A decorative finish that has withstood the weather for 23 years...

DU PONT

TEDLAR* - one of the most weatherable, long-life finishes ever developed for building materials

PVF FILM

TEDLAR

has been exposed to sunlight and weather since 31st March, 1943; that mahogany board has suffered, but the sample of TEDLAR is still tough and flexible. Why? What's so special about TEDLAR?
TEDLAR is no liquid or spray. It's a tough Fluoride film which is factory-bonded to building products with special Du Pont adhesives—it actually becomes part of the material it protects. Paints have to adhere as well as protect—TEDLAR avoids compromise and protects exclusively.
TEDLAR can be bonded to many substrates: asbestos, wood, metals, reinforced plastics and vinyls, for example.

TEDLAR

for lasting beauty

TEDLAR has been subjected to 23 years of outdoor exposure and laboratory testing. These tests have proved that sun, ozone, winds and weather have had virtually no effect on it. Chalk and fade resistance are 3 to 4 times greater than those of the best paints. Rigid laboratory control ensures that colours, thickness and physical qualities remain constant. Colour uniformity and stability permit buildings to be extended without loss of colour continuity.
TEDLAR is available in a range of ten attractive colours and white.

TEDLAR

for protection and long life

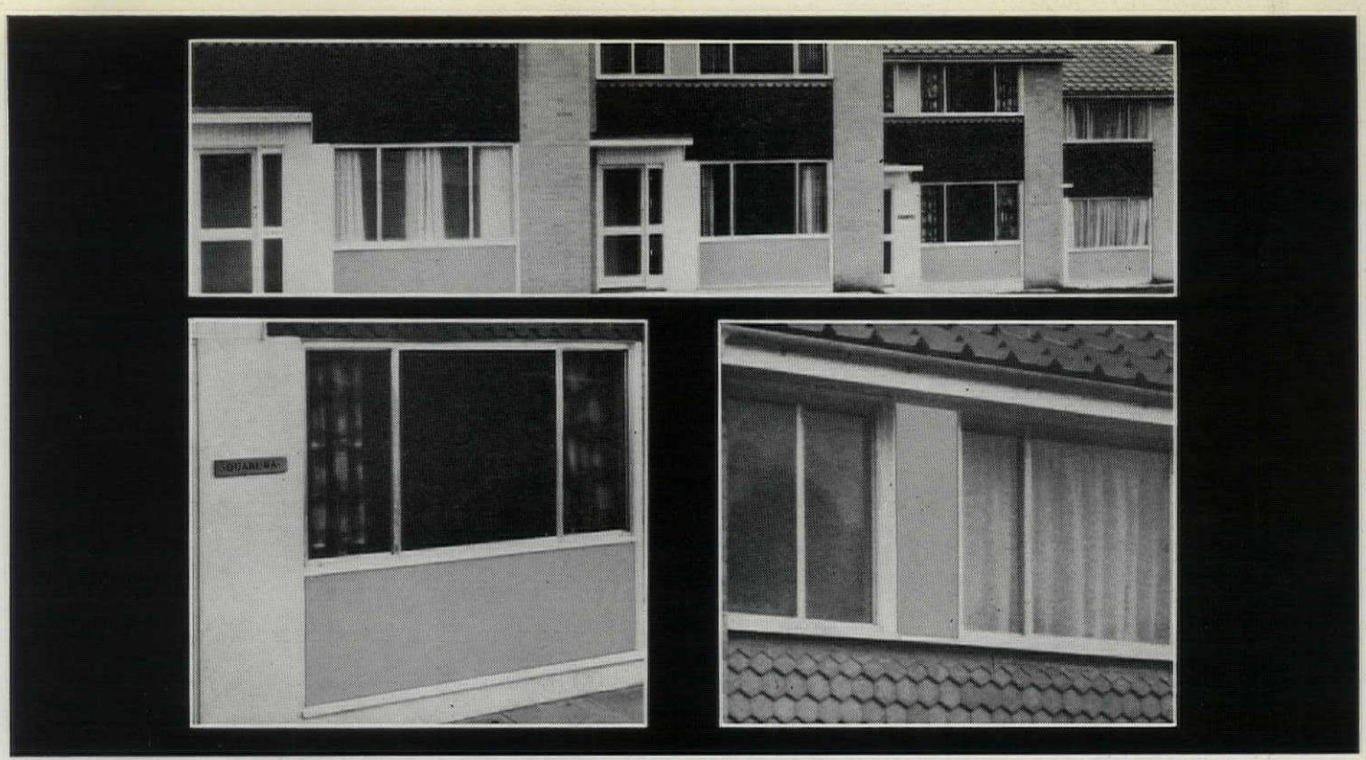
TEDLAR is chemically inert—resists acids, alkalis, solvents, hot tar, oils, greases, caustics... virtually everything. It's ideal for buildings where chemical processes or smog create corrosive vapours, and for buildings by the sea.
TEDLAR is really tough—average tensile strength is 16,000 psi. It stretches over 100% before breaking, so movements in the substrate are matched—no blisters, cracks or crazes. It will resist scuffing, marking, sand blast, rubbing and abrasion long after paints have failed.

TEDLAR

for long-term economy and freedom from maintenance

TEDLAR has shown that it will withstand sun, wind, rain and the destructive forces of nature for many years. The smooth surface, together w its inertness, prevents the adhesion o dust, dirt and chemical effluent. Even stubborn stains like roofing tar and gr can be sponged off without trace. Aft years of exposure, all that may be nee to restore the original surface appeara will be a wash down. If necessary, har cleaning agents and solvents can be u with complete safety.
The exceptional toughness and resist of TEDLAR, combined with its easy cleanability, results in a reliable finish which will keep its good looks, withou maintenance, very much longer than a conventional finish—in any environme

* *Du Pont's registered trade mark.*



Architects: Chapman & Copland, Hythe, Kent. Builders: D. & G. Mills (Builders) Ltd., Hythe, Kent.

...now available, factory bonded to Asbestos-Cement Fully-Compressed Flat Sheets- TURNALL COLOURPREST†

TEDLAR

has been selected for the surfacing of "TURNALL" "COLOURPREST" to provide the Architect and Builder with a building panel of improved appearance, durability and colour stability.
Building products surfaced with TEDLAR are ideal for exterior surfacings, infill panels; wall linings, and many other applications in low and high rise housing, offices, factories, schools and hospitals.

For further information about TEDLAR PVF Film, write to:
Du Pont Company
(United Kingdom) Limited,
Du Pont House, Fetter Lane,
London, E.C.4.

† Available from Turners Asbestos Cement Company Limited, Trafford Park, Manchester 17.

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living... *through Chemistry*

DU PONT TEDLAR* PVF FILM

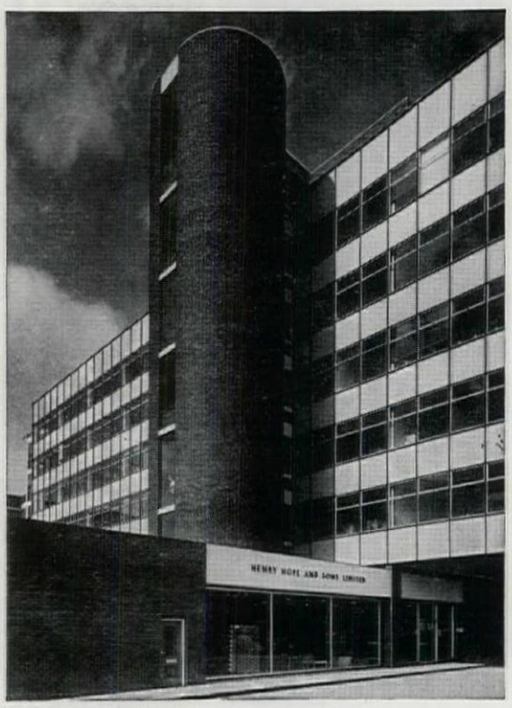
DP239

engineering bricks take the eye

And do a whole lot more besides!

No-one questions the strength and durability of engineering bricks—their resistance to moisture, acids, alkalis and atmospheric pollution. What is becoming more apparent is their visual appeal. And it is for the beauty of their colour and texture, for the contrast they provide when combined with less traditional materials such as curtain walling, that engineering bricks are being increasingly used. Take the staircase tower below. Here, all at the same time, engineering bricks (in this case blue) contribute load-bearing strength, colour, textural interest and flexibility in use towards the achievement of a visually exciting whole. For bonus, they reduce maintenance costs to nothing in atmospheres which blemish and corrode. A considerable range of colours and textures is available, each capable of giving attractive substance—a new aesthetic even—to architectural form.

For further information consult any of the Association Members listed below:—



OFFICE BLOCK FOR HENRY HOPE & SONS LTD. AT SMETHWICK
80,231 sq. ft. 6-storey building with staircase tower.
MAIN BLOCK: in situ concrete frame with curtain walling. Base, non-load-bearing brickwork, Class 'A' Engineering Bricks.
STAIRCASE TOWER: Load-bearing brickwork, Class 'A' Engineering Bricks in 7 different shapes. Walls 18" thick to first floor level, 13½" thick thereafter. Stairs, precast concrete set 9" in brickwork. Design gives maximum clear floor areas in offices.
CONSTRUCTION TIME:
March 1963—March 1964.
Architect:
JOHN H. D. MADIN & PARTNERS
Chartered Architects & Town Planning Consultants.
Structural Engineer:
ALAN MARSHAL & PARTNERS
Quantity Surveyors: SILK & FRAZIER
Contractor: C. BRYANT & SON LTD.

ACCRINGTON BRICK & TILE CO. LTD.
Accrington, Lancashire
ALDRIDGE BRIXANCOLE LTD.
Aldridge, Near Walsall, Staffordshire
BARNETT & BEDDOWS LTD.
Atlas Blue Brick Works, Aldridge, Staffordshire
CATTYBROOK BRICK CO. LTD.
37 Queen Square, Bristol, 1
EMPIRE BRICK AND TILE CO. LTD.
Wallsall Wood, Near Wallsall, Staffordshire
HATHERNWARE LTD.
Loughborough, Leicestershire; and Tamworth, Staffordshire
HAUNCHWOOD BRICK & TILE CO. LTD.
Stockingford, Nuneaton, Warwickshire
HIMLEY BRICK CO. LTD.
Kingswinford, Brierley Hill, Staffordshire
JOBERNS HOLDINGS LTD.
Walsall Wood, Near Walsall, Staffordshire
KETLEY BRICK CO. LTD.
Brierley Hill Staffordshire
G. W. LEWIS' TILERIES LTD.
Rosemary Tileries, Cannock, Staffordshire and Essington Tileries, Near Wolverhampton
NATIONAL COAL BOARD
Brickworks Executive, Midland Region.
"The Terrace" Oaken, Codsall, Wolverhampton, Staffordshire
REGIS BRICK CO. LTD.
Blackheath, Staffordshire
STAR BRICK & TILE CO. LTD.
Ponthir, Newport, Monmouthshire
SUSSEX & DORKING BRICK COMPANIES LTD.
Graylands, Horsham, SUSSEX
WILNECOTE, BRICK CO. LTD.
Wilnecote, Near Tamworth, Staffordshire

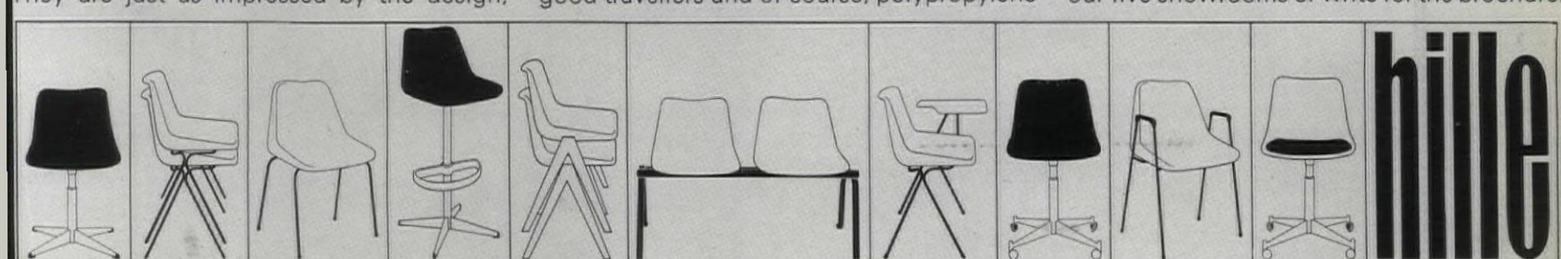
Members of the Association produce bricks to B.S. 3921:1965 (which supersedes B.S. 1301)

COLOUR ✱
TEXTURE ✱
STRENGTH ✱
DURABILITY ✱

BRITISH ENGINEERING BRICK ASSOCIATION
Grove House, Sutton New Road, Birmingham, 23

Now the everyuse chairs are everywhere

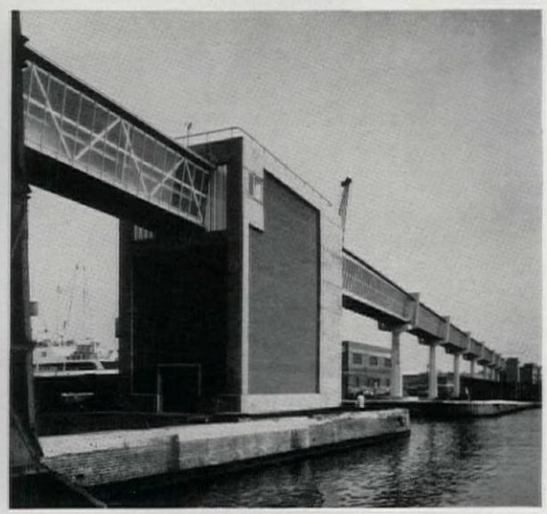
Ever since the Hille Polypropylene Chair Programme was launched two years ago, it has really been going places. And why not? Hoteliers, office managers and educational authorities have the same seating problems in Tokyo as their counterparts in Birmingham. They are just as impressed by the design, durability, comfort and inexpensiveness of these chairs and foreign demand for this very thoroughly planned range continues to rise. Shipped in compact boxes (stacking chairs in sixes, pedestal based in twos, etc –all easily assembled on arrival) they are very good travellers and of course, polypropylene is as impervious to climate as to scratching or chipping. So if you're arranging a rice-growers convention, expecting a big crowd at the next rodeo, or simply refurnishing the igloo–perhaps you should consider the Hille Polypropylene Programme. See it in any of our five showrooms or write for the brochure.



hille

Showrooms: **London** 41 Albemarle Street London W1. Hyde Park 9576-9. **Birmingham** 24 Albert Street Birmingham 4. Midland 7378. **Edinburgh** 25a South West Thistle Street Lane Edinburgh 2. Caledonian 6234. **Manchester** 50 Sackville Street. Central 6929. **Watford** 134 St Albans Road Watford Herts. Watford 42241

Who makes such expressive faces?



