, a lecture room seating 50 people and, at garden level, common rooms for Members and Fellows and a dining room for the secretarial staff. The kitchen, general administrative accommodation and library offices are situated in the rear part of the building which closes the Albany Street frontage of the site. This also contains two flats.

Running south from the entrance foyer alongside the entrance drive and forming the third side of the garden court is a low block containing a lecture theatre seating 300 people. This is equipped with a radio system for simultaneous translation and is provided with a variety of visual



4



5

1
South elevation from St Andrew's Place

2
Part of the glazed wall in the south façade

3
The same, at night, with the censor's room on the right

4
View of the south façade from the administration wing, looking over the lecture theatre to Regent's Park

5
The lecture hall from St Andrew's Place

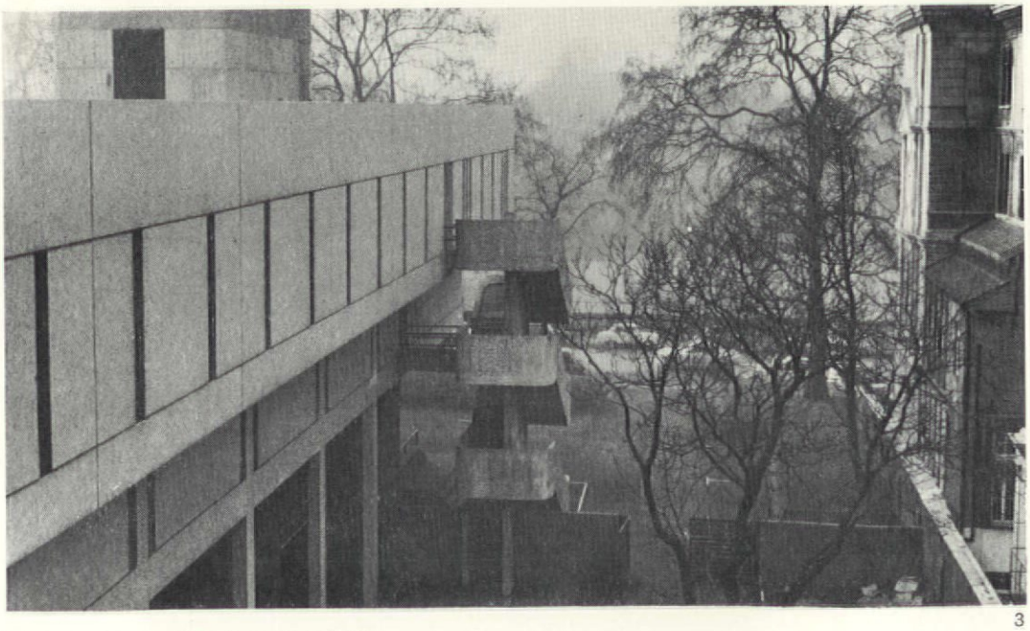
Photos: 1, 2 & 4 A. Ponis; 3 J. Donat; 5 Behr



1



2



3

aids so that it can be used for international congresses. On such occasions the building could accommodate up to a thousand people. The lecture theatre is also linked with the smaller lecture room and the library by wiring for closed circuit colour television.

The main areas of the building are air conditioned. The plant for the library is run continuously, but the other main rooms have separate plants to allow for intermittent use.

The two tall stained glass windows in the hall which incorporate heraldic glass from the previous College building were designed and executed by Keith New.

The lettering on the foundation stone and on the commemorative panel in the hall was carved by James Sutton.

Technical notes

Materials:
Bricks: Baggeridge blue rustic facing bricks. Blue paving bricks.
Timber: Muninga from East Africa (main block). Tasmanian oak from Australia (lecture theatre block).
Mosaic: Candiolite porcelain mosaic from Candolo, near Turin (colour specially made).
Marble: White Sicilian from Tuscany.
Metalwork: Polished manganese bronze. Silver and black anodized aluminium. Black cellulosed steel.

Structural design:
Structure mainly of reinforced concrete.
Library walls in-situ prestressed concrete.
Library floor and roof—precast prestressed concrete units (spanning 43ft and 49ft respectively).
Main roof—precast concrete slabs on steel castellated beams spanning across three rows of columns.
Lecture theatre roof—steel pyramoidal 'space frame'.
Points of interest:
Library structure supported only on central group of free-standing columns and internal cross-wall.
Second floor external walls hung from cantilevered ends of roof beams to balance loading on beams and relieve stress on cantilevered floor slab below.

Mechanical services:
Five areas of the building are separately air conditioned to allow for intermittent use:
(1) Library; (2) lecture theatre; (3) dining room; (4) main committee rooms; (5) small lecture room.
Each plant is served with hot and chilled water pumped from central boiler and refrigeration installation in basement.
Embedded heating panels in floors and ceilings are unobtrusive heat sources in other parts of the main building.

1
Albany Street façade with the service entrance on the right

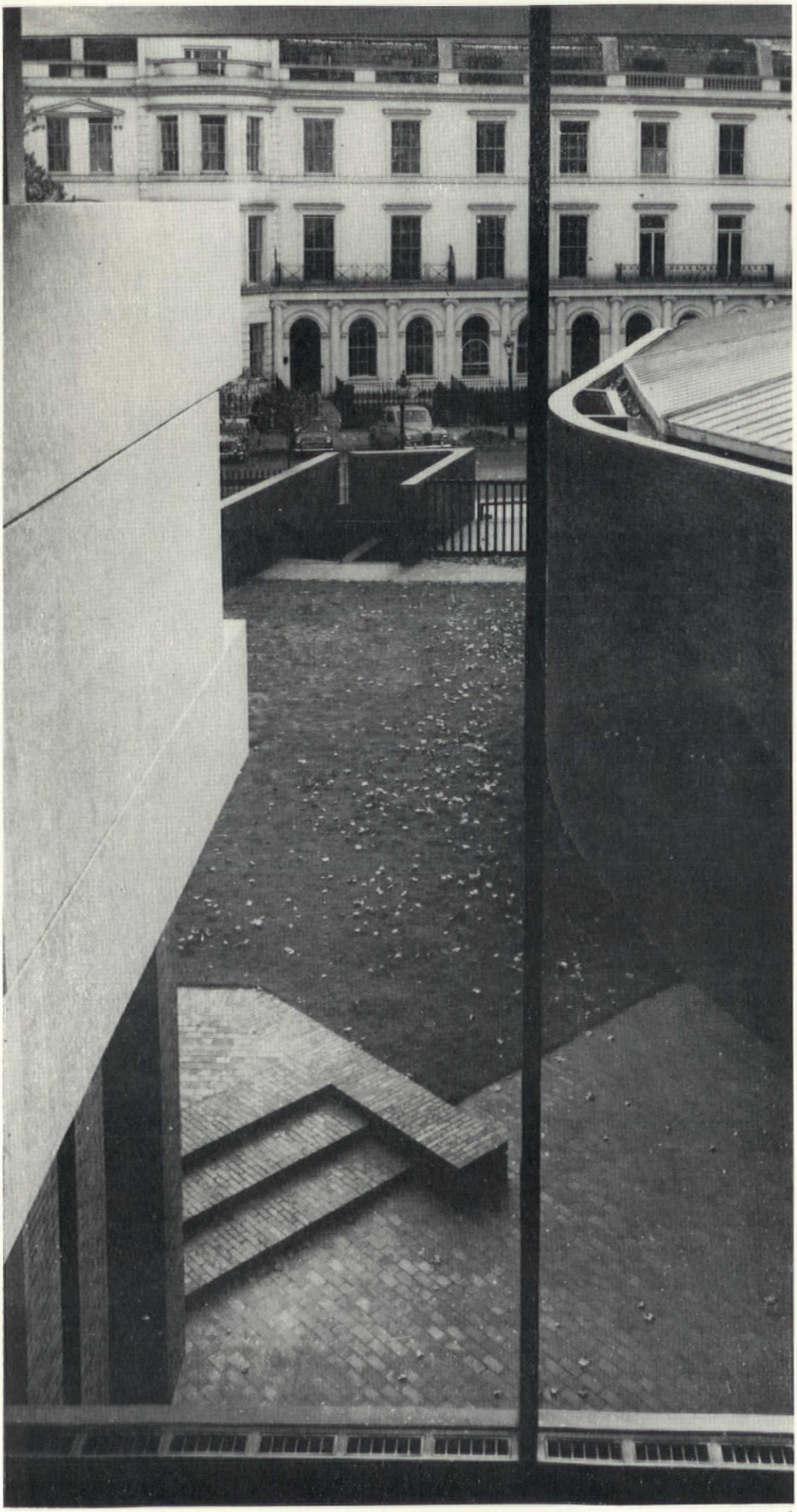
2
View from Albany Street through the service entrance to the escape stair on the north side of the main building, with Regent's Park in the distance

3
The escape stair on the north side of the building seen from the adminstrative block

4
The main entrance portico overlooking Regent's Park

Photos: 1, 3 & 4 A. Ponis; 2 J. Donat

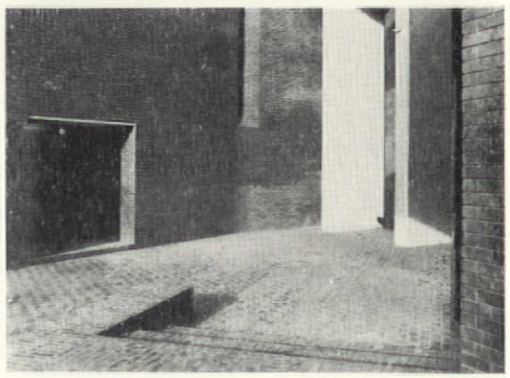




1

Speech reinforcement:
Full equipment is installed in three rooms:
(1) Library; (2) dining room; (3) lecture theatre.
Column type loudspeakers built into each room.
Microphones are connected to concealed sockets in walls and floors to give complete coverage.
Specially designed control panels—fixed in dining room and portable in library and lecture theatre.
Provision for cross connecting the installations in library, lecture theatre and lecture room to facilitate use of one room for 'overflow' from another.

Continued on page 285



2

1
View from the upper stair hall towards St Andrew's Place

2
Brick walls and paving between the lecture theatre and the common room on the lower ground floor

3
Detail section through the rear end of the lecture theatre
1 air conditioning inlet diffuser
2 pressed aluminium lighting trough
3 fibrous plaster louvred panel
4 air conditioning inlet diffuser
5 absorbent to reduce sound reflection from glass
6 softwood louvres to extract vent
7 miniature fluorescent lighting fittings
8 Cullamix rendering on x.p.m.
9 $\frac{1}{4}$in plate glass
10 heating element
11 Tasmanian oak 'split resonator'
12 stove enamelled steel guard rail
13 ventilation inlet to projection room
14 carpet
15 air conditioning extract grille
16 background heating outlet grille
17 Tasmanian oak strip flooring

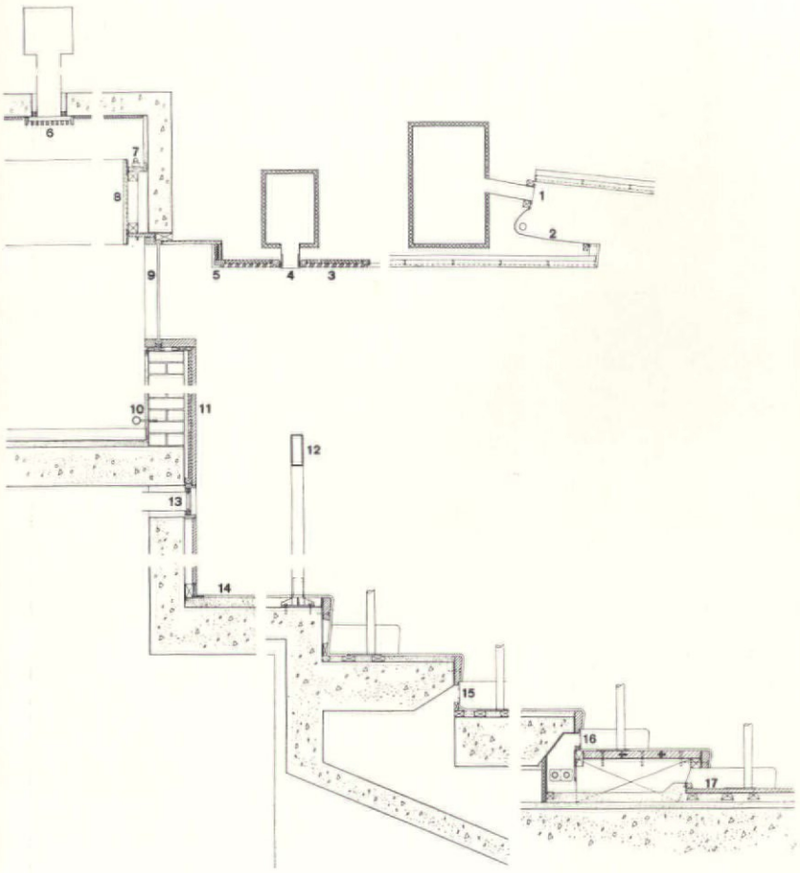
4
Regent's Park seen from the escape stair

5
Detail section through the main library
1 Aglite 'no fines' screed
2 prestressed precast concrete beams
3 pressed aluminium lighting trough with hardwood louvres
4 Italian 'Candiolite' mosaic
5 vertical pivot hung aluminium weatherstripped windows glazed with sealed anti-glare duel-glass units
6 $\frac{3}{4}$in copper drain pipe
7 $\frac{5}{16}$in cork tiles
8 'Walcrete' rendering on x.p.m.
9 polished bronze handrail
10 white marble capping
11 special extruded aluminium trim
12 continuous linear air diffuser
13 built-in bookcases
14 Muninga strip flooring
15 air conditioning trunking
16 prestressed precast concrete joists

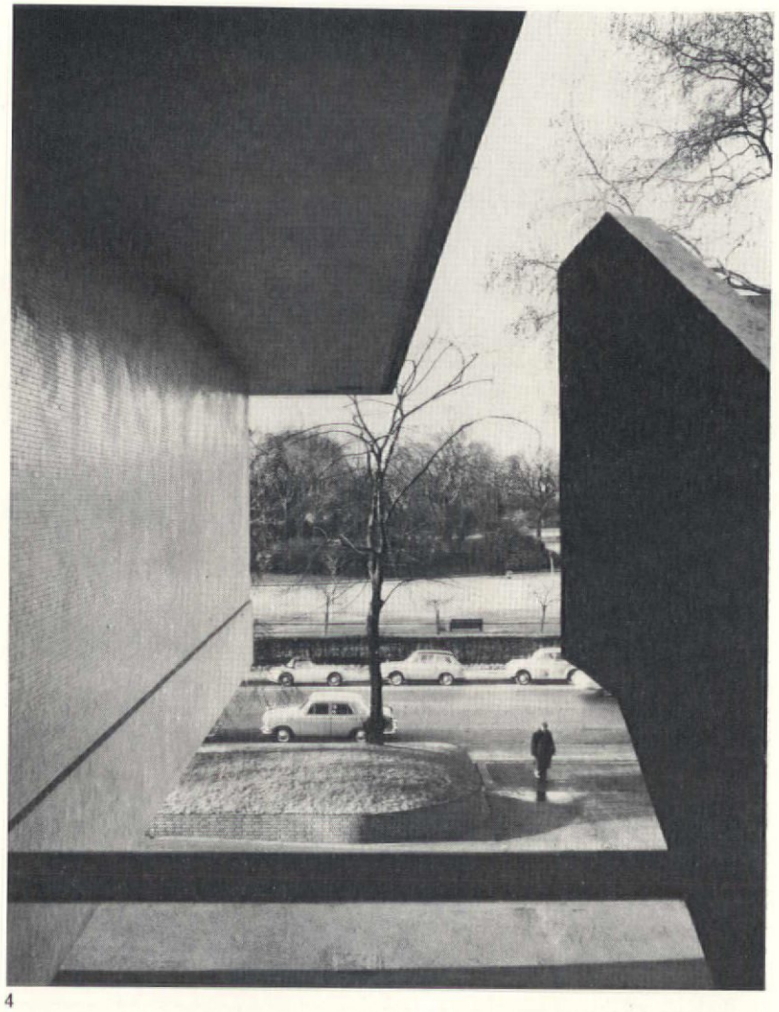
6
Window detail with the roof of the lecture theatre beyond

7
Typical plan of the windows in the main block

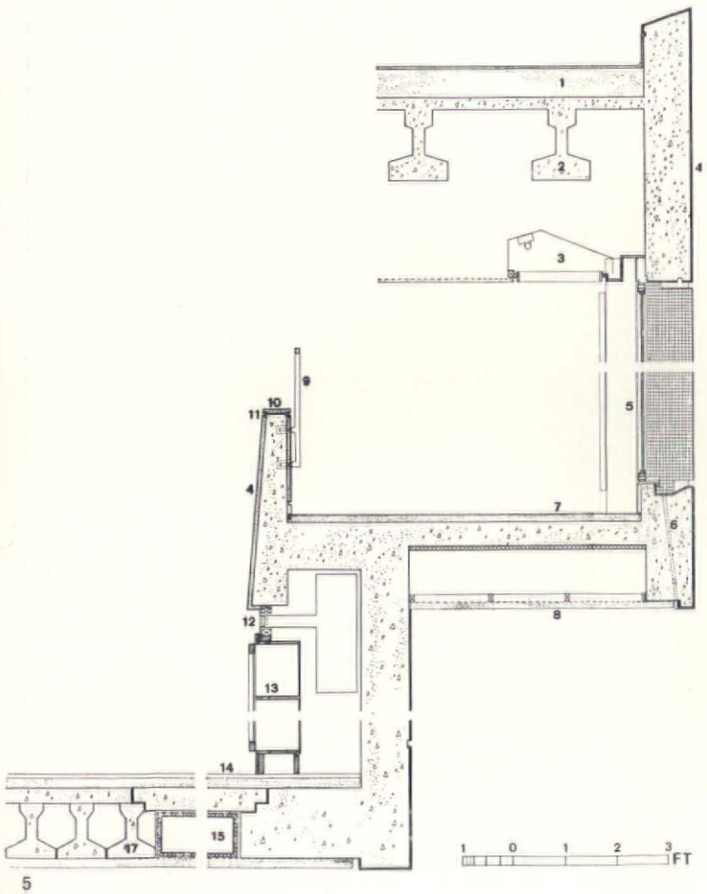
Photos: 1, 2, 4 & 6 J. Donat


6
7
8
9
5
4
3
1
2
10
11
12
13
14
15
16
17

3



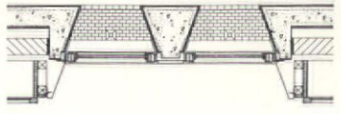
4


1
2
4
3
9
10
11
5
4
7
6
12
8
13
14
15
17
1 0 1 2 3 FT

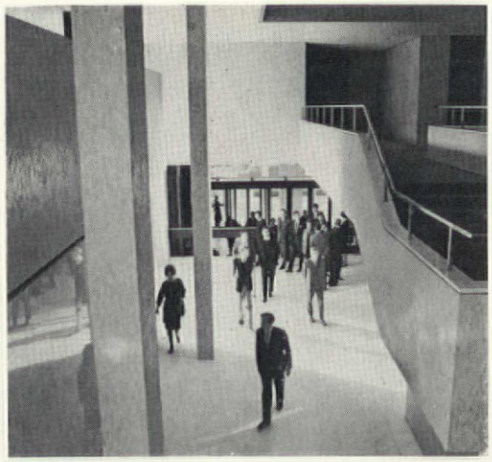
5



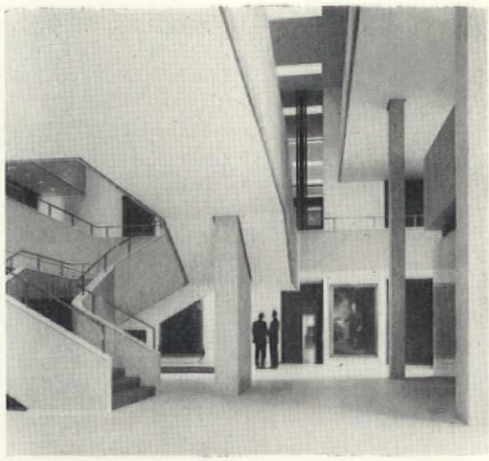
6



7



1



2



3



4

1
View of the main entrance from an upper gallery in the stairhall

2
The main stair seen from the entrance lobby

3
The main stair from the topmost gallery

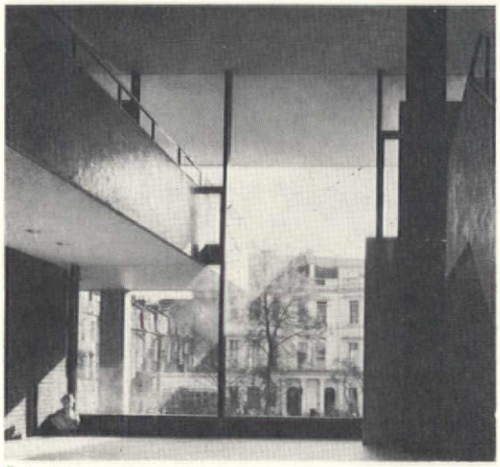
4
Another view of the main stair from the upper gallery

5
View towards St Andrew's Place from the stair hall

6
The top of the main stair looking towards the censor's room

7
The upper gallery of the stairhall looking over the court off St Andrew's Place

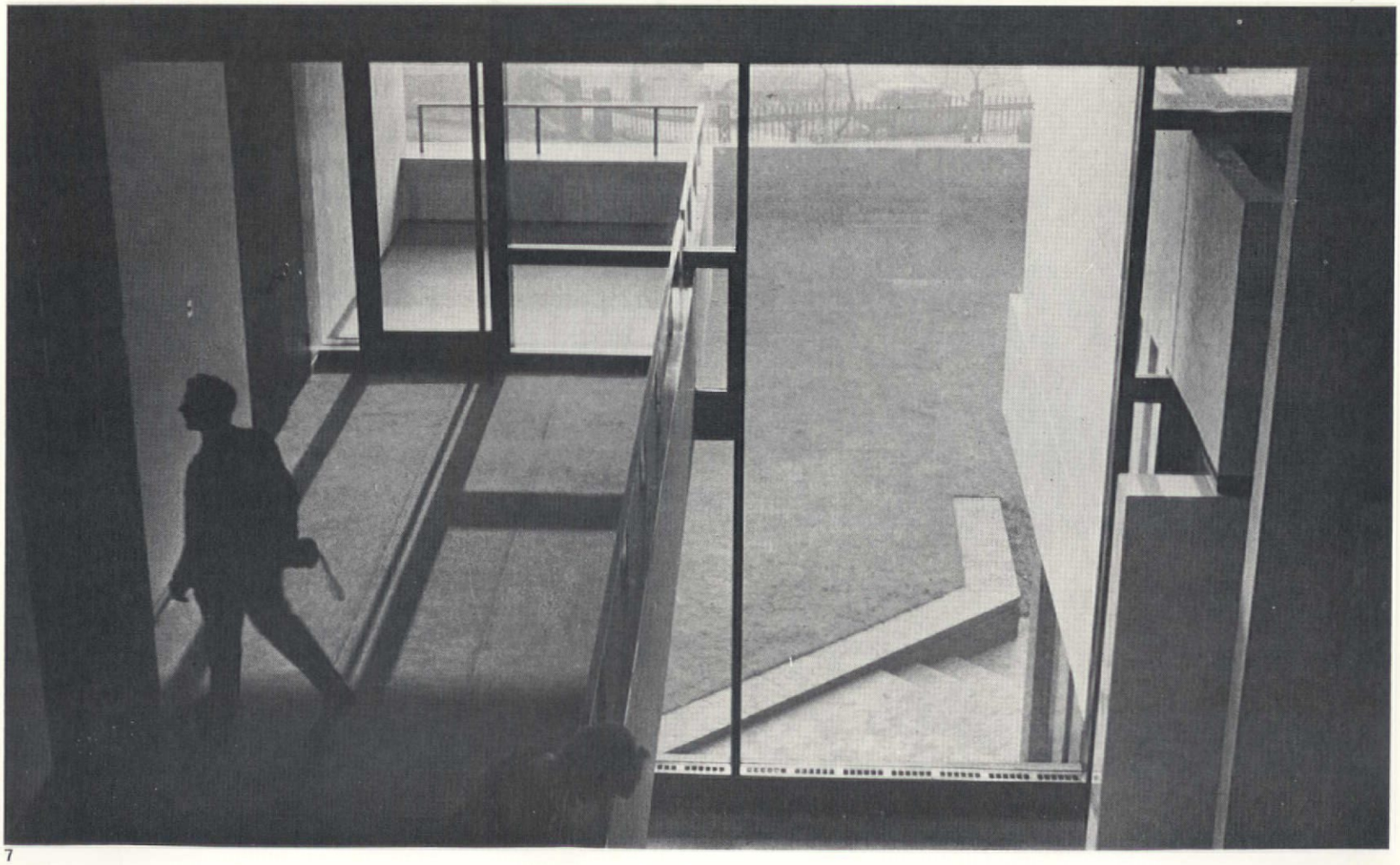
Photos: 1, 3, 4, 5 & 6 J. Donat; 2 Behr; 7 A. Ponis



5



6



7



1

Continued from page 280

Closed circuit television:
Permanent wiring provided to link library, lecture theatre and lecture room by closed circuit television.
Wiring in 'quadruplicate' to provide four channels required for colour television.
Special electric supplies provided for heavy television equipment.

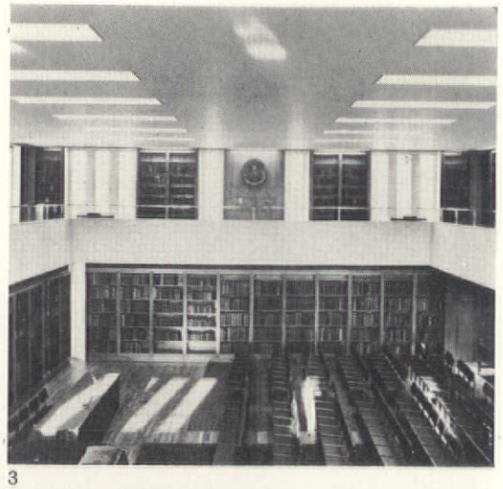
Lecture theatre equipment:
Theatre designed for good viewing and acoustic conditions in all seats and to allow maximum flexibility of use.
Projection room accommodates 16mm cinema projector, episcope and several slide projectors. It has full width window to enable projection equipment to be rearranged whenever necessary.
Large Perlux screen concealed by electrically operated curtains provides for simultaneous projection of several images.
A diascriptor writing and drawing projector is installed.
Specially designed lectern given by Royal College of Surgeons gives lecturer control of his visual aids.
Radio system of simultaneous interpreting is installed. Sound-proofed booths at back of theatre for three pairs of interpreters and a controller.
Ceremonial chair and table in Tasmanian oak presented by Royal Australasian College of Physicians.

Acoustic design: points of interest:
Windows to interpreting booths at back of lecture theatre tilted to control harmful long path reflections and special absorbent ceiling panel in front of projection room window for same purpose.
Library balcony fronts tilted to control horizontal flutter.
Special absorbent wall panels in committee rooms covered with acoustically transparent material.
Double windows in main committee rooms to exclude external noise.
Special sound reducing panels on resilient mountings on both sides of moving wall.

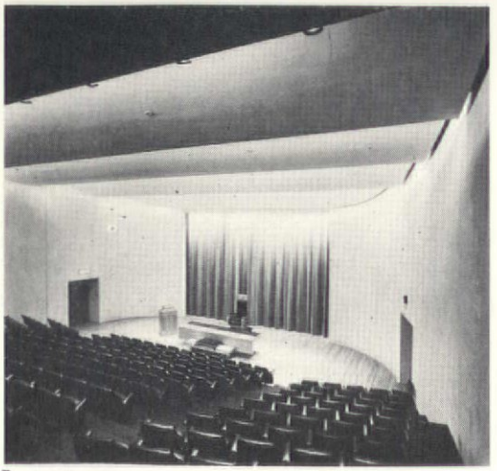
Moving wall:
Wall between dining room and long room can be raised hydraulically to unite rooms.
Operated by a hydraulic ram at each end, it is 62ft long and weighs 5 tons.

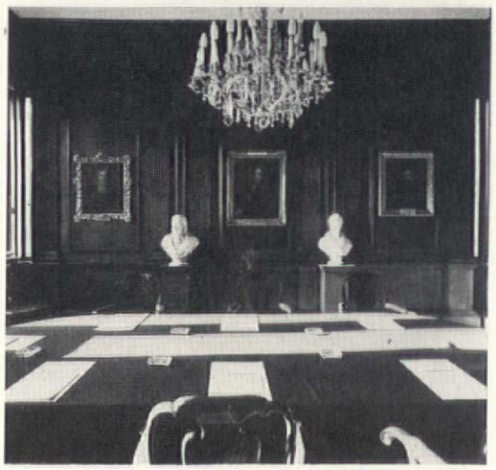
Structural engineers: Ove Arup and Partners


2


3


4


5


6

1
Doorway to the main library

2
The dining hall

3
Main library prepared for a meeting

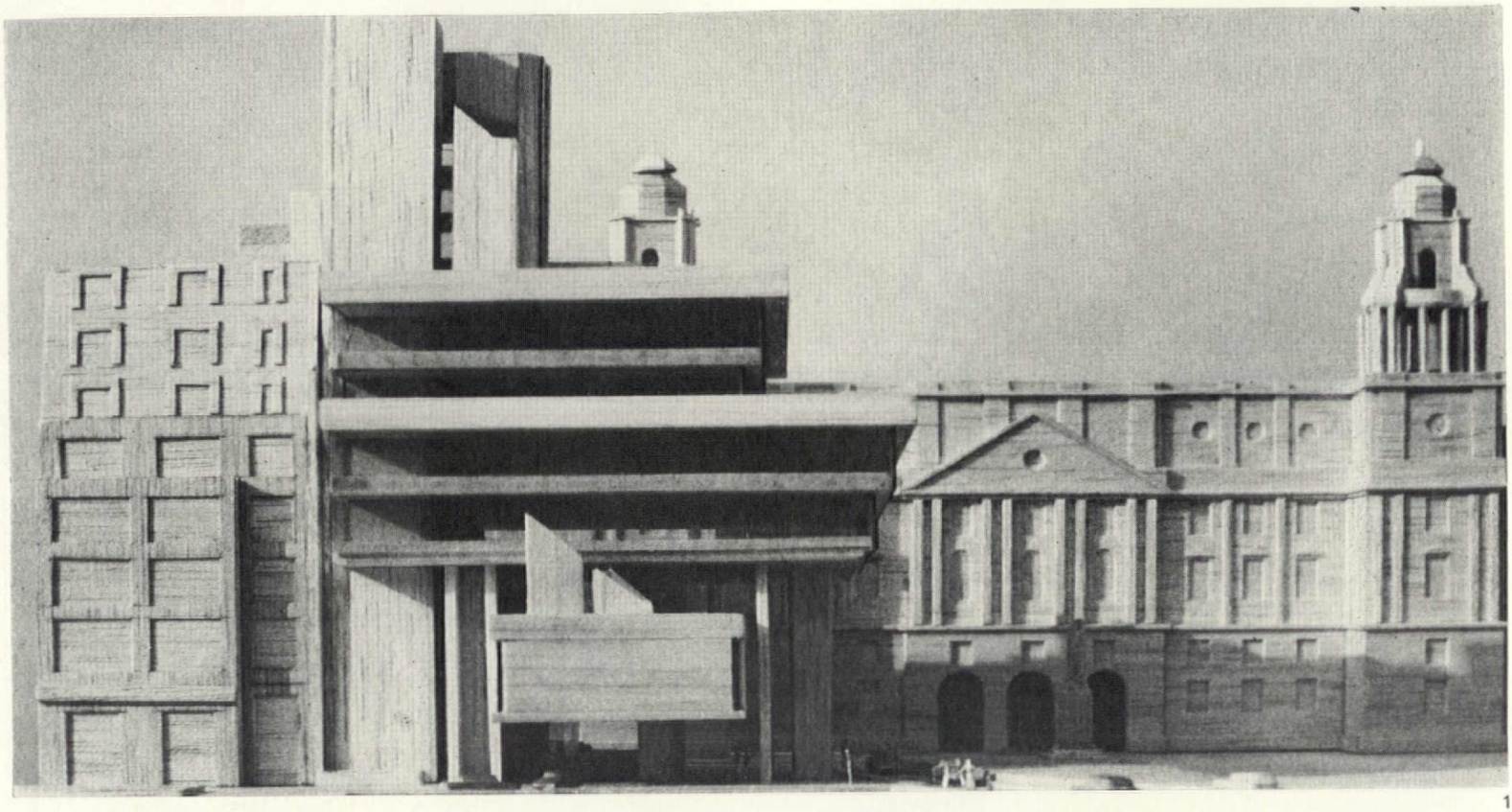
4
The main library gallery

5
Lecture theatre

6
The Censor's room with its seventeenth century panelling

Photos: 1, 2, 3, 4, 5 & 6 J. Donat

Royal Institution of Chartered Surveyors
Parliament Square, London

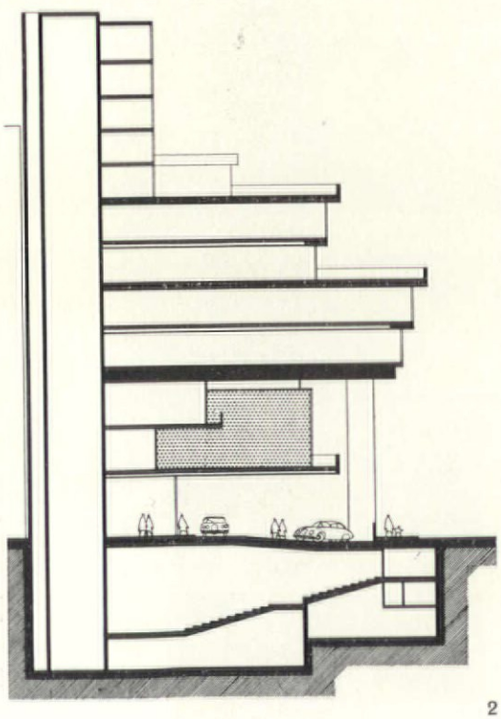


1

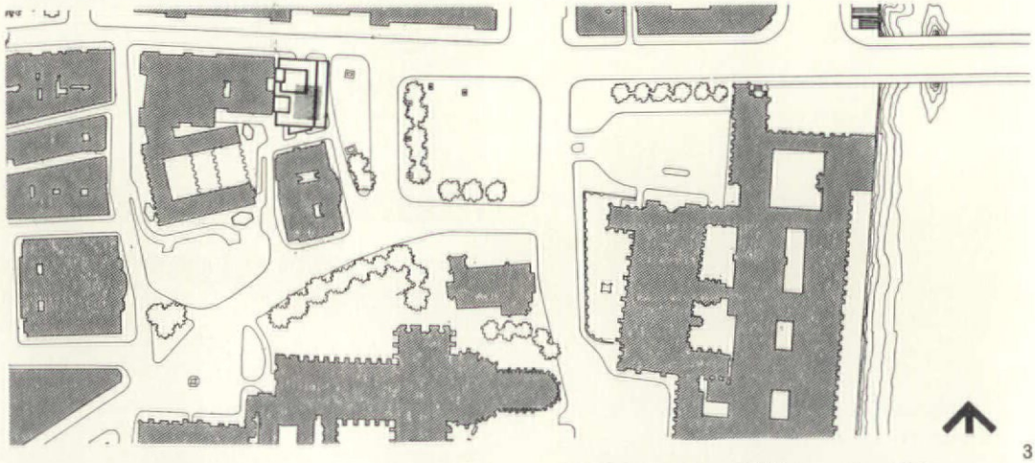
The existing building is about sixty years old—architect: Waterhouse.