Williams & Williams

Three distinct systems of cladding each capable of expressing so many different moods, of taking on so many different guises. WALLSPAN, versatile pioneer of curtain walling. ALUMINEX, the puttyless glazing system for wall or roof. KALWALL, a new concept in double-glazed cladding without glass. And purpose-made systems too for special requirements. All putting such expressive faces on to industrial, commercial and prestige buildings throughout the world!

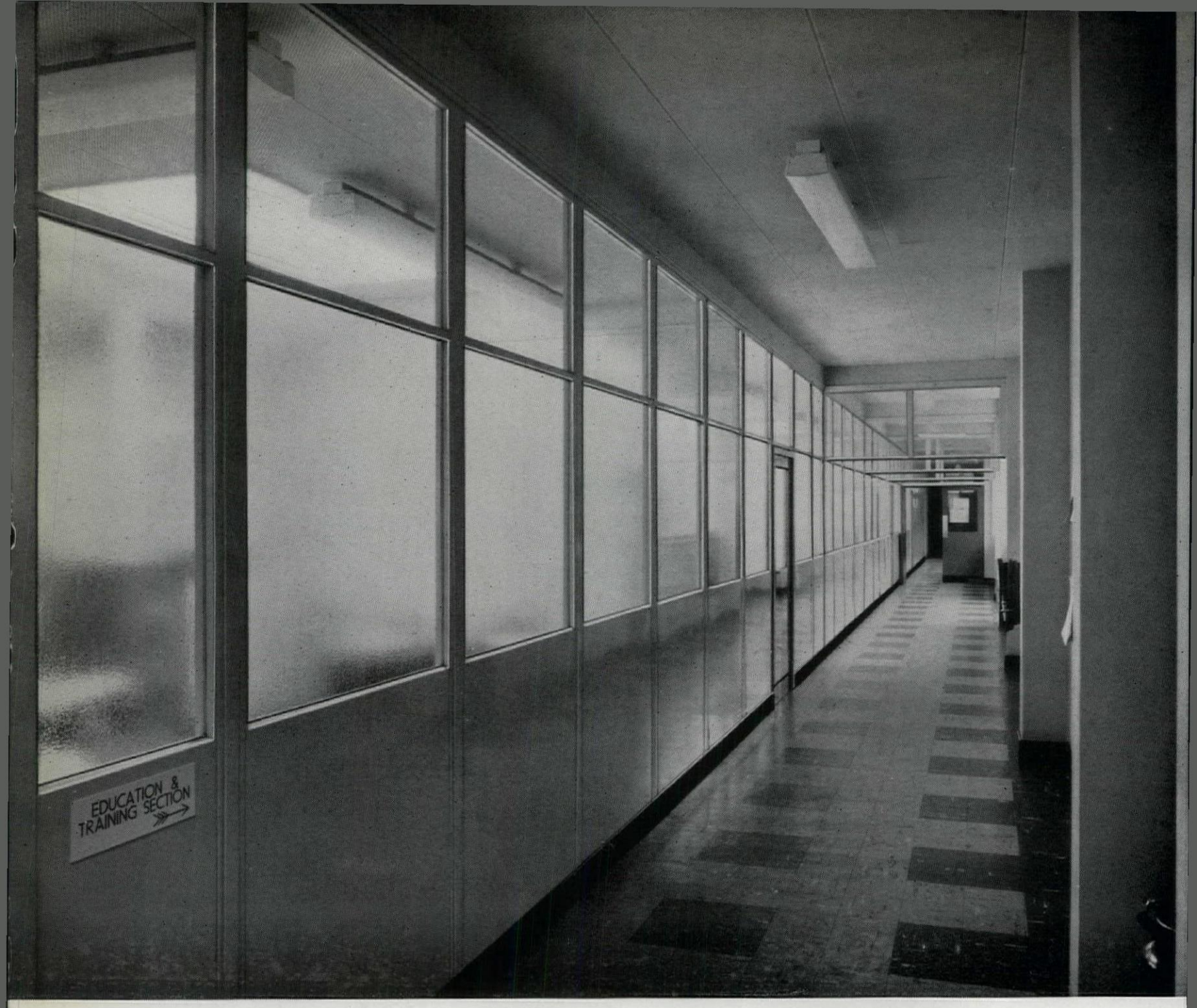
cladding by

Williams & Williams Ltd
Reliance Works · Chester
Telephone 24624 · Telex 61154

Endurance testing is a pre-requisite for all Newman products and is carried out in the group laboratories, illustrated below. Typical tests require Briton door closers to operate consecutively three million times, or a floor spring to be tested to destruction under normal and simulated tropical conditions. To ensure the highest standard is maintained at all times tests of a great variety are carried out on Automatic Doors, Glass door rails, Flexible Doors, Panic Hardware and Window Controls, and also on products of our competitors.

WILLIAM NEWMAN & SONS LIMITED, HOSPITAL STREET, BIRMINGHAM, 19

NEWMANS



EXECUTIVE TYPE

Ayrshire Partitions

Flush Panels in stove enamelled steel.

a·m·p

AYRSHIRE METAL PRODUCTS LTD.

IRVINE, AYRSHIRE. Phone Irvine 2671.

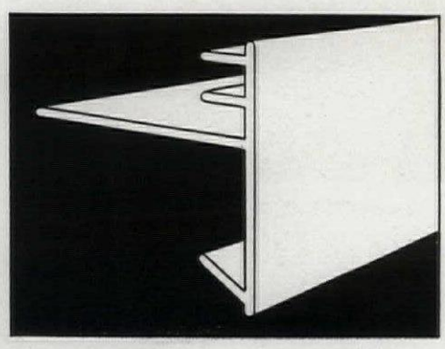
LONDON, Hodford House, 17-27 High Street, Hounslow, Middlesex — Phone Hudson 0606.

BIRMINGHAM, 63 Temple Row — Phone Midland 1993.

ST. HELENS, Lancashire — Phone St. Helens 22639.

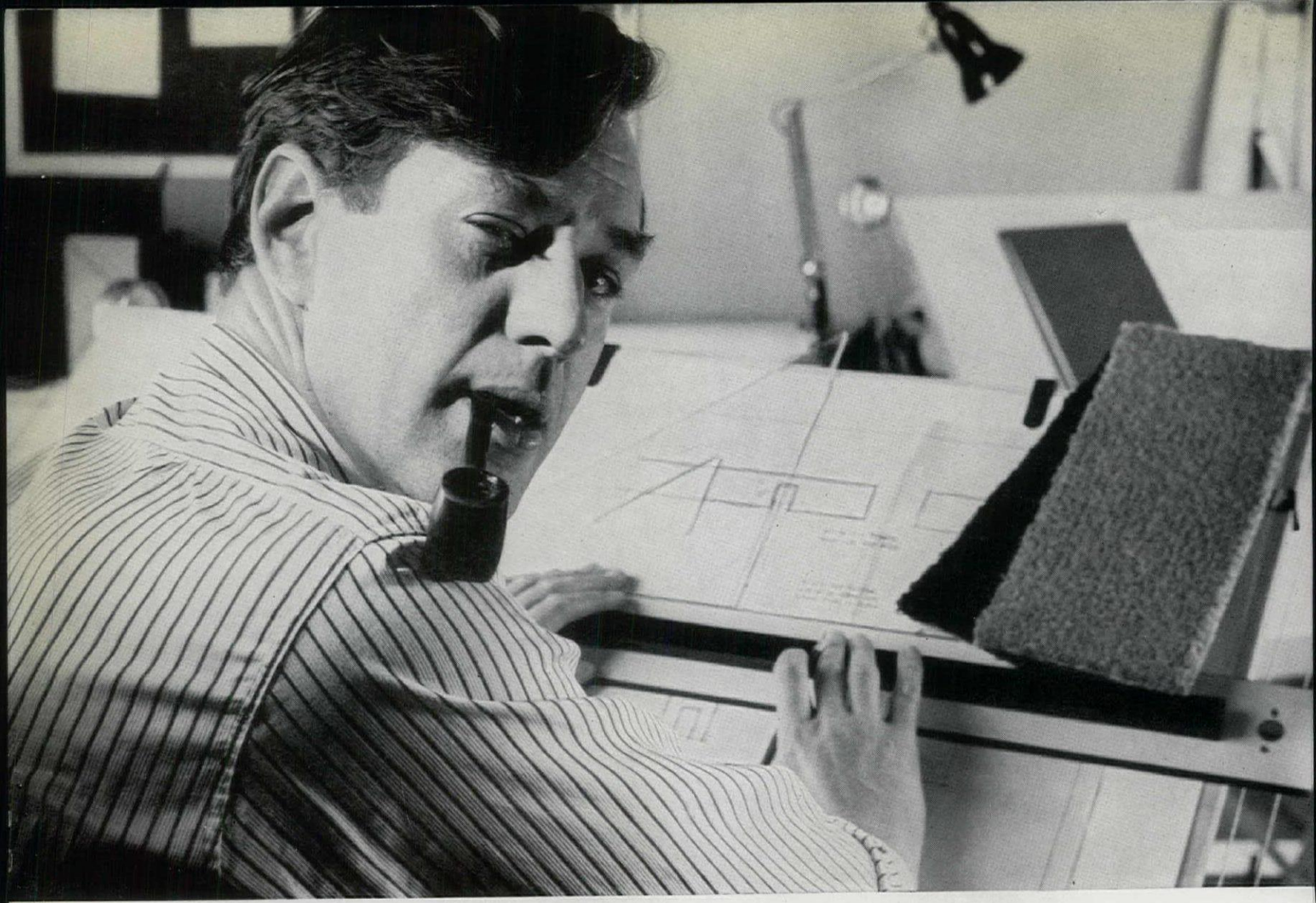
So attractively weatherproof The first (and still the finest) extruded aluminium roof edging, Paptrim conceals unsightly laps and uneven lines, presenting a perfectly straight line on elevation. Paptrim also forms an impermeable bond with flat-roof waterproofing materials and provides a rigid, undamageable surface for ladders. In trend with the increasing use of colour in building, Paptrim can be supplied with rigid PVC facing strip in a wide range of colours.

PAPTRIM extruded roof edging



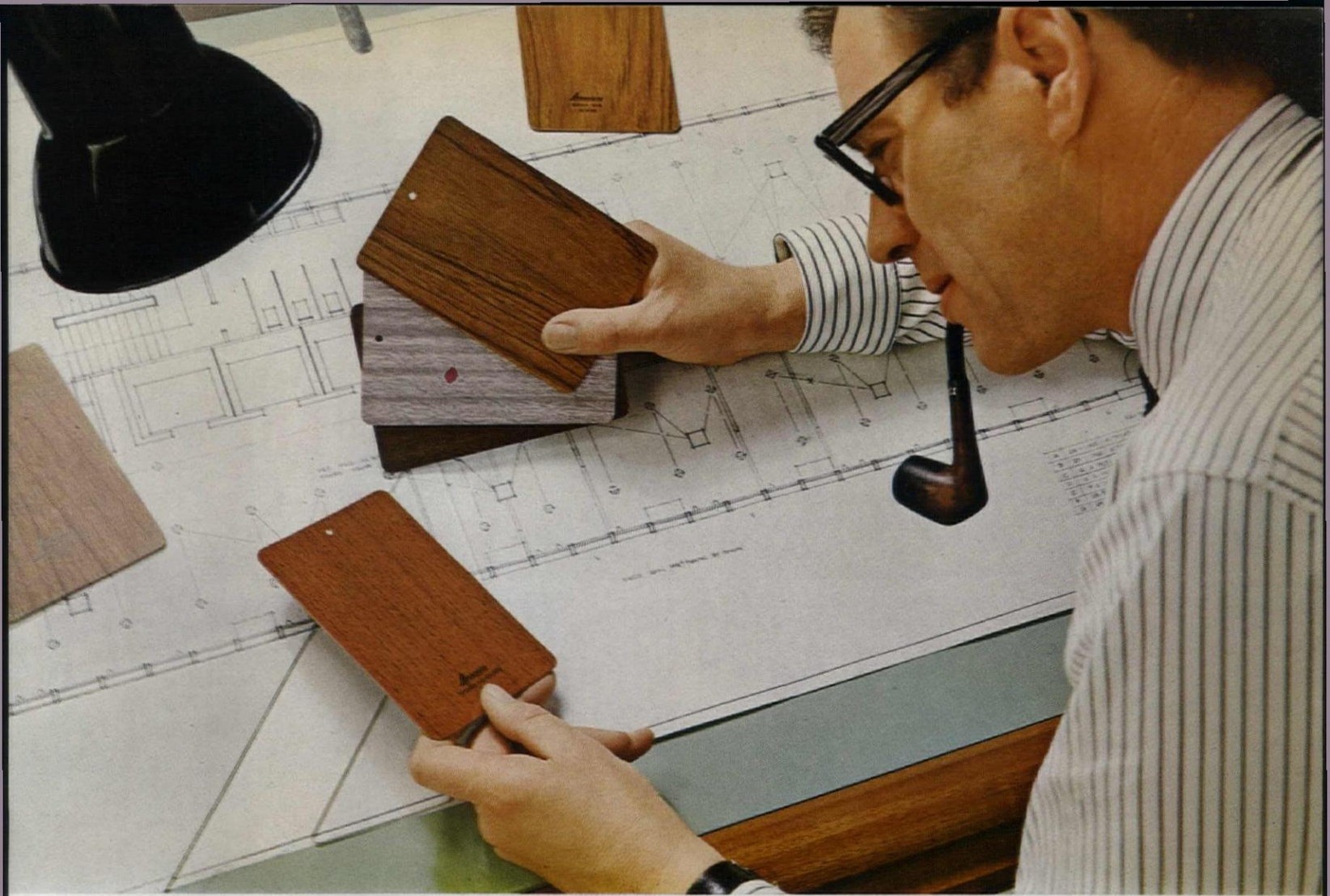
Write for literature from...

Patentees: PITCHMASTIC ASPHALT PAVING CO. LTD.
Excelsior Works, Sandiacre, Notts. *Sandiacre 2681/2/3/4/5*



"Don't just talk about woodgrain laminates. Show me some that really look like wood...

The professional decorative laminat



So we did (and these are only a few of them).

You could check any of the woodgrain samples above against the corresponding natural wood and find a remarkably close match. Arborite woodgrains are acknowledged the most technically perfect in the business. And you can have any of our wide range of woodgrains in texture finish, which gives them a surface close in 'feel' to natural, untreated wood.

Over 300 colours and patterns. 51 subtle plain colours (41 of them exact or close matches of B.S. specifications). Plain colours are difficult technically. Must be absolutely flawless. Only Arborite go to the lengths of offering so many.

Texture finish in all colours and patterns including woodgrains. Professionals who specify large areas of wall cladding are sometimes shy of high-gloss surfaces. Obviously. Reflected light plays unsightly tricks. Texture finish gives the pleasing non-reflecting surface they want. And only Arborite can give it in any colour or pattern they want.

Twin Trim for 'invisible' joints and corners. Familiar aluminium extrusions become exclusive to Arborite when coated with a matching laminate. Cove, corner, counter-nosing, cap and divider profiles can match many colours and patterns.

Postforming grade — curves as small as $\frac{3}{8}$" inside radius. Controlled application of heat needed . . . but what a wonderful advance in laminate techniques for contoured working surfaces and other fittings involving small radius bends.

Solid grade Arborite—practically a new material in itself. Exceptionally strong and rigid. Solid thicknesses of Arborite up to $1\frac{1}{4}$" are in use as laboratory bench tops, shower cubicles or window sills, partitions etc. Only Arborite offer you Solid Grade.

What else can we do? Apart from these special features, Arborite meets all the normal specification needs. High gloss and furniture finish (matt) as well as texture. Variety of thickness grades from $\frac{1}{32}$" to $1\frac{1}{4}$". Normal bending grades for 3" radius curves upwards. Standard sizes 10′ x 4′ and 8′ x 4′ with others, including 12′ x 5′, available. Edge Trim—flexible strips of bending grade Arborite for neat edging.

Technically minded—technical service. Just as we control the quality of Arborite at every stage by expert laboratory work—so we like to help you control the quality of your installation. From the design to the finished job, just call our technical service whenever needed.

Arborite is in business to do more for architects than any other laminate can.

ARBORITE

® Trade Mark Registered

Arborite standard grade ($\frac{1}{16}$") is tested and approved by BSI to BS3794

DOMTAR

Send for your Arborite manual and samples

Arborite Limited, Bilton House, 54/58 Uxbridge Rd., Ealing, London W.5. Telephone: EALing 0116

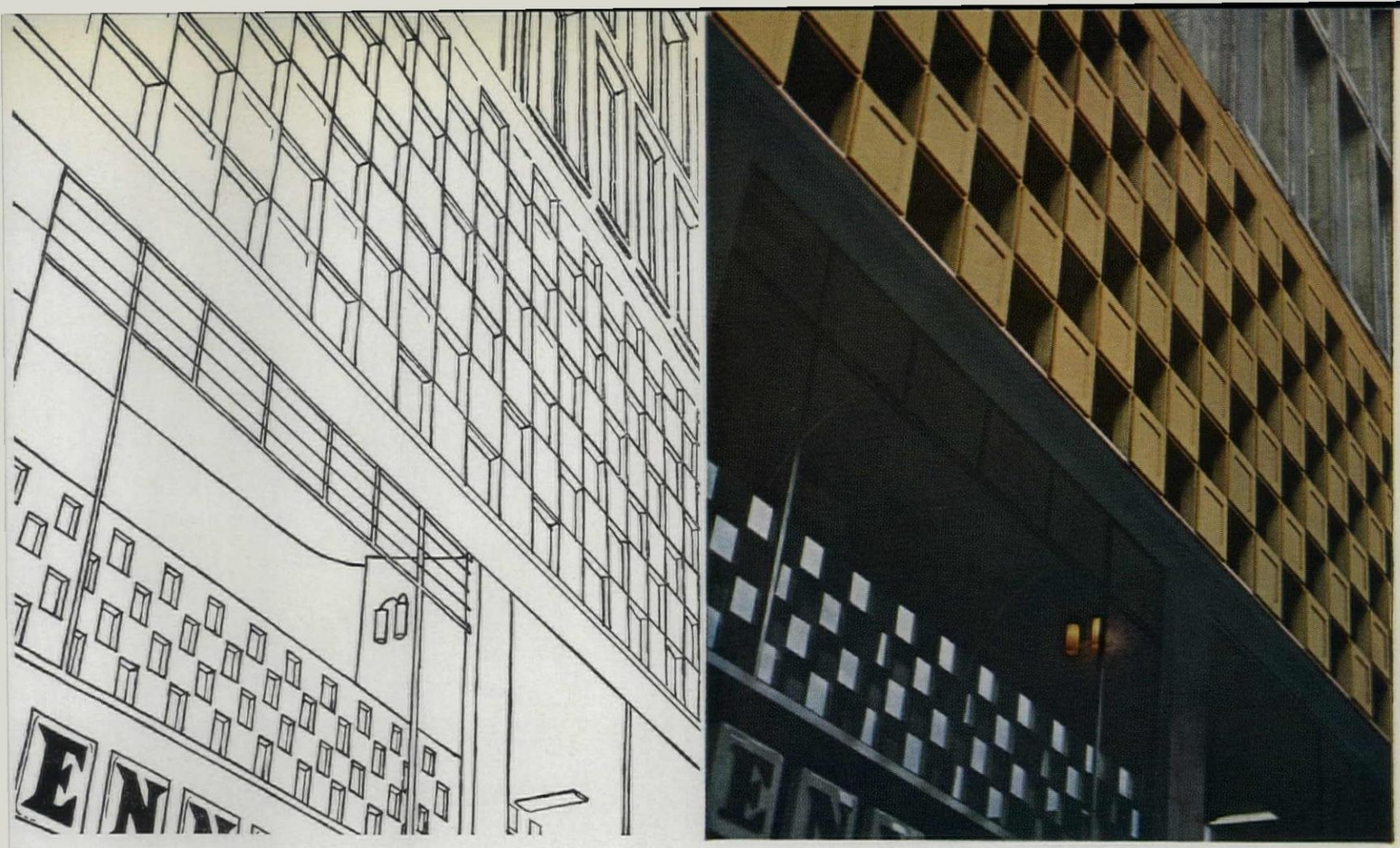
Name.....

Company.....

Address.....

.....

Please send me Arborite literature and samples AR/W



Arndale House, Bradford. Architect: Mr. P. Gray, F.R.I.B.A., M.R.A.I.C., Assoc. A.I.A. Contractors for canopy: W. & R. Leggott Ltd., Bradford. Anodising by Acorn Anodising Co. Ltd.

Colour this canopy Burnt Gold

When you do the colour will LAST, for Burnt Gold is one of the Alcanodox "built-in" colour range. Alcanodox colours, available on sheet or extrusions, are the natural colours of the oxide films produced when certain Alcan alloys are anodised by an exclusive process. They are completely free from the limitations sometimes associated with dyed anodic films • The anodic film on Alcanodox aluminium is guaranteed for ten years. Its light-fastness makes it ideal for exposed architectural applications and its high resistance to abrasion is particularly valuable on shopfronts, doors, handrails, and lifts • Alcanodox anodised sheet is now available from stock from Acorn Anodising Co. Ltd. For the full colour range and a descriptive brochure, which includes the names of authorized manufacturers who use Alcanodox*, write to your nearest Alcan sales office.

ALCAN INDUSTRIES LIMITED

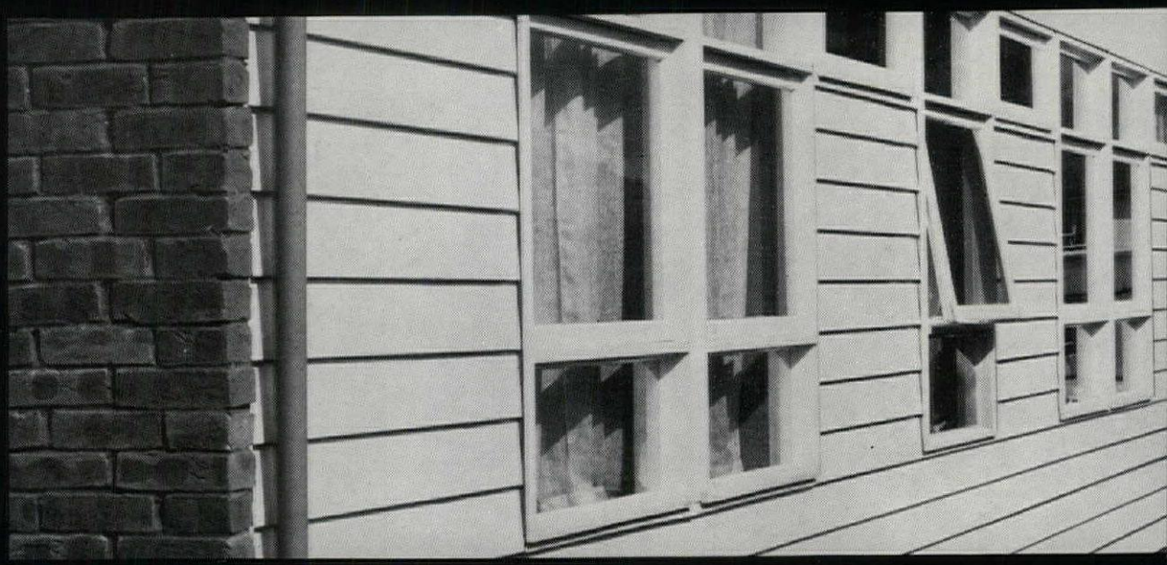
London Sales Office: 50 Eastbourne Terrace, W.2. Tel: PADdington 3281
Sales Offices also at: Birmingham, Bristol, Glasgow, Leeds, Luton, Manchester and Newcastle upon Tyne

*Alcanodox is the Registered Trade Name applied only to products made from Alcan aluminium under a Name Users Agreement and anodised by Acorn Anodising Co. Ltd. from whom details of the guarantee may be obtained.