The site is one of the most important in London. Government buildings on the corner of Whitehall, the Houses of Parliament and Westminster Abbey occupy three sides of the square. Parliament Square badly needs a sense of enclosure. There is general agreement by LCC and RFAC that the unsightly gables of Middlesex County Council buildings, as seen from Parliament Square and from Westminster Bridge, must be screened by any new proposal. It is also felt that any new building should be sympathetic in scale relationship to the Middlesex Guildhall. In the new proposal, **1** it will be noted that the height of the most forward projecting floors facing Parliament Square would broadly correspond with the Guildhall. Thereafter, there should be a transition from this height to the ultimate height of the existing gables of the Middlesex County Council buildings. By its form and organization on section, **2** the proposed new building recedes from the building line in order not to mask completely the pediments and cupola of the Ministry of Housing and Local Government. The anatomy of the proposed building is such that it would be possible to extend the principle of the design in a comprehensive manner **3, 4.**

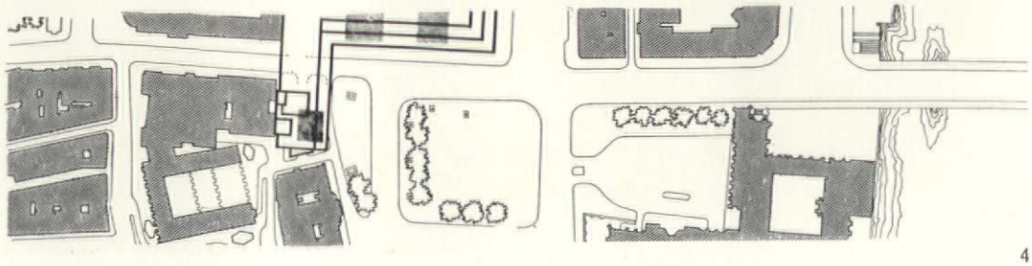
The planning of the building differentiates between elements of a fixed and permanent nature (lecture hall, council chamber, dining room, lounge, committee rooms) and the more flexible zones of administrative offices. The lecture hall is underground but visually connected by a stairwell to the ground floor reception area, which in its turn is also visually connected to a first floor suite of rooms, consisting of council chamber, committee rooms and consultation rooms. On the second floor are the lounge and dining rooms. All the above rooms shelter, as it were, in an interval of some 40ft high beneath the main statement of the upper four floors of offices and ground level.



2



3



4

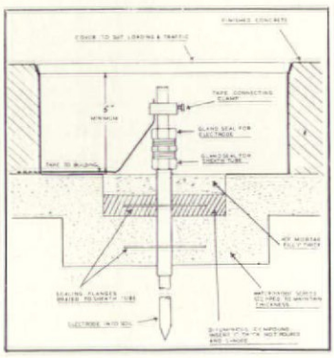


Royal College of Physicians



Protection from lightning

Description: Unobstrusive, practically concealed system of modern design, routed internally to earth terminations below structure.
Specification: Air Terminations; strip-copper laid horizontally. Down Conductors; strip-copper laid vertically in ducts. Earth Terminations; rods-copper driven into sub strata with copper seal through base slab (see detail).
Erection: System pre-planned and with site attention at early stage of construction. An essential ingredient these days.



R. C. CUTTING & CO. LTD.

The Leading Specialists in Lightning Protection

17 Crawford Street, London W.1

Tel. Hunter 4350

Code 60

Architects
Denys Lasdun & Partners
designed the
Royal College of Physicians
at Regents Park

and Heal's Contracts
supplied the
curtains and carpets
throughout the
principal offices
and public rooms.
They also
furnished completely
the President's flat.

Heal's Contracts work
with important
architects throughout
Britain.

HEAL'S CONTRACTS LTD

196 Tottenham Court Road, W.1. Museum 3399
Shell-BP House, Calthorpe Road, Birmingham 15. Edgbaston 5251

Code 61

HOPE'S aluminium windows



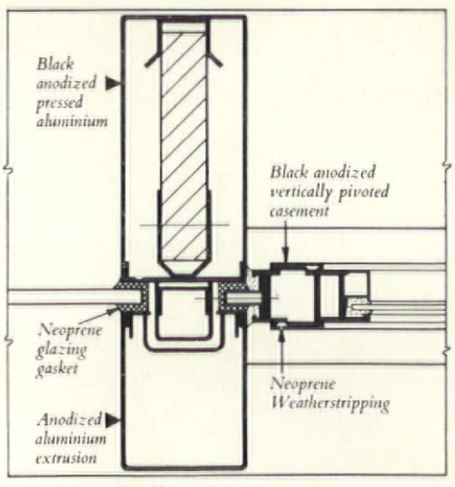
THE ROYAL COLLEGE OF PHYSICIANS, REGENTS PARK, LONDON

Architects: Denys Lasdun & Partners

HOPE'S anodized aluminium and hot-dip galvanized steel windows are installed throughout this contract.

The large composite windows in the staircase hall and main entrance foyer are constructed in black anodized pressed aluminium and glazed with $\frac{3}{8}$ inch glass using HOPE'S patented pressure glazing system.

Opening ventilators are of extruded aluminium sections weatherstripped to minimize heat loss and draughts.



Mullion detail

HOPE'S WINDOWS
The Name Guarantees

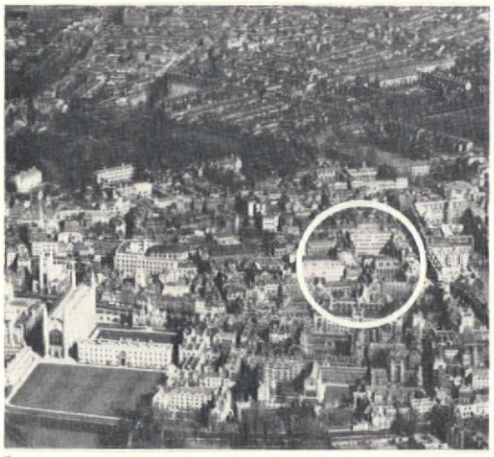
HENRY HOPE & SONS LTD
SMETHWICK, BIRMINGHAM
& 17 BERNERS ST., LONDON W.1

Send for Catalogue 396

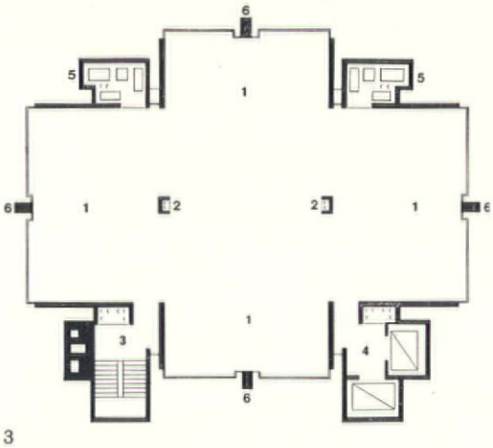
University Laboratories
New Museum's site, Cambridge



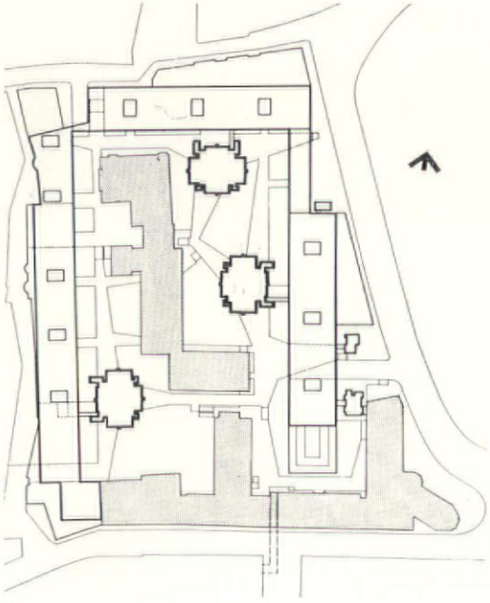
1



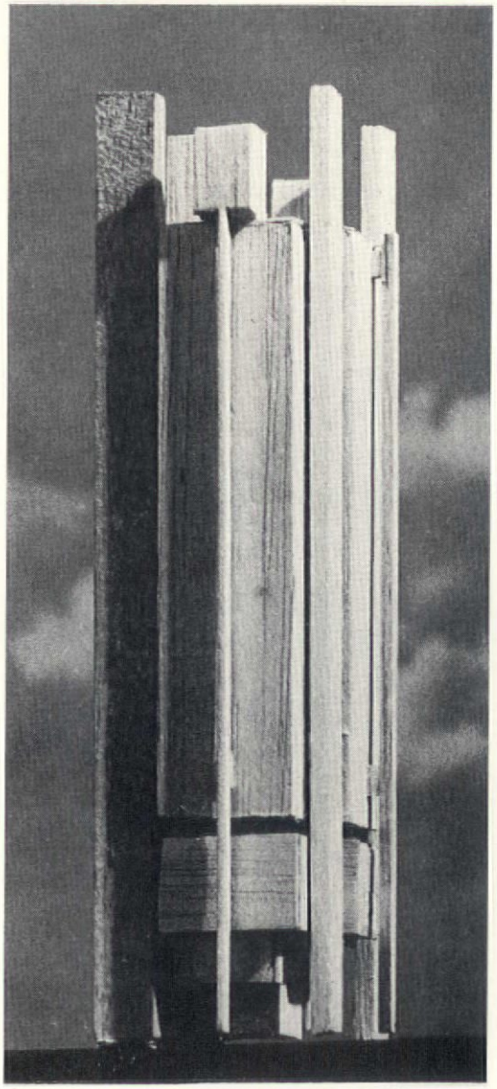
2



3



4



5

1
The projected laboratory towers as they would have appeared in the classic Cambridge view from King's College meadows

2
Aerial view of Cambridge showing the location of the New Museum's site

3
Typical floor plan of one of the towers
1 laboratory or office space
2 column serving as a duct
3 column designed to contain ducts and stair
4 column designed to contain ducts and lifts
5 column designed to contain ducts and act as a crane support
6 structural columns

4
New Museum's site with proposed buildings heavily outlined and existing buildings to be retained shown in grey

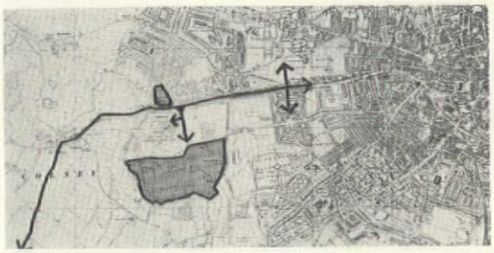
5
Model of one of the proposed towers

University of East Anglia, Norwich

The architects were instructed to prepare a development plan for a University which would grow rapidly until it could accommodate 3000 students by the tenth year; and they were also instructed to bear in mind the probability of a further expansion beyond this figure. In their proposals they have assumed that the University might ultimately grow to about 6000 students and their scheme makes provision for expansion on this scale.

The architects were further instructed to embody in architectural terms a University in which individual disciplines will, so far as possible, be related to one another and to a common dedication to the pursuit of education, learning and research.

The basic academic plan of providing the student with a sense of identity with the University at large and with his or her school of study, renders unnecessary and irrelevant the separate residential organization of tradition. Whether or not a student lives in lodgings or in the student residences will be less important to him or her than the life of the University itself, with its library, seminar rooms, laboratories, refectories and common rooms, open for long hours, seven days a week. Students will live part of their undergraduate lives in lodgings, but it is hoped that for two-thirds of their time they will be in residences. These will be designed to provide a variety of living arrangements: for men and women, for graduates as well as undergraduates, for married students, and for academic staff.

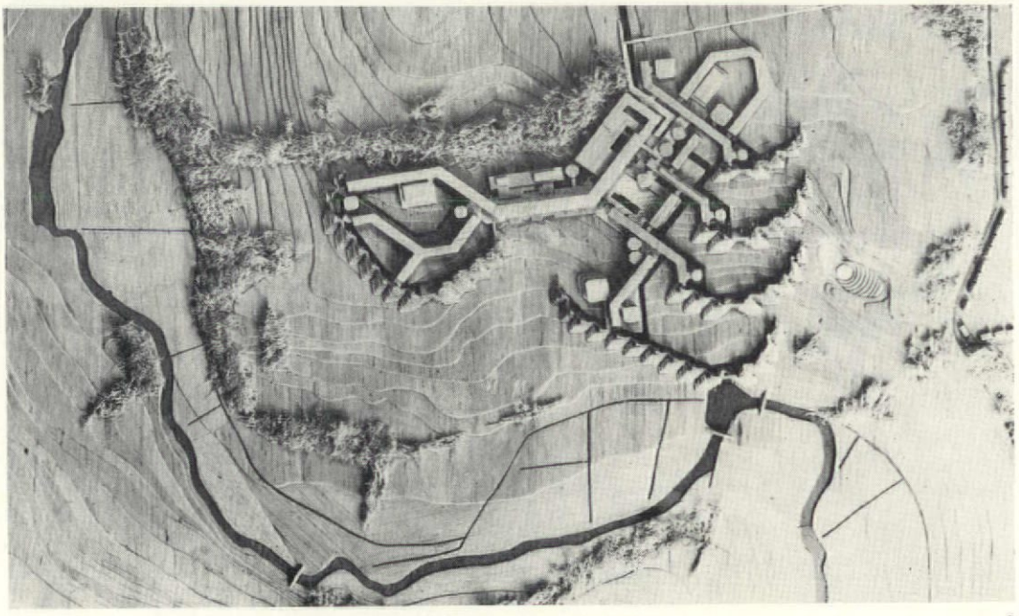


1



2

The site of the University, 1, 2, which rises 70ft from the River Yare, is on a south facing slope in a fine landscape on the present boundary of Norwich. It is conveniently approached from either east or west along Earlham Road and a new access road will link the site not only with Earlham Road but with Earlham Hall and the University village.



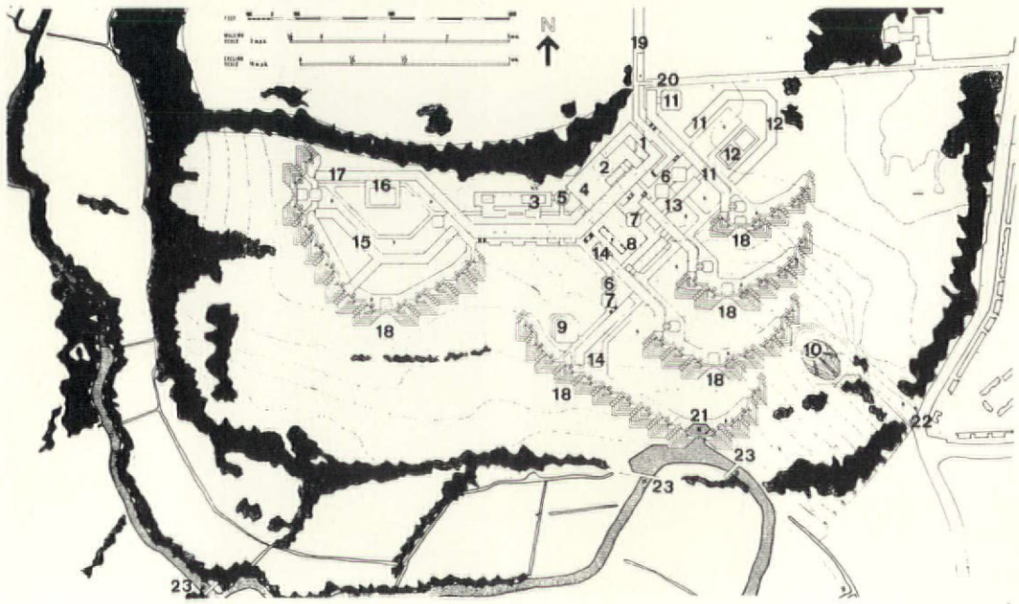
3

Model and layout of development plan, draft I, 3, 4.

The first draft of the development plan was prepared before the appointment of the academic staff. It was based on basic academic decisions made by the Vice-Chancellor and the Academic Planning Board and was the culmination of a study of the brief in relation to the site and the larger environment.

It established certain principles which could remain constant while the plan as presented in detail became the basis of discussion with the University.

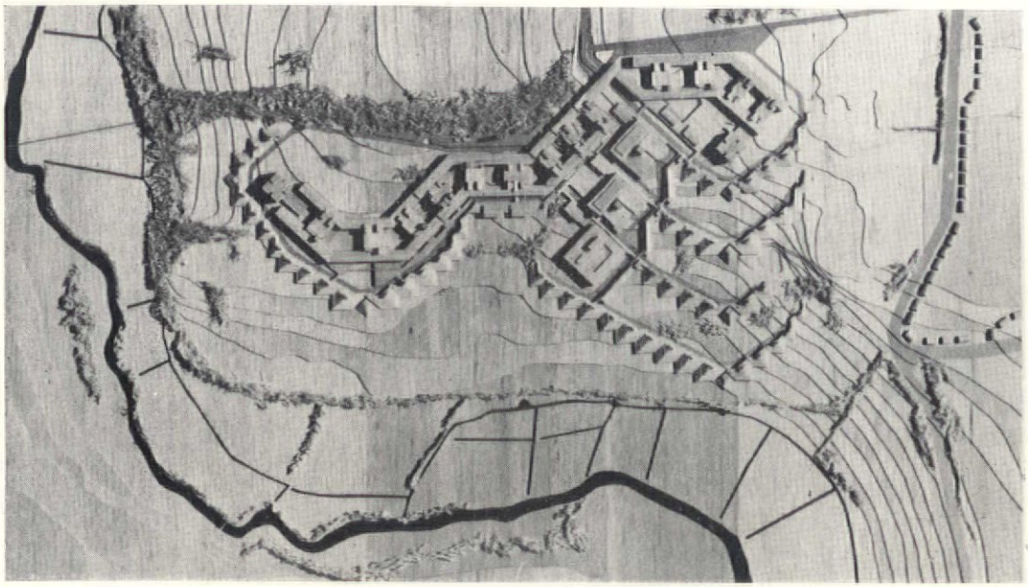
(*a*) Concentration: creates a place where activities merge and where the individual can sense his identity with the whole.
(*b*) Limitation of spread: obtains the maximum benefit from concentration and preserves the natural landscape which remains distinct from the urban environment.
(*c*) Linkage: a word for routes holding a horizontal level against the natural slope of the ground. It allows buildings to be approached at one or more floors above ground giving a measure of concentration that could otherwise be obtained only by a use of lifts.
It also allows cars to make for their destinations without restricting the free flow of pedestrian movement. Parking can thus be dispersed throughout the plan.
(*d*) Student living: an architectural form which, while not detracting from the student's sense of identity with the University at large, would foster small and socially cohesive groups within an integrated community.
(*e*) Organic growth: the plan shows what the ultimate form of the University might be, but as each stage is worked out in detail as an entity in itself.



4

Photos: 2 & 3 Behr

Key to plan
1 senate house
2 library
3 university house
4 assembly hall
5 little theatre
6 science lecture theatre
7 arts lecture theatre
8 shops
9 sports centre
10 amphitheatre
11 chemistry
12 temperature research
13 biology
14 arts
15 maths and physics
16 environmental science
17 institute of education
18 residential
19 main entrance
20 footpath
21 boathouse
22 entrance
23 footbridge

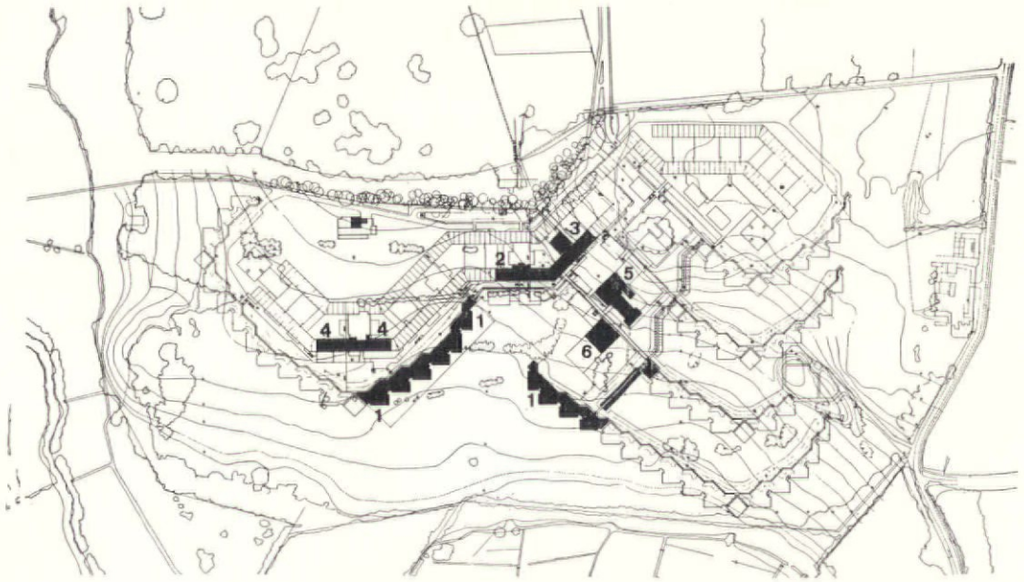


5

Model and plan of the development plan, draft II, 5, 6

The second draft of the development plan is a development of draft I as the result of discussions with the academic staff concerning their detailed needs and as an integral part of this process the establishment of a viable first stage. It illustrates how the final form is continually modified to respond to the detailed examination of the parts without departing from basic principles established by draft I.

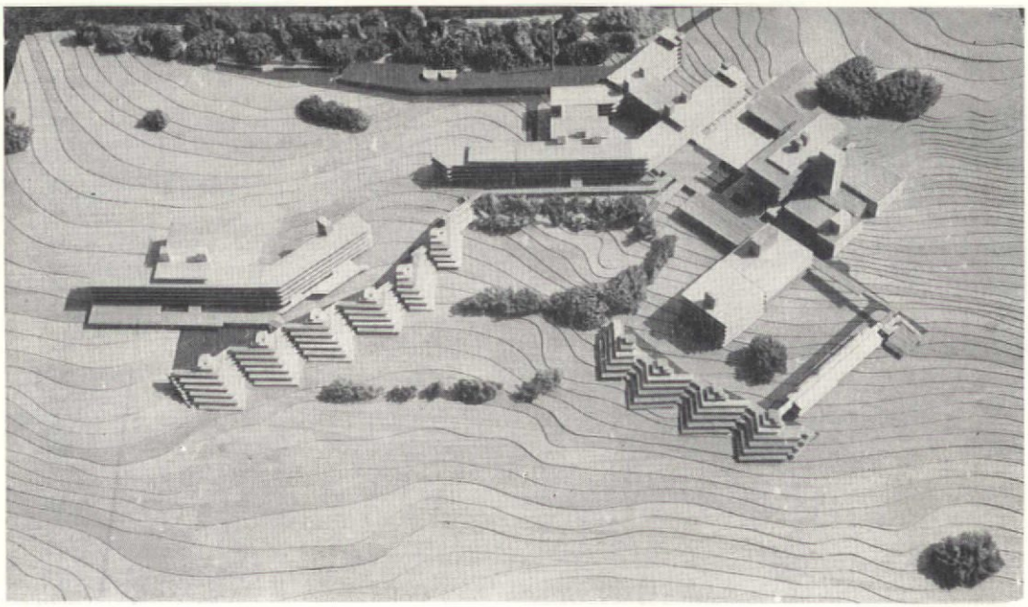
The buildings are disposed around a sequence of central spaces leading to a large re-entrant rough grass area. On one side of these spaces are the library, lecture theatres and University House, containing dining rooms, common rooms and other student facilities. Beyond these are the residences which, in draft I, were approached by routes formed by teaching and research buildings but are now attached directly to the central corporate buildings. On the other side of the central spaces is a continuous belt of teaching and research accommodation, where in draft I there was a mixture of disciplines on each side of the centre.



6

Key to plan

1 residence
2 chemistry
3 arts
4 biology
5 university house
6 boiler house, sub-station and maintenance



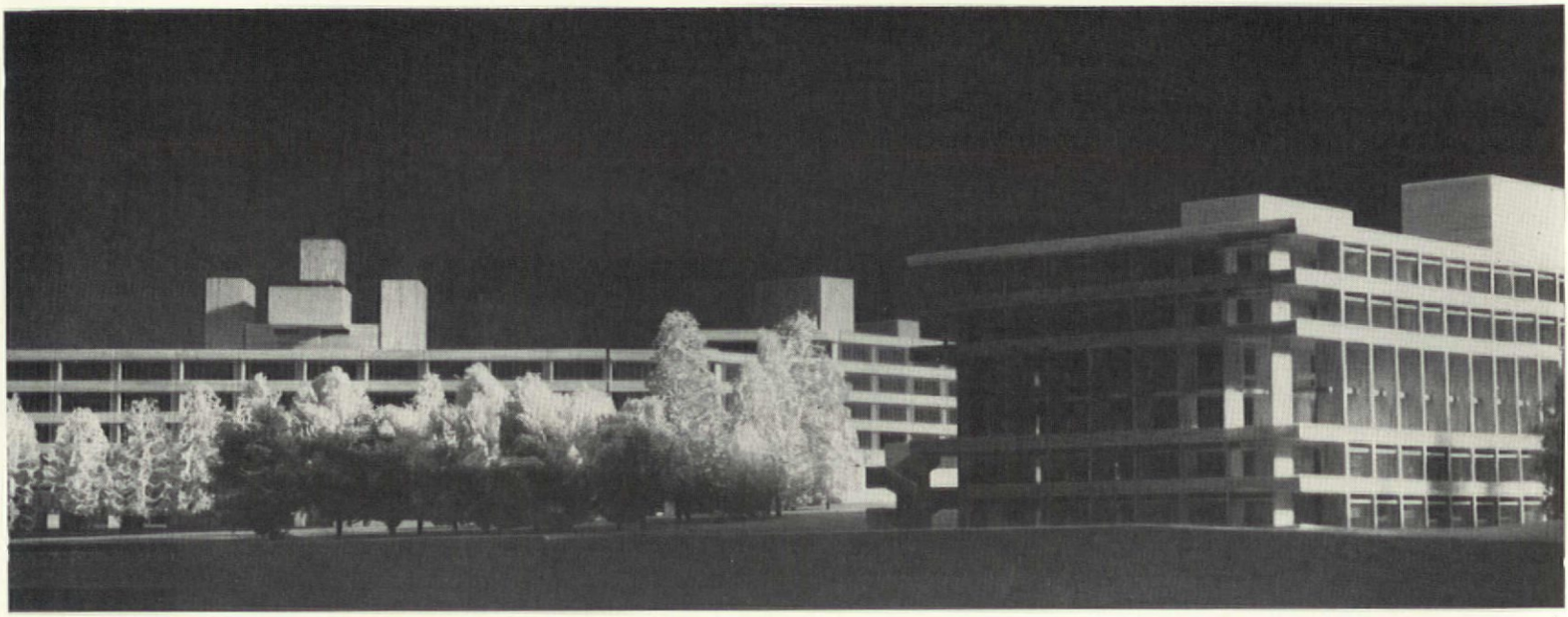
7

Model of the first stage, 7

This resulted from the detailed study which preceded draft II of the development plan. It contains parts of all elements in the ultimate plan and thus forms a microcosm of it.

The principles of movement are established and 'linkage' is effected by service ducts which need to be at high level, forming walkways linking residences to the centre until the buildings planned to these connections at a later stage can be built.

The first stage as illustrated shows approximately the volume of building it is expected to complete by the end of the University's ten-year programme.



1

The first stage of building, 1, 2, 3, 4 is to provide schools of chemical sciences and biology, an arts building and a part of the library.

The main teaching and research belt is generally five storeys high and will, when complete, consist of two continuous parallel blocks, each being 50ft wide and 100ft apart. These parallel blocks contain the smaller rooms, i.e. those between 100ft² and 1000ft² in area. The parallel blocks are connected at intervals by wider linking blocks which contain the larger teaching spaces. This arrangement enables large and small rooms to be planned in close association, facilitates direct contact between departments and provides a planning discipline within which the known teaching and research requirements of all schools can be met. The teaching belt runs generally east-west across the site, turning through 45° several times in its length.

The same structural system is proposed for both science and arts teaching buildings. These buildings are similar and by careful planning a degree of dimensional coordination can be introduced, thus permitting the maximum repetition of the precast units.

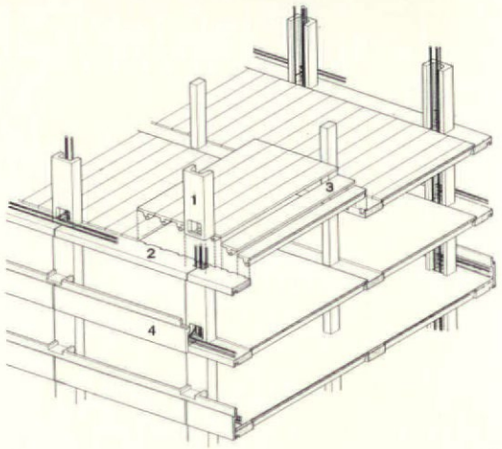
The floors will be made of reinforced concrete in the form of a structural slab of constant depth. This slab will be composed of precast ribbed slab units and edge beams and the central section will be cast in place to stabilize the whole building.

A module of 2ft 7½in has been chosen and will be used throughout. Variations in departmental requirements are catered for by adjustments in the position of the corridor and the central column and beam.

The vertical piped services rise within hollow columns along both elevations and distribute horizontally at each floor behind the precast spandrel units, while air and extract ducts are located within the central corridor suspended ceiling and walls.

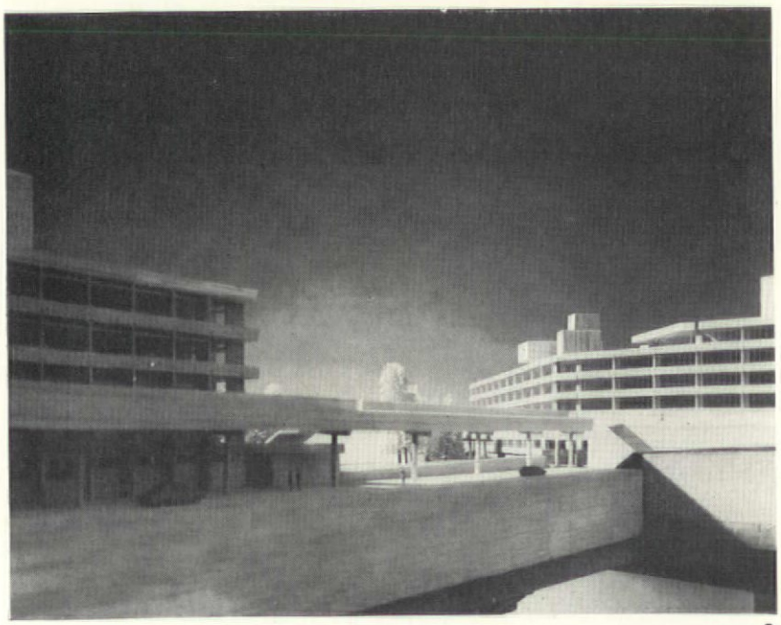
The library building comprises six floors. Two floors of reading and stack are positioned above the administration and concourse floors, and two floors of reading and stack below.

The proposed structure consists of reinforced concrete slabs 1ft 0in thick supported on a grid of 20in × 20in columns arranged at 22ft 6in centres.

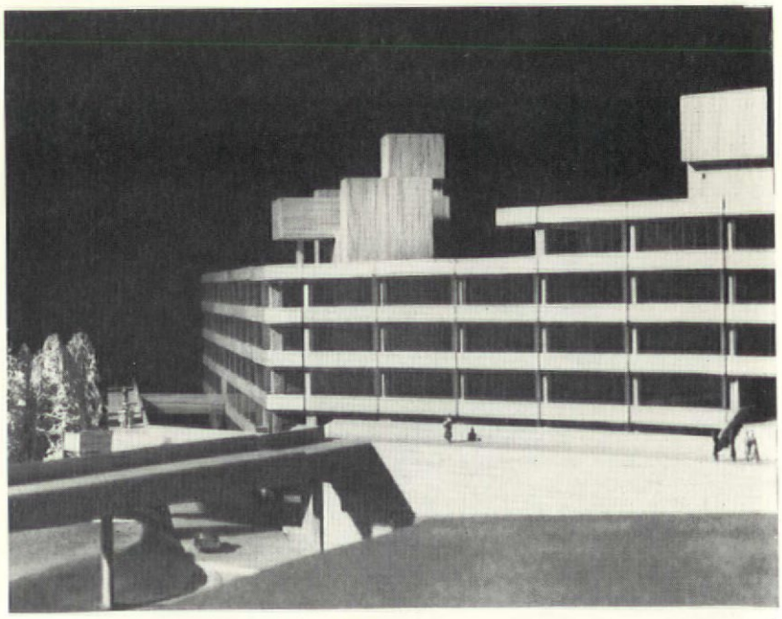


2

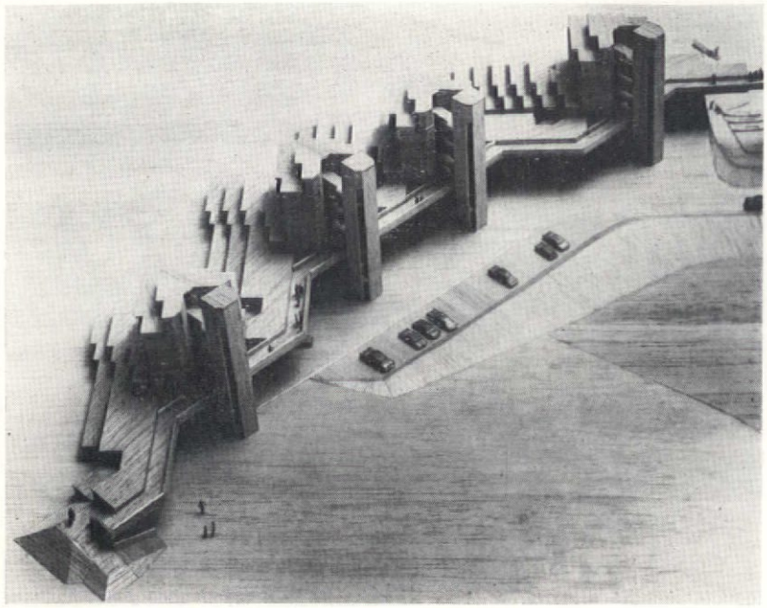
2
Structural system proposed for the teaching and research buildings
1 column/duct
2 edge beam
3 floor 'T' beams
4 spandrel duct



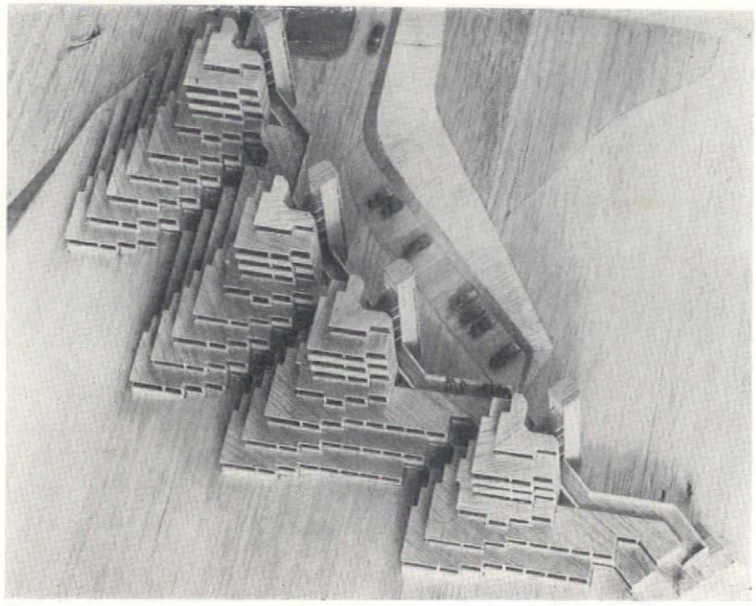
3



4



5



6

The residential buildings 5, 6, 7 ,8, 9, are planned so that the natural landscape penetrates between them as 'swards' until it reaches the more urban areas in which the schools are situated, and goes on thence to the centre.

In order to achieve the richest possible mixture of people and disciplines within one community these units will not function as large single entities but will be so designed that twelve or fewer people will be accommodated together in study bedrooms around a single tutor's flat leading directly off the deck.

Each group will have its own front door, its own kitchen-breakfast room, and its own bathrooms, but it will be closely linked to neighbouring groups and to the centre of the University by staircases, high-level decks, and by the open spaces.

Groups of rooms can be set aside either for men or for women undergraduates, and flats will be included for single or married tutors and for married students.

All rooms will face outwards from the University down the slope towards the river to the south; they will pile up the hill, one over the other to create an undercroft on the north side. Within the undercroft will be housed squash courts, games rooms, store houses, workshops, car and cycle spaces and all the other ancillaries of a full undergraduate life.

The married tutors' flats and domestic staff houses are of load-bearing brickwork with concrete floors in the flats and a timber first floor in the houses. The roof, where it is not formed by the walkway, is of timber.

5 & 6
Draft I view from the north and east

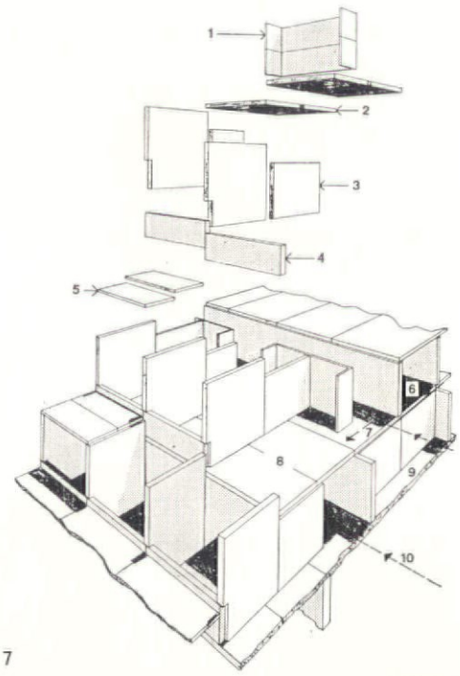
7
Diagram showing the principles of construction

1 non structural precast unit	6 bathroom
2 precast floor unit	7 entrance
3 precast wall unit	8 bedroom
4 precast beam unit	9 cleaners
5 siporex precast roof unit	10 corridor

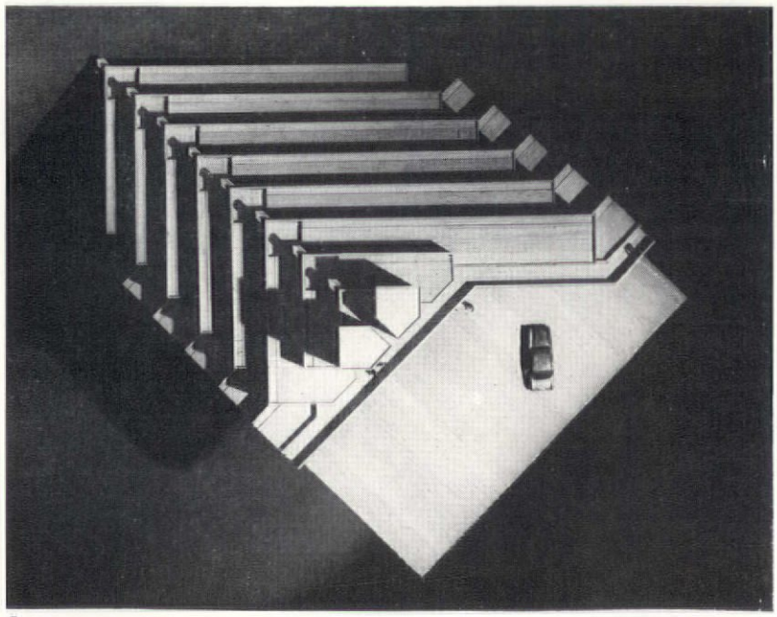
8
Model of revised design for the residential block with the stair towers incorporated within the mass of the building, now under construction

9
Side elevation of the revised residential blocks showing how the individual units are to interlock giving a headroom of 8ft 6in in the front of the bedrooms with 6ft 10in in the rear and in the corridors

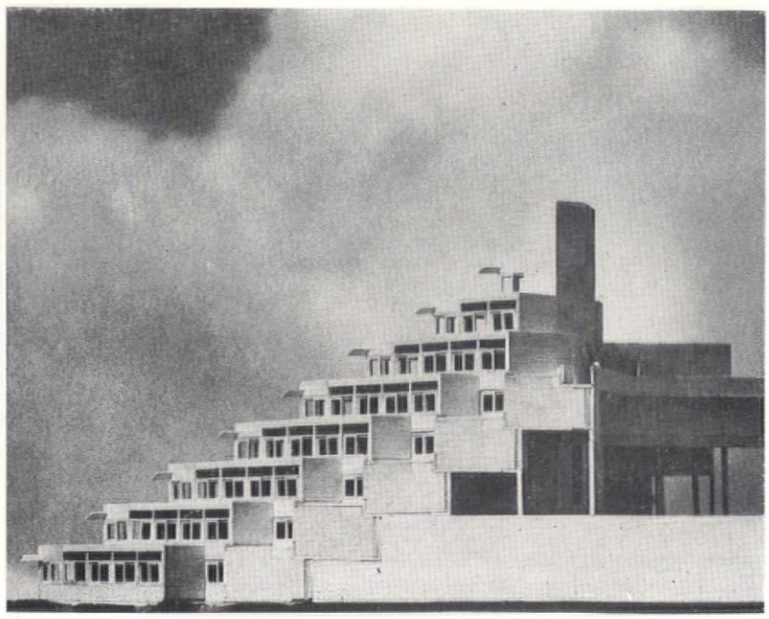
Photos: 3, 5, 6 & 8 Behr



7



8



9

John Mackintosh Hall, Gibraltar

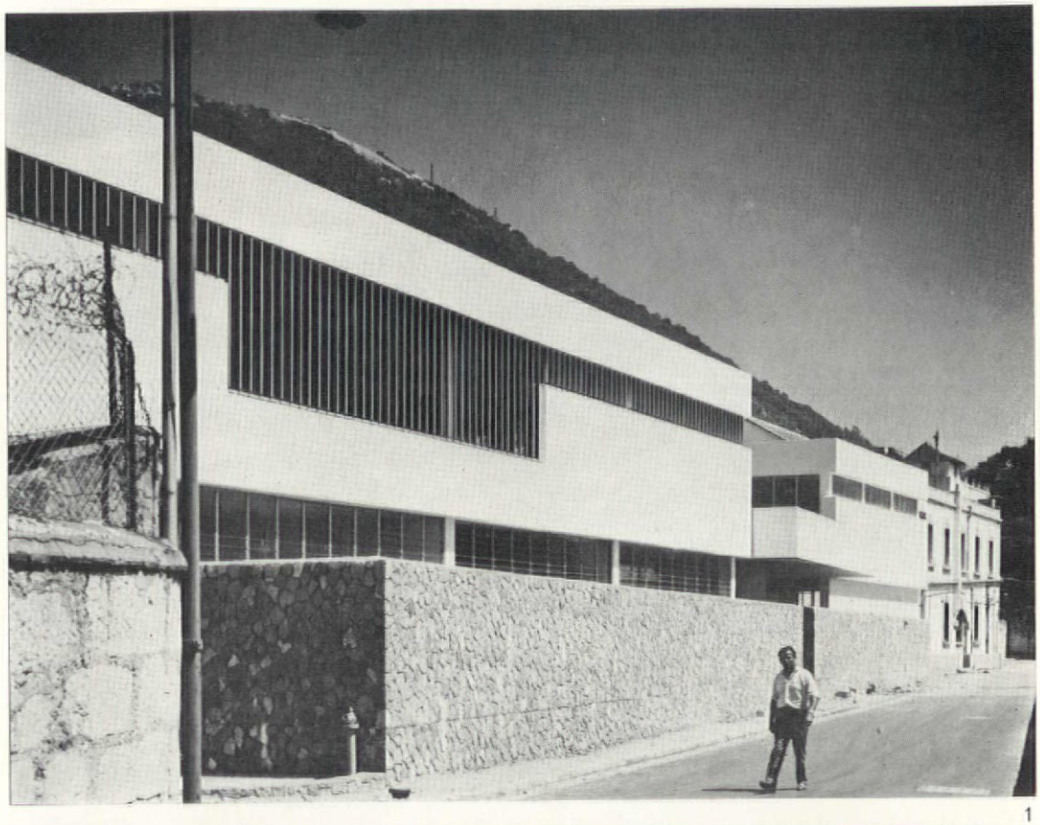
Stillman and Eastwick-Field
Consulting engineers: Ove Arup and Partners

Outside the building does not give much away—to understand it one must get inside: it is a building that looks inwards.

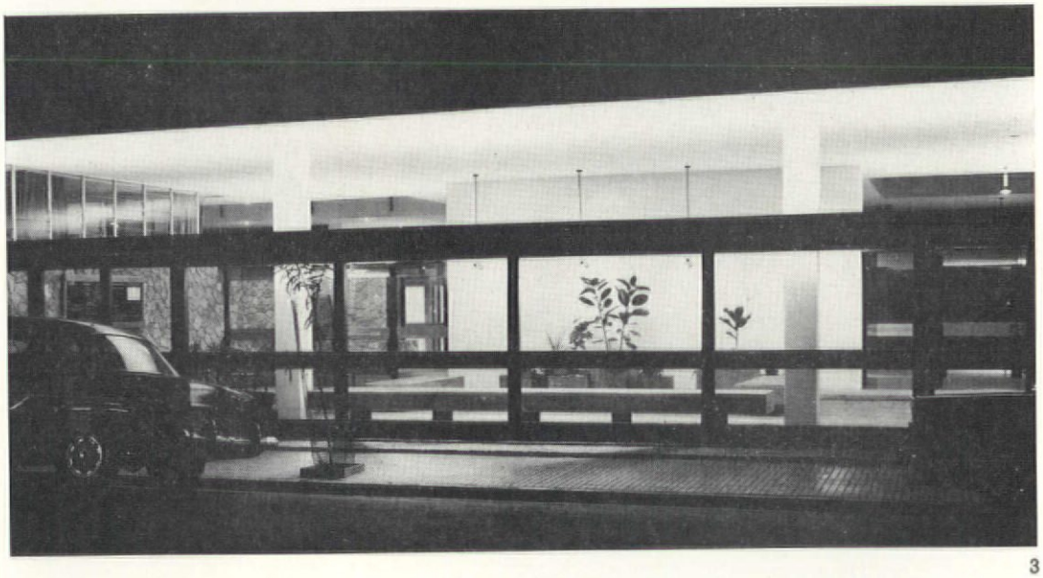
There are four courts, whose purpose is to be as rooms without roofs. Round each of them is an open gallery giving access to the upper rooms and each has its own special character. A fountain animates one, another is planted with orange trees and the third is primarily for children's play. The little court by the caretaker's flat is a private patio: and everywhere there is planting to give colour and added shade.

For the most part the building is white; this helps to keep it cool by reflecting the sun's heat and the colours have been restircted to blues which, too, are cool. The finishes internally are unsophisticated except for some local Spanish copper tiles. Cork and terracotta on the floors and lime plaster have a sympathetic natural quality and are appropriate to the locale. The estimated cost was £249,050.

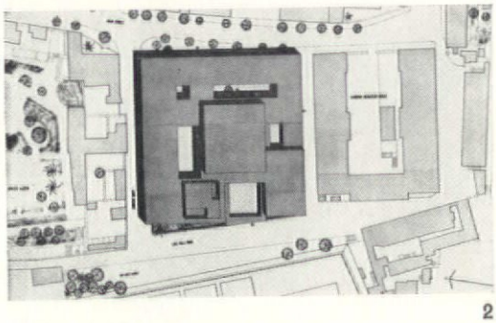
The plan is flexible and in accordance with the brief given to the architects in July 1959, there are no rigid separations, though certain rooms are now to be put to entirely new uses from those first envisaged, and an increasing emphasis has been given to adult educational and cultural interests. The theatre which was thought of as a multi-purpose secondary school hall has changed in character so that it is now better suited to lectures, music and above all to drama. It has fixed seating and additional space in a gallery for those occasions when there may be an extra large audience.



1



3

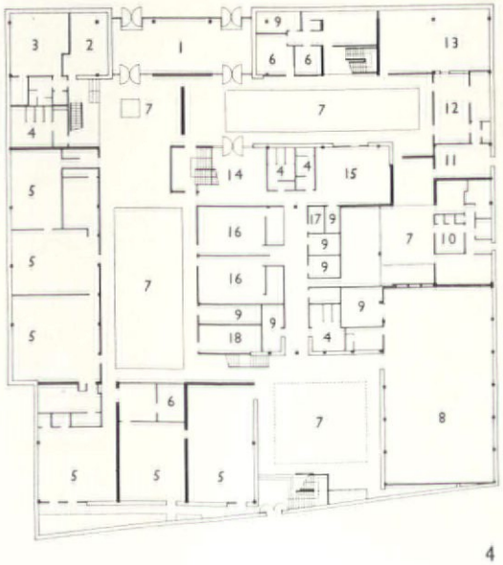


2

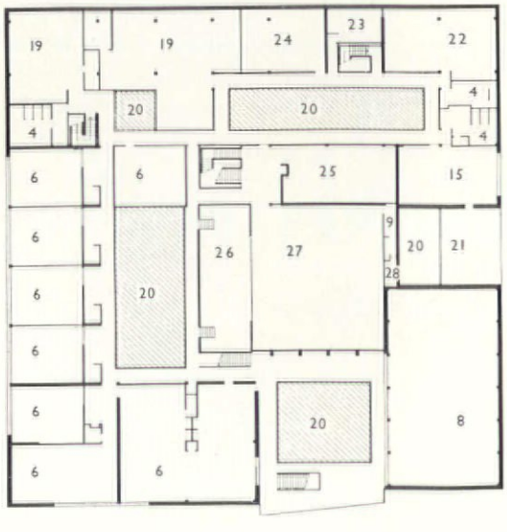
1
Elevation to Line Wall Road
2
Location plan
3
Night view into entrance hall
4
Ground floor plan
5
First floor plan

Key to plans

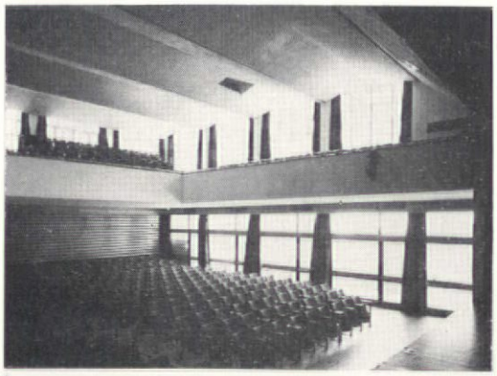
1 exhibition area
2 headmaster
3 staff room
4 w.c.
5 classroom
6 office
7 court
8 gymnasium
9 store
10 caretaker's flat
11 covered service yard
12 refreshment room
13 common room
14 foyer
15 exhibition room
16 changing
17 plant room
18 medical inspection
19 library
20 void
21 open terrace
22 lecture room
23 dark room
24 studio
25 music room
26 stage
27 hall
28 projection room



4



5



6

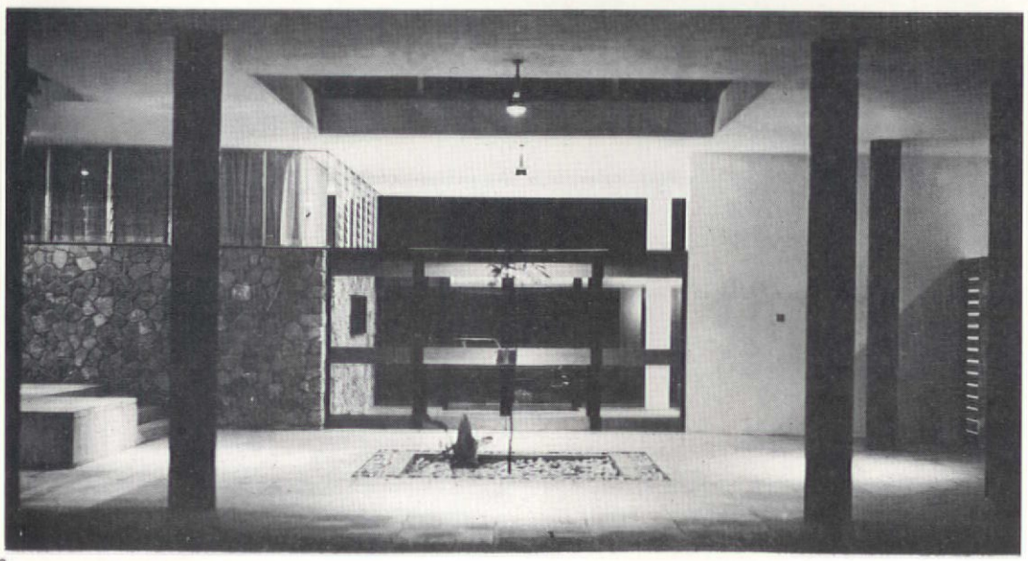


7

6
Auditorium from the stage
7
Common room
8
School courtyard from the entrance
9
School courtyard towards the entrance
10
Stairs to upper level



8



9

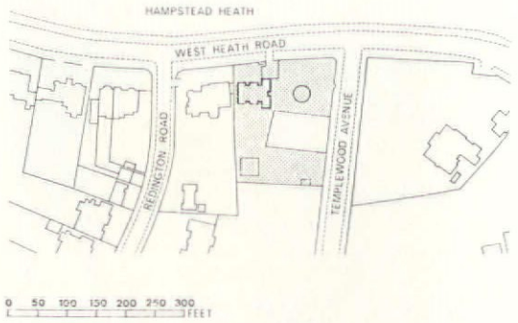


10

Schreiber house, Hampstead Heath, London

James Gowan

*All photos John Donat**



Criticism by Neave Brown:

The Schreiber house is highly unorthodox. It establishes its originality immediately it is seen. Its stark black form looming above the road is in sharp contrast to its neighbours and its immediate environment of prosperous suburban villas, a contrast considerably more marked than would be established by the presence of a more conventionally contemporary house. It does not correspond to any of the norms of modern design that are expected even by the sophisticated, and few houses of any period can have asserted their presence with such a forward confidence. Its nature cannot be interpreted from the exterior by any of the standard clues, and few people can pass it without wondering, at least for an instant, what it is.

This perplexing appearance is the outward manifestation of a building designed to a private set of rules. It seems indeed to belong to another culture. The architect has invented for it a closed system, and every event within the building is subjected to its discipline with a really impressive thoroughness. This system is a highly fastidious and refined architectural language of contrasts, of clarity and illusion, cohesion and fragmentation, unity and ambiguity; an apparently wilful breaking of all the expected rules; a virtuoso performance.

It is an example of a building for which a grid is invented, and exploited to the *n*th degree, for expressive purposes.

The form is developed with symmetry about crossing axes. The constricted staircase from road level to garden level effects an appropriate and abrupt separation of the building from the surrounding landscape, and initiates the first of the axes leading directly to the front door. It is disconcerting to find on entry that this axis plunges through the house, driving straight out the other side, as if the house were only an event on the route.

The axis about which the internal plan develops, crosses this just beyond the entrance, terminating on the left side with the staircase, and on the right dividing the cruciform compartments of the living spaces, of which this axis is one of the elements, juxtaposed over the cross spine containing the services core and a variety of alcoves. Since these main crossings both happen about a point and not a major space, the house is denied a volumetric centre, or hierarchy of spaces, and they tend to fragment the building as much as unify it. There appears to be an intentional play between this fragmentation and a unification achieved by a remorseless systemization and repetition of detail.

This crossing within the plan is articulated on the surface of the building and explains events which cannot be interpreted from outside, where a conventional reading of the forms would indicate significant horizontal changes in function between the segments, and a vertical unity established by the soaring continuity of wall and window. These distinctions do not operate within the plan.

Despite the lack of a unifying space system, the house has indeed a sense of interior as the internal fragmentation of volume forces attention on the external walls. These walls, formidable black cliffs of brick externally, effect internally a strong sense of enclosure.

The windows of each space appear both as two strips in a continuous wall, and as a single opening divided by a pier discontinuous with the return walls on either side. This ambiguity emphasizes the presence of the external wall which is identical in all spaces, and symmetrical across the house. The sense of the interior being captured and held prisoner within the building (as a unifying substitute for a master internal space?) is increased by the small module of the glazing which divides the opening so closely it is not possible to lean out of the window. Despite the door width of these openings, not even the terrace which runs across the garden side of the house can be reached from within, except by the exit on the cross axis. These openings and piers of the end walls follow the grid across the house. In the opposite direction it is expressed on the soffit by the exposed precast concrete beams, spanning between load-bearing cross walls. All openings follow the grid, and all wall faces suggest it by means of raised plaster panels. In order not to interrupt this expression the doors themselves are finished with panels similar to the walls. Even the system of curtains has been painstakingly designed to follow the grid both when open and drawn.

On the ground floor sets of large doors allow many variations of space, the most dramatic of which can be played within the living room. When these doors are open, the sense of the axis leading to the staircase divides the space in two. When the doors are shut, the room is unified, though still retaining the feeling of having two distinct ends.

Throughout the house there is an amazing thoroughness and mastery of detail, a fascination with the mechanisms of luxury. The cupboards and joinery are an essay in ply technique. Wash basins are carved from marble slabs to forms of almost religious intensity. Tiling works everywhere, apparently without cutting. Services are integrated with an aesthetic delight and amazing invention.

And yet, despite the completeness, the conviction, and the consistancy, it remains to me perplexing and unsatisfactory.

I cannot see what idea has generated or justified this formality, or why a house should be so hermetic, so complex in detail and lacking in the ease and expansiveness of space I associate with luxury.

The problem that is posed by this house is that of appropriate expression. Things are expected to look like themselves so that their appearance will express a concept of the content or nature of the problem. When Louis Kahn asks what a building 'wants' to be, as an aid to understanding a problem, he is phrasing a contemporary dilemma. Only in an age uncertain of its appropriate forms could such a question be asked. Architecture becomes in part a matter of inventive definition, and the raw material is the programme and the relevant condition. The problem of function emerges as a problem of expression. It is felt that a combination of rational and intuitive thought will illuminate the inner nature of a problem, and act as a generator of form. It is also clear that there is a wide divergence of opinion as to what is relevant, and no age has shown such a bewildering variety of approach. Difficulties arise when it is not possible to preceive an analogy between the methods employed and the problem itself. The Schreiber house appears to have given the architect the opportunity to develop a particular formal system, but the relevance of that system to the problem is so disturbingly obscure that it is hard to see why such a choice has been made. It seems like a substitute for creative thought about the problem itself. It must be admitted that this is a matter of opinion; but so many sacrifices have been made in the interests of the system that it appears irrelevant, and its complexities display a grammarian's delight in syntax rather than in content.

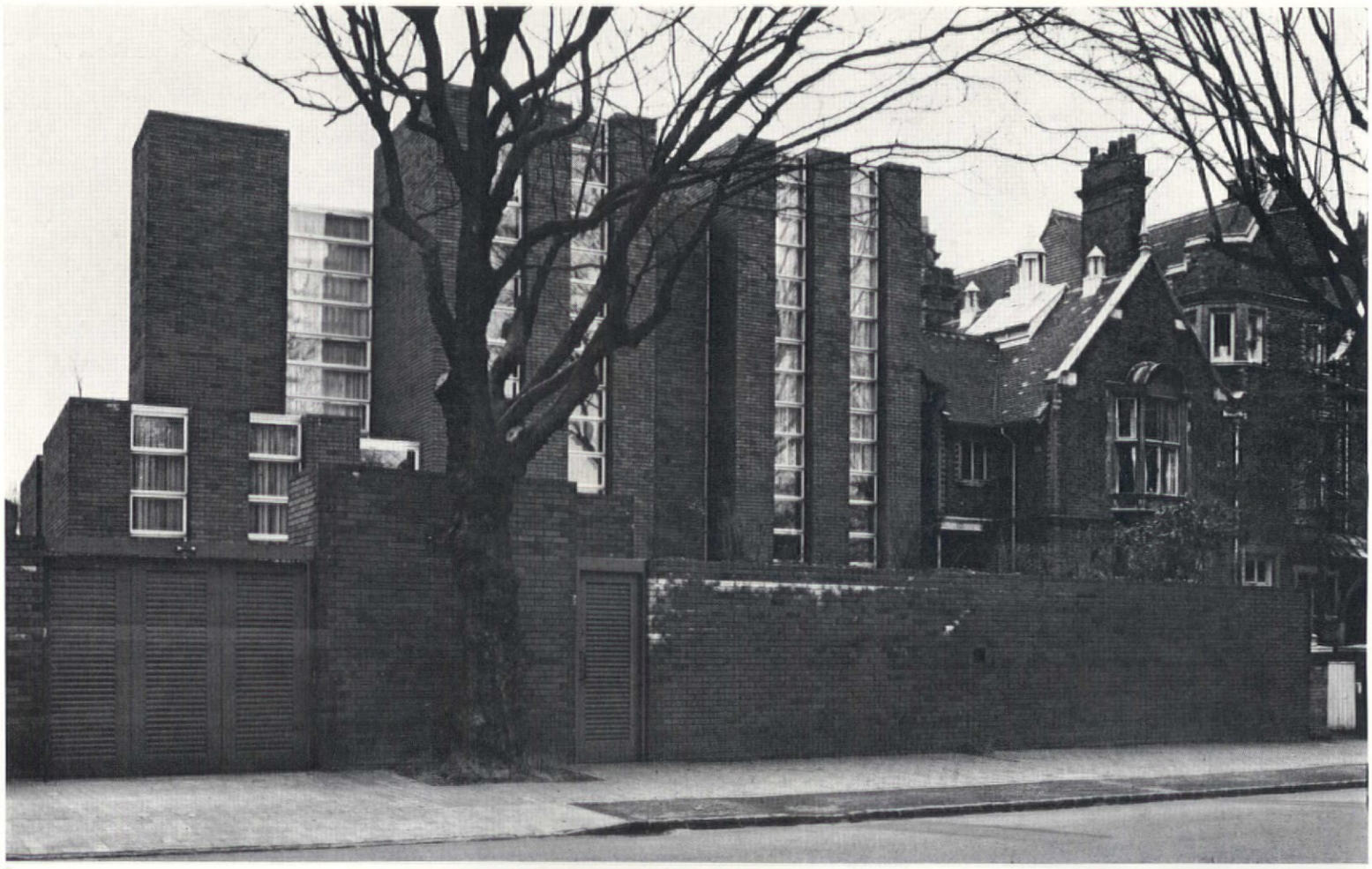
It is interesting that Louis Kahn himself also at times invents systems for his buildings that seem irrelevant to the problem, and he develops them with the same obsessive care. The orders in a previous age provided the grammar of expression, and the functional problem as we know it scarcely existed. It was in fact as a meaningful substitute for the obvious inadequacies of the orders to contemporary problems that a functional architecture developed. I feel that the development of a formal system as a substitute for a concept expressive of the problem itself, is a retreat similar to a use of the orders in disguise.

In this instance, the opportunity to invent a formal system has been presented by a luxury house. The result is an object of immense complexity. Apart from the incredibly lavish services, fittings and finishes, it is hard to see what is achieved here in terms of luxury to compare with either the great houses of the thirties, or for that matter a large, conventional suburban villa.

*Colour blocks by courtesy of C. S. Schreiber



2



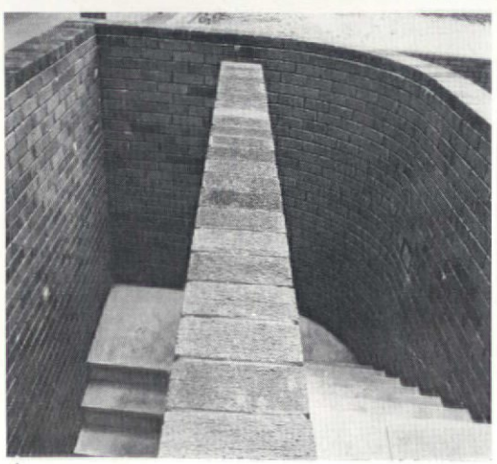
3

1
Location plan

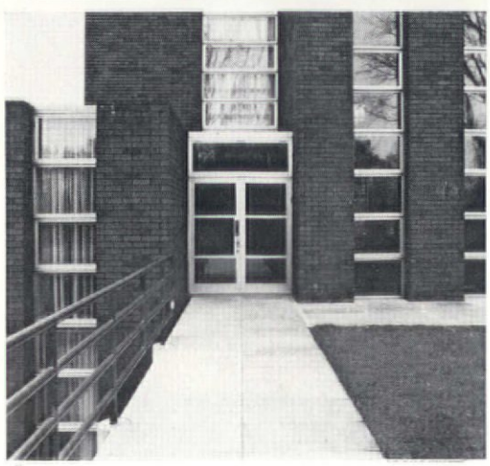
2 & 3
North side of the house facing the Heath. The small door provides pedestrian access, via the stair, to garden level and main entrance. The larger door is the garage and service entrance. The family cars carry transmitters, which open the gates electrically at 100 yards distance

4
Entrance stairway with special coping and radius bricks. York stone treads and risers. Bronze recessed light fittings

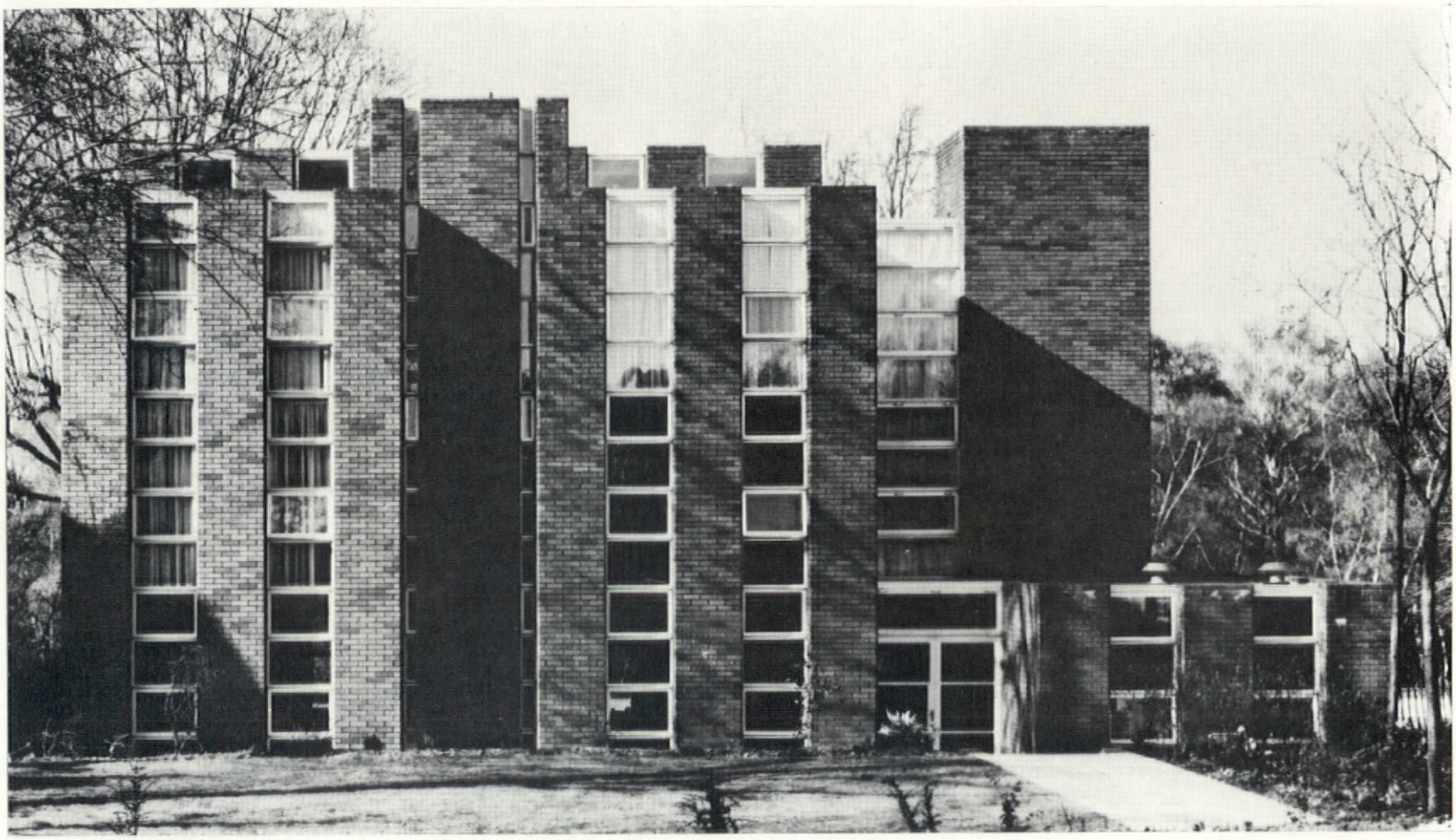
5
Main entrance at garden level. The handrailing is 2in dia. manganese bronze tube. All external paving is electrically heated to keep it clear of snow in winter



4



5



1



2

Site
The site faces Hampstead Heath and is elevated 9ft 0in above the perimeter road. The main apsect, the view over the Heath, is to the north.