ALCAN

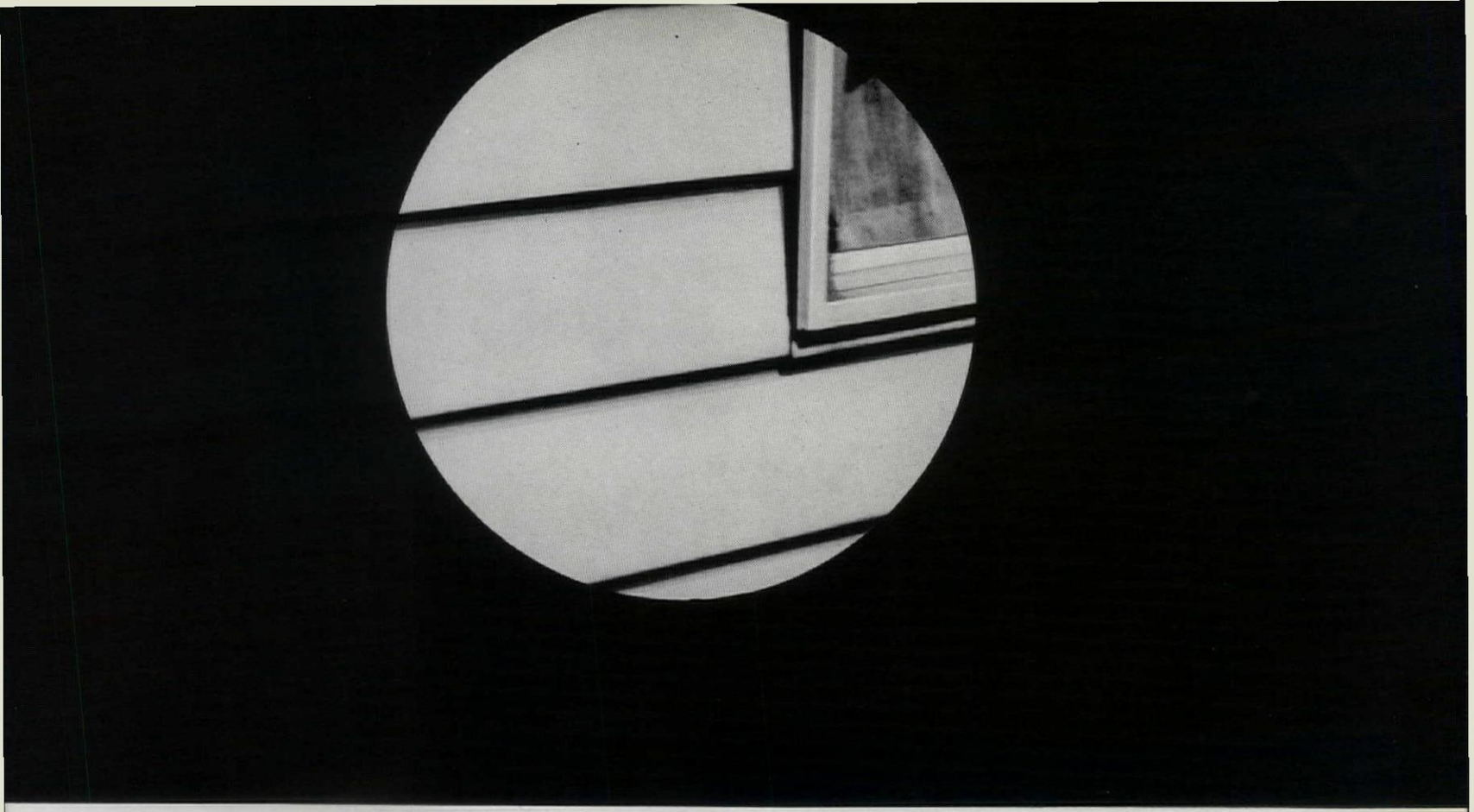
A TOWN CALLED ALCAN

is the title of the continuing series of studies on urban planning which has already introduced the Circuit Linear Town and The Scanner. It is part of a two-way traffic in ideas which we regard as an integral part of our business. We are interested in the problems facing architects and builders because we are well equipped to help in solving them. Our own team of building specialists is backed by the experience of Alcan companies all over the world and by the facilities of Aluminium Laboratories Limited, Europe's leading aluminium research organization. On this page we present one product that has grown from this traffic in ideas.



Architects' offices at Bovingdon: Derek Phillips & Associates, A.R.I.B.A.
Alcan Weatherboard is covered by patents held by Cookson Sheet Metal Developments Limited

Take a long look



es, it's weatherboard, but it's not wood. It's new. It's Alcan aluminium Weatherboard. You n't see the difference? Maybe not now, but try again in a year or two, for this new cladding om Alcan adds the lasting qualities of aluminium to the traditional appeal of weatherboard. The lines stay crisp and regular. They are precision-formed in metal, and incorporate a itented snap joint to ensure freedom from rattle. • The colour lasts for years, without re-inting. It is a stoved vinyl finish on a base of durable aluminium, which won't deteriorate even the surface is accidentally scratched. • There are no nail-heads to cause staining. All fixings are concealed. • Light and simple to erect, new Alcan Weatherboard saves labour costs and cuts down the delays and hazards of on-site painting. As a machine-made product it is ideal for factory application and is a practical proposition for industrialized building. Alcan Weatherboard is available ex-stock throughout the country in two forms: for horizontal use, 6″ or 8″ wide; for vertical use, $5\frac{1}{2}$″ or $7\frac{1}{2}$″ wide. • A full range of accessories has been developed, and aluminium fixing nails are supplied. • Like to take another look? Why not write to us for further details?

Take a close look

Alcan Industries Ltd., London Sales Office: 50 Eastbourne Terrace, W.2. Tel: PADdington 3281. Sales Offices also at Birmingham, Bristol, Glasgow, Leeds, Luton, Manchester and Newcastle upon Tyne.

Supplying Britain's architects and builders with *more* than aluminium

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That's what Arcline gives to large industrial or commercial buildings. Its tough, striking look makes a complete break with traditional methods of double-skin cladding—yet it compares with them favourably on cost. Alcan have taken the sound practical qualities of aluminium—light weight, versatility, corrosion resistance—and fashioned them to a bold, uncompromising design. • But Arcline isn't just a pretty face. It has other qualities below the surface. Its fastenings are hidden, and its double aluminium skin, enclosing polystyrene, gives impressive thermal insulation. • Arcline's handsome "built-in" finish needs no on-site painting and no maintenance. Panels can be plain, Alcancolour prepainted sheet, or finished with Alcanodox self-colour anodising. Contrasting ribs can be natural or coloured, plain or anodised. • And Arcline is swift and simple to install. • Like to know more? Why not write to us—or give us a ring?

The bold, clean cut look

Alcan Industries Ltd., London Sales Office: 50 Eastbourne Terrace, W.2. Tel: PADdington 3281. Sales Offices also at Birmingham, Bristol, Glasgow, Leeds, Luton, Manchester and Newcastle upon Tyne.
Supplying Britain's architects and builders with *more* than aluminium

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Barbour Index: Sfb Tn6

Superior sound insulation is just one good reason for specifying Rossella

A pure jute needleloom felt is bonded to a P.V.C. surface, producing a floorcovering with **Grade 1 sound insulation.**

Resistance to indentation is in the region of 1 ton per sq. in.

"Rossella" is made by Dermide — the leading British vinyl manufacturers — 72" wide.

Joints can be invisibly welded using easy-to-apply "Rossweld" acrylic vinyl solution.

"Rossella" is supplied in many modern designs in an extensive colour range.

Send for samples and literature.

Recent specifications for "Rossella" include:
Chalcots Estates, London (Flats); Peterlee Housing Estate; Edinburgh University Halls of Residence (phases 1 and 2); Bradford University; London University; Loughborough Teachers' Training College; Fazakerley Cottage Homes; Methodist Old Peoples Homes; Huddersfield Nurses Home; Chadderton Homes; Gloucester Nurses Home; Fram Offices; Theatre in the Round; B.A.C. One-eleven; V.C. 10; Trident.

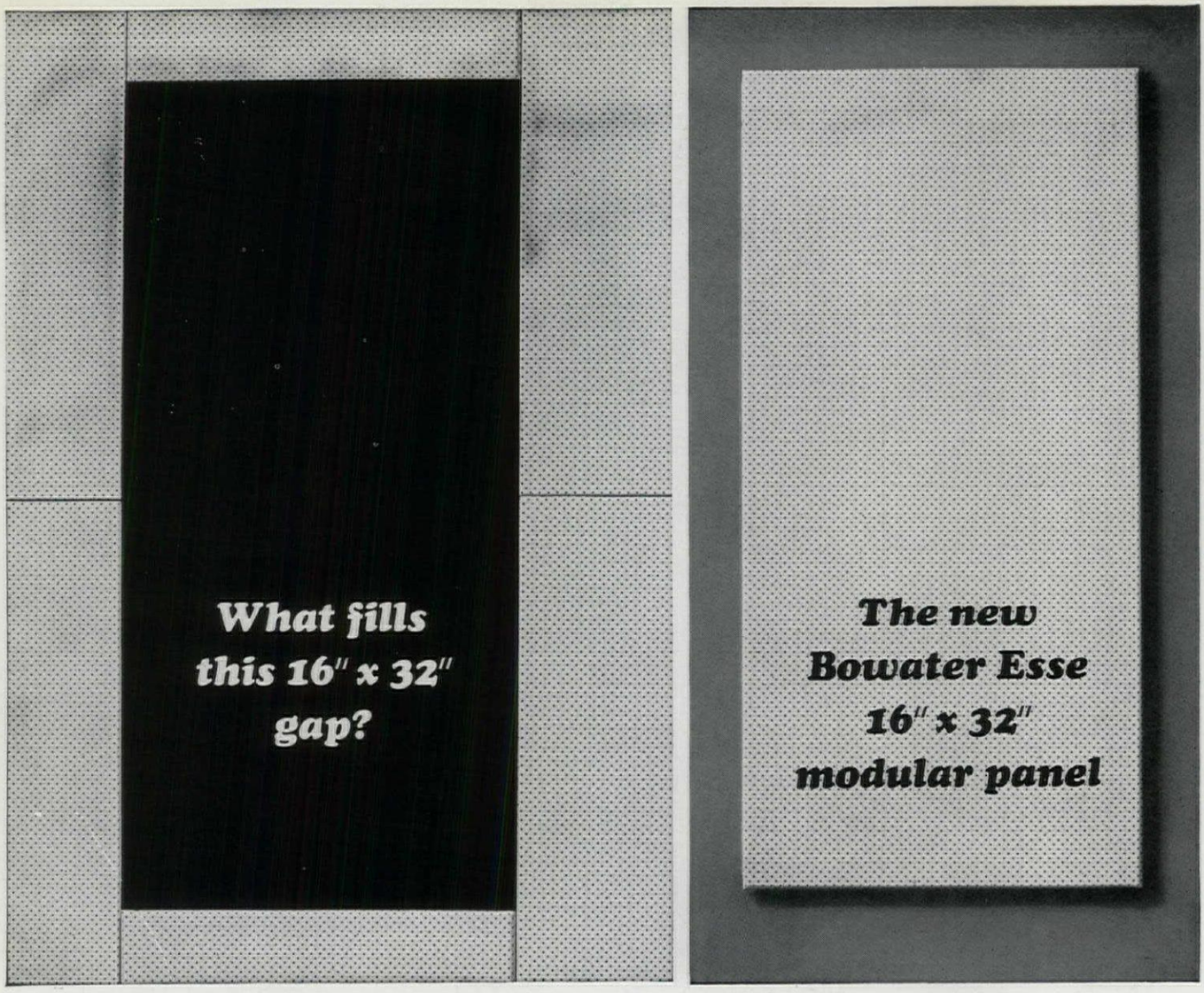
ROSSELLA

VINYL FLOORCOVERING

WITH BUILT-IN UNDERFELT

DERMIDE LIMITED
Valley Mills, Meanwood Rd., Leeds 7
Telephone 629262
London Office: Kingsland House,
124 Regent St., London W.1. Tel: Regent 2326

Banking Hall: Northern Bank Limited Belfast
Architect: Hugh McIlveen MA ARCH (Hons) DA (Edin) ARIBA
R Ferguson and S McIlveen



New Bowater Esse Metal Ceiling panels in 16" x 32" modular design

This new design is the ninth in the range. It fills an important gap – gives you more scope, makes sure that difficult ceiling areas can be covered more easily. And like all Bowater Esse Ceiling Panels, it combines a pleasing visual effect with a host of practical advantages. It slips into position easily, without screws, nuts or bolts. It is light in weight and conforms to the requirements of modular construction. There are accredited fixing contractors all over the country ready to do the fixing for you. A simple enquiry from you is all that's needed to put our technical resources, our knowledge and our experience at your service.

Information in Barbour Index

BOWATER ESSE METAL CEILINGS

To: Bowaters Sales Company Limited, Ceilings Department, 87 King's Avenue, London S.W.4 Telephone: TULse Hill 5871

I would like your representative to call ☐

I would like full technical literature on Bowater Ceilings ☐

Please place tick in appropriate square

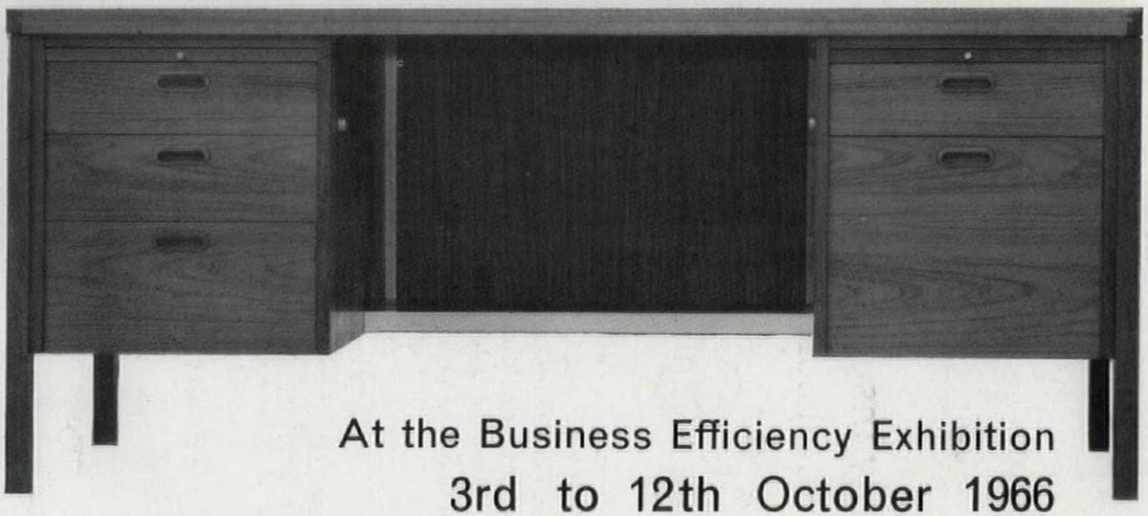
NAME.....(BLOCK CAPITALS)

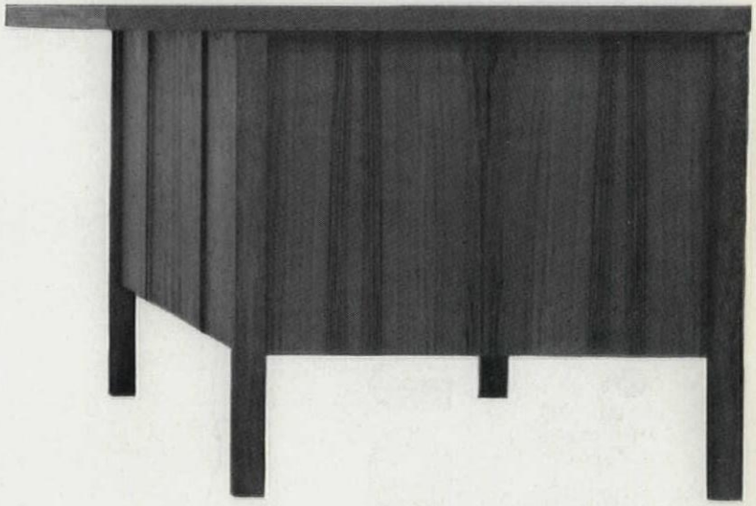
COMPANY.....