Client
Mr C. S. Schreiber (an industrialist, who specializes in wood engineering) and his wife, required a spacious, well-equipped house for themselves, their son and two daughters. They expressed a perference for durable, natural materials.

Planning
The house is stratified functionally, on four floors; service rooms in the basement, living rooms on the ground floor, the master suite on the first floor and bedrooms and studio on the second. Each floor is arranged as an open suite but, when privacy is required, secret doors housed in the walls, can isolate particular areas. The Heath view is to the north and the rooms, characteristically, extend through the plan, so that sunlight livens the various spaces.

Structure
The piers are 18in cavity brickwork, cross walls 11in cavity and internal walls 9in solid. Floors are 18in wide and 9in deep precast concrete units. The structure, components and finishes are set out on a 3ft 0in measure. Basement retaining walls are 8in reinforced concrete.

External finishes
Blue rustic Staffordshire engineering bricks, aluminium double-glazed windows, York stone paving (electrically heated), bronze handrailing.



3



4

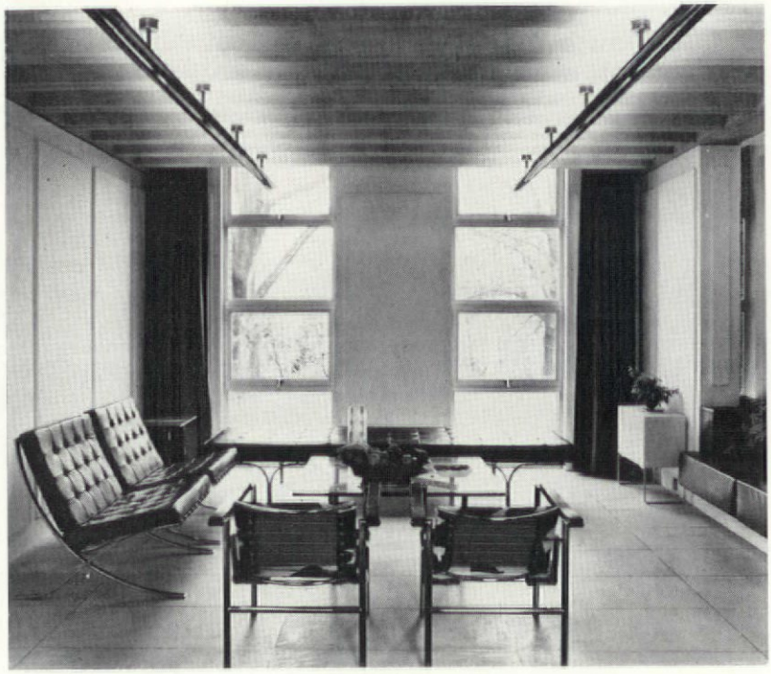
1
Rear garden elevation. The terrace is paved with 3ft 0in × 1ft 6in × 2in thick York stone pavings with a sawn finish

2
Detail of the south façade

3
Detail of central service stack which contains the bathrooms and storage and terminates in the roof tank room. The quoin bricks are specials with $1\frac{1}{8}$in radius. The mortar jointing is dark grey ready-mix

4
Rear garden elevation showing the three principal floors at night

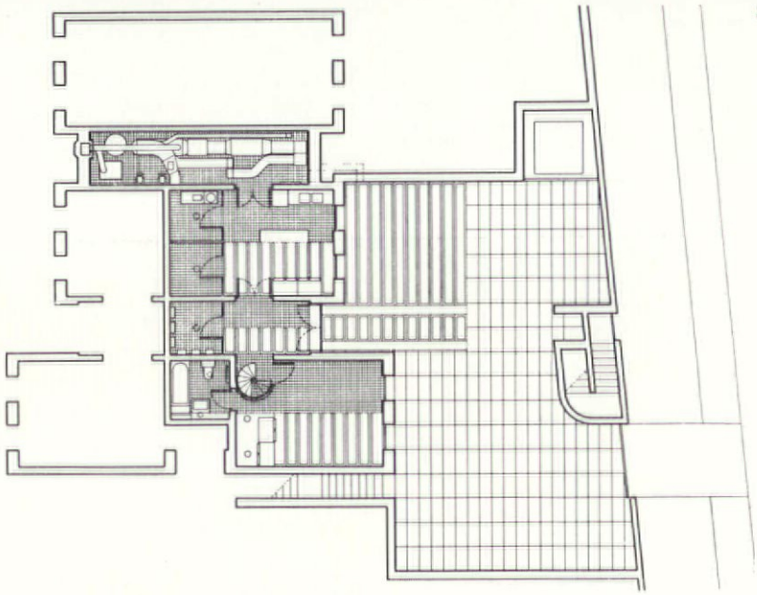
1



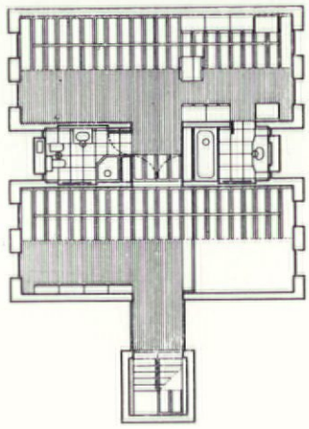
2



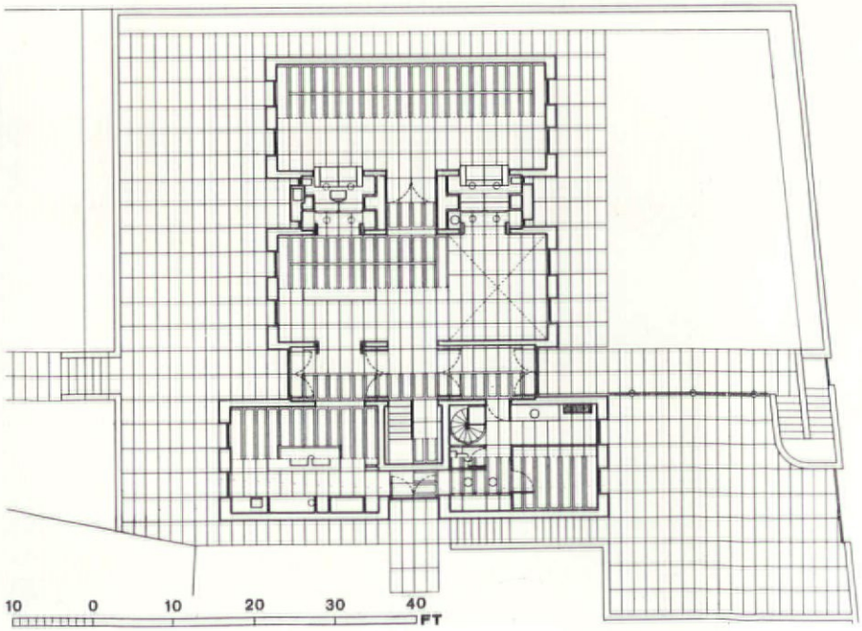
3



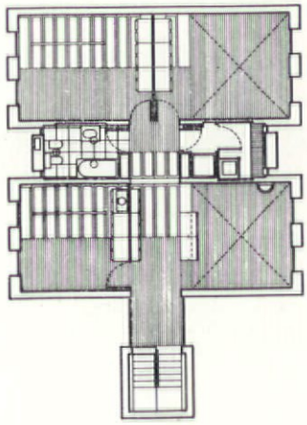
5



4



6



1
Living room facing north

2
Dining room looking towards the living area

3, 4, 5 & 6
Basement, ground, first and second floor plans

7
View of staircase from living room



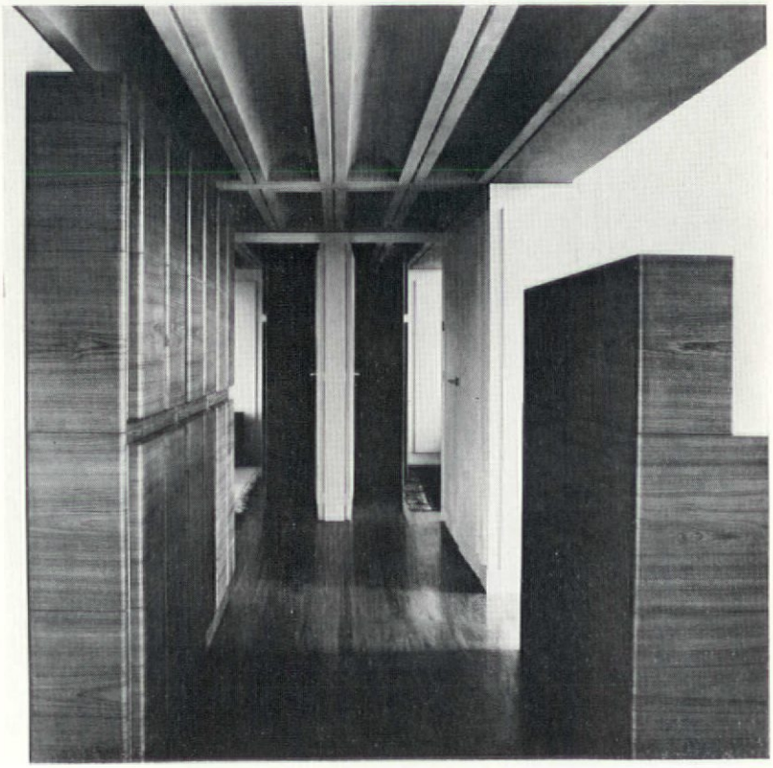
1



2



3



1 & 2
The study looking towards the Heath and the rear garden. The walls are painted matt white. The storage unit is made of four standard sections with a 4½in solid cramped teak top

3
Second floor approach to bedrooms

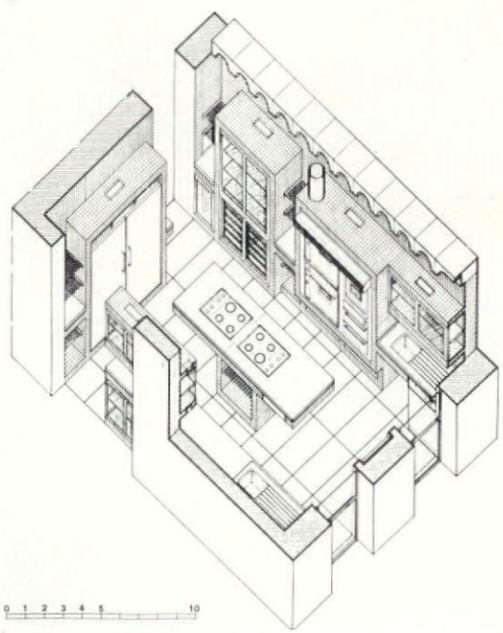
4
North end of dining room from study at first floor level



1



2



1
The kitchen looking towards the south. The electric hot plates are inset in 2in polished San Stefano. The table is made of 2½in precast reinforced concrete faced with matt glazed white 2in × 2in tiles. Extract hood is bronze glazed with dark safety glass

2
Axonometric drawing of the kitchen

3
The kitchen shelves in the open cupboards are of stainless steel tube: inside the cupboard they are stainless steel sheet

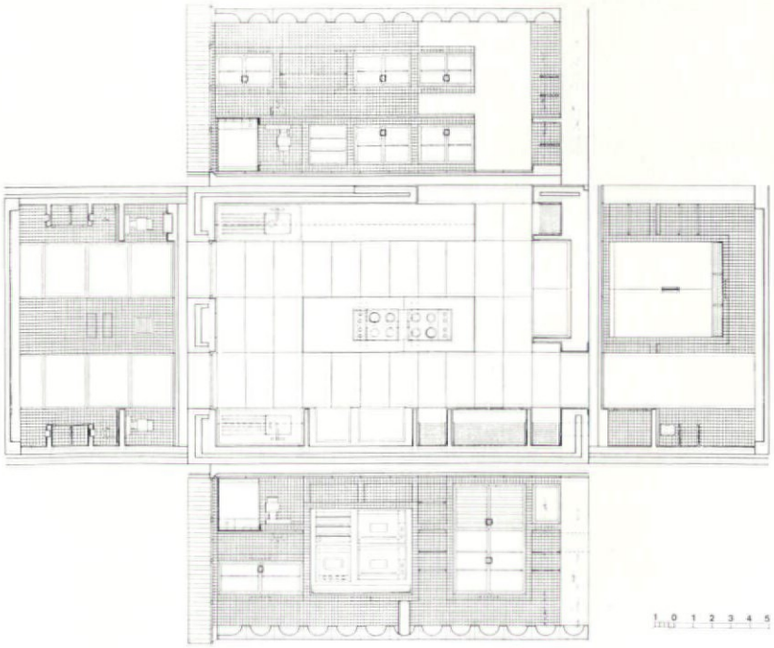
4
Plan of the kitchen

5
Kitchen looking towards trade entrance. The assembly on the right contains two electric ovens, a microwave oven and electric hot drawers

3



4

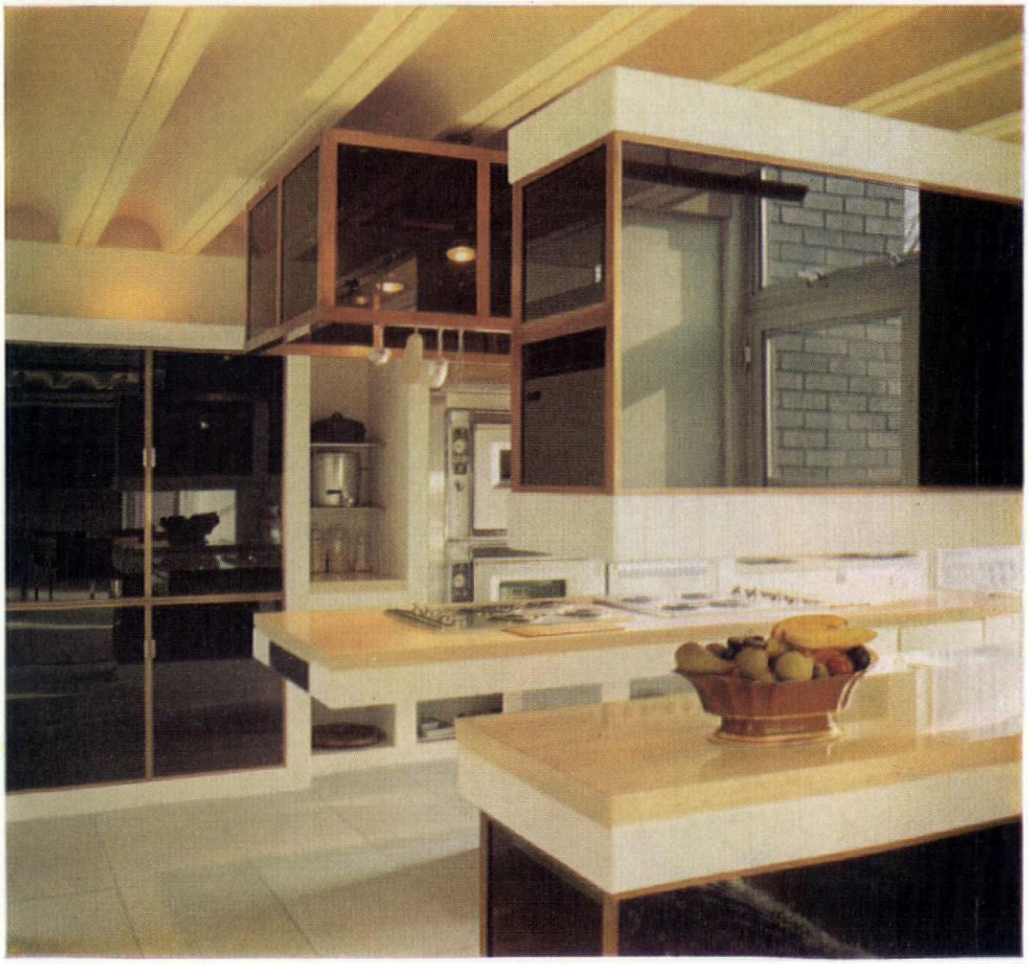


5





1



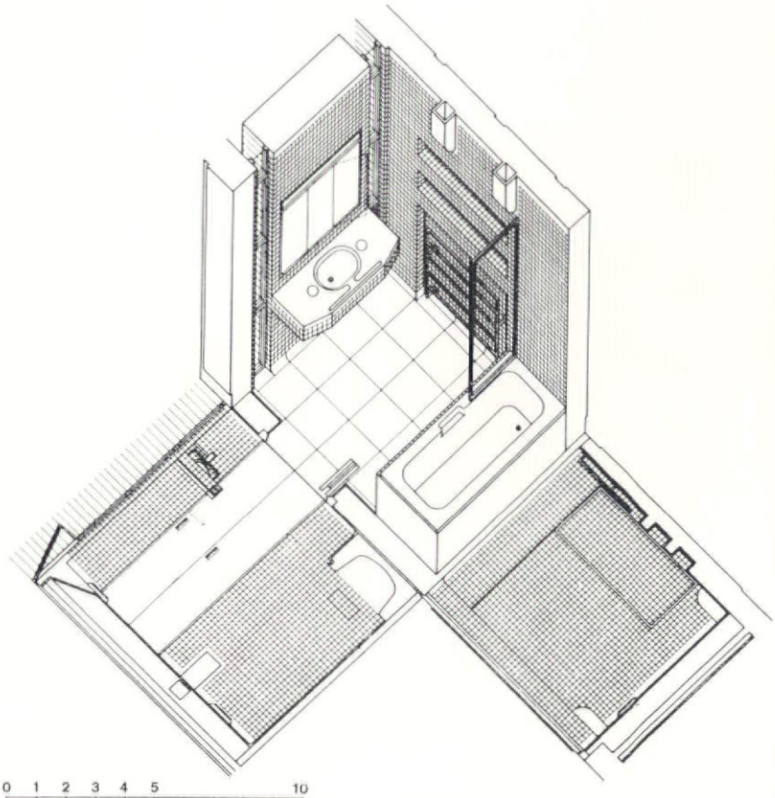
2

1
View along the secondary axis from the kitchen to the dining room storage recess

2
Kitchen seen from the hallway. Both the oven and the cooking range are fitted with an extract ventilation system. The storage units have bronze doors fitted with dark safety glass

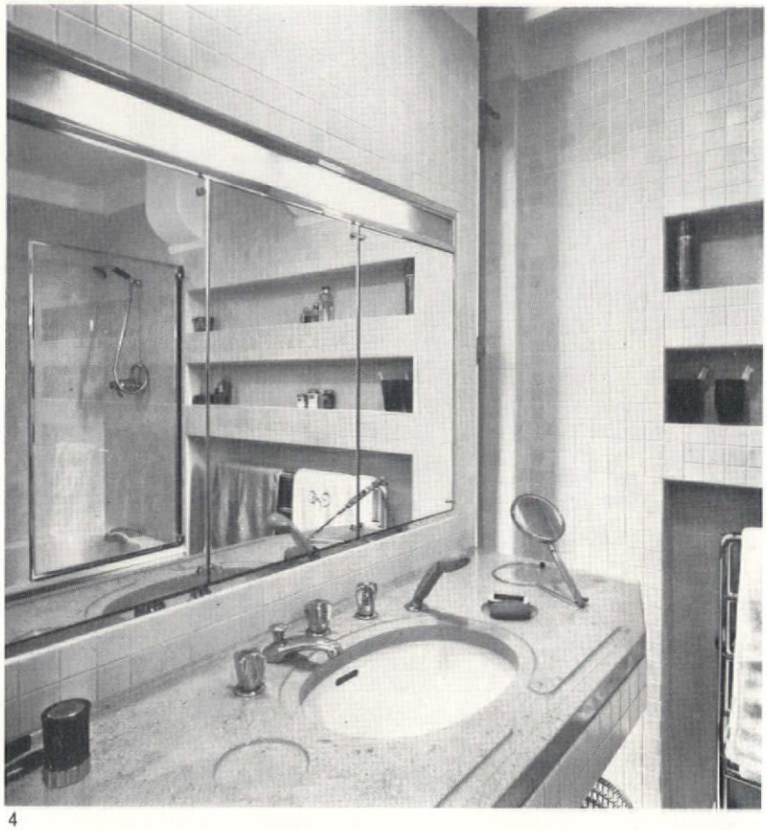
3 & 4
First floor bathroom adjacent to dressing room. Matt polished, electrically heated San Stefano marble floor. Wall tiling 2in × 2in matt white glazed. Wall cabinet fitted internally with stainless steel shelves and linings. Towel rails are chromium plated tubular steel specials

5 & 6
Dining table of 4½in solid teak cramped with stainless steel bolts, adjustable by secret capstans on table underside

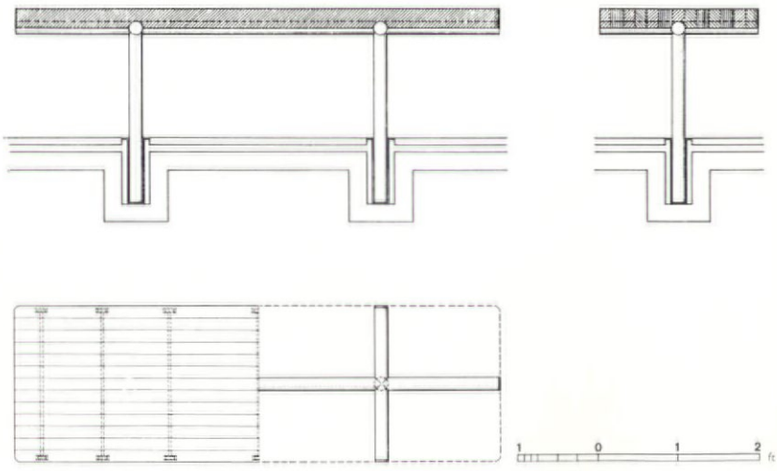


0 1 2 3 4 5 10

3



4

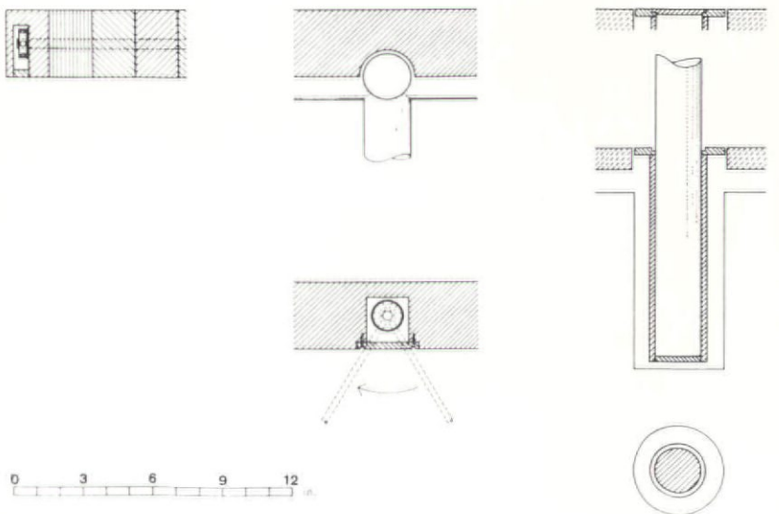


1 0 1 2 ft

5

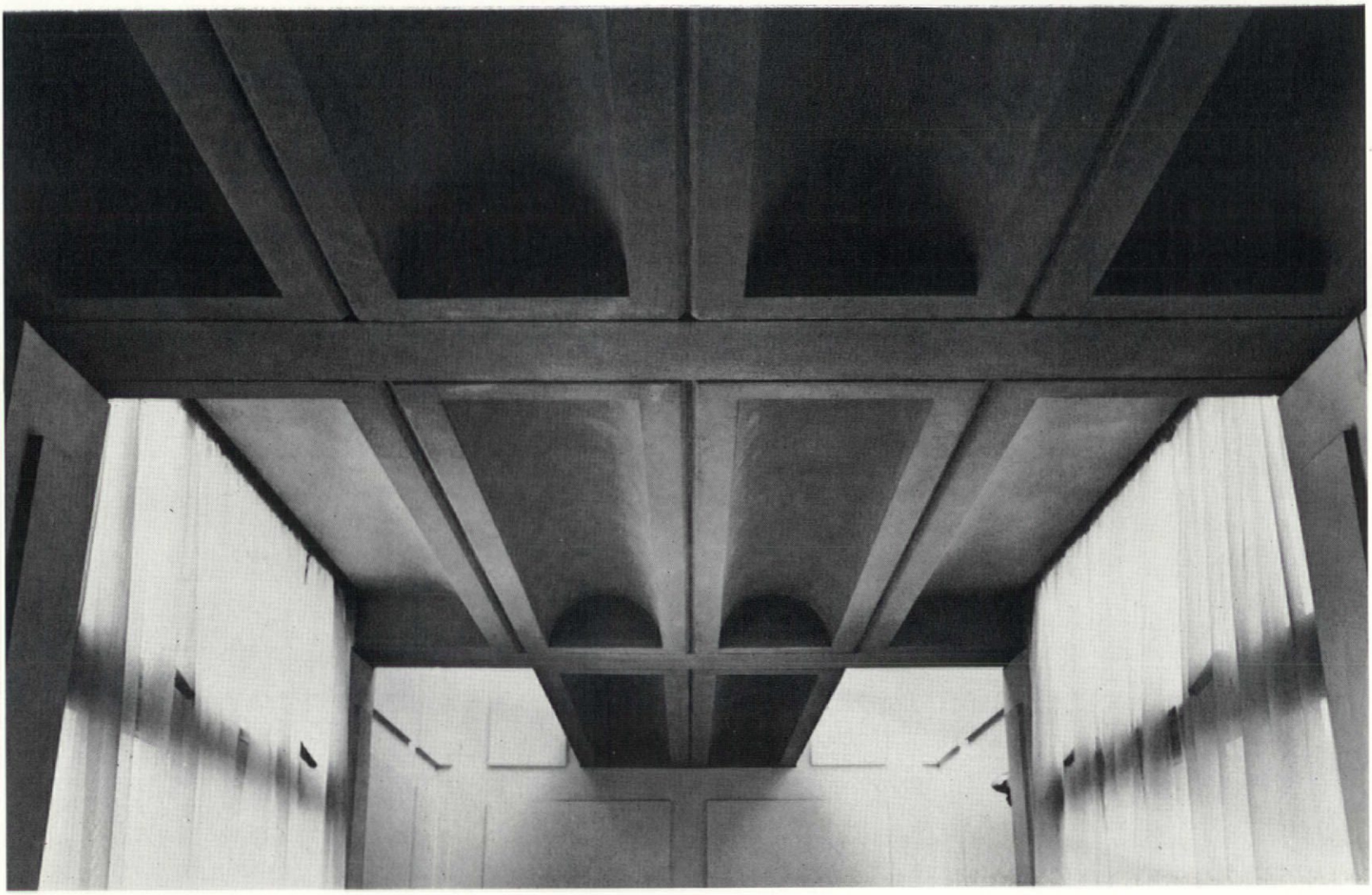


6

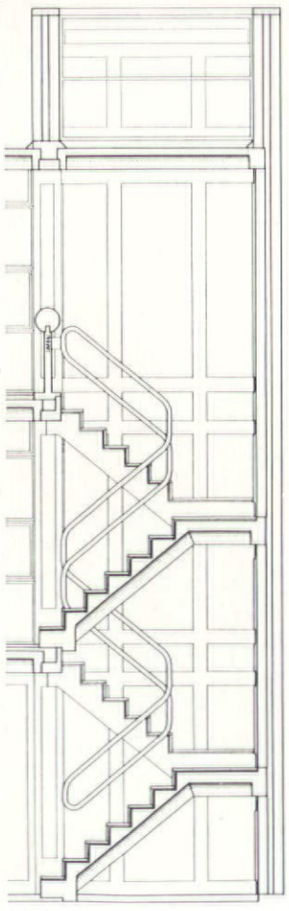


0 3 6 9 12 ft

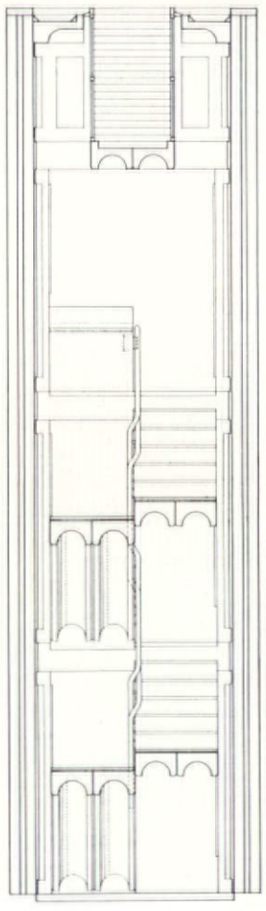
7



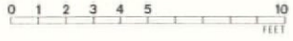
1

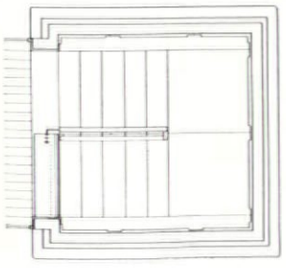


2



3





4

1
Detail of pre-cast ceiling at roof level above the main stair. A special unit occurs over windows

2, 3 & 4
Section, elevation and plan of the main staircase

SfB (63)

HARLEQUIN



TWO NEW FITTINGS

Right: 65/F DOUBLE TAPER GLASS CONE
Left: 66/F GLASS CONE WITH CURVED SIDES

Our fully illustrated catalogue TYL 33 of new designs is available on request.

Two of the SIXTY interesting additions to our range of lighting fittings

TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LIMITED
Wansdown Place, Fulham Road, London, S.W.6.
Telephone: FULham 9581
Showrooms:
The Lighting Centre, Liscartan House, 127 Sloane St., S.W.1.
and at 46 Rodney Street, Liverpool 1.



Creative . . . Marley tiles. Marvellous.

A pattern of dark blue, light blue, and white tiles takes you to Venice—perhaps. The choice is yours. A delicate selection of colours capable of a thousand and one variations in design. Yet one thing is constant. The supreme quality of Marley flooring. Good looking. Long lasting. Ever fresh.

Marleyflex vinyl asbestos tiles shown here, are outstanding for strength, resilience, quietness, and resistance to abrasion, oils, grease, and most chemicals. Available in an unequalled range of colours and tones.

BY APPOINTMENT
TO HER MAJESTY THE QUEEN
SUPPLIERS OF FLOOR TILES
THE MARLEY TILE COMPANY LIMITED

MARLEY
FLOORS

MARLEY • SEVENOAKS • KENT • TEL: SEVENOAKS 55255 • London Showrooms, 251 Tottenham Court Road, W.1 • Tel: MUSeum 2324

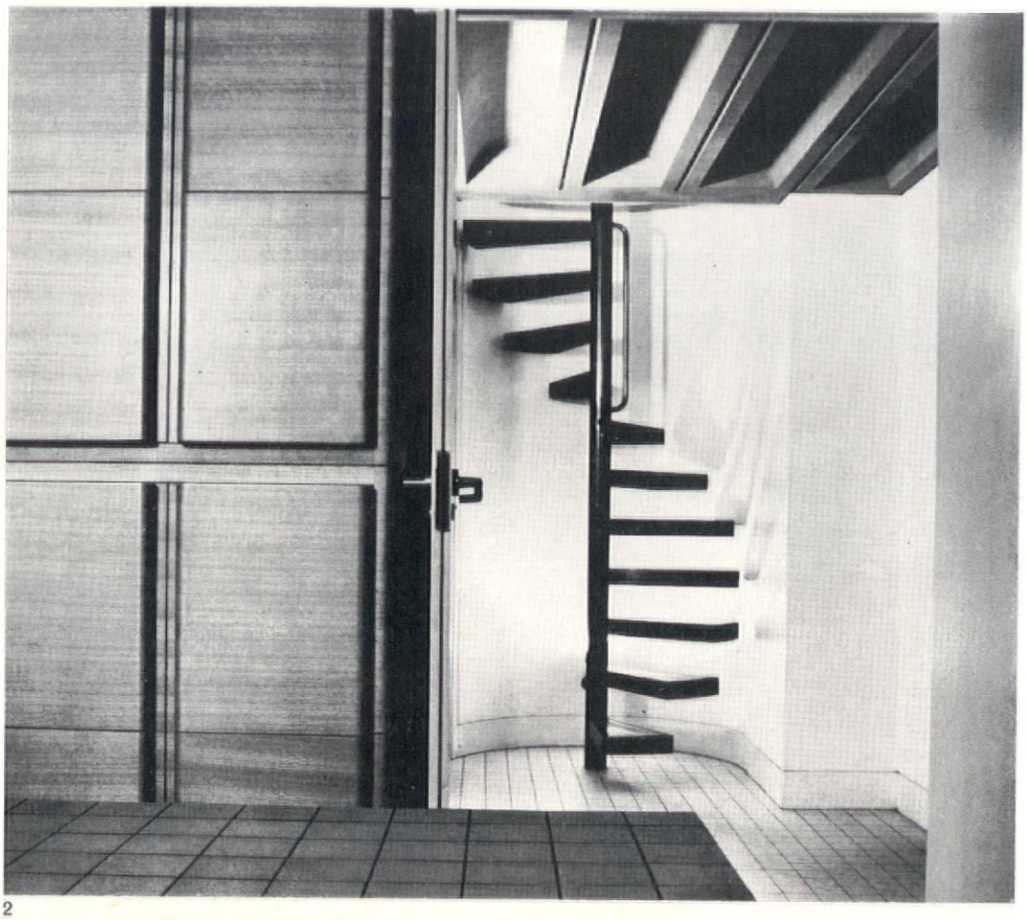
Barbour Index File No. 372 *Gorco Bureau No. 17/6*

1–4
Details of the manganese bronze stair in the basement. 4in dia. centre column, 3in × 1½in × ⅜in. Tee section treads and landings, 1¾in dia. guard rails, 1in dia. grab rail. Treads and landings in 1in thick rough cast glass on $\frac{5}{16}$in rubber strip seatings

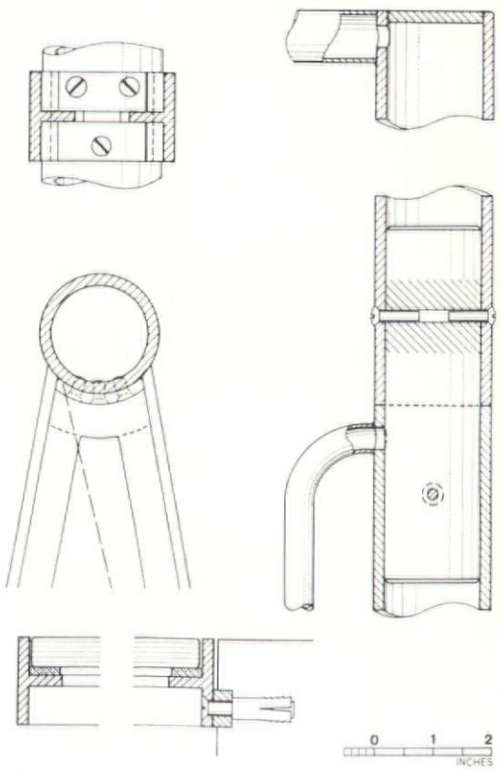
2
The stair seen from the basement laundry room. Off-white 4in × 4in tiled work table. Ash veneered moulded plywood storage units



1



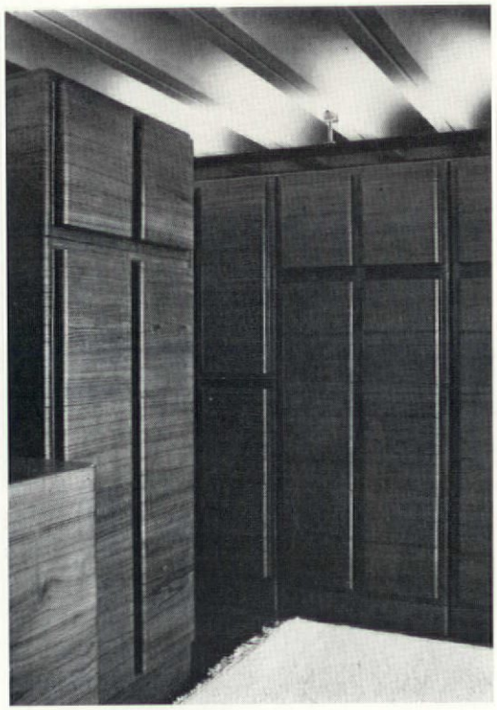
2



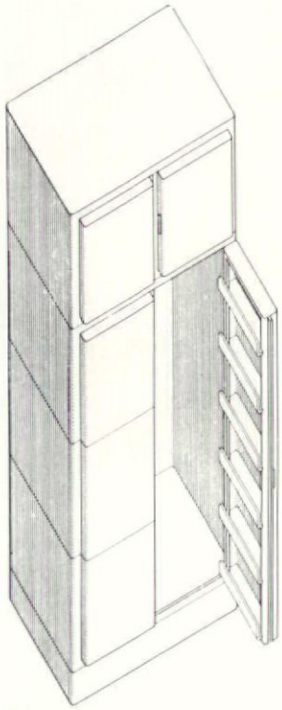
3



4



1



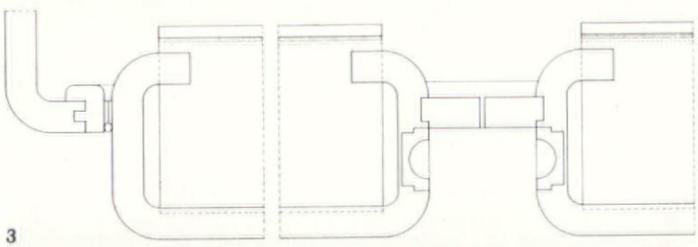
2

Storage units

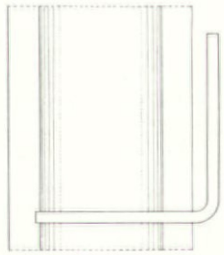
The architect and the client cooperated to design a range of storage units, using the patented wood moulding techniques known as the Schreiber system. This method consists of sandwiching plywood veneers between two sheets of stainless steel and bending around a timber mould to a pressure of 100 lb per sq. in. The stainless steel bands have a dual function, since they also act as low voltage heaters for setting the urea formaldehyde adhesive.