ADDRESS.....

.....TELEPHONE.....

AR.10



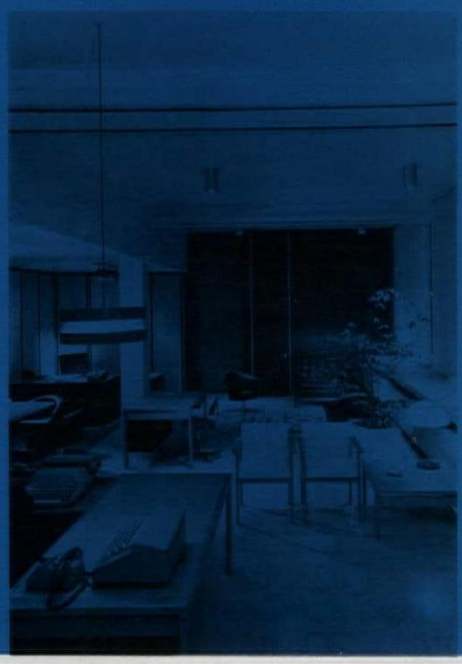


At the Business Efficiency Exhibition
3rd to 12th October 1966

LUCAS FURNITURE

Teak Range desks, designed by Herbert Berry FSIA and Christopher Cattle MSIA. Available with wood or satin chromed steel legs. Model T/DP53 is as sturdy as it looks, but easily demountable to get round tight corners. The price is £72 8s including tax. Matching Teak Range pieces include single pedestal and typists' desks, storage, bookcases and tables. Lucas have furniture for all contract needs, including four ranges of desks, plan chests, unit storage, beds and a wide range of contract chairs. On show at The Design Centre, and in our showrooms. Write for details to Lucas Furniture, Old Ford, London E3. Advance 3232. Barbour Index file SfB 82

This is a full size photo of the adjustable foot fitted to all **Nexus** desks and tables. Very useful (the foot, not the photo)



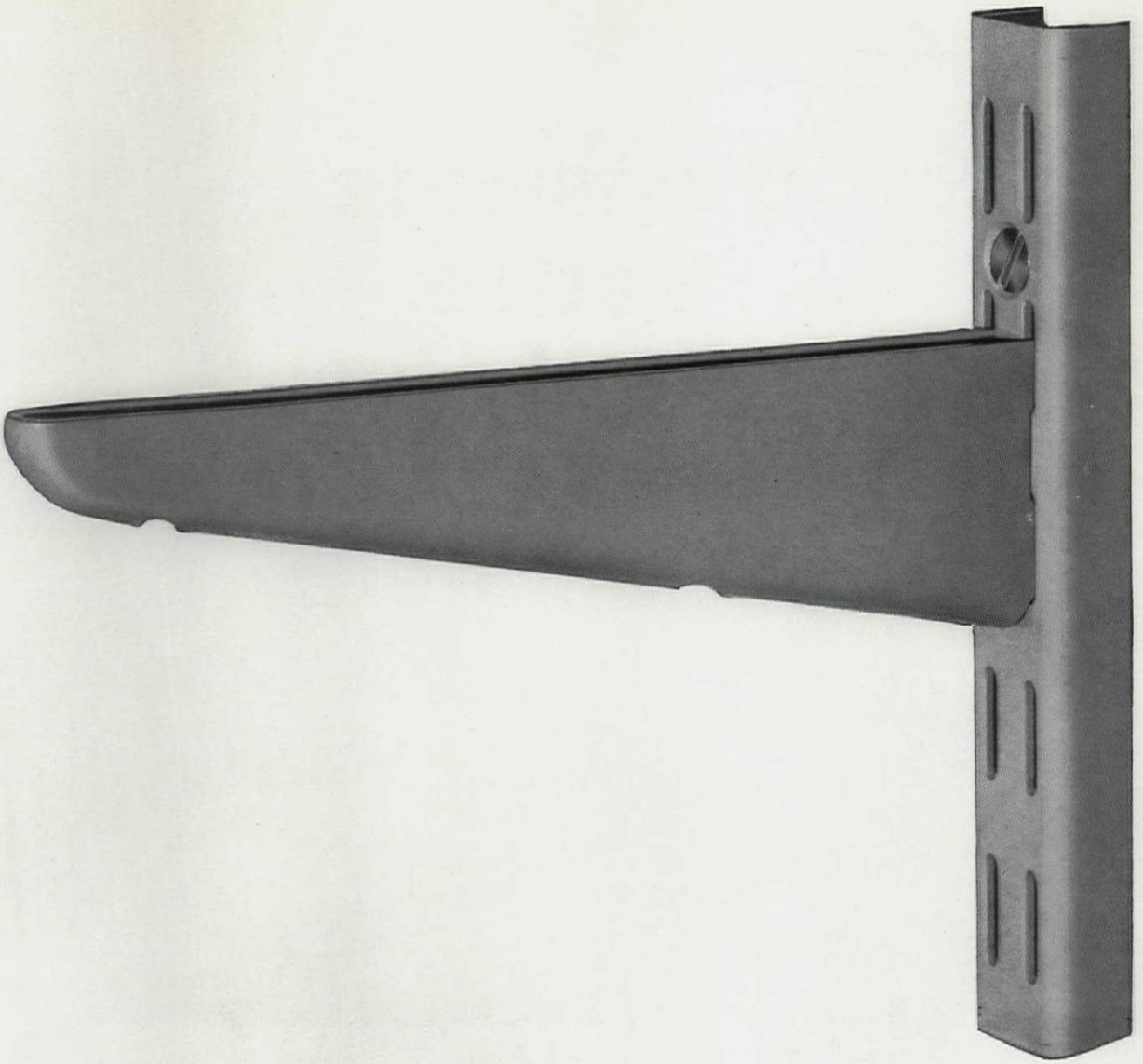
This is a mini-size photo of our new showroom showing **Nexus** desks and tables. Practically useless (the photo, not **Nexus**).

Nexus is, in fact, so practical and so useful that it's a must for your next office furnishing scheme – whether for one office or for hundreds. Genuinely interchangeable legs, tops, storage units and fitments, all in prime timber, allow the widest possible choice for individual desks and tables and for continuous desking runs. Designed by Martin Grierson MSIA FRSA and accepted for Design Index by the Council of Industrial Design, **Nexus** includes novel features not found in any other office furnishing system.

There's a lot more to it than that. Come and see the **Nexus** range for yourself at our new Central London showrooms:

Aston Cabinet Co Ltd
50-54 Charlotte St London W1
Phone Museum 7318

Head office and showroom:
Astrola Works, Roebuck Lane
West Bromwich, Staffs
Phone West Bromwich 2551



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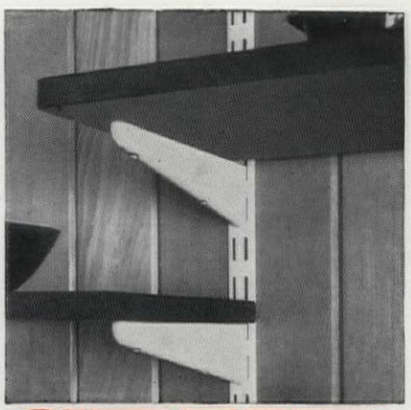

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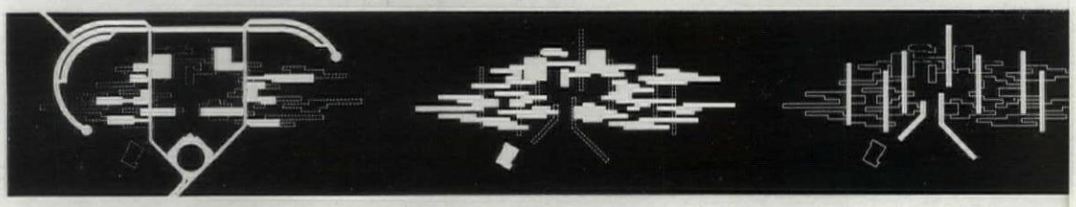

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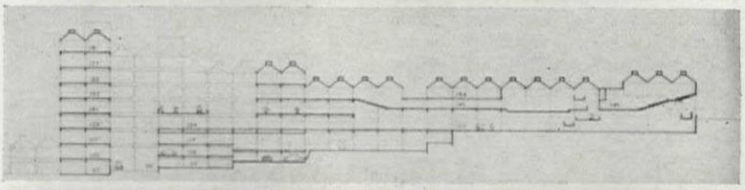
THE EXPANDING CAMPUS



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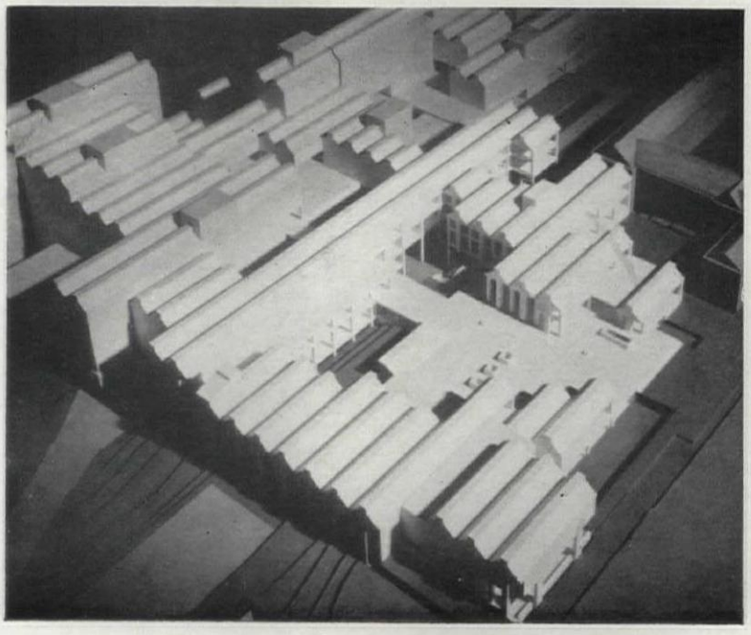

4

TORONTO

The cliffs in suburbia of the Uni
of Toronto's Scarborough (
(pages 245–252 of this issu
matched in the street grid of t
centre by Fairfield & Dubois' r
able New College, 5. The see
arbitrary form is justified firs
means of blocking out the heavy
on Spadina Avenue (west) by
bedrooms on the inner face,
backing of service rooms. The u
sity insisted on long corridor
mixing purposes' instead of stai
by snaking the bed-sitters in a
(incidentally avoiding overlook

THE ARCHITECTURAL REVIEW

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VOLUME 140 NUMBER 836
OCTOBER 1966

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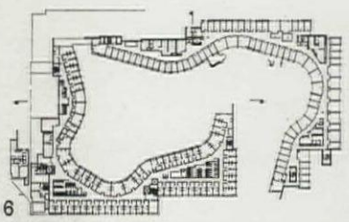
CONTENTS

INWARD-LOOKING COMMUNITY

corners), the architects have replaced institutional vistas by a fascinating variety of enclaves, lobbies and culs-de-sac (see plan, 6). Carpeting—sound absorbent as well as friendly—was disallowed by the client, who significantly has relented for the second college (women's), which will complete the quadrangle. The admirable discipline of the elevations, 7, will have to overcome the removal from the architect's control of both furnishing and landscaping. Dons' rooms have been placed in the plum sites at the raking ends, 8; but, in this consciously Oxbridge or Ivy League atmosphere, the university requires dons to be 'disciplinary as well as intellectual leaders' and in the women's college they will instead stand sentinel beside the main staircases.



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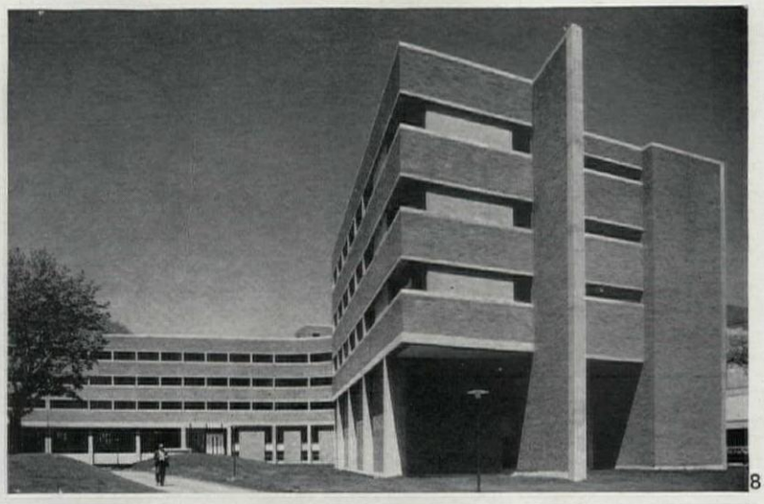

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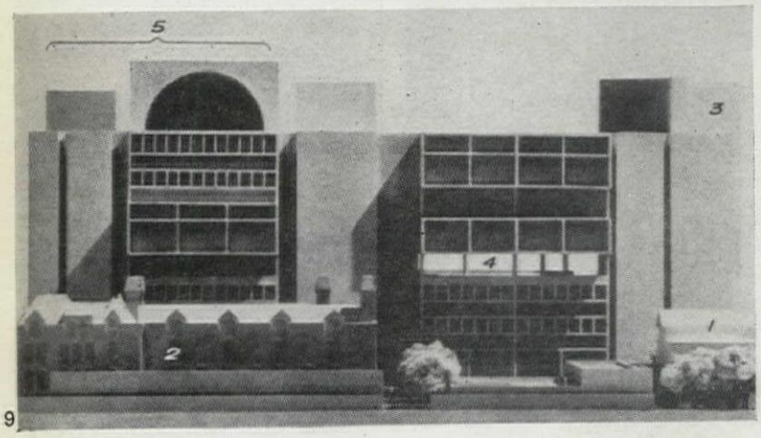
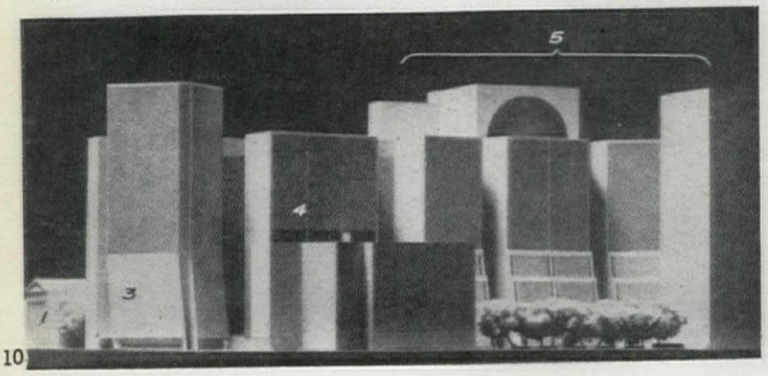


9

GIANT

The didactic reputation of Louis I. Kahn is sustained both by his appointment to a professorship at Pennsylvania and by his grandiose plans for Philadelphia College of Art, 9 and 10, at present housed in Greek by John Haviland (1 on the model) and Gothic by Frank Furness (2). There will be a towering library (3), roof gardens throughout and four instructional buildings: the first isolated (4), the other three grouped round a light-well (5) and placed on stepped trapezoid bases with a wall-less garden platform at fourth floor level—'a free area away from the bondage of use,' says Kahn.

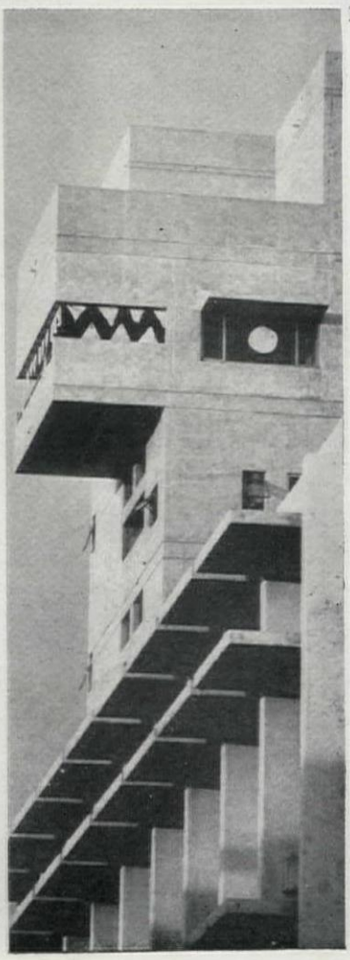


10

THREE-HEADED WURSTER

Apart from its ingenious improvisation, 11, as a symbol of student protest, Wurster Hall, the new college of environmental design at the University of California's Berkeley campus, is a straightforward late Corb derivative, 12, neither better nor worse than others of its type. It results, however, from an ambitious 'collaborative process' in 'functional design,' inspired by Wurster himself, between three assorted Bay Region architects, Vernon de Mars, Donald Olsen and Joseph Esherick (whose word was evidently more final than the others'), and a fourth, Donald Hardison, who withdrew. From the fuss the American magazines have made, it seems that collaboration is a pretty novel concept

12



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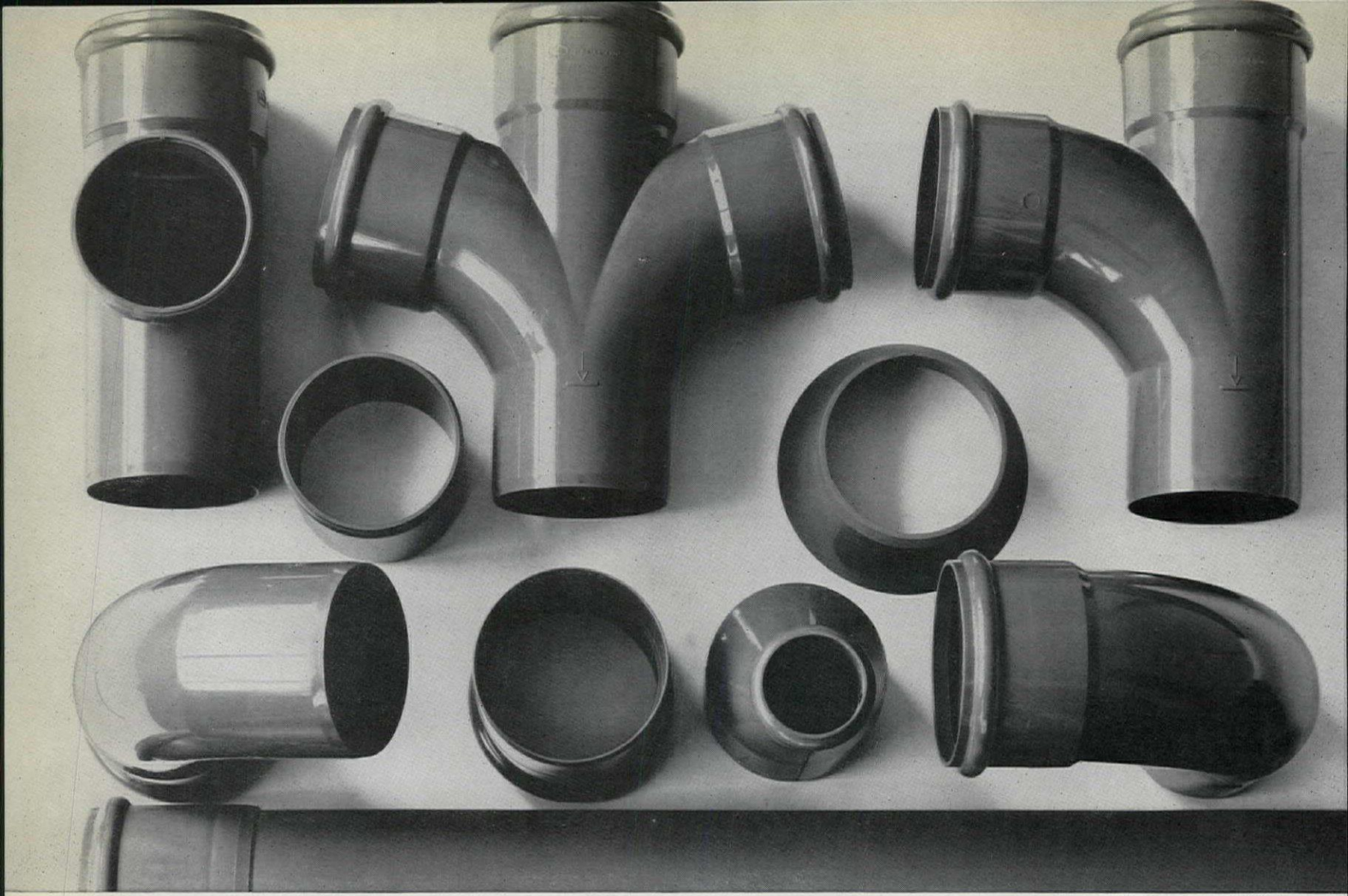

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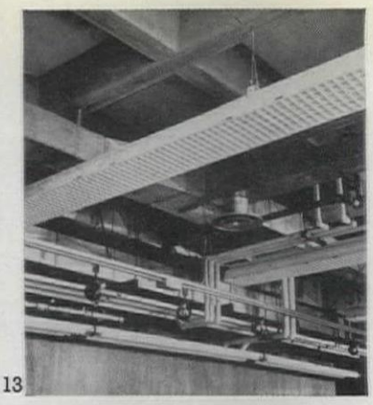


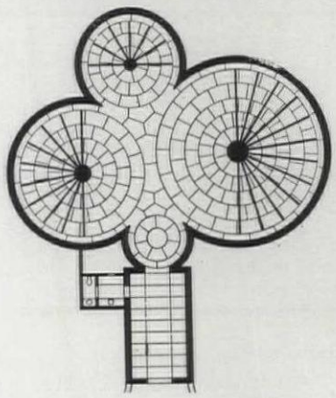
13

WURSTER HALL

for their readers; yet—to repeat—the result is the kind of straightforward, dignified and slightly dull building that the LCC and Sheffield have been producing for years. The only eccentricity is the shameless (and intentionally didactic) exposure of all service piping, 13.

KUNST BUNKERS

Philip Johnson has never forgotten his former role as a museum curator, at least in educating his guests at New Canaan. A hundred yards or so north-east of the famous Glass House, he has burrowed an underground 'kunst bunker' or 'bat-cave' to house his rapidly growing collection of Op and Pop. The pictures are hung, 14, on



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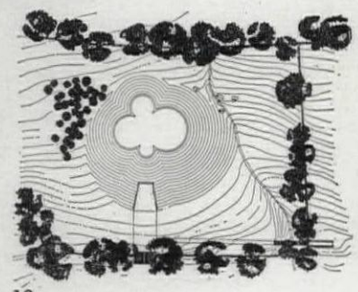

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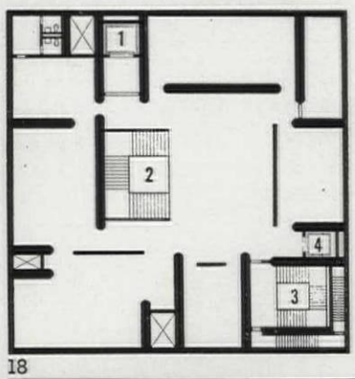
off-white carpet-covered display walls, fixed to three swivelling newel posts—like huge revolving doors, except that the leaves can be moved individually as well as in unison. There are stools, tables and a bar for use when all is stationary. On plan, 15, the three circles (the largest is 40 ft. in diameter) and a fourth containing the entrance are arranged tangentially, the external impression of a fall-out shelter being mitigated by a curb wall, 16, enclosing a hill-top sandpit.

Nearly as exclusive is Johnson's massive four-storey pavilion in South African granite, 17, forming the museum of twentieth century art presented to Bielefeld in Germany by Rudolf Oetker, the packaged pudding king. The two floors of offices are kept below ground; and although forced against his will to allow natural side and top lighting of the galleries, Johnson has provided conspicuous tracks for blinds. The plan form, 18, while giving the curator a variety of room sizes, limits his choice by making the partitions with structural concrete walls.

Even in his 'architectural sculpture' now under construction in Dallas at the site of Kennedy's assassination, 19, Johnson has avoided an out-going approach to the public. It forms a 50 ft. square enclosure, 30 ft. high, with two narrow entrances. Seventy-two hollow precast slabs, 30 in. square, are poised slightly off the ground.

It takes a rich man's villa on a Riviera cliff-top for Johnson in his present patrician mood to allow a breezy openness. In the new house at Cap Benat for Eric Boissonas (whose first Johnson house is a New Canaan neighbour of 1956), a wavy canopy on four columns, 20, shades an open platform linking three separate living wings with the sea view on the fourth side.



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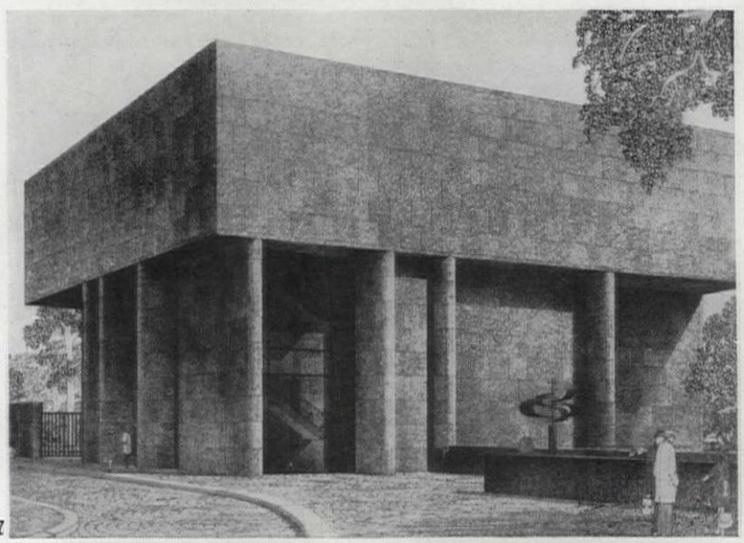
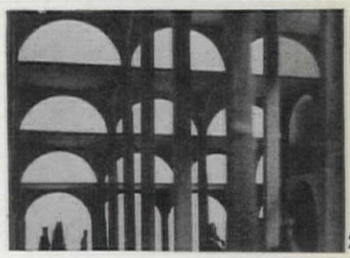


17

SWITCHED ON

The Johnsonian and sub-Johnsonian splendours of the Lincoln Centre have provoked many cities to compete. At Erie, Pennsylvania, this has led to an intelligent, even electric, project of industrial archaeology by Paul Schweikher. It has its precast Johnsonian giant order of course, 21, but



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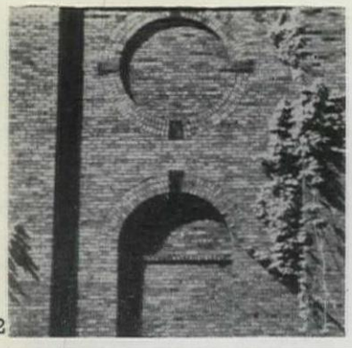
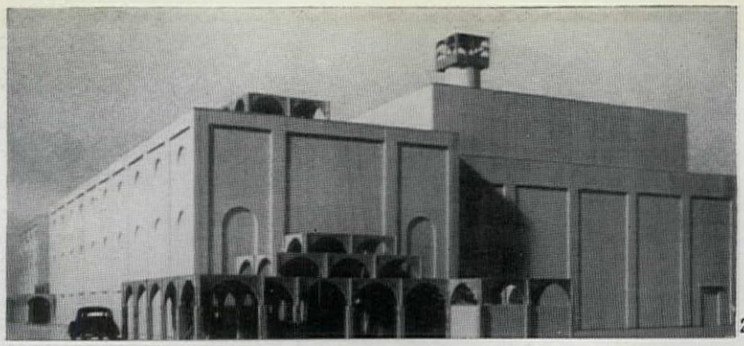


22

POWER HOUSE

only in the porches. The body of the building, housing a 1,790-seat concert hall, a 380-seat theatre-cum-recital room, an art gallery, classrooms, rehearsal rooms, offices and a restaurant, is none other than the old PENELEC power station, abandoned thirty years ago. The visual appeal of the existing bay rhythm of arch and bull's eye, 22, is marred only by a scrap of colonnade impaled on the chimney as a trade mark. 23.