The plywood shells for the doors, drawers, plinths and carcases are $\frac{1}{2}$in thick. They consist of eleven constructional veneers which are, alternately, rotary cut birch and flat cut obeche. The face veneers are sliced cut featured teak and the backing veneers medium coloured teak. So that the service storage units would be distinct, they were veneered in quarter cut white ash.

The carcase and the plinth top and base are $\frac{3}{4}$in resin bonded gaboon plywood veneered in teak or ash. The door top and base is of similar construction but is $\frac{1}{2}$in thick and is lipped on the back edge.



3
4



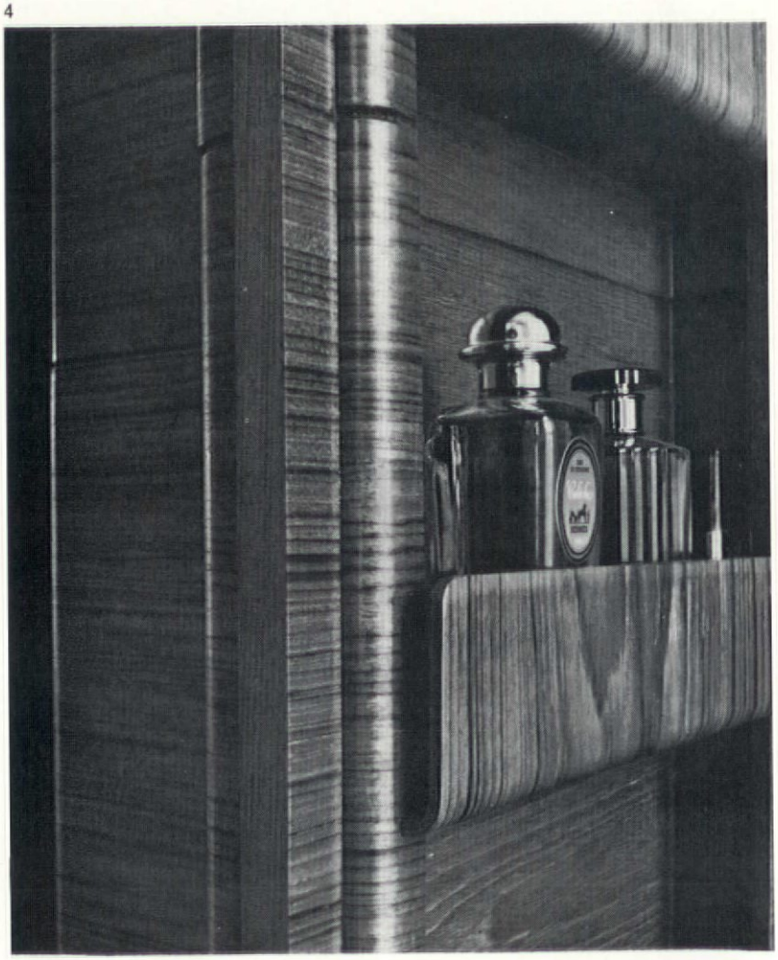
5

1
First floor master bedroom with dressing room storage units in teak veneer. For 'short' hanging the storage units are 3ft 6in high, for 'long' hanging 5ft 3in high

2
Axonometric of typical storage unit

3 & 4
Door detail of teak veneered storage units. The doors are moulded shells fitted with bent plywood shelves

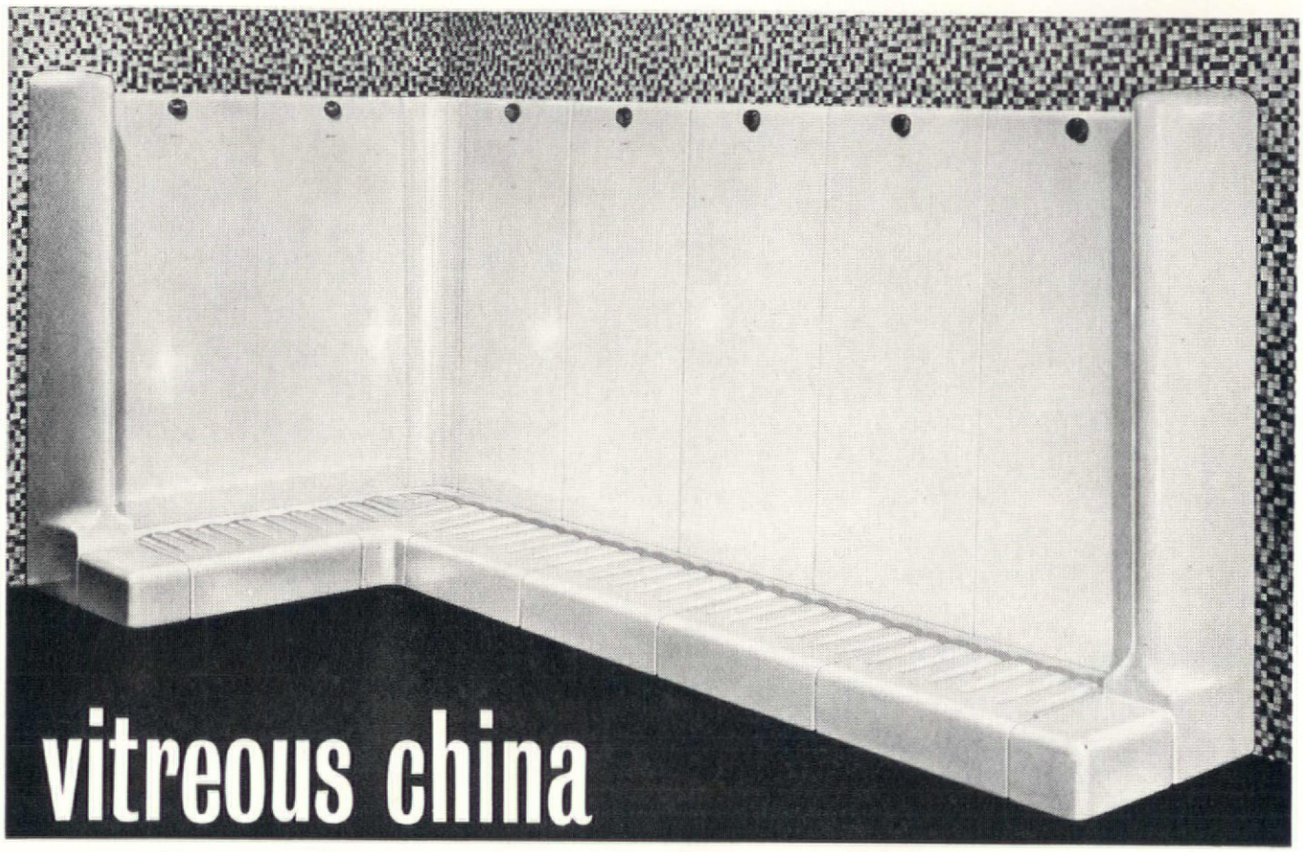
5
Teak drawer unit showing recessed handles and drawer runners



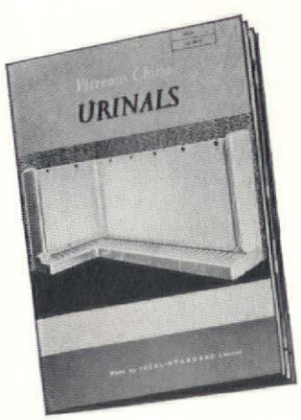


BARBOUR INDEX
386

the new "Vitural"



slab urinal now available with corners, risers and treads.



- the only slab urinal made of vitreous china
- priced very competitively with other urinals
- easy to order and cost—to any required length
- light weight of vitreous china facilitates handling and fixing
- new simplified flush pipe system is easily installed
- comprehensive booklet and price list (also covering wall urinals) are now available

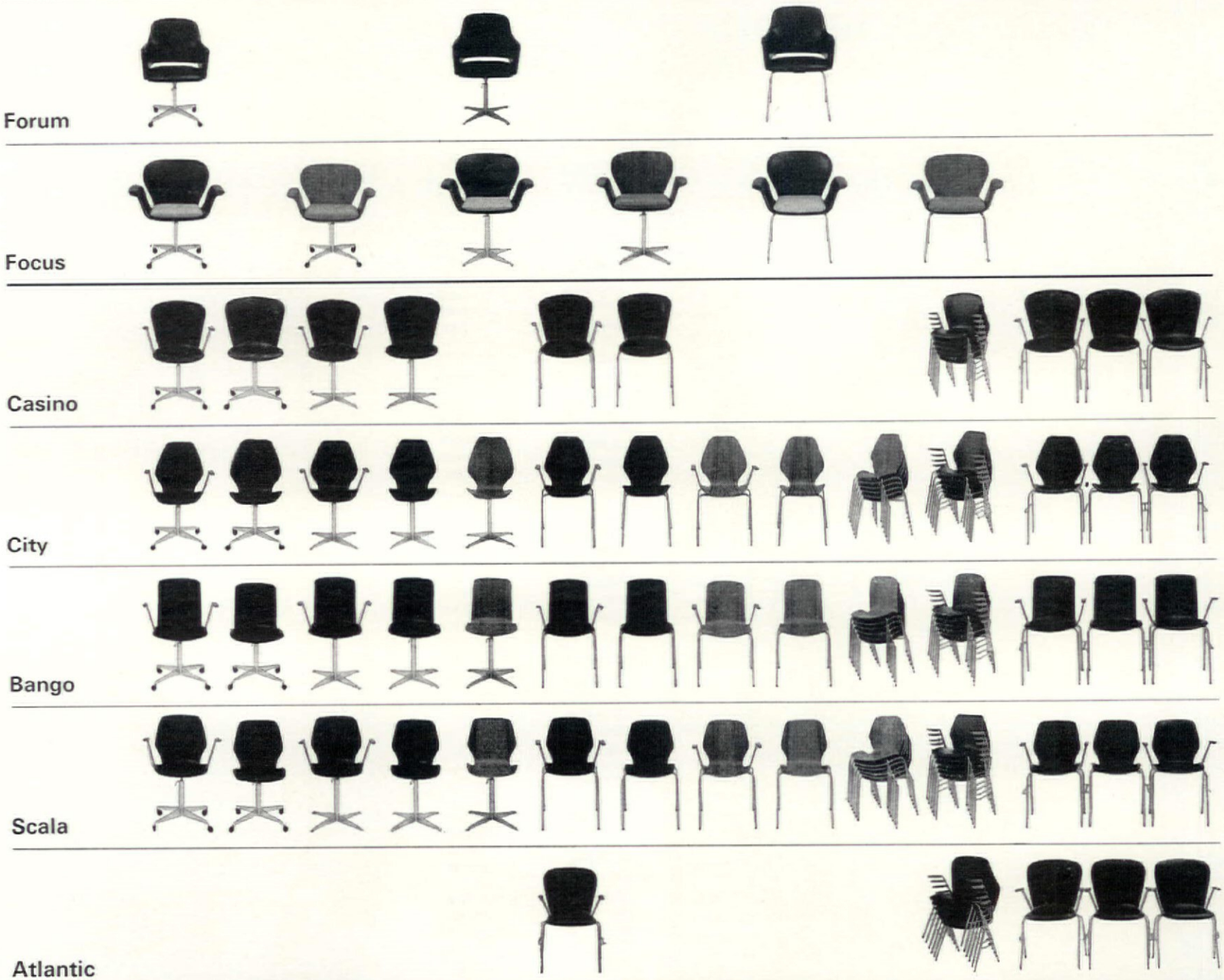
FOR A COPY OF THE BOOKLET AND PRICE LIST WRITE TO:

IDEAL-Standard
LIMITED
Ideal-Standard Limited, P.O. Box 60, Hull

THE LEADERS IN HEATING AND SANITARY EQUIPMENT

S.45

"Ideal-Standard" and "Vitural" are trade marks of Ideal-Standard Limited



westnofa
Quantum Range

Quantum Range consists of seven chairs made from moulded plywood supported on steel frames.

All the shells can be supplied upholstered and most of them are also available in a variety of natural wood finishes. The shells can be mounted on swivel bases with or without castors and arms, or on leg frames, with or without arms and linking device.

Each chair in **Quantum Range** is a distinct design on its own and can be used alone or in conjunction with the other chairs. The many models available give **Quantum Range** a high degree of flexibility as regards design, function and price. The components are to a large extent inter-changeable.

Please write for a catalogue or see **Quantum Range** in our showrooms.

Westnofa (London) Limited,
24 Rathbone Place,
London W.1.
Telephone: LANgham 0747

Hall of residence, Needler Hall, Cottingham, University of Hull

Trevor Dannatt

Development of an existing hall of residence—in which new building forms the major part containing 80 study bedrooms, dining hall, kitchen staff and service accommodation, etc. in a two-storey building planned to one side of the present buildings with one principal pedestrian entrance at a key point between the two. Endeavour has been made by form and scale to establish a satisfactory relationship between the old and new wings and create a harmonious whole, with the sense of *one* hall. The scale of the village street is also respected.

The building is developed about two courtyards open towards the old buildings and garden. The larger court gives access to the residential wings, the smaller forms an entrance court which might be considered as the hub of the whole group, with its access to the main social rooms. That is dining hall, SCR, meeting room, music room in the new wing; JCR, library in the old wing, as well as the warden's accommodation and the existing residential accommodation.

Student accommodation is planned in groups of from 5 to 8 rooms, each group has its own pantry (tea making room) but shares with another group sanitary accommodation planned generally on the ground floor.

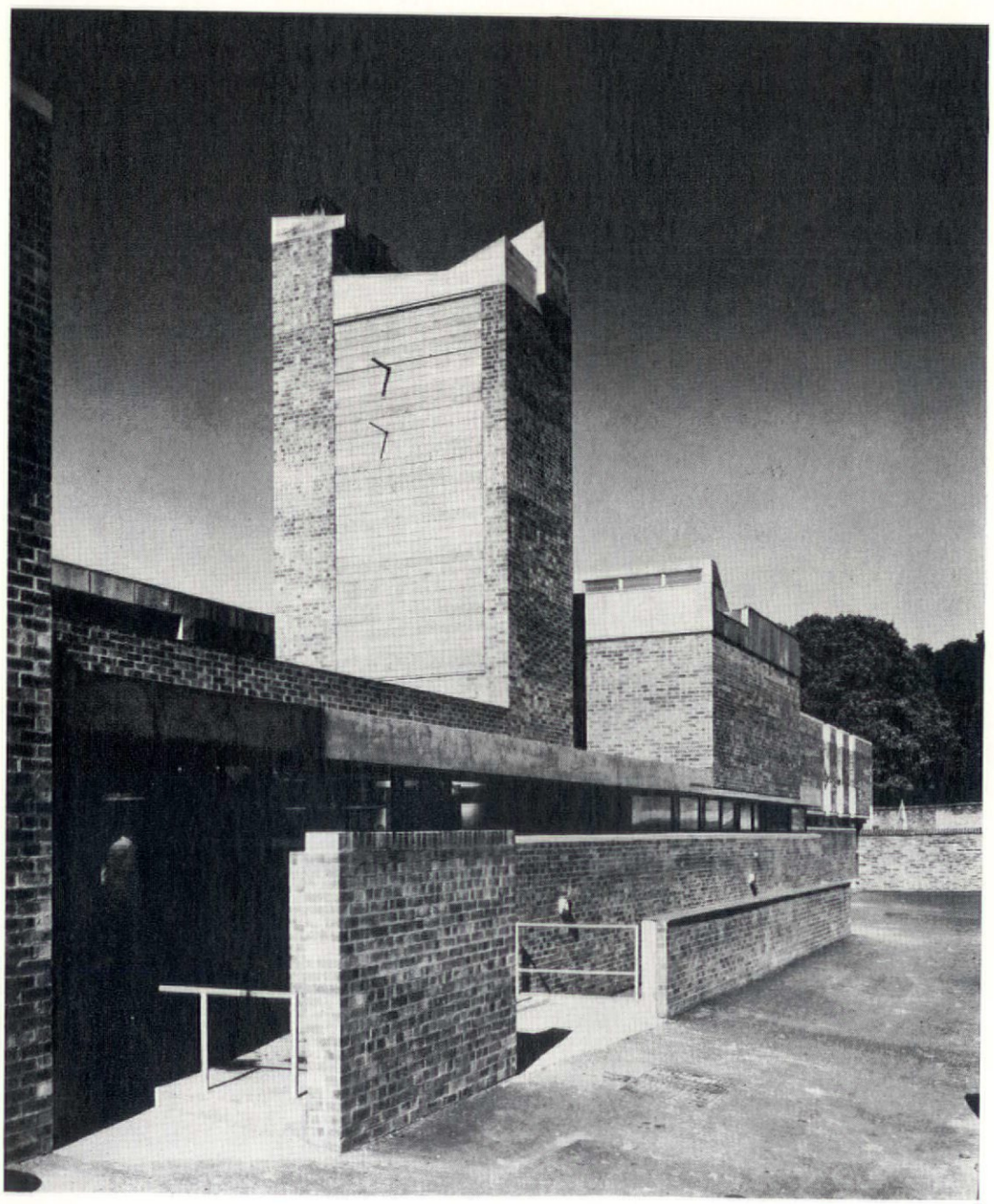
Thus in principle sanitary accommodation is placed with least favoured aspects on one side of the ground floor, with study bedrooms on the opposite side, whilst on the first floor over study bedrooms are planned on both sides of a central corridor. Five north facing rooms have narrow windows for outlook and high level south facing windows for insolation.

The entrance hall to the social block is only separated by a low barrier from the dining hall, and a stair leads from entrance to a gallery overlooking the dining hall off which opens a music room with two practice rooms (all top lit), a meeting room with high level lighting, and the senior common room. This has windows on north and west overlooking court and garden, a door to terrace leading to outside stair and a window into the dining hall, set in horizontal elm strip boarding.

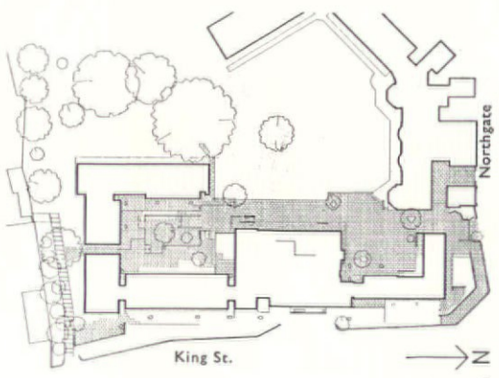
General contractors: L. H. Beal



1



2



3

1
King Street side looking south

2
East side of central block, with service area off King Street

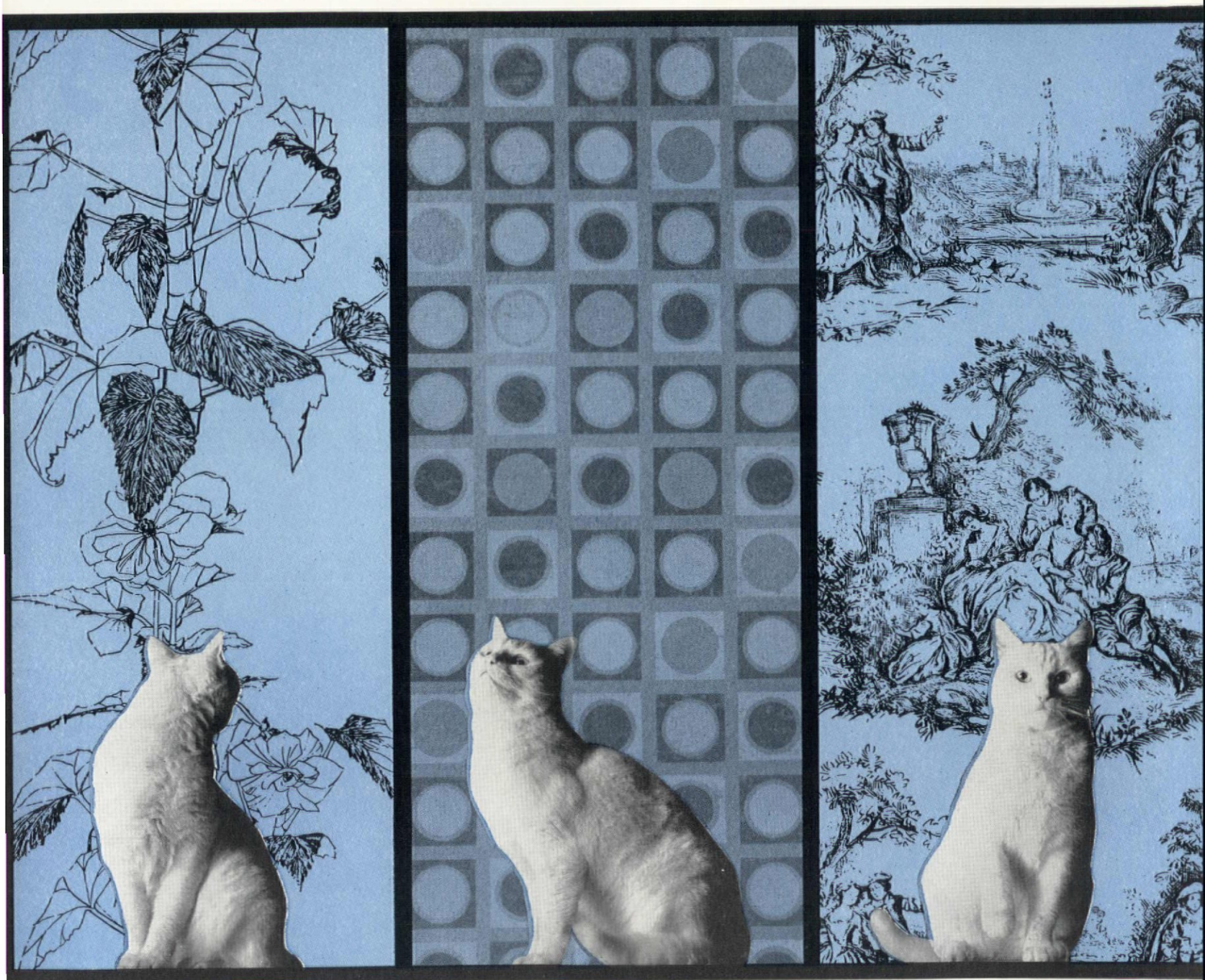
3
Block plan

Photos: 1 Frank Donaldson; 2 Sam Lambert

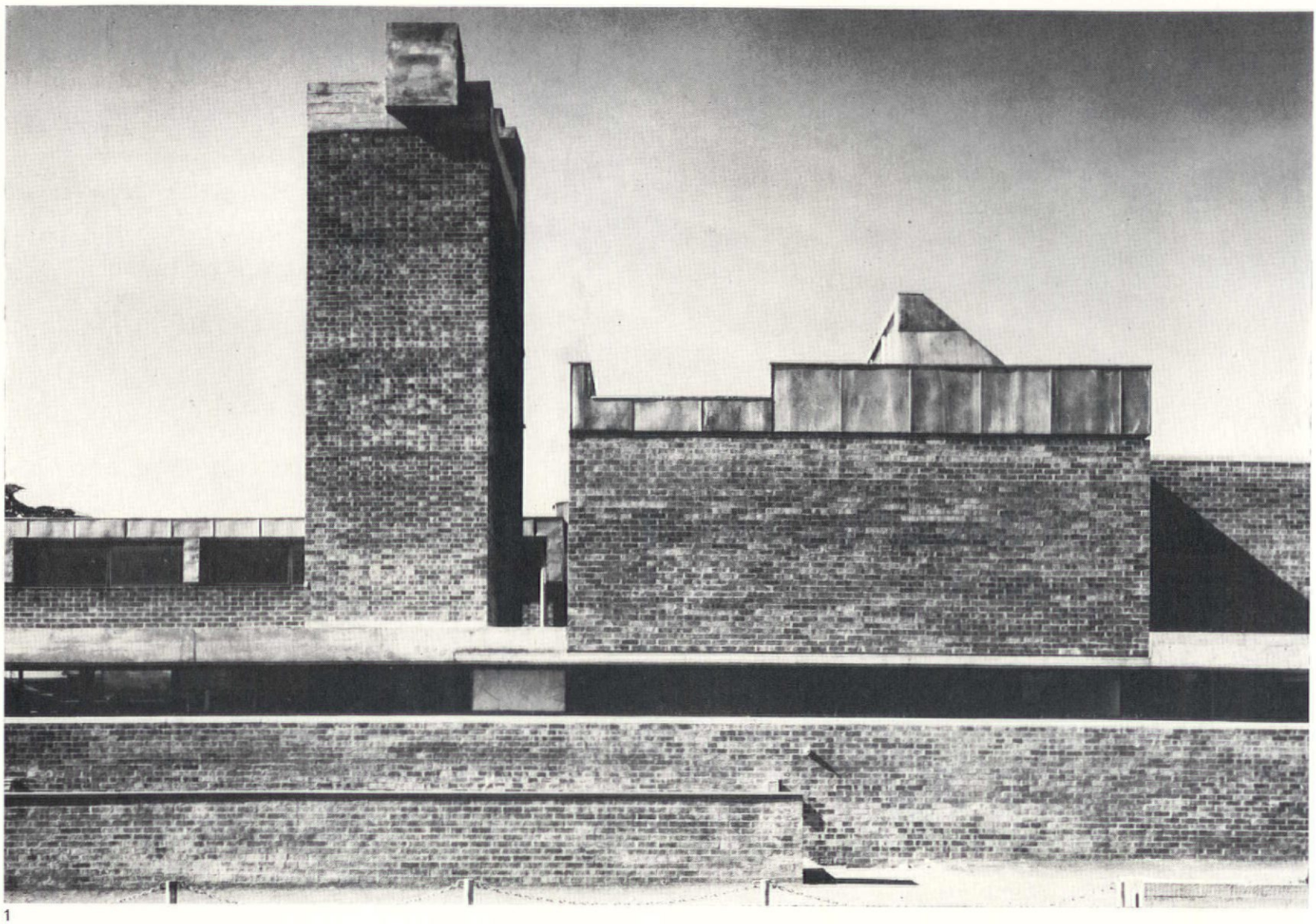
NEW FROM ICI

VYMURA

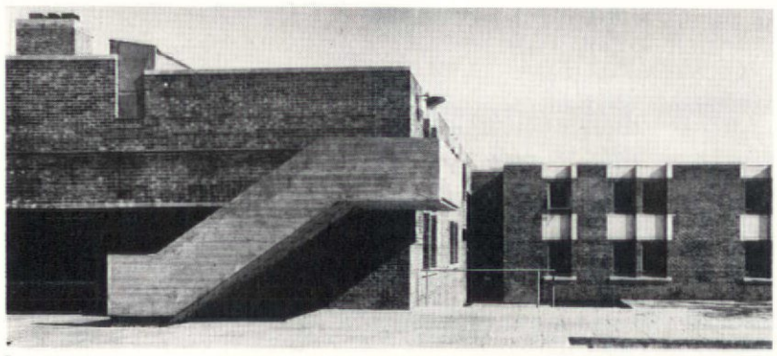
Vinyl-tough wallcovering with as many lives as a cat!



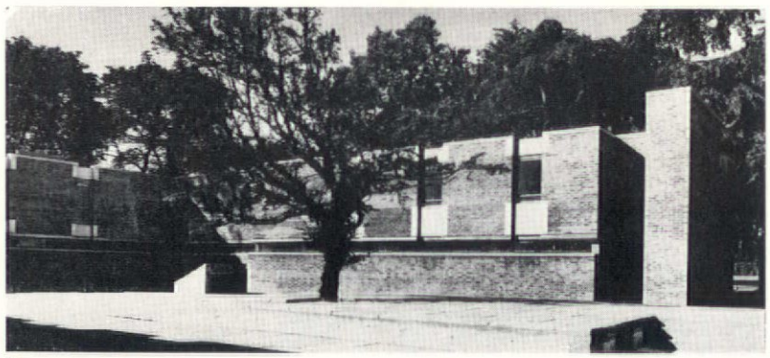
'Vymura'—a new idea in wallcovering. Original in design and texture and with a touch like fabric, yet 'Vymura' is tough enough to be scrubbed repeatedly. 'Vymura' offers exciting new possibilities for the decoration of public and domestic buildings. 'Vymura' is a tough p.v.c. coating on a paper backing, it hangs easily like wallpaper, and comes pretrimmed in standard sized wallpaper rolls.



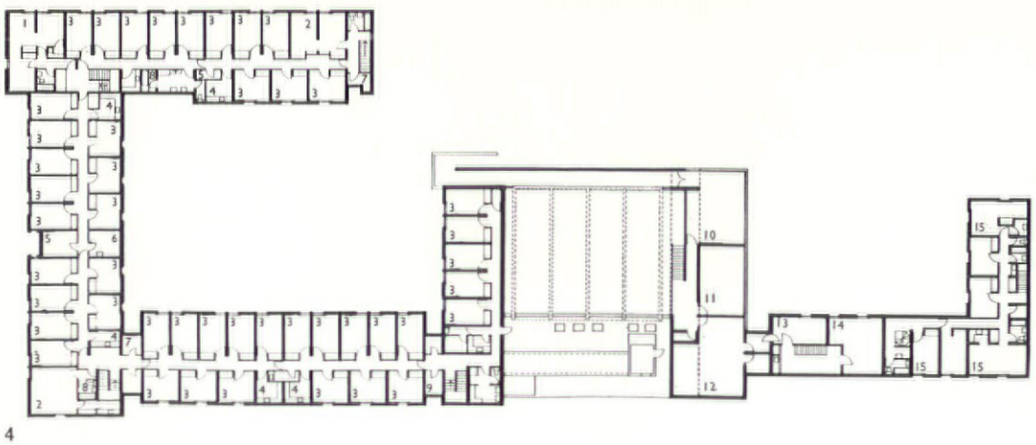
1



2



3



4

1
East side to King Street

2
South west corner of dining hall and view into residential court

Photos: Sam Lambert

3
East side of residential court

4
Second floor plan

1 deputy warden's flat
2 hall tutor's flat
3 student's study bedroom
4 pantry
5 linen
6 cleaner
7 trunks
8 bathroom
9 drying room
10 senior common room
11 meeting room
12 music room
13 staff dining room
14 staff common room
15 staff accommodation



PERMANITE protection

Below: Roof of Car Park surfaced with Permanite Paving Asphalt to form Children's Playground



Permanite Asphalt Roofing

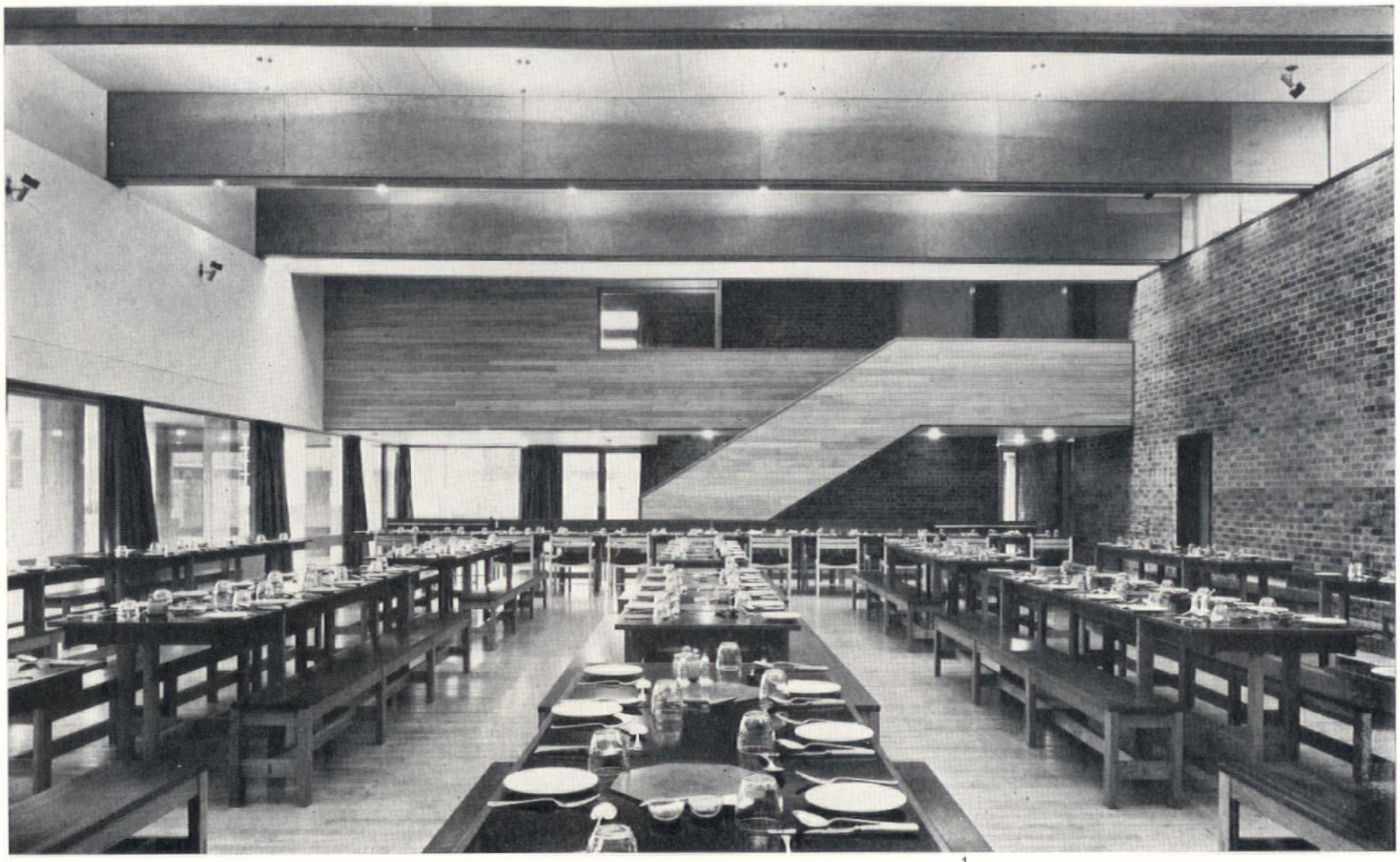
Fleet Road Re-development, Hampstead, London
Architect: C. E. Jacobs ARIBA
Housing Architect, Borough of Hampstead
Main Contractors: John Laing Construction Ltd.