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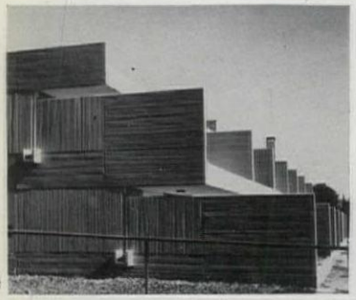
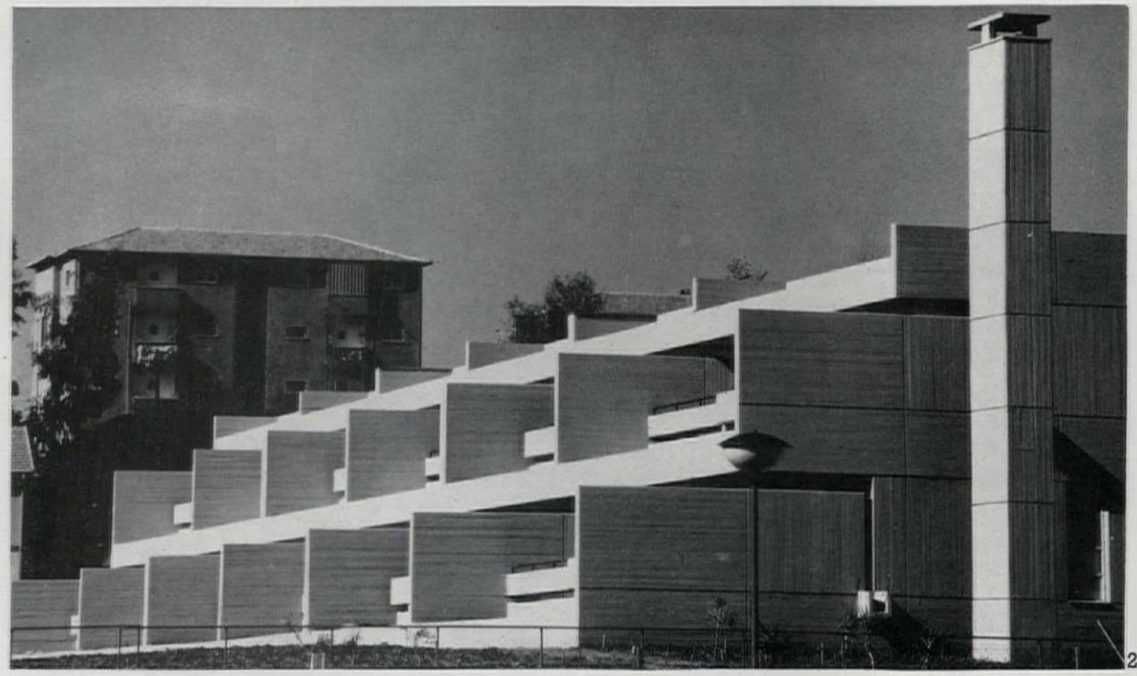


24

SCIENTISTS

Rechter and Zarhy, whose muscular structure of the Tel-Aviv Hilton was shown in last month's AR, have used the same impeccably textured concrete, 24, board-marked and painted, for the more cerebral atmosphere of the Lunenfeld-Kunin residence for visiting scientists, 25, at the Weizmann Institute, Jerusalem. Two identical east-west wings with stepped terraces, each containing eight one-bedroom and four two-bedroom flats, are joined by galleries and a central staircase descending into a shaded courtyard.



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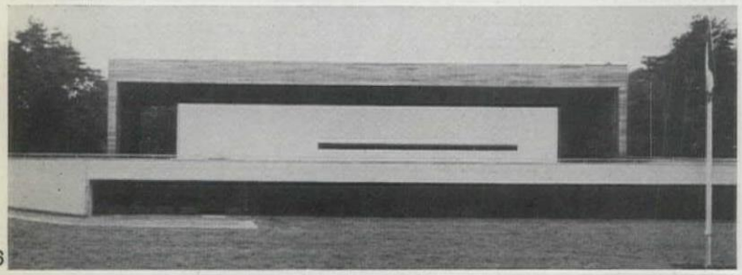

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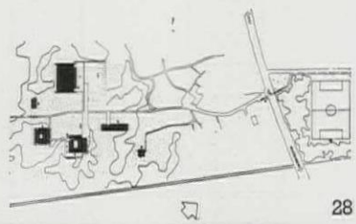
CLASSICISTS

European athletics began in an idealized nudity, and in architectural terms this tradition has been powerfully reinterpreted in the boldly *de Stijl* KNVB Sports Centre at Deist in the Netherlands, designed by the architectural office of Maaskant, van Dommelen and Kroos (with Seuf, structural engineer). The gymnasium, 26, frames in white-painted concrete and timber slatting an internal space, 27, of 165 ft. by 100 ft., with a half-sunk suite of changing rooms forming a terrace. Other pavilions of the same abstract purity of design are placed informally in the park, 28, for teaching, eating and resting.



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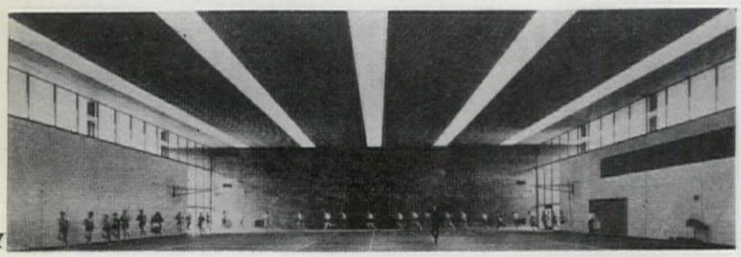

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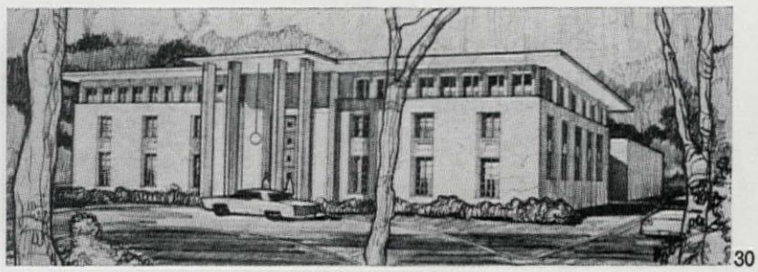
29

COLONIALISTS

It ill befits the world's first revolting colony to house its leaders in a way not seen since Britannia's palmiest days of decline. The $970,000 Governor's Mansion at Harrisburg, 29, for that well-known 'progressive Republican' Scranton has been designed by the George M. Ewing Co. in a style officially called 'Early Pennsylvania Georgian'—to which it bears about the same relation that popcorn bears to Quaker Oats. Scranton himself was in a minority of one against it. Not pastoral-comical but outright Fascist is the $750,000 Vice-Presidential Mansion for Hubert Humphrey, 30, designed by the General Services Authority for a site on upper Massachusetts Avenue, Washington. Increased war expenditure may delay the project long enough for the chairman of the House sub-committee concerned to achieve his stated aim of a 'modern' style home by a 'top architect.'



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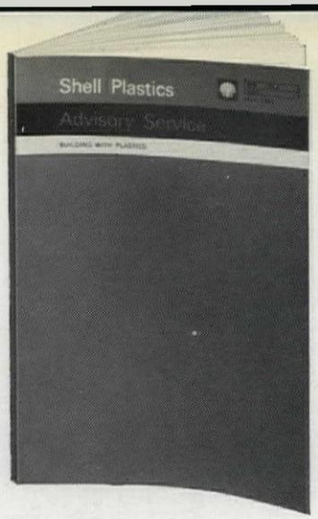

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AT 54

VIEWS AND REVIEWS

marginalia

MONUMENT OR GRAVE

Le Corbusier's renowned Villa Savoye at Poissy-sur-Seine, 1, was last in the REVIEW's news columns in April, 1959, when the local council had decided to tear down the house and build a school in the adjoining meadow. Malraux intervened, the house was 'saved,' and in 1965 it was declared a *monument historique*. However, as visitors have continued to report and as the Museum of Modern Art at New York recently illustrated in a well-timed exhibition, the villa has, in spite of benevolent intentions, been allowed to become an almost total wreck, 2. Damaged by German and American troops in the war, used thereafter as a barn by the impoverished and widowed Mme. Savoye, encircled by suburban housing and rudely awakened from its classical solitude by the erection alongside of the massive school announced in 1959 (yes, it *was* built), the villa has rapidly disintegrated, with stucco peeling, glass broken and window frames rusted. This is in spite of the State's purchase of the land it stands on after the earlier scare.

It would be wrong to raise false hopes after all this. Nevertheless, it is reliably reported that workmen have been carrying out first aid on the stucco this summer on the instructions of the Ministry of Culture; and on June 24 Malraux himself discussed with André Wogenscky, José Luis Sert and others a scheme to establish the Villa Savoye as a museum of Le Corbusier's work (an earlier private venture on these lines failed to attract sufficient financial support). Such a scheme deserves every success. State funerals butter no parsnips.

ARCHITECTURAL BIBLIOGRAPHERS

The odd things the United States can afford to possess, i.e. can find support for! Lounges on wheels and without windows, for instance, to take you from terminal to aircraft because it would be so humiliating to have to sit in a little bus.

Is not the existence of an American Association of Architectural Bibliographers equally odd? To the outsider no doubt, but we cannot fail to see that the first two volumes it has produced (University Press of Virginia, Charlottesville, vol. 1 1965, vol. 2 1966) have their uses, even if these may only be fully recognized by the historians *anno* 2000. Volume one has the bibliographies of Henry-Russell Hitchcock's writings 1927–56, of Gropius (so far only books, pamphlets and typescripts, not journals), of Philip Johnson (i.e. by and about him; continued in volume two) and of the early architecture of Virginia (also continued in volume two). In volume two are the writings of Sybil Moholy Nagy, an interesting choice, and the bibliography of Holabird and Roche, the Chicago architects of, e.g. the Marquette Building of 1894, the most elegant of all early Chicago skyscrapers. The volumes are about 100 pages each and nicely printed and bound. N.P.

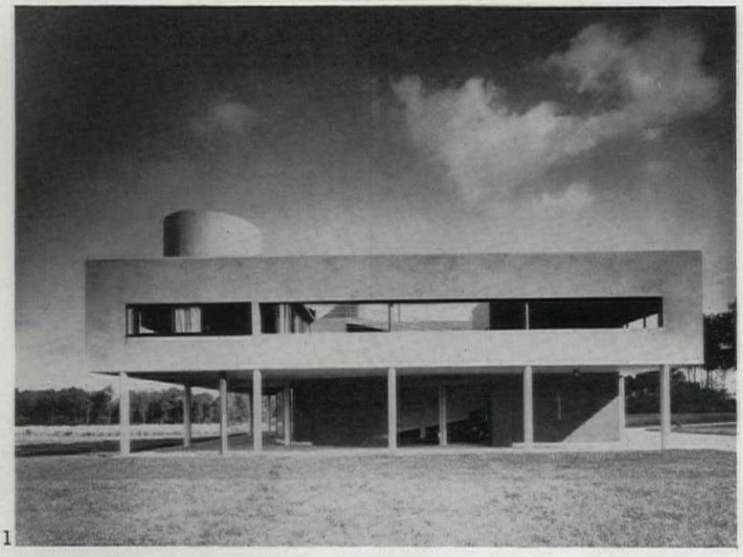
MARBLE HILL

Within the expanded boundaries of Greater London, many former country houses remain as oases of civilized landscape within the suburbs. The park at Marble Hill, Twickenham, was laid out by George II's gardener, Bridgman, as the setting for the home of the king's mistress, the Countess of Suffolk. The chaste Ionic house (1724–29) was designed by the Earl of Pembroke and Roger Morris, who together had created the Palladian bridge at Wilton, and was later lived in by George IV's Mrs. Fitzherbert. It was acquired by the London County Council as long ago as 1902 to prevent speculative development from spoiling the view from Richmond Hill; but, while the park was from the start a popular part of the public riverside, the house decayed without any definite use.