This housing development at Fleet Road, Hampstead, consists of five two-storey blocks and two 15-storey blocks, providing a total of 179 dwelling units. An interesting feature is the two-storey car park, the roof of which serves as a children's playground.

The 15-storey blocks have reinforced concrete frames with cavity brick cladding and are supported on under-reamed piles. There is a central shaft for services and access to the flats and the roof. The boiler house, which provides warm-air central heating for the entire development, is situated on the roof of one of the blocks.
The roofs of the tall blocks and the balconies to each flat were finished with Permanite Asphalt laid in two coats on an underlay of Black Sheathing Felt. Permanite Paving Asphalt was used for the car park roof, to provide a hard-wearing surface for the children's playground.

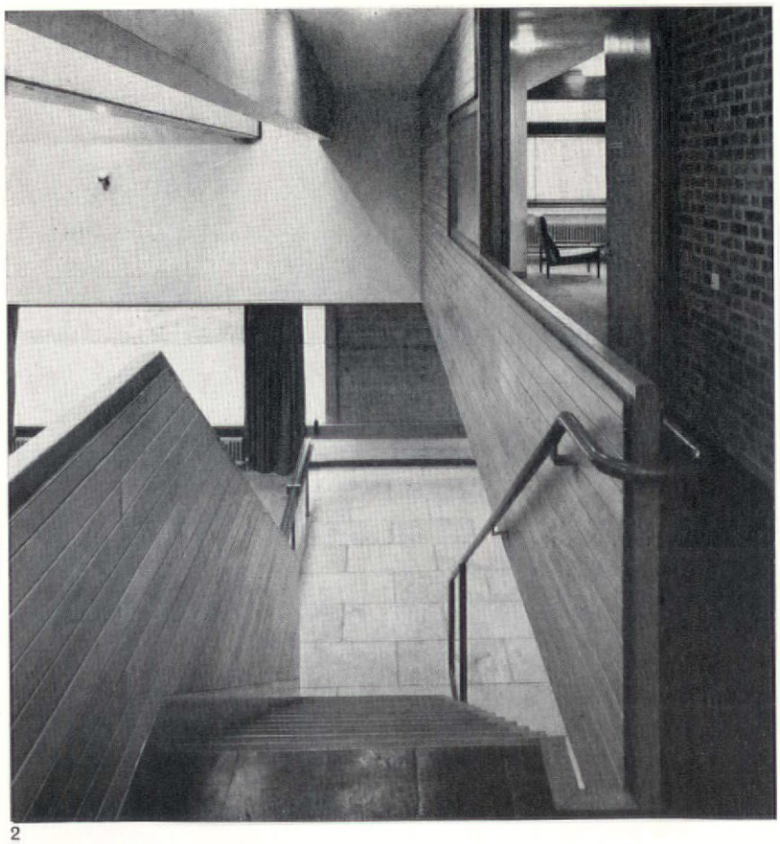
write PERMANITE protection into your specification

Technical literature on Permanite Asphalt Roofing is available from: Permanite Limited, 455 Old Ford Road, London E3. ADVance 4477 (20 lines)



1

1
Dining hall
2
Stairs to gallery from entrance hall
3
Typical study bedroom
Photos: Westwood/Interior Design



2



3



The bricks: Ibstock silver grey handmade
The building: Cottenham Village College Cambridge

Architect: The late R. H. Crompton, A.R.I.B.A., A.M.T.P.I., formerly Cambridgeshire County Architect.
Contractors: Grant & Dodson Ltd. 23 Saint Andrew's St., Cambridge.
Bricks supplied through: Cyril Ridgeon & Son Ltd.

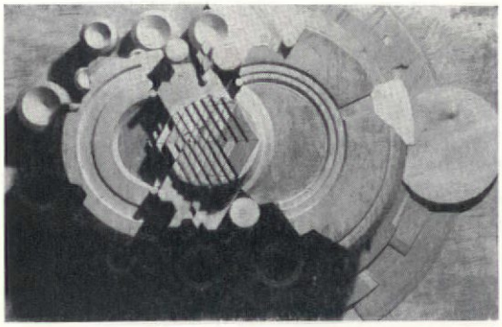
See the permanent exhibition of Ibstock and Himley machine and hand made bricks at the Ibstock showrooms, 29 Crawford Street, London, W.1.

IBSTOCK who produce Ibstock and Himley facing bricks

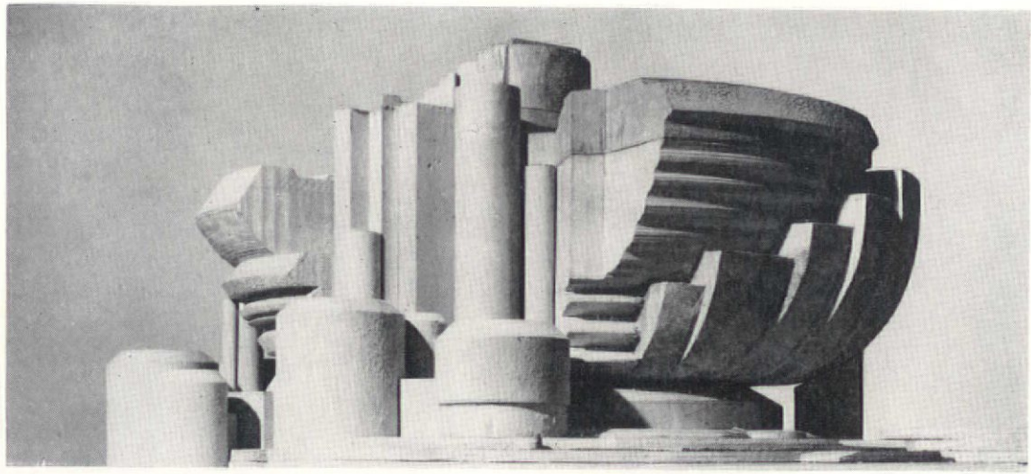
THE IBSTOCK BRICK & TILE Co. Ltd., Ibstock near Leicester Ibstock 531
London offices: 29 Crawford Street, London, W.1. AMBassador 2782
Subsidiary company: Himley Brick Co. Ltd., Kingswinford, Brierley Hill, Staffordshire Kingswinford 3118

Madrid Opera House

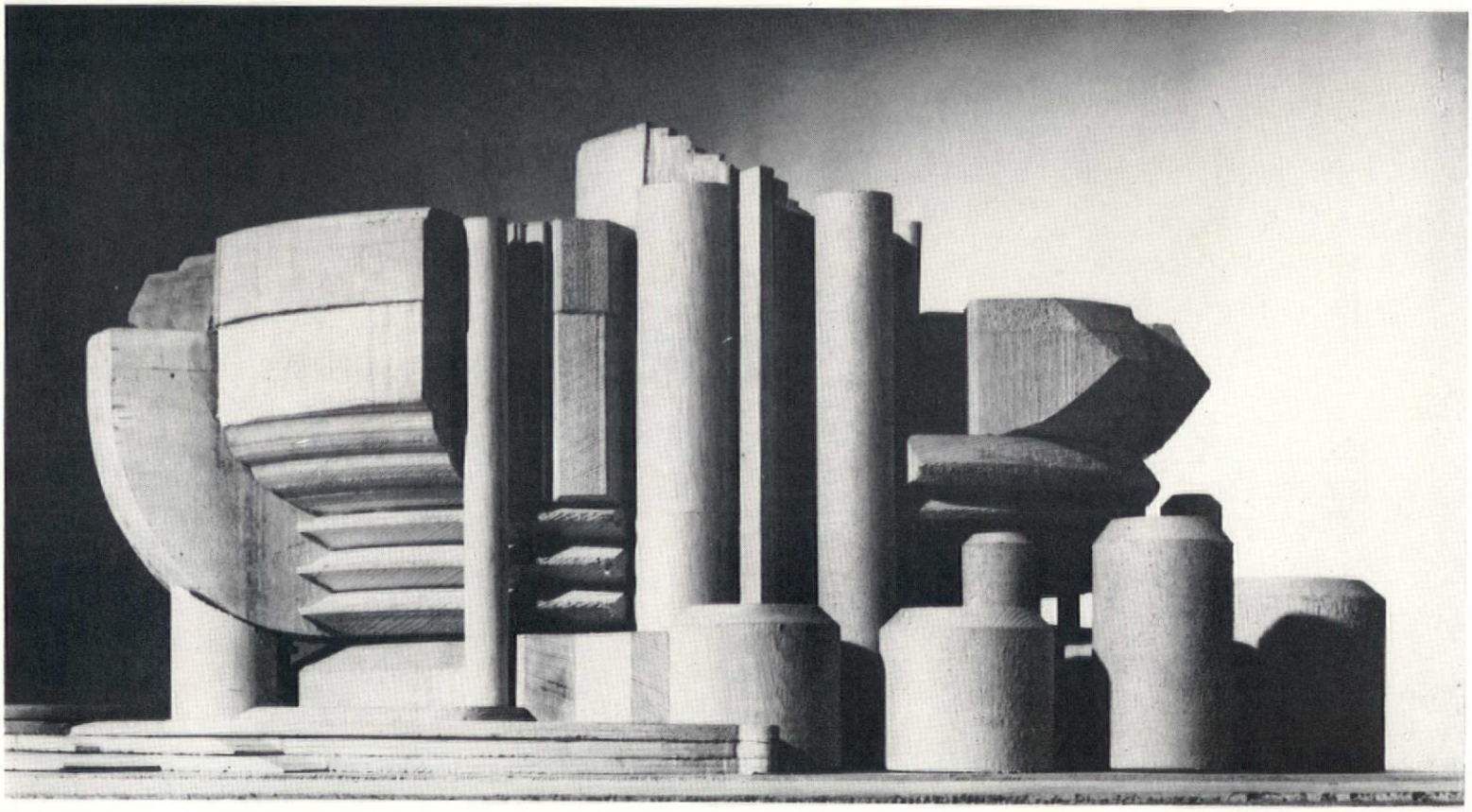
Project A-62 by Francisco F. Longoria



1



2

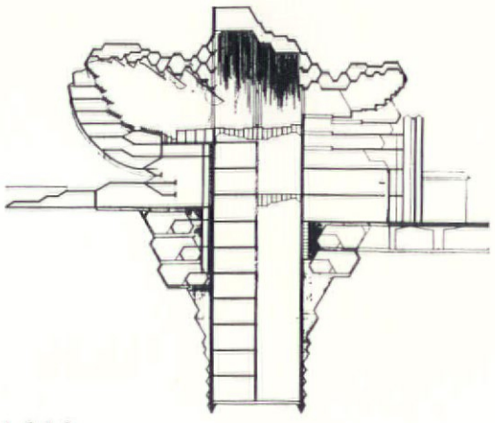


3

4

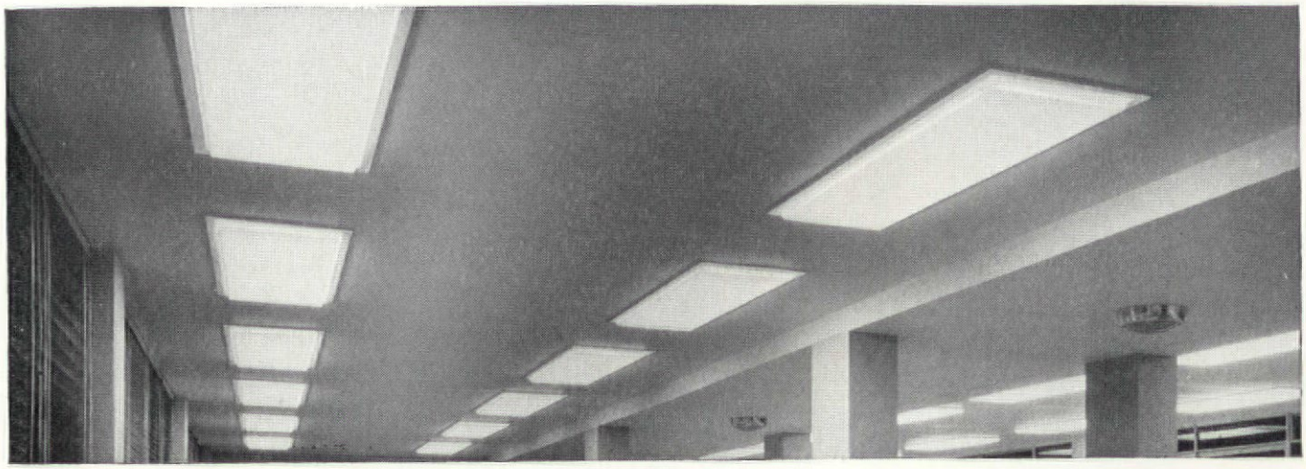
The competition last year for the Madrid Opera House offered architects a challenge that was not only architectural but, equally, ideological—many preferred to have no part in the aggrandizement of the present Spanish régime. Yet the entry was numerous and representative—the first prize in fact went to a group of Poles. But the results were disappointing and it was, one hopes, for felicities of planning rather than for architectural coherence that the judges (among them Egon Eiermann and Gio Ponti) felt bound to make their awards. Certainly, none of the main prizewinners nor any of the premiated designs (see *Bauen und Wohnen*, November 1964) have the force and clarity of concept that one might expect in a building of this nature. Only Project A-62, the work of Francisco Longoria of Madrid has those qualities of confidence and expressiveness that should have been requisite for success. Whether or not one likes the form, whether or not one approves the image, one is bound to admit that it *looks* like an opera house. And it is for this firm image-making quality that we have determined to publish the design in more detail.

The plans show the same dramatic sense of organization of the parts to fuse into a whole as the already published views of the exterior—though they can be easily faulted when it comes to details of planning. While the report that accompanied the submission is little inspiring of a grasp of practicalities and cannot have been of much help to the assessors, yet even this highflown document stresses the architect's preoccupation with the total concept—a concept of a great musical centre adaptable to all changes of interpretation and participation yet, oddly enough, firmly anchored to the ground by a core (a root in the architect's plant imagery) which serves as a great library for a repertoire of prepared stage sets—thus perpetuating this most antiquated of operatic conventions.



1, 2 & 3
Views of the model of the Opera House

4
Section. (Plans on page 313)



How to please your lighting contractors and your clients

You specify G.E.C. Module fittings – and get all these advantages . . .

What the client will like

When you specify G.E.C. Module lighting fittings, the client gets the best module lighting ever designed.

It is neat. It is modern. It is efficient – thanks to a unique G.E.C. cooling device which decreases the operating temperature of the tube and increases light output.

It is easy to service – the diffuser unit has a snap-in fixing device which allows it to be hinged down from either side, or quickly removed.

What the contractor will like

G.E.C. Module fittings can be quickly and easily fixed – frame first, then the gear tray and the reflector hinge in. Adjustable brackets allow quick true alignment with the ceiling, alternatively, hangers may be used. The flange is suitable for either overlapping or fitting flush with ceiling.

And some points you will like

G.E.C. Module units are very versatile. You can specify 6ft x 2ft or 4ft x 2ft fittings for 2, 3 or 4 tubes; or 2ft x 2ft fittings for 2 or 4 tubes — all with louvred or opal Perspex diffusers. And you can use them in any type of modular tile ceiling — even in heated ceilings.

G.E.C. Modules can be supplied adapted to the leading air handling systems.

For further details, catalogues, price lists contact:

Osram (G.E.C.) Limited

East Lane Wembley Middlesex Arnold 4321

Madrid Opera House/continued

1
Basement, car parking

2
Ground level, scenery preparation

3
Main entrance level with artist's dressing rooms and instrument stores

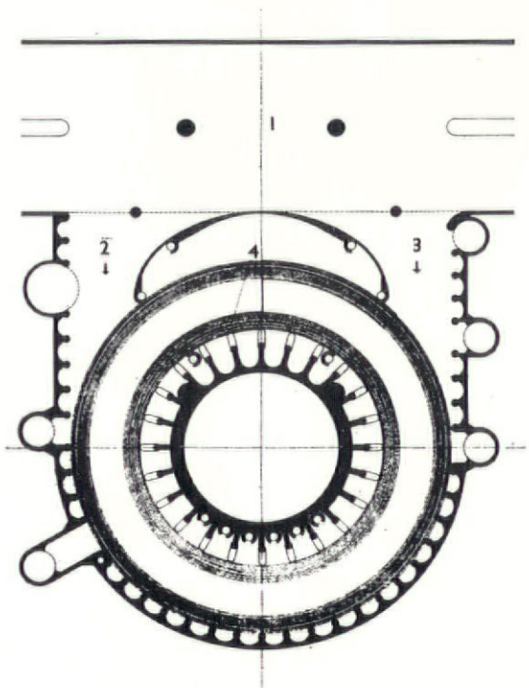
4
Main foyer and stage level

5
Auditorium and rehearsal rooms

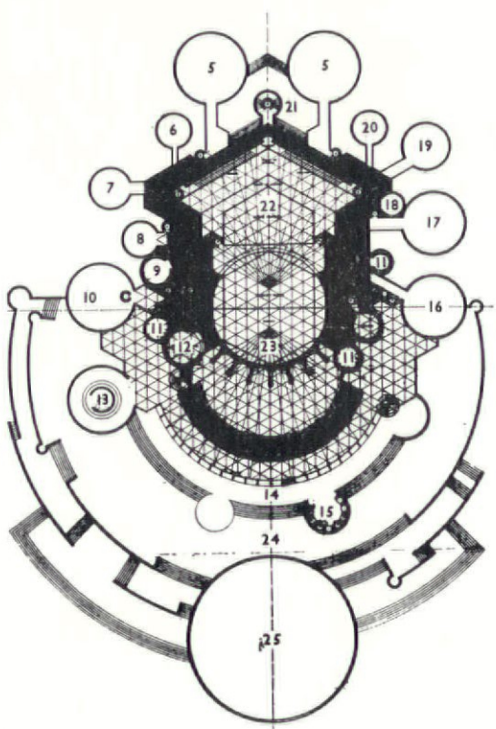
6
Upper auditorium and public rehearsal gallery

Key to plans

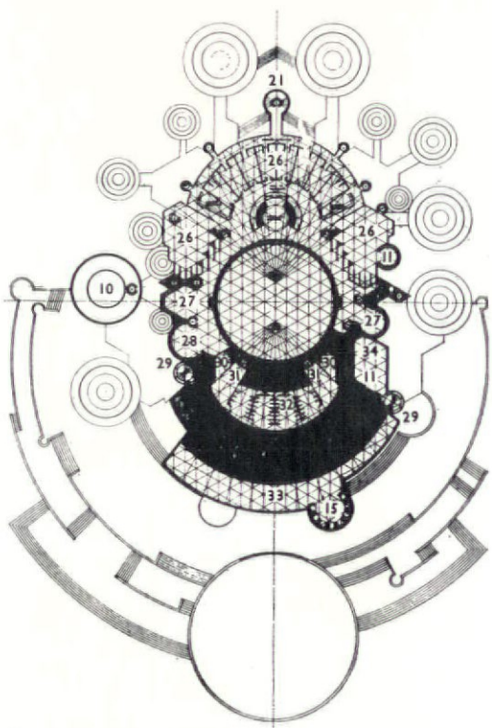
1 subterranean passage
2 parking entry
3 parking exit
4 ramp to lower ring
5 wardrobe
6 cobblers
7 workshop
8 soft furnishings
9 electricians
10 administration tower
11 cleaners
12 technical services duct
13 bar
14 entrance hall
15 public lifts
16 forge
17 carpentry
18 plasterers
19 stage managers
20 hairdressers
21 actors' access
22 scenery preparation
23 scenery store
24 terraces
25 garden
26 dressing rooms
27 accounts
28 instrument store
29 fire escape
30 access to pit
31 musicians' access
32 musicians' rooms
33 public hall
34 storage
35 service lifts
36 star dressing rooms
37 scenery director
38 actors' waiting room
39 scenery exit
40 foyer
41 choir
42 wings
43 props waiting
44 lobby
45 void
46 revolving stage
47 cyclorama
48 podium
49 adjustable podium
50 pit
51 auditorium
52 orchestra rehearsal room
53 rehearsal rooms
54 tools
55 choir rehearsal room
56 public viewing of rehearsals
57 public access
58 technical services for rehearsals
59 observation



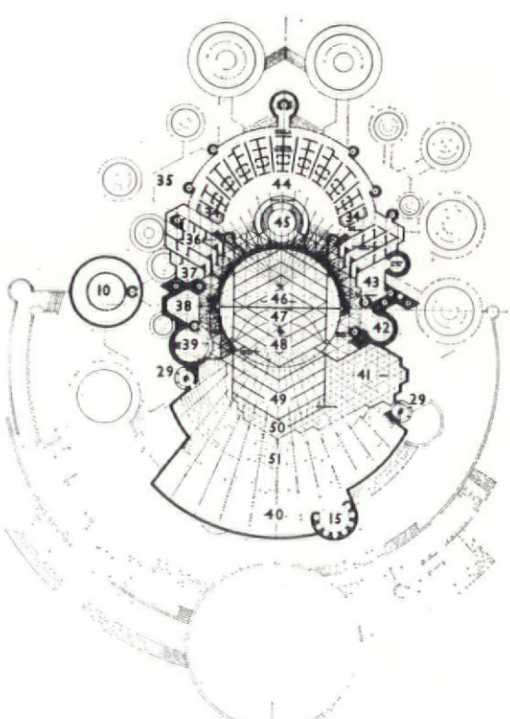
1



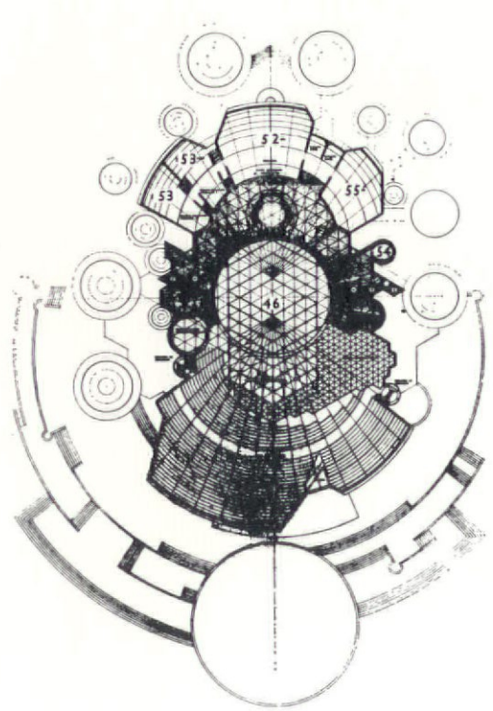
2



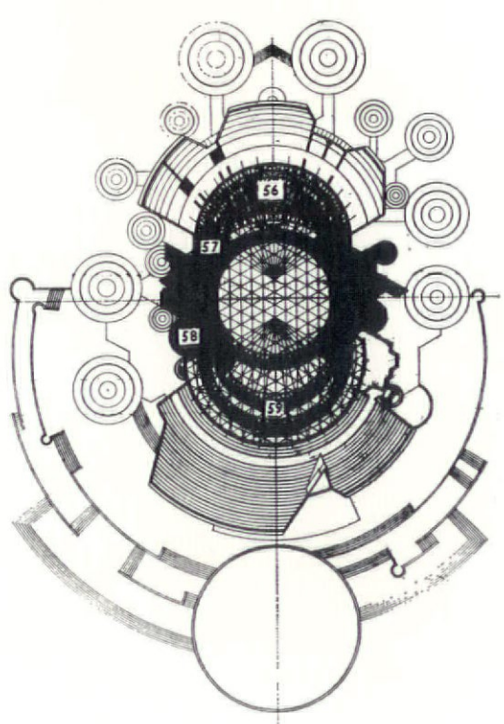
3



4



5



6

TOP DESIGN



Armstrong Ceilings offer the utmost in design. Not just good looks—though the lace-like pattern of Minatone and the directional fissuring of Minaboard are highly attractive—but ceilings that are *completely* functional: acoustic, fire-resistant, fully accessible, and—if necessary—ventilating. Available in several sizes, installation costs are surprisingly low. Other advantages are: good attenuation factors and complete versatility. For details and samples of Minatone and Minaboard write to us direct—or ask the Armstrong representative.

CEILING SYSTEMS BY Armstrong

ARMSTRONG CORK CO. LTD., CEILING SYSTEMS DEPT., CARLISLE ROAD, COLINDALE, N.W.9. TEL: COLINDALE 9744.

Makers of Minatone, Minaboard, Tacetone, Travertone, Corkoustic, Cushiontone.

AT.45

Trade notes

Alexander Pike

To obtain additional information about any of the items described below, circle their code numbers (A1, A2 . . . etc.) on the Readers' Service Card inserted elsewhere in this magazine.

A1 Hospital bedhead lighting 1

Thousand and One Lamps Ltd., 386 Lee High Road, London, S.E.12.

Two adjustable lamps with 45in and 25in reach can be supplied with a combination wall unit having a 2amp razor socket and a 5amp general purpose outlet. Limiting stops to the lamp head prevent glare and telescopic plastic covers encase the springs. Prices from £5 8s to £6 13s. Combination wall unit £7 extra.

A2 Telephone speech scrambler

The Telephone Manufacturing Coy., Special Products Unit, 360 Kennington Road, London, S.E.11.

Housed in a box approximately 4in × 6in × 10in, a fully transistorized speech scrambler can be operated by one of the buttons on a standard GPO telephone and may be purchased or rented.

A3 New sliding windows

Williams & Williams Ltd., Reliance Works, Chester.

Two pairs of factory glazed panels with a 1¼in air space, one sliding behind the other, are claimed to provide completely effective double glazing when closed.

A4 Controls for sliding sash windows

Teleflex Products Ltd., Christopher Martin Road, Basildon, Essex.

A new addition to the ClearLine range is particularly suitable for wide vertically sliding sash windows.

A5 Double glazing units

Plyglass Ltd., Edinburgh Place, Temple Fields, Harlow, Essex.

A recent publication gives full design and fixing information on standard Plyglass and Gado one-piece double glazing units.

A6 New venetian blinds

Hunter Douglas Ltd., 33 Sloane Street, London, S.W.1.

Additions to the Luxaflex range have slat widths of 1in or 1⅜in and are suitable for fitting between the panes of double glazed windows.

A7 Venetian Vogue Ltd., Slough, Bucks. 2

A Sunway blind for external installation is now available, operated by a small electric motor concealed in the headrail. Slats 1⅜in or 2in wide in a choice of twenty colours.

A8 Gas-fired heating 3

Simplicity Heater Company Ltd., Island Farm Avenue, West Molesey, Surrey.

Supplying warm air central heating and domestic hot water, a new system from this company is suitable for houses up to 1000ft² in area.

A9 Oil-fired heating

A. H. Bibbey Ltd., Sawbridgeworth, Herts.

New to this country, the Husqvarna Swedish equipment provides warm air central heating and domestic hot water for houses up to 1200ft².

A10 Circular paving slabs

Marley Concrete Ltd., Peasmarsh, Guildford, Surrey.

Paving flags 18in diameter, 2in thick can be obtained in brick and stone colours at 5 *s*0*d* each.

A11 Timber wall panelling

Swedia Imports Ltd., 146 West End Lane, London, N.W.6

Impregnated veneer strips ⅝in wide in natural unstained teak or pine, woven to form panels 7ft × 2ft ready for sticking to existing walls. Price per panel, £3 10*s*.

A12 Melamine laminate

Allied Manufacturing Co. (London) Ltd., Sarena House, Islington Park Street, London, N.1.

Sefenit decorative laminate in sheets 4ft wide and 8ft, 9ft and 10ft long is available in a large number of patterns at 2*s* 9*d* per sq ft.

A13 Modular wall tiling

Carter Tiles Ltd., Poole, Dorset.

A range of 8in × 4in × ¼in wall tiles conforming to a 4in module when fixed. In 80 colours, from 24*s* 6*d* per sq yd.

A14 Ceiling tiles

Armstrong Cork Company Ltd., Carlisle Road, London, N.W.9.

Georgian acoustic ceiling tiles have a low relief pattern in which 0·05in perforations are fairly well concealed.

A15 Paint for wet surfaces

Colebrand Ltd., 15 Hampden Gurney Street, London, W.1.

Cital Aquapaint, an epoxy resin-based industrial coating, is now obtainable in this country. It is claimed to be capable of application direct on to wet surfaces, or even under water, and resistant to sewage, petrol, oil and mechanical wear.

A16 Electric incinerator

Felvic Marketing & Sales Company Ltd., 70 Carolina Road, Thornton Heath, Surrey.

Imported from Germany, the Felvic De Luxe employs a secondary burning process claimed to dissipate smoke and odours. With a time control and an automatic cut-off, the capacity is 2·4ft³ and casing size 19in × 24½in × 36in high.

A17 Dimming switches

Spectrum Electronics Ltd., Deneway House, Darkes Lane, Potters Bar, Middlesex.

Luxtrol switches provide full control of lamps from full bright to blackout. Capacity 500W.

A18 Pipe collars

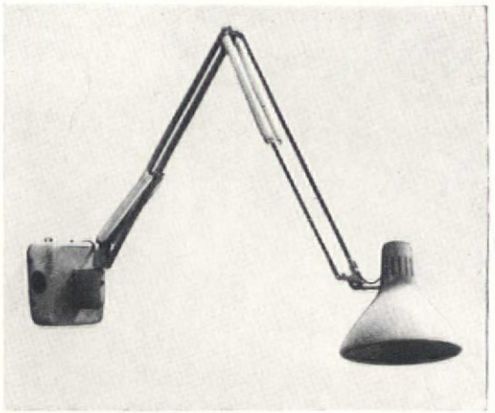
J. & T. Whitehouse & Company Ltd., 70 Victoria Street, St. Albans, Herts.

Designed to provide a clean junction where pipes enter walls or ceilings, the moulded polythene Klipcola provides an interlocking flange which can be slipped over fitted pipes. Prices from 1*s* 0*d* to 1*s* 3*d* each,

A19 Self-darkening glass

The National Cash Register Company Ltd., 206 Marylebone Road, London, N.W.1.

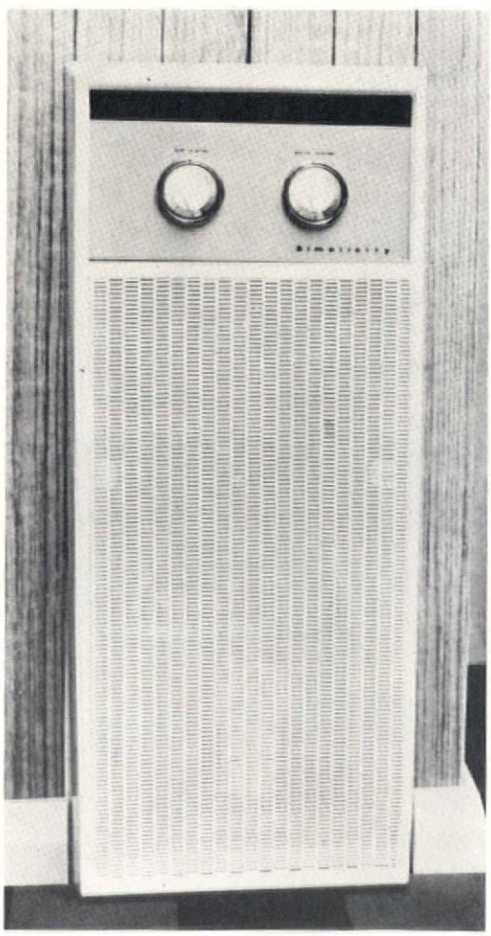
A windshield being developed for the US Air Force employs the unusual light filtering properties of photo-chromic materials. Normally colourless, when exposed to ultraviolet light they darken and absorb visible light, clearing again when the application of the ultraviolet source is discontinued. Intended for protection against the flash of nuclear explosions, at present the device has no practical application for building purposes, but the potential is self-evident and raises the hope that the possibilities of self-darkening glass for glare and sunlight control may be exploited in the near future.



1



2



3

COMposit 1141 Ext 1180....

A secretary's extension. One of the many permutations possible with COMPOSIT office furniture.

The COMPOSIT secretary's desk is a combination of any one of eight types of table or pedestal desk (such as the 1141 shown) with the 1180 typists' extension.

4'0" x 1'6" x 2'3" high, and with a willow grey 'Arborite' top, the 1180 extension can also be supplied with a 3 drawer pedestal or a drop-front stationery fitment.

The COMPOSIT range is veneered in Afrormosia/Teak with timber or square tube frames. There is also a selection of matching chairs.

COMPOSIT FURNITURE is designed by J. W. Leonard FSIA to satisfy all office needs - from board room to back room - with compatability, versatility----- and economy.