The council (now the GLC) has at last restored Marble Hill impeccably at a cost of nearly £50,000 to provide a centre for lectures, seminars and meetings of cultural societies. Administered by the curator of Kenwood, it will be open to the public every afternoon throughout the year except Monday. Loans of appropriate furniture include examples released from the Victoria and Albert Museum's large undisplayed collection, which could well be further dispersed in the suburbs in this way. Besides a guidebook (1s. 3d.), a catalogue (2s. 6d.) is available from the re-opening exhibition on 'The Countess of Suffolk and her Friends' (Pope, Swift, Gay).

NO COMPROMISE

The planning committee of Glasgow Corporation has shown unexpected firmness in opposing a compromise agreed by its own sub-committee in the important case of Park Church, described in the AR by James Macaulay (June, 1965) and mentioned by 'Alex Thomson' in his letter in last month's issue. The Kirk's proposal, it will be recalled, was to replace J. T. Rochead's Late Gothic pile of 1858 with an eleven-storey office slab designed by Derek Stephenson and Partners. Various proposals for alternative uses were put forward, including a bid from the Electricity Board to preserve the entire exterior of the church by housing a sub-station within it—as has successfully been done in Edinburgh. The Kirk however, was determined to extract maximum development value from the site and the corporation evidently had not wished to make itself liable to pay compensation for 'loss of development potential' (as happened in the Edinburgh Tron Church case). So the following compromise, the fourth scheme put forward by Stephenson, was provisionally agreed: the tower would be kept for its importance in the Park district skyline while the body of the church would be replaced by a less lofty office block (six storeys) consisting of a series of interlocking polygons. That would be quite high enough in an area otherwise residential in scale and particular sensitivity would be needed in relating the new bulk to that of Charles Wilson's Italianate Trinity College next door. However, the planning convener, Councillor McCutcheon, has since said the corporation should acquire the church intact, adding 'Surely a great city like Glasgow could find a civic use for this fine building'.



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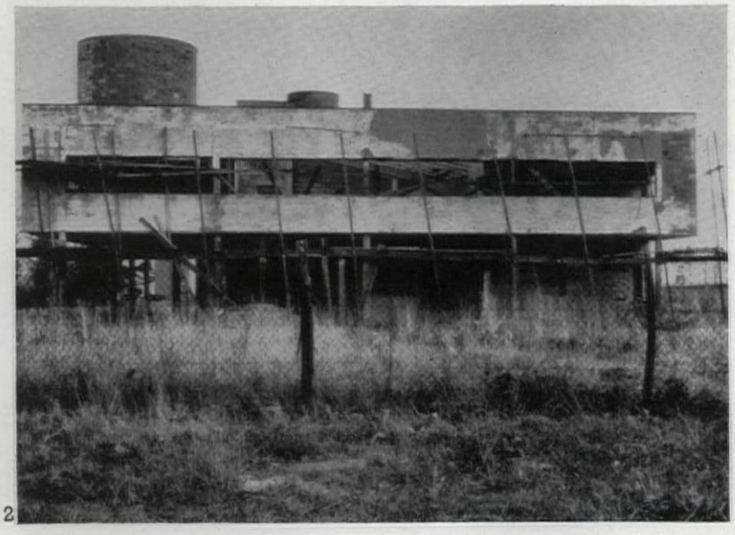

2

1, *the Villa Savoye as it was when built.* 2, *as it is now. See first note.*

HISTORICAL RESEARCH REGISTER

The Society of Architectural Historians proposes to set up a Research Register of work on architectural history either unpublished or in preparation, the aim of which will be to avoid duplication in any particular field of study and to make information already collected available to scholars undertaking new research projects.

The Register will be compiled in three categories:

1. Unpublished theses and other unpublished works; e.g. books, papers given to learned societies, etc.
2. Work in progress on theses, books and major articles.
3. Information collected with a view to publication at a later date.

It is hoped that the list of categories 1 and 2 will be published annually in *Architectural History*. Category 3 will be available for consultation by anyone wanting information on work in progress on any particular topic, but will be constantly under review to ensure that only *bona fide* projects are included. The Registrars will be glad to hear from any scholars whose work falls into any of the above categories. Until it is known how much work is entailed it is proposed to limit the scope of the Register to work undertaken in Great Britain and Ireland, but there is no geographical restriction on the subject matter of research projects.

Registrars of Research: Dr. and Mrs. Andor Gomme, Dept. of English, The University, Keele, Staffs.

ART IN SKELMERSDALE

To appoint an artist to the staff of a new town development corporation is a new and intelligent policy. Ian Henderson, who was recently appointed to this position at Skelmersdale (and is also Gulbenkian Fellow in painting at the University of Keele), has just had an exhibition in Skelmersdale which clearly shows the sort of contribution an artist with an eye for townscape can make.

Reproduced herewith are two of his designs already executed at Skelmersdale: 3, arrangement of paving slabs in chlorinated rubber paint in a courtyard—the colours are orange, red and white; 4, direction sign pointing the

3

4

3, *decorative paving at Skelmersdale.* 4, *direction sign. Both are by Ian Henderson.*

way to a clinic and surgery. It is in black emulsion paint on the concrete fencing alongside the new town's main pedestrian way.

correspondence

RUNCORN NEW TOWN

To the Editors.

SIRS: I have been intrigued by the illustrations of Runcorn New Town in your July issue. I would question the validity of the encircling road around the town. There are sixteen connections on to this road of a secondary nature and five connections of a primary nature. These junctions are so many and are likely to be costly; moreover, they are terribly close together.

The lateral connection to the Central Area I also find curious, in that the Central Area can very well be the largest workplace in the town and certainly the largest traffic generator, and it is difficult to see how the skew nature of the Central Area can economically compose, in traffic terms, with the limited nature of the lateral connection.

I am rather suspicious also of the multilevel solution of the Central Area in that this is a costly proposal and needs to be justified by cost exercises and other feasibility studies. It may be that traffic flows, as predicted for the plan, will prove me wrong, but the abiding impression is that the published proposals are an architectural exercise and not a planning solution, and that it requires radical reorganization to become acceptable. In my view a grid-iron solution with alternative routes and limited access (after the Dawley Expansion Studies) or even with one-way flows would carry more conviction.

Is there not a salutary warning here against architects imposing a visual solution on a programme of accommodation and should we not encourage planning as an independent discipline, and indeed broaden it further to include the economics of planning on a more sophisticated basis (c.f. the Victoria Tube Report, the M.I. Studies, etc.)?

Yours, etc.,

A. BEDFORD SMITH

Feckenham, Worcs.

GREGG PRESS

To the Editors.

SIRS: In your otherwise most encouraging recent notice of the work of Gregg Press, there are two points which call for clarification. First, Gregg Press is not 'American in origin, but based equally between the USA and England.' Gregg Press Limited is, and has always been, an entirely British company with which, despite the similarity of name, Gregg Press Incorporated of New Jersey has no connection other than as holder of the sales franchise for Gregg Press Limited publications in the USA and other specified territories.

I also feel bound to emphasize that our limited edition of Repton's Norwich Cathedral drawings and the forthcoming RIBA Drawings Collection catalogue are original publications, a fact which may possibly have escaped your readers' notice since both these titles appear under your heading 'Reprints.'

Yours sincerely,

J. K. SANSOM (Editor)

Farnborough, Hants.

book reviews

BERKSHIRE BARN

THE BARNS OF THE ABBEY OF BEAULIEU AT ITS GRANGES OF GREAT COXWELL AND BEAULIEU ST. LEONARDS. *By Walter Horn and Ernest Born. Berkeley and Los Angeles: University of California Press,* 1965. $10 *or* 80*s.*

William Morris proclaimed the barn at Great Coxwell, Berks, to be the finest piece of architecture in England. Anyone who dares such a statement not only claims that the building touches perfection in its category but that that category is quintessentially architectural. The implied major premise is a 'committed' one. A less radical but equally sensitive person might have said the same of Coleshill House, which until recently was a neighbour to the barn. There are those who would deny that a medieval barn was architecture at all, but rather an *ad lib* aggregation of bays, so long, in such cases as Abbotsbury, that a single *coup d'oeil* was impossible. But, given Morris's canons of functionalism and craftsmanship, Great Coxwell, with its satisfying unity of seven bays only and a dominating porch, with its untroubled marriage of masonry and carpentry, with its phrases of supra-vernacular grammar, demonstrates that a barn can be architecture in every sense. With it we can accept or ignore the problems of agricultural archaeology, as with a great church we accept or ignore those of liturgiology.

Such a building amply deserves this monograph. It shares it with the ruined barn at Beaulieu St. Leonards, which was evidently of much the same simple and impressive design, but on a gigantic scale. Neither had been properly described before. In fact, apart from one or two specialized aspects, the serious study of the medieval barns of England is only now belatedly beginning. By way of comparison the authors publish, for the first time, one or two of the few praiseworthy but inadequate pieces of recording that do a little to relieve the great losses of the last century and a half, but it is hoped that one fruit of this book will be to stimulate a thorough comparative study of the whole series of noble stone barns, mostly the work of rich monastic houses, distributed over the middle-west of England.

From his base in California Professor Horn has made the whole of medieval European aisle-post construction his province. Hitherto his widely-ranging studies have appeared in learned

After several changes of architect and changes of programme (including an increase in the number of beds from 850 *to* 1,250*) the design, by Yorke, Rosenberg and Mardall, for the new St. Thomas's Hospital, London, on the river bank opposite the Houses of Parliament, has been approved. It is to be built in stages, beginning in* 1968. *The drawing,* 5, *shows the completed hospital including the final stage which will begin in* 1974 *or* 1975. *The walling material is white glazed brick. Points that have been criticized about the layout include the symmetrical arrangement of the ward block (the square block on the left) and the medical school about an axis that has no particular significance on this site, and the massive bulk of these two blocks, which are* 160 *ft. high, in relation to the Palace of Westminster and County Hall—a bulk imposed on the architects by the quantity of accommodation they were asked to provide.*

5

Greater London Council - National Recreation Centre, Crystal Palace.

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journals. Our respect for his achievements and encouragement is not lessened by noticing that, while he avoids the particularism and provincialism of much research into 'vernacular architecture' over here, he is as ready as we are to generalize too easily and to take sides too enthusiastically. Structural similarities between a barn in England and one in Belgium do not prove a 'Cistercian carpentry tradition,' and I would be more guarded than Professor Horn about accepting Morris's dating of Great Coxwell before 1250. The corbels would allow it, but other details, if primary, would argue for a slightly later date. Nevertheless, one must be grateful that serious discussion of a too neglected subject is directed to a new public.

Professor Horn's co-author, Mr. Born, is responsible for the painstaking production of the book as well as for all the drawings. Mathematically, the survey is unexceptionable, but Mr. Born is not an antiquary by instinct or training. His analysis of joints and assemblage is incomplete, his representation of texture is unconvincing and his Osbert Lancaster-like figures rather absurd. In fact, everything in the volume that stems from the school of architecture has an affectation of the 1930's and would have seemed less dated had it been nearer in spirit to William Morris. STUART EBORALL RIGOLD

FARM FORM

FARM BUILDINGS. *Volume 1. By John B. Weller, Crosby Lockwood.* 55*s.*

Good reference books on building construction are rare, and there are even fewer that attempt to describe the techniques suited to the construction of buildings for agriculture. In fact until the publication of this book no such comprehensive study had been made since the last century, when methods of farming were very different. The volume is the first of a series, the second volume being already in preparation. It is concisely written, well ordered and adequately illustrated with photographs, drawings and diagrams. It is an essential reference book for all those concerned with the construction and conversion of farm buildings.

Volume 1 has three parts. The first is called The Function of Farm Buildings, and includes sections on relevant legislation, finance and grant aid, and on the pitifully inadequate building research facilities available to farmers at the present time. The second part is called Mechanical Handling of Materials and the information included here is important because the increasing use of mechanical equipment and automation is having profound effects on the economics, magnitude and physical form of holdings and the buildings they need. In the third part particular building types are described in detail under three headings: Storage Buildings, Processing Buildings and Production Buildings. There is an appendix called Livestock Buildings as an Investment.

The schedule of contents for the second volume shows that it will be devoted to detailed studies of typical building elements. It will be divided into four parts: Structure above Ground Floors, Structure below Ground Floors, Services, and Materials and Fittings. While applauding the comprehensiveness of Mr. Weller's achievement and intentions it is to be hoped that he may find some sensible place in which he can discuss the difficult question of the appearance of farm buildings realistically. The functions and the finance of these buildings are complex but it must not be forgotten that their forms predominate in the rural landscape which everybody experiences and hopes to enjoy from time to time. JOHN VOELCKER

BUILDING PAPERS

INDUSTRIALIZZAZIONE DELL'EDILIZIA. *Dedalo Libri,* 1965. *Italian lire* 16,000.

Edited by the Institute of Architecture of the Faculty of Engineering, University of Bari, this is a collection of the papers submitted to a course organized at the university during the academic year 1963–64, with the participation of numerous Italian experts plus a handful of international vedettes (Konrad Wachsmann, Gérard Blachère, Milan Zlokovic). Like most exercises of this kind, its presentation is regrettably unbalanced. The general title is used to cover a wide range of subjects only remotely related to it, including a long essay by Marcello Grisotti on the history of the modern movement from the first industrial revolution onwards and an impressive paper (embellished by a bibliography of some 200 titles) reviewing the theory of modular co-ordination from Plato down to its most recent applications in Montenegro. One of the most interesting (if not original) contributions is a translation of extracts from the French equivalent to the 'Principles of Modern Building,' edited by the Paris Centre Scientifique et Technique du Bâtiment. This particular paper is concerned with the criteria for judging the quality of building materials, components and functional elements, with some reference to the problems of non-conventional systems of construction.

The variety of subjects covered is so great that it is difficult for somebody not having taken part in the debate to express a judgment on the validity of the conclusions of the course. But the most original contribution is, no doubt, that of Professor Ciribini, the Director of the Centro per la Ricerca Applicata sui Problemi della Edilizia Residenziale, and