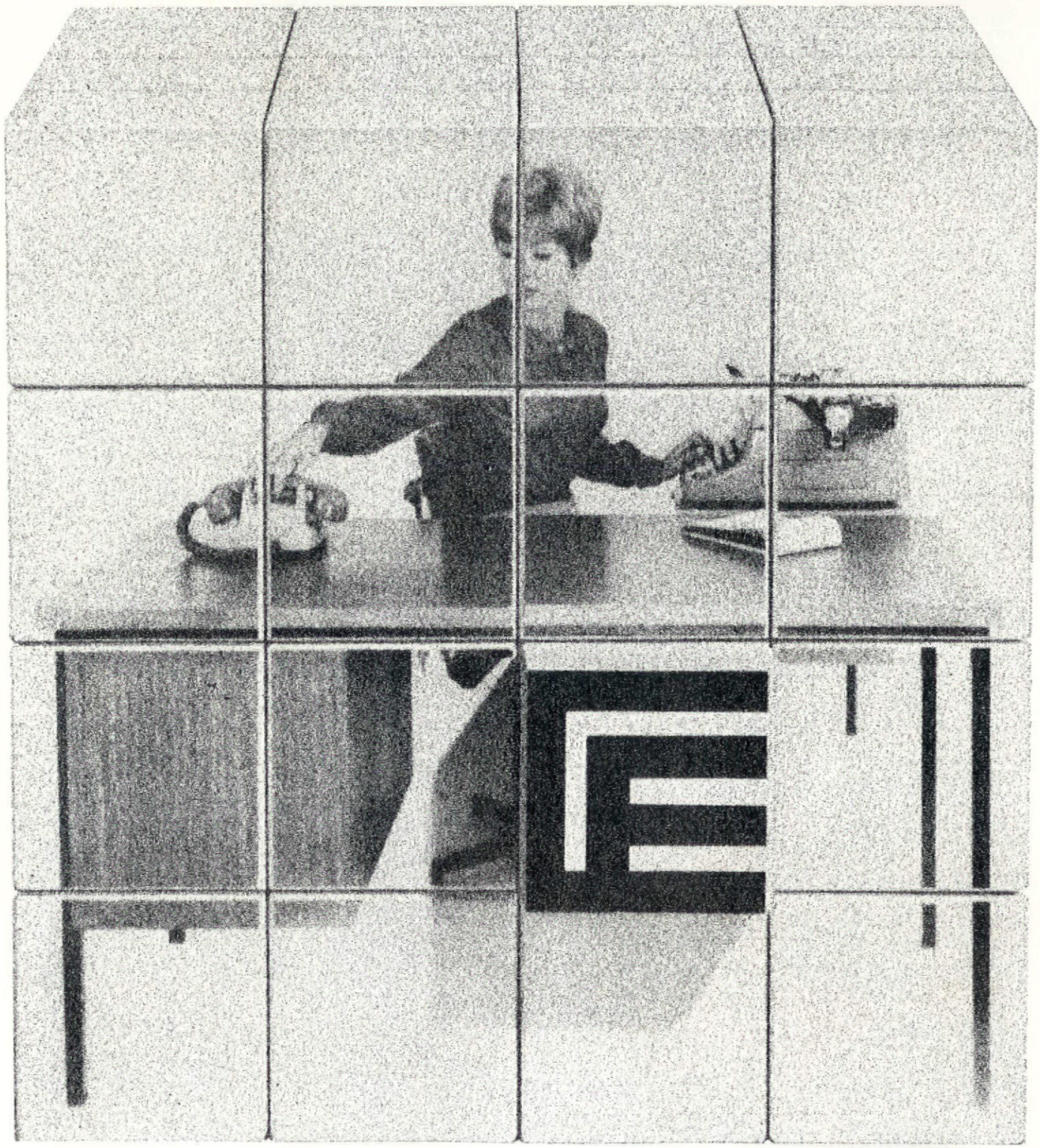
Leasing arrangements are available for orders exceeding £500.

Esavian Limited
Esavian Works
Stevenage Herts
Telephone Stevenage 500

London Showrooms
185 Tottenham Court Road. W1
Telephone Langham 3436

Birmingham Showrooms
Charles St, West Bromwich
Telephone Tipton 1631

Glasgow Showrooms
101 Wellington Street C2
Telephone Central 2369



COMPOSIT FURNITURE is manufactured by ESAVIAN Ltd



Logically simple in design and construction, the Ventura series provides at low cost, efficient and glare-free lighting.

Ceiling and pendant types are available in two sizes—9″ dia. 100 watt and 12″ dia. 150-200 watt.

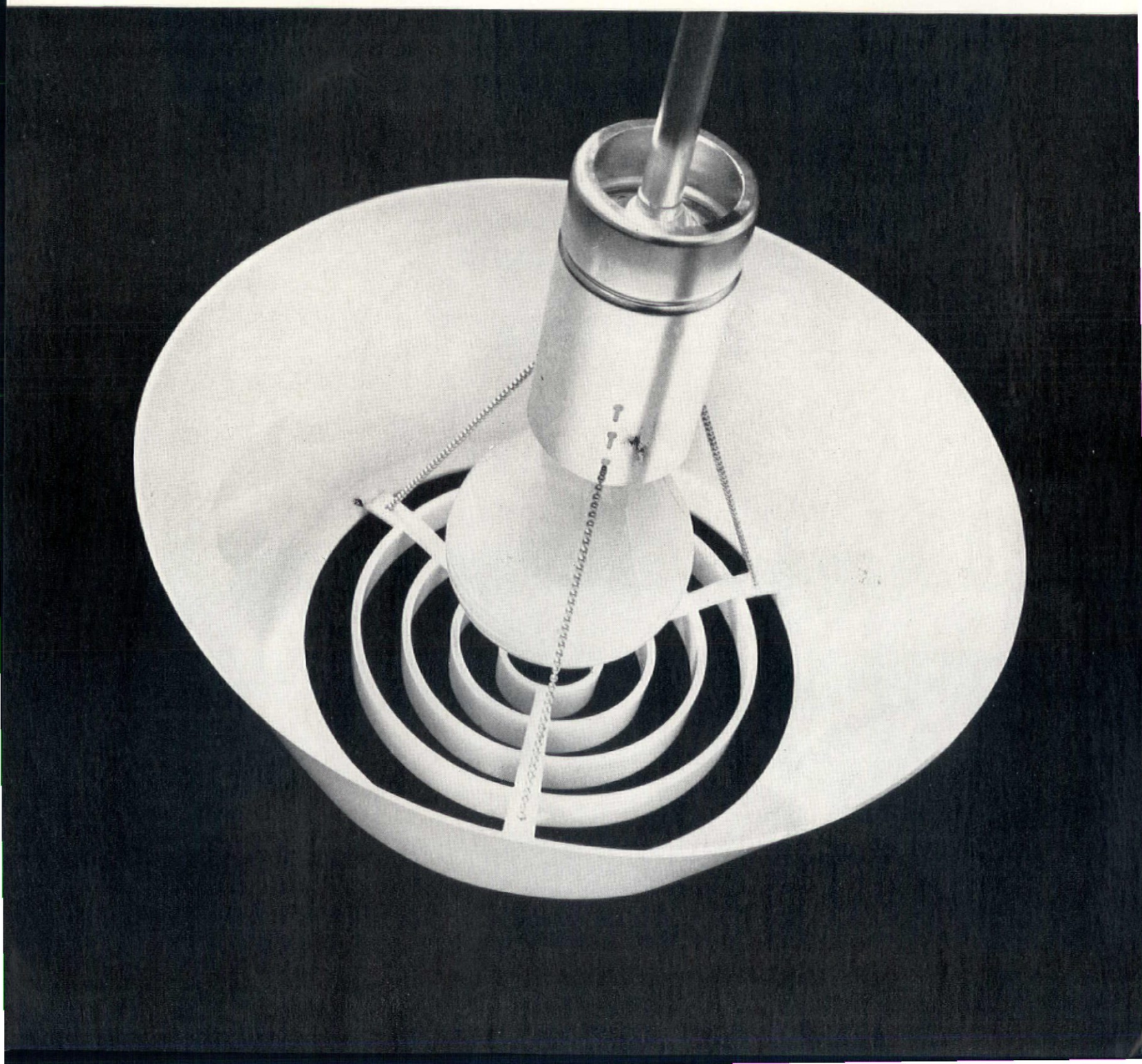
Ask for publication BTV/5

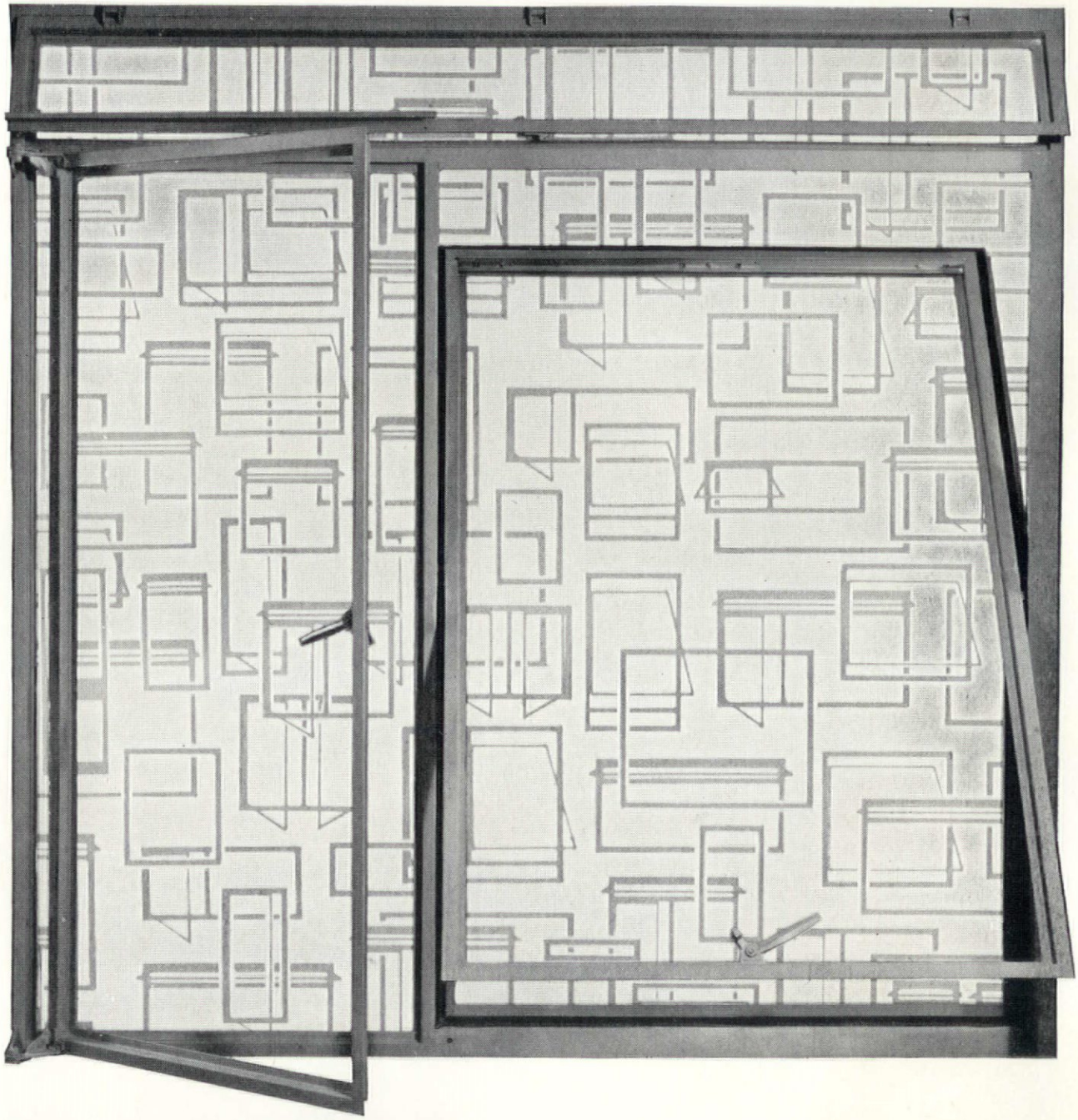
Merchant Adventurers Limited

Feltham Middlesex (FEL 3686)

London Showrooms:
231 Tottenham Court Road, W1

MA LIGHTING





THE CRITTALL RANGE OF STANDARD STEEL WINDOWS MODULE 4

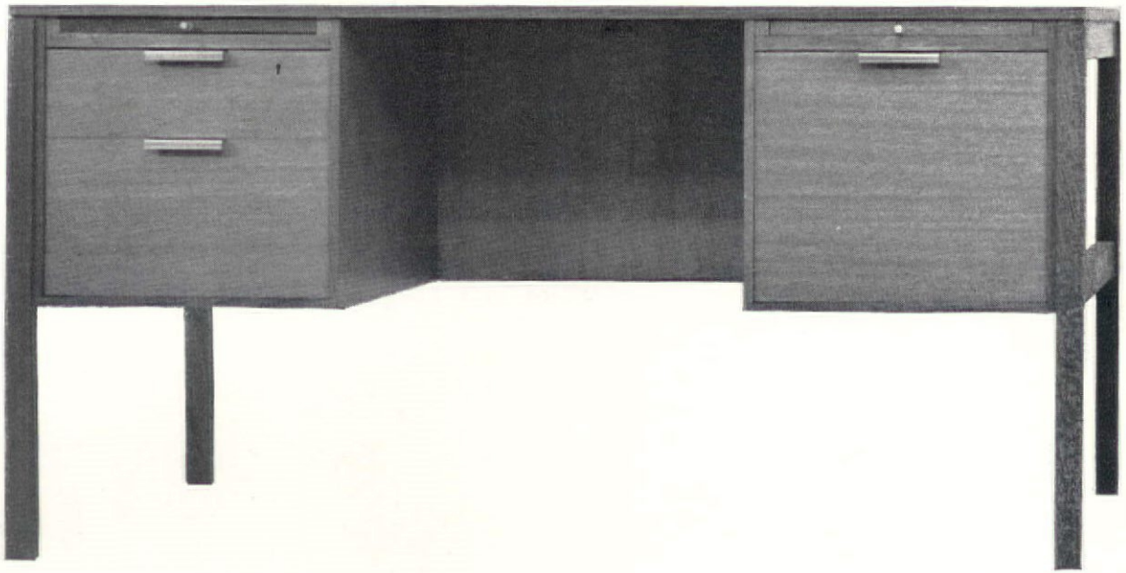
Module 4 represents a complete range of standard steel windows and doors which give a wide variety of single units and an even wider selection of coupled composite windows. Both single units and composite windows conform to the 4″ module with 12″ increments in width.

Hot-dip galvanising, weatherstripping, and the accompanying benefit of warmth conservation, are among many practical features of the range. The remarkable versatility of Module 4, its clean modern lines and its wholly practical applications herald the most important advance in standard window design since Crittall produced their first Standard Metal Window in 1919. Crittall leaflet no. 318 gives a full description and complete details.

CRITTALL

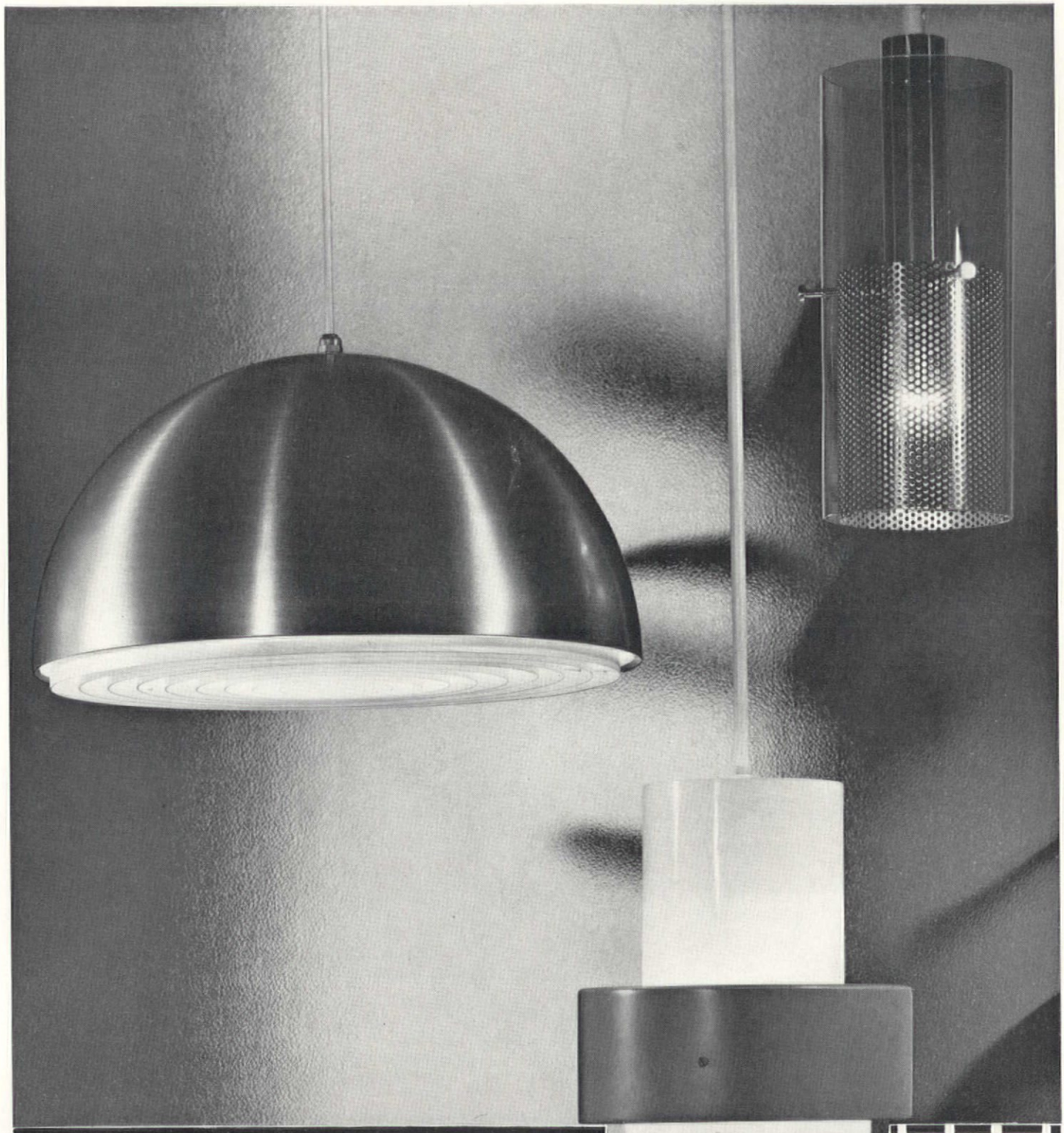
THE CRITTALL MANUFACTURING CO., LTD.,
BRAINTREE, ESSEX.

WCW 222





LUCAS FURNITURE Double pedestal desk, Model LD46 from the Lucas Range. Designed by Herbert Berry FSIA and Christopher Cattle MSIA, it is available in mahogany or oak at £35 12s including tax. The construction used makes it easily demountable for access where space is limited. The Range includes double and single pedestal desks, tables and storage. Lucas provide furniture for all contract needs. Four ranges of desks, tables, storage, plan chests, beds and a wide range of chairs. On show in The Design Centre, London, and in our showrooms. Write or telephone for details to Lucas Furniture, Old Ford, London E3, Advance 3232. Barbour Index File Number 410



Left: Pendant fitting in spun copper. Plastic Louvre Dia. 16", Height 9". Suitable 150w. £9.10.3., plus tax £1.14.9. With metal louvre £10.0.3. plus tax £1.17.0. Also 12½" dia. Height 7" suitable 100w £7.6.4., plus tax £1.6.9.

Centre: Pendant with grey outer cylinder, white perspex inner cylinder. Dia. 9", Height 11". Suitable 100w. £8.0.7., plus tax £1.9.3.

Right: Polished brass with perforated brass cylinder complete with glass in Red, Blue or Smoke Grey. Height 13", Dia. 5". £8.10.0., plus tax £1.11.0.

Please send catalogue of complete range of Lighting Fittings.

NAME _____

FIRM _____

ADDRESS _____

_____ 1

OSLITE EQUIPMENT CO. LTD.,
45-46, PORTLAND PLACE, HULL . TEL: 23042.



Perforated Metal Pattern No. 2065.



Perforated Metal Pattern No. 954



Ribbon Wirework Pattern No. W1357



Perforated Metal Pattern No. 3922

Add pattern and texture to interior fittings



Furniture: Kandya Ltd.
Designer: Tom Lee.
Contractors: Cementation Group.

Harvey Perforated Metal Pattern 954 in anodised aluminium used on combined bedside table/radio at the Royal Teheran Hilton Hotel.

Use it for interior screens, room dividers, lift and staircase enclosures, grilles, radiator covers, balcony fronts, etc.

For full information on patterns and the many finishes available please see Barbour Index File No. 96, or ask us for Brochure.

HARVEY

Decorative Metalwork

For elegance that will endure, for strength without solidity, Harvey Decorative Metalwork can be used as a feature in itself or as a background or support to other materials. It gives a pleasing textural effect to interior fitments of many kinds and can also be used to considerable advantage out-of-doors.

Many attractive patterns, wide choice of metals and a variety of finishes available.

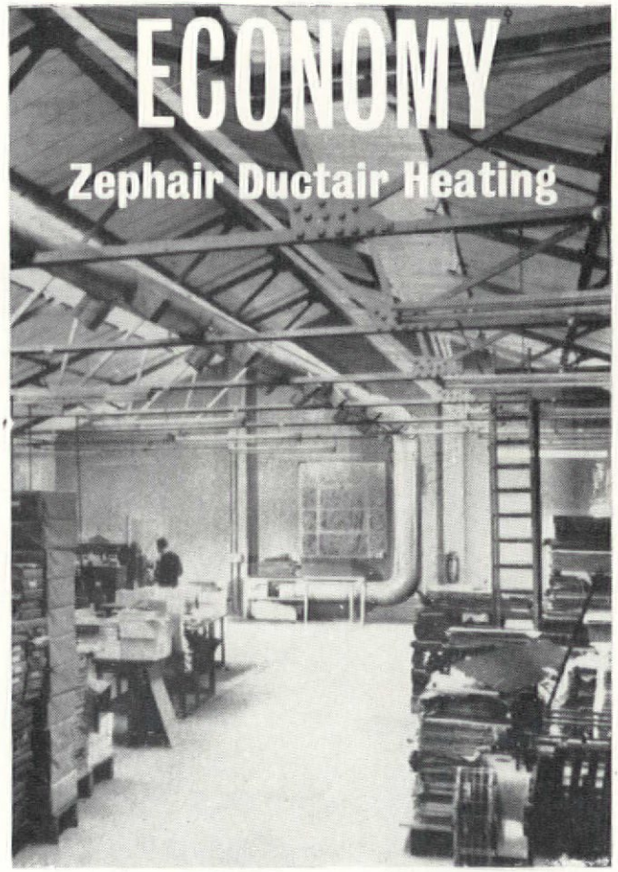
HARVEY PERFORATORS & WEAVERS LTD · WOOLWICH ROAD · LONDON S.E.7

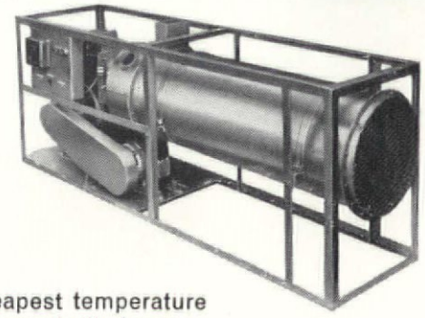
Telephone: GREenwich 3232

P/W/Wg/28

ECONOMY

Zephair Ductair Heating





The cheapest temperature and time controlled space heating is available with Zephair Ductair Heaters connected to ducting. Full output at over 80% efficiency is available in 30 seconds. Fuel is used only when there is a demand for heat.

Zephair Ductair Heaters have heat output range of 100,000 to 600,000 B.T.Us. per hour, and are suitable for firing with light oil.

ZEPHAIR LIMITED CONTROLLED AIR HEATING

Please send by return details of your Industrial Air Heaters

NAME .....

ADDRESS .....

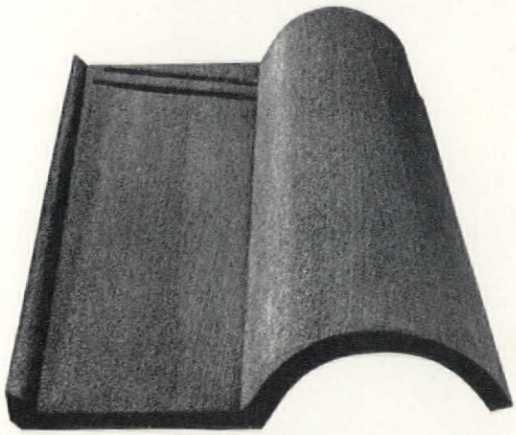
.....

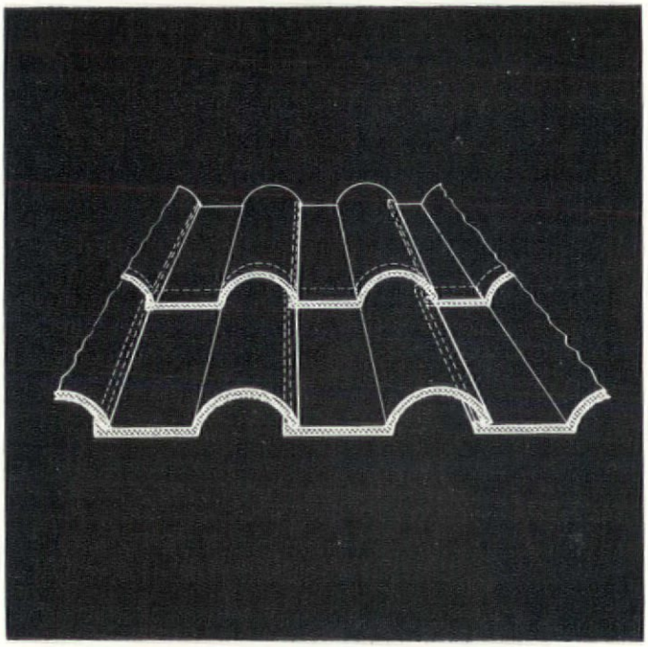
AD/6/65

1 BRANDON ROAD, YORK WAY, LONDON, N.7 NORTH 2245/8
50 WELLINGTON STREET, GLASGOW, C.2 CENTRAL 5323/4
and at Birmingham Bristol Cardiff Leeds Leicester Liverpool Newcastle

Code 78

ANCONA





Single Roman Tiles

The Ancona hand-made concrete tile complying as far as applicable to B.S.S. 550:1956 is designed to provide character and interest to roofs with pitches as low as 17½°. The omission of the nail hole increases the effective lap of the Ancona by 1½". The Ancona being a full colour tile with no sand-facing allows the water to shed far more easily at lower pitches. These fixing recommendations comply with B.S.C.P. 142:1958 (Add. 1st July 1964).

Tiles can be used for any pitch roof i.e. over 30° a nail hole is provided, or under 30° two bars in place of nail hole.

Colours
Standard colours are: Slate Blue, Green, Red, Brown and Honey. They are all coloured throughout.

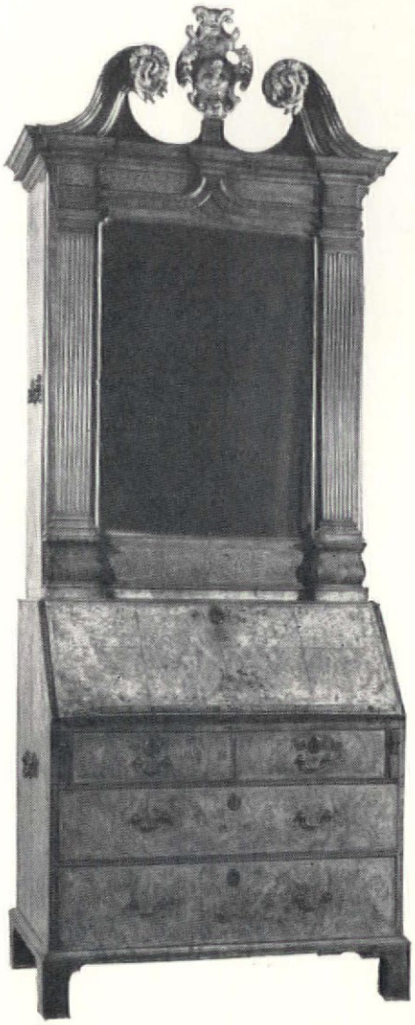
Technical Service
Sample tile sent by post. Additional details are available on request as well as roof truss designs.

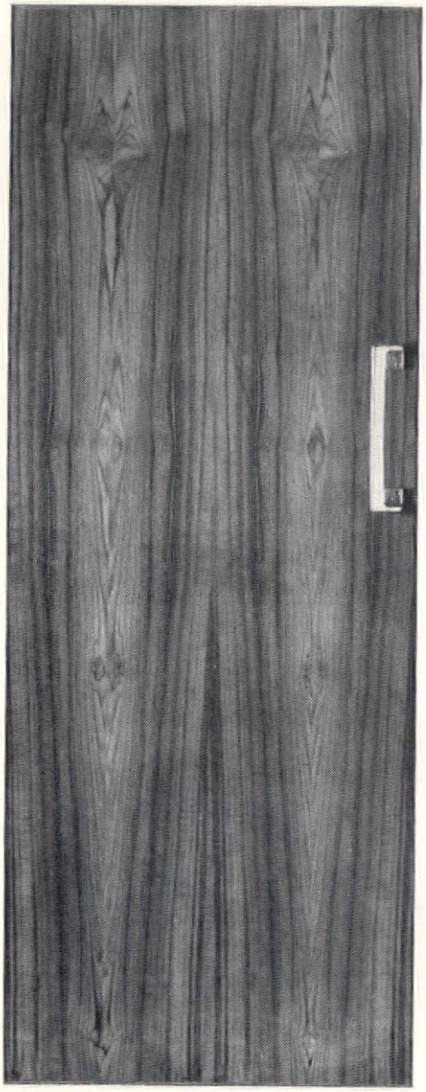
ANCHOR BUILDING PRODUCTS LTD.
BROOMHILLS ROAD, LEIGHTON BUZZARD, BEDS.

Telephone: LEIGHTON BUZZARD 3236.

Code 79

Bureau Cabinet, Walnut inlaid, Circa 1700
by Samuel Bennett. Victoria and Albert Museum.





craftsmanship that endures

is built into every Leaderflush door

The care that goes into the making of every Leaderflush door is reflected not just in the perfection of finish, but in the quality built in beneath the surface as well.
A Leaderflush door will never warp, shrink, twist or distort. From the day it is first hung, its standard of construction ensures a lifetime's satisfactory use.

You'll find details of our very exacting specifications in the Leaderflush catalogue. And a note of some of the many contracts where Leaderflush doors have been specified for lasting satisfaction.
Next time your commission calls for doors of distinction specify Leaderflush — Britain's finest flush doors.

Leaderflush

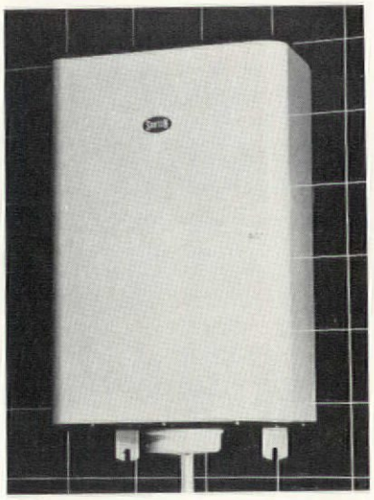
LEADERFLUSH (DOORS) LIMITED TROWELL NOTTINGHAM Telephone: Ilkeston 4111
London: Bush House, Aldwych, London W.C.2. Telephone: COVent Garden 2243
Belfast: 143 Northumberland Street, Belfast 13. Telephone: 22802

santon

Automatic Electric Water Heaters

are designed to solve all known problems

Water Heating of course!



The heater illustrated is a cistern type, wall mounted, rectangular. Just one from the large SANTON range of types and capacities.

Types include free outlet, pressure and cistern, while capacities range from 2½ gallons.

All SANTON heaters are contemporary in style, embodying the highest quality materials and first class workmanship. By specifying SANTON you ensure satisfaction.

BARBOUR INDEX 204.

For full details of the range of heaters please write to:—

SANTON LTD. Somerton Works, Newport, Mon.

Telephone : Newport, 71711

Code 81

SfB Un6

THIS WALL IS WASHABLE DURABLE STAIN, SMEAR & SCUFF PROOF



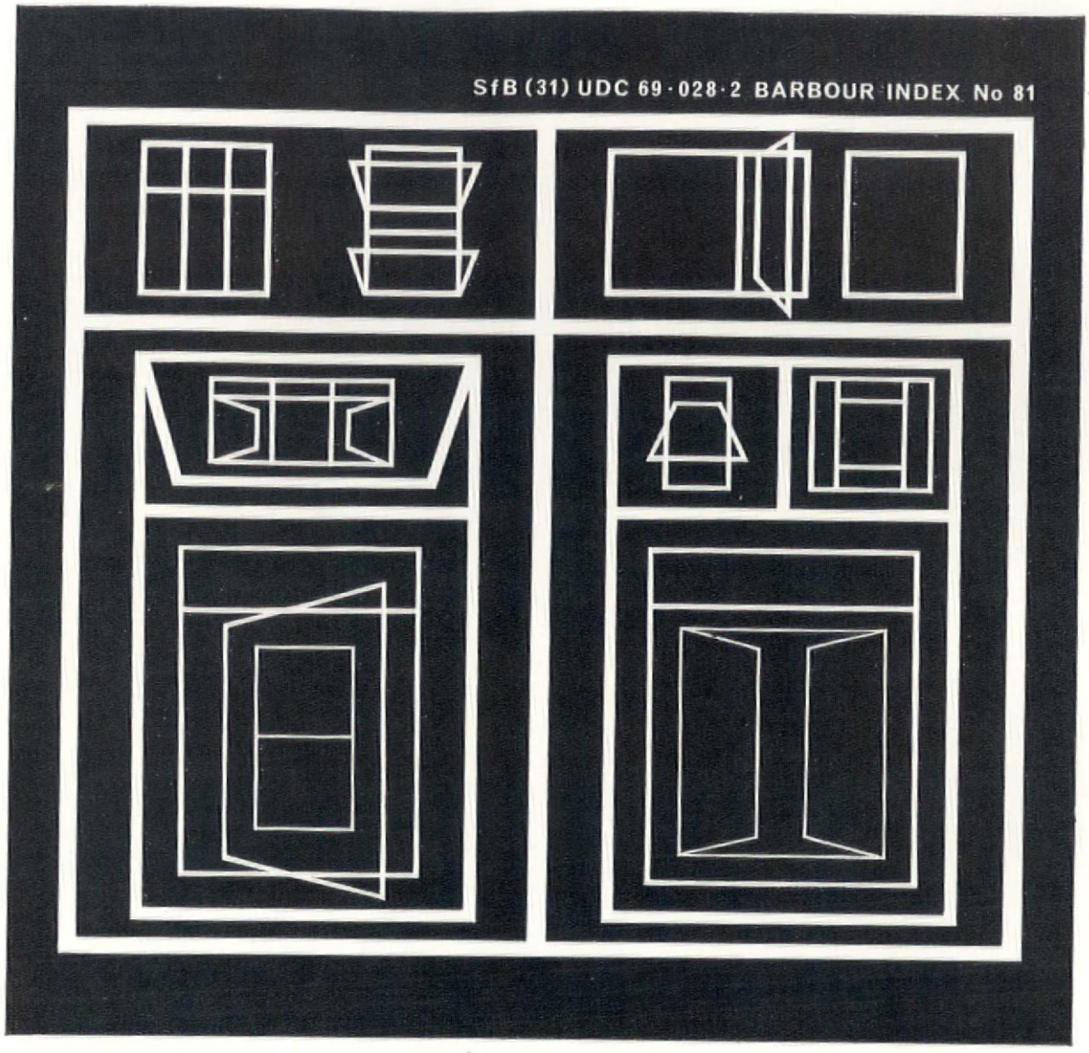
cover this wall in Brymor too

write now for pattern books and samples

BRYMOR LIMITED
THE TANNERY, EAST PECKHAM, TONBRIDGE, KENT
TELEPHONE: EAST PECKHAM 384
Subsidiary of Bryant & Co. (Leather) Ltd., Curriers since 1850

BRYMOR VINYL WALLCOVERINGS COVER ALL YOUR PARTITION PROBLEMS

SfB (31) UDC 69·028·2 BARBOUR INDEX No 81

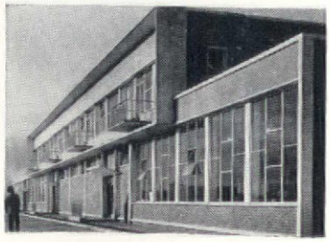


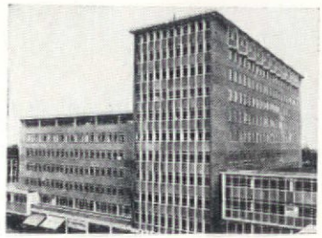
METAL WINDOWS IN ALL DIMENSIONS

Haywards

MEET YOUR NEEDS . . . EXACTLY







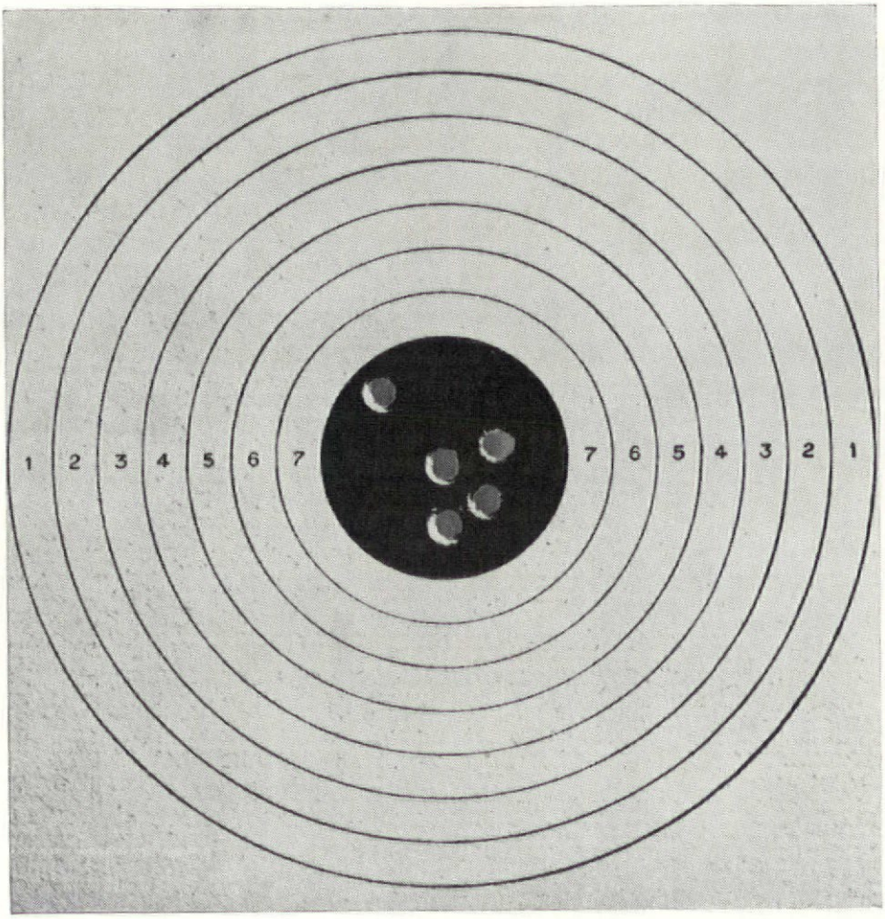
Please send for technical literature

HAYWARDS LIMITED, UNION STREET, LONDON, S.E.1. TEL: WATERLOO 6035 TELEGRAMS: HAYWARD BROS., LONDON, S.E.1

Makers of purpose made metal windows—fire escapes, staircases and balustrades—steel doors—roof lights and patent glazing—pavement lights and cellar flaps

BRANCHES AT: BIRMINGHAM, BRISTOL, CARDIFF, DUBLIN, MANCHESTER

LGBI



T55

consistency makes champions

Turquoise Drawing Pencils are right on target for consistency. Pencil after pencil, batch after batch, they never vary. In each of the 17 grades a separate formula is used. The result—consistent, spot-on-grading. Turquoise gives perfect reproduction by any method. Maximum strength and smoothness, minimum point wear. Consistent in all grades, 6B to 9H. There are Turquoise Drawing Leads as well, 2B to 6H. For a sample pencil and further details, shoot off a card to Eagle Pencil Co., Ashley Road, Tottenham, London, N.17.



TURQUOISE
DRAWING PENCILS

Code 84

REGD. Hawk

HAWK ORGANISATION
EST. 1902



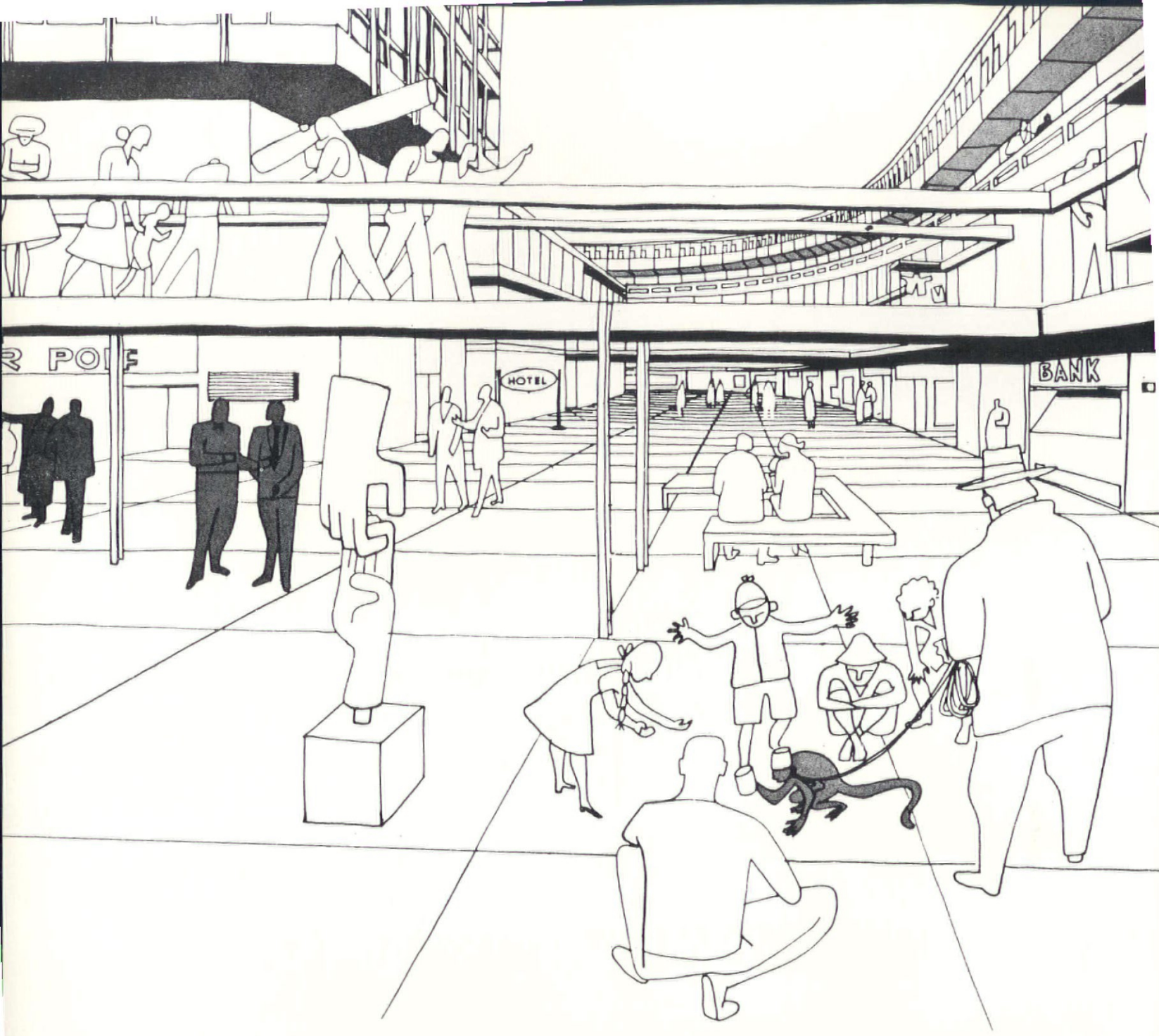
- The Silver Hawk Boiler is manufactured from Stainless Steel to B.S. 3377 and is "Kite Marked".
- Tried and proved over the past ten years.
- Specified by many Local Authorities and Range Makers.
- Recommended for use in Soft Water Areas.
- Immune from attack by Domestic Fuels and the Products of their combustion.
- Do not suffer the disadvantages of PRICE FLUCTUATION as do boilers manufactured from copper and its alloys.

HAWK B S 3377 3756

HAWKHEAD BRAY & SON LTD

PHOEBE LANE MILLS, HALIFAX, YORKS. TEL. HALIFAX 4794

All major products of the Hawk Organisation bear the B.S.I. Kite Mark. A guarantee of quality and performance.



New edition—Graphic Effects in Architectural Drawings

Save time—save money with this wonderful book specially designed for architects—224 pages size 12″ x 12″ containing over 950 drawings of trees, people, scenes, signs, cars and lettering, etc. This book gives designs and plans their special finish, neat script and artistic layout which characterises the perfect architectural drawing. Every architectural office or individual architect should have this beautifully produced book.

Price 55/- inclusive of postage.

To: The Standard Catalogue Co. Ltd., 26 Bloomsbury Way, London, W.C.1.

I enclose remittance of 55/- inclusive of postage

Please send.....copy of Graphic Effects in Architectural Drawings

Name.....

Address .....

.....



Structural PITCH PINE joists in solid form avoid lamination and halve the cost when spanning in excess of 18 feet.

Structural PITCH PINE is graded to CP.112. requirements and is especially economical for use when spanning up to 30 feet plus.

It is purpose sawn to NETT sizes for delivery anywhere in the BRITISH ISLES.

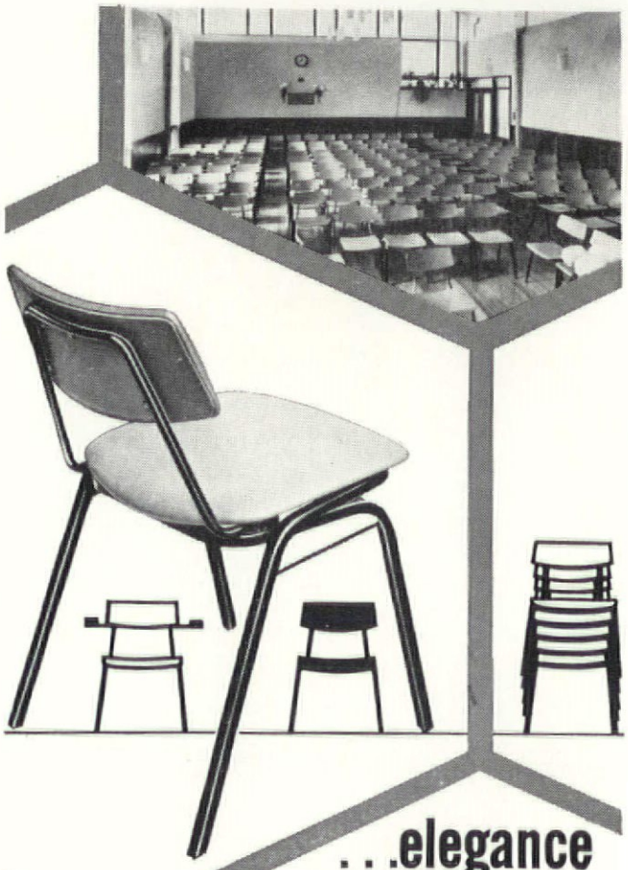
If your files do not contain a copy of our leaflet 'Economies of PITCH PINE' we will gladly post you one, together with a specially prepared SLIDE RULE giving-at-a-glance loading table calculations.

MALLINSON & ECKERSLEY LIMITED

Pitch Pine Importers.

23 BLANTYRE ST. CHESTER RD. MANCHESTER 15
Tel: DEAnsgate 5867/9

SHEPHERD'S DESIGN WITH A PURPOSE



. . .elegance comfort long life

Shepherd's briefed Jack Stafford to design their ideal chair: gave it the experience and manufacturing techniques that only Shepherd's could provide, for good measure treated it with the new epoxy resin powder finish to double its working life, provided numerous variations using plastic, timber and upholstery—all to link or stack—and produced the new Walton Range, ideal for every role from public hall to restaurant and classroom.

Full details with pleasure from

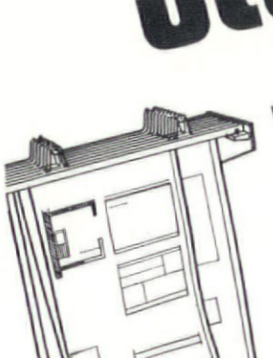
H. C. SHEPHERD & COMPANY LTD

A Member of the Thomas Tilling Group of Companies

THE COURTHOUSE, 9/11 JUSTICE WALK, LONDON, S.W.3. TEL: FLAXMAN 2212

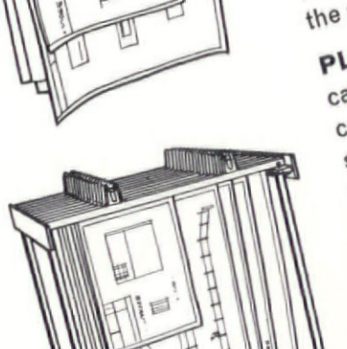
Planman

drawing storage



PLANMAN offers the ideal solution to the problem of handling large numbers of working drawings.

PLANMAN can be used with equal facility in the office, on the site or in the factory.



PLANMAN can be fixed to any convenient wall surface or is available in the NEW free-standing version.

WRITE NOW to

J. Hodsman & Son Ltd.

82-84 Eldon Street York England Tel 23132

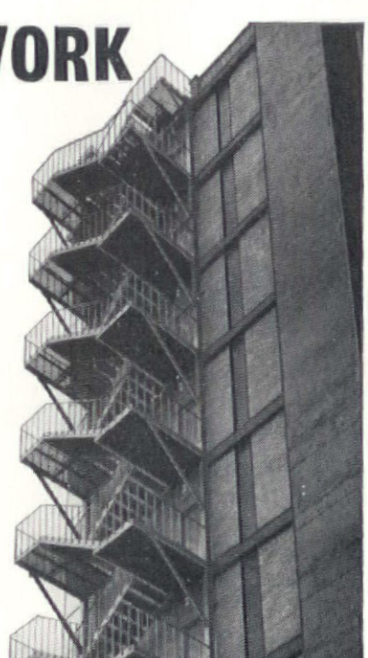
Planman

Code 89

METALWORK

for the
Building and
Civil Engineering
Industries

BALUSTRADES
RAILINGS
FIRE ESCAPES
SPIRALS
SPECIAL STAIRCASES
BRIDGE BALUSTRADING



BIGWOOD BROS
(BIRMINGHAM) LTD

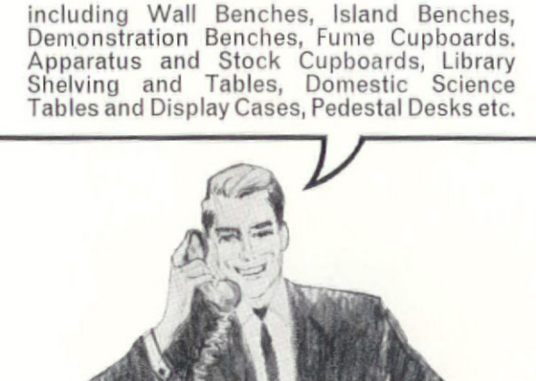
WOODFIELD ROAD · BALSALL HEATH · BIRMINGHAM 12
Established 1879 *'Phone* CALthorpe 2641/2

Code 90

"LABORATORY FURNITURE

certainly sir! Here at Wadsworths we specialize in all types of laboratory furniture and fittings

including Wall Benches, Island Benches, Demonstration Benches, Fume Cupboards, Apparatus and Stock Cupboards, Library Shelving and Tables, Domestic Science Tables and Display Cases, Pedestal Desks etc. "



JAMES WADSWORTH & SONS LTD.

WAKEFIELD ROAD BRIGHOUSE YORKS. Phone BRIGHOUSE 1686

Code 91

The permanent finish for architectural metalwork

NYLON COATING

RILSAN NYLON DECONYL R.P.95

eliminates maintenance — extraordinarily durable
non-chipping — warm to touch
attractive — full colour range
resistant to atmospheric, industrial, salt water corrosion

Send for our special architects brochure, Barbour Index No. 99 Collections and deliveries throughout the country—7 day service



PLASTIC COATINGS LIMITED

SOUTHERN DIVISION
By-Pass, Guildford, Surrey
Telephone: Guildford 64611
Telex: 85237

MIDLAND DIVISION
Industrial Estate, Winsford, Cheshire
Telephone: Winsford 2031
Telex: 66312

Code 92

YOU MAKE THE OPENING —
Thornborough roller shutters
PROTECT IT

Make it as wide and as high as you like. Make it internal or external, large or small. For every opening Thornborough provides roller shutters.

Send for literature F giving full details of Thornborough Roller Shutters, hand and electrically operated, in steel, wood and aluminium. Also suppliers of Sliding Door Gear.

Thornborough & Son (Manchester) Ltd
ST. VINCENT STREET, ANCOATS, MANCHESTER 4 TELEPHONE: COLLYHURST 2887
LONDON: VALE WORKS, TWICKENHAM, MIDDLESEX TELEPHONE: POPESGROVE 0797
Representative for Northern Ireland: OSWALD McMULLEN, 6 SUSSEX PLACE, BELFAST Telephone: 29126

Code 93

Subscription Form

Please

☐ *commence a new subscription to start with the ..... issue 19 .....*

☐ *renew my current subscription*

as follows

☐ **U.K. 1 year subscription 60/- including postage**

☐ **U.K. Student rate 1 year subscription 36/- including postage**

☐ **Overseas 1 year subscription 80/- including postage**

☐ **Remittance enclosed**

☐ **Invoice to be sent**

U.S.A. and Canada 11.50 dollars. Foreign remittances by bank draft, money order, or local postal order.

Name .....

Professional qualifications .....

Address .....

.....

.....

If a Student state School .....

Year of Study .....

This is the **Timeless** *Group*

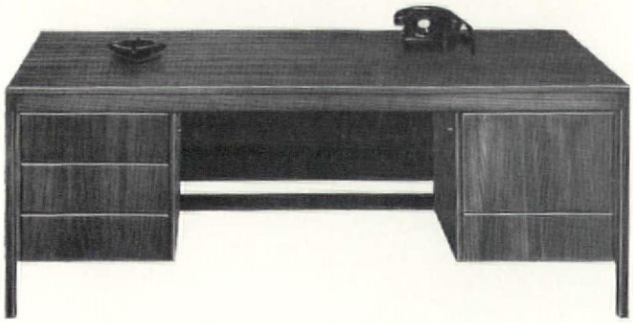
It's design function and price will serve the executive and mid-management offices, stenographic areas, and in fact wherever desks are required. Companion chairs, of course.



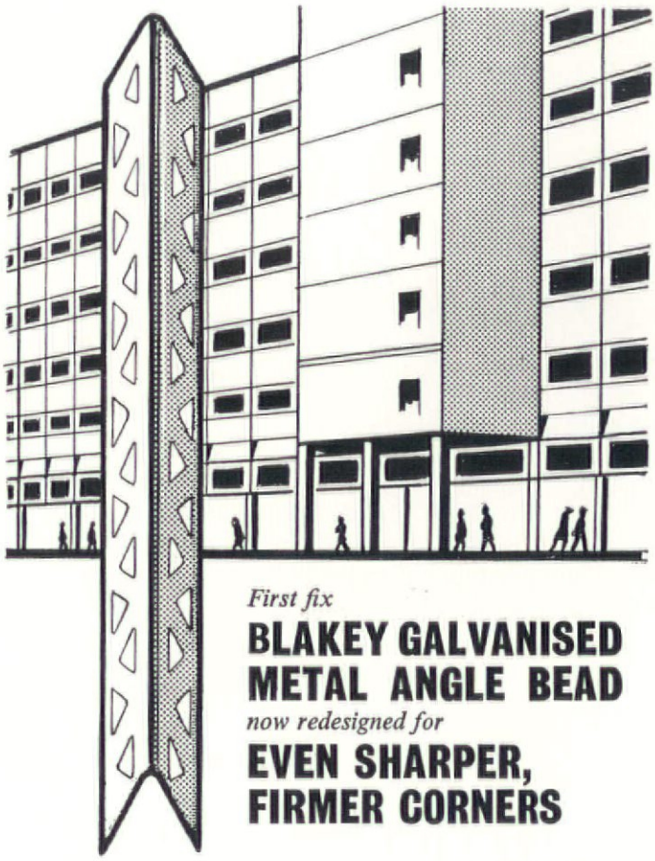
Architects, Interior Designers & Contract Furnishers should get to know more about the *'Timeless Group'*

Write for full details of our internationally famous ranges

KK KASPARIANS
KASPARIANS (UK) LTD · SAMSON HOUSE · PROGRESS ROAD · SOUTHEND-ON-SEA · *Tel: SOUTHEND 523101/2*



Code 94



First fix

BLAKEY GALVANISED METAL ANGLE BEAD

now redesigned for

EVEN SHARPER, FIRMER CORNERS

Almost every house, office, hospital etc., has plaster covering its interior wall surface. At every corner, abutment or arris, in doorways and window-openings the plaster will require angle beading to strengthen the corner. The knowledgeable architect will choose for this job the new **Blakey** galvanised metal angle bead (Patent No. 797/887).

This new **Blakey** angle bead offers increased perforation which allows the plaster to key more easily and much more powerfully as almost the whole of the back of the bead is fitted to make an extremely solid integral corner.

Blakey angle bead combines lightness with strength, will never chip or corrode, is easily cut and applied. All patterns are heavily galvanised and comply with B.S.S. 1246/1959.

Use of this bead almost always cuts plastering costs—at least one well-known firm of plasterers reported a saving of 5d. a foot over concrete beading.

Stock Sizes: 10ft., 9ft., 8ft. 6in., 8ft., 7ft. 6in., 7ft.

Other sizes supplied to specification

BLAKEY

GALVANISED METAL ANGLE BEAD

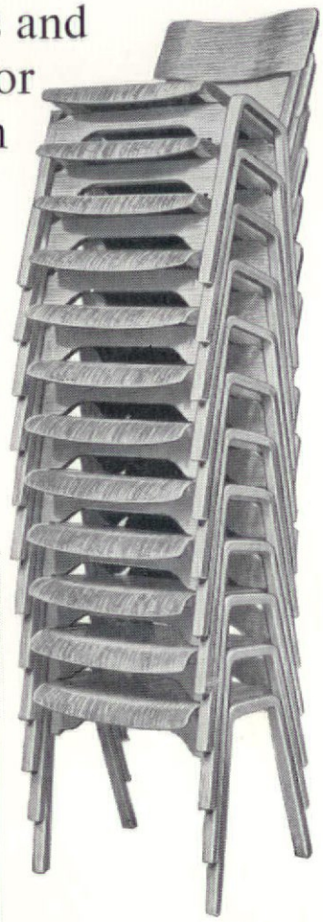
Full details gladly supplied by:—

BLAKEY Cabinet & Metal Works Ltd.
61 SCOTLAND ROAD, NELSON, LANCASHIRE
Tel: Nelson 64941

TECTA

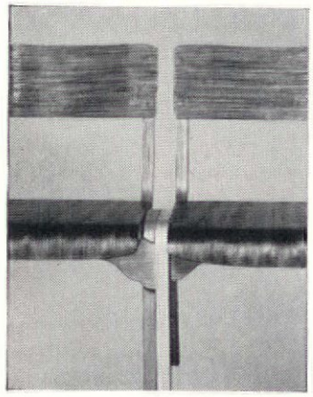
LINXTAK CHAIRS

link at 18″ centres without clips or battens and stack 12 high for maximum open floor space

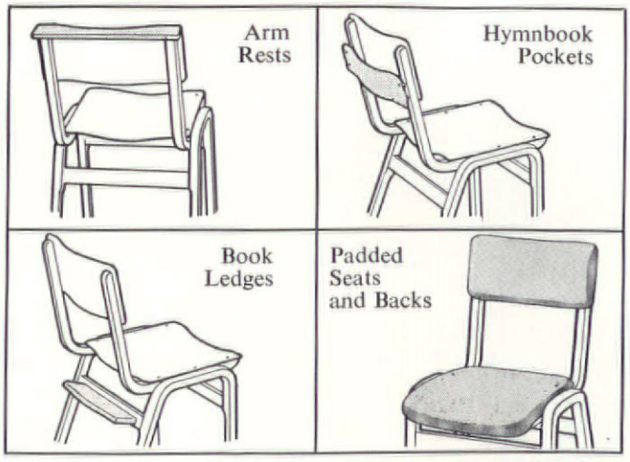


Linxtaks (built to B.S.I. specifications) link simply by placing the leg frame of one chair inside that of the next. Seats can be set or cleared quickly. Beech frames reduce noise to the minimum. Chairs are laminated and resin bonded, and need no maintenance. Seat and back panels finished in Beech or Mahogany. Available part or fully upholstered.

Pat. No. 912174 Reg. Design No. 898906



LINXTAKS CAN BE FITTED WITH ANY OF THESE FEATURES AND STILL LINK AND STACK



For free brochure, write to Tecta Furniture Limited,(A.D.3.L.) 1 Dorset Square, London N.W.1. or telephone Paddington 1891. Factory: Great Yarmouth, Norfolk. (Great Yarmouth 4251)

Advertisers Index JUNE 1965

Please note the Architects Standard Catalogue SfB section reference shown against those advertisers who file information in that publication. Please use ASC for quick technical information.

ASC, (74)	Adamsez Ltd.	11
ASC, U	Airscrew-Weyroc Ltd.	25, 36
ASC, N	Anchor Building Products Ltd.	77
ASC, Q, T	Armstrong Cork Co. Ltd.	70
ASC, (63)	Atlas Lighting Ltd.	8, 9
ASC, U	Bakelite Ltd.	26, 27
	Biddle, F. H., Ltd.	42
ASC, Xd, (24)	Bigwood Bros. (Birmingham) Ltd.	84
ASC, P	Blakey Cabinet & Metal Works Ltd.	86
ASC, (32), (66)	Bolton Gate Co. Ltd.	89
	Booth, James, Aluminium Ltd.	34
ASC, D	Bow Slate & Enamel Co. Ltd.	41
	Boyle & Son	43
ASC, G, P, Q, R	British Gypsum Ltd.	2
ASC, (66)	British Monorail Ltd.	24
ASC, V	British Paints Ltd.	48
ASC, D, F, K, L, T, (28), (52)	British Sisalkraft Ltd.	52
ASC, U	Brymor Ltd.	79
	Carpet Trades Ltd.	5
	CIBA (A.R.L.) Ltd.	51
	Crittall Manufacturing Co. Ltd., The	73
ASC, (68)	Cutting, R. C. & Co. Ltd.	60
	Eagle Pencil Co.	81
	Electrical Development Association	6
ASC, (32), (72), (83), (85), (86), (87)	Esavian Ltd.	71
ASC, (73), (74)	Fisher & Ludlow Ltd.	22
	Gliksten Doors Ltd.	35
ASC, (22), (76)	Harvey, G. A., & Co. (London) Ltd.	76
ASC, (53)	Hawkhead Bray & Son Ltd.	81
ASC, R, (24), (31), (32), (36), (37)	Haywards Ltd.	80
ASC, (72)	Heal's Contracts Ltd.	60
ASC, (30), (32)	Henderson, P. C., Ltd.	50
ASC, Q	Hermeseal Acoustics Ltd.	12
	Hille of London Ltd.	58
	Hodsman, J., & Son Ltd.	84
ASC, (31), (32)	Hope, Henry, & Sons Ltd.	61
ASC, F	Ibstock Brick & Tile Co. Ltd., The	68
ASC, D	ICI (Plastics) Ltd.	66
	Ideal-Standard Ltd.	64
	Kasparians (UK) Ltd.	85
ASC, D	Kerner-Greenwood & Co. Ltd.	30
ASC, (32)	Leaderflush (Doors) Ltd.	78
	Lucas of London Ltd.	74
ASC, (63)	Lumitron Ltd.	15
	Magnet Applications Ltd.	14
	Mallinson & Eckersley Ltd.	83
ASC, I, K, N, Q, T	Marley Tile Co. Ltd.	63
	Merchant Adventurers Ltd.	72
	Metal Window Association Ltd., The	13
	Ministry of Public Building and Works	54, 55
ASC, (30)	Newman, William, & Sons Ltd.	17, 49
	Noise Control Products Ltd.	53
	Oslite Equipment Co. Ltd.	75
ASC, (63)	Osram (G.E.C.) Ltd.	69
ASC, L, L, L, T	Permanite Ltd.	67
ASC, F, R, U, (21), (32)	Pilkington Bros. Ltd.	19, 20, 23, 31
	Plastic Coatings Ltd.	85
ASC, R, U	Plyglass Ltd.	16
ASC, Xd, (15)	Ranalah Gates Ltd.	59
	Rawlplug Co. Ltd., The	4
ASC, R	Reed Millican & Co. Ltd.	3
	Rotaflex Lighting Ltd.	59
ASC, L, (27)	Ruberoid Co. Ltd., The	28, 29
ASC, (53), (56)	Santon Ltd.	79
	Savage & Parsons Ltd.	21
	Shepherd, H. C., & Co. Ltd.	83
ASC, (56)	Steel Radiators Ltd.	47
	Stevens, R. S., Ltd.	46
	Stewarts & Lloyds Ltd.	37, 38, 39, 40
ASC, D, U	Stone Firms Ltd., The	44, 45
	Tecta Furniture Ltd.	86
ASC, (66)	Thornborough & Son (Manchester) Ltd.	85
	Tibor Ltd.	7
ASC, (63)	Troughton & Young (Lighting) Ltd.	62
	Trusteel Corporation (Universal) Ltd.	18
ASC, I, N, (38), (52), (53)	U.A.M. Group of Companies	32, 33
ASC, G	Uniton Ltd.	10
ASC, (87)	Wadsworth, James, & Sons Ltd.	84
ASC, (53)	Walker Crosweller & Co. Ltd.	57
	Wednesbury Tube Co. Ltd., The	88
	Westnofa (London) Ltd.	65
	Zephair Ltd.	77

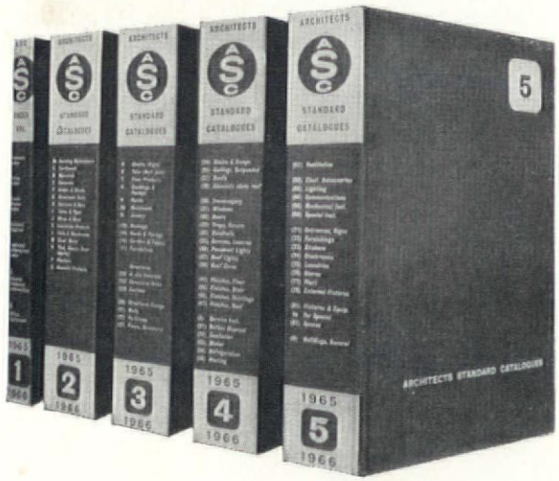
For further information

refer to



The index alongside shows the advertisers who file their product information in the 16th edition of the Architects Standard Catalogues where fuller details can be found

The ASC SfB section for reference is shown before the advertisers name



The most used reference source of the architectural profession, containing:

- ★ 2150 pages of product or service data sheets.
- ★ 460 pages of manufacturers catalogues and leaflets.
- ★ 300 pages of revised technical editorial.

A4 size SfB classified Fully indexed

FREE DISTRIBUTION IS NOW COMPLETED BUT A FEW COPIES ARE STILL AVAILABLE FOR SALE AT 10gns. PER SET OF 5 VOLUMES. Apply to:

The Standard Catalogue Co. Ltd.,
26 Bloomsbury Way, Holborn, London, W.C.1

Printed in Great Britain for the Proprietors of "Architectural Design" (The Standard Catalogue Co. Ltd.), 26 Bloomsbury Way, London, W.C.1, by The Whitefriars Press Ltd., London and Tonbridge (Kent).



The name for plastic-c

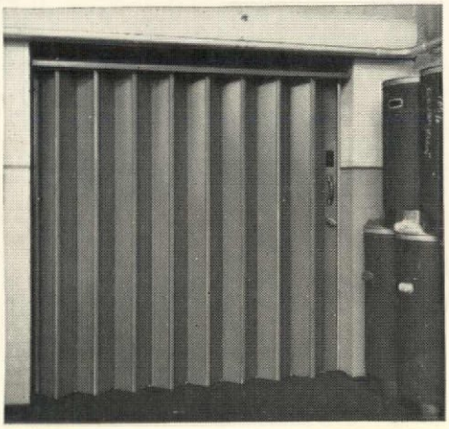
Quality tested rig
in coils and straight l
for use above or belo

THE WEDNESBURY TUBE COMPANY
Telephone BILSTON 41133 (9 Lines) also

DEMCO

ECEIVED
JUN 25

COUNT THE COST OF FIRE...YOU'LL FIND BOLTON FIREPROOF SHUTTER DOORS CHEAPER!



Available with a variety of devices which automatically close them on outbreak of fire, these doors provide grade 'C' fire resistance. They can contain a blaze at source until the brigade arrives. Also available are hinged or sliding steel plate doors.

Write for full information under ref. AD599.

BOLTON GATE CO LTD

THE BIGGEST NAME IN DOORS

BOLTON, LANCS.

Branches in London, Birmingham, Glasgow and throughout the country

BG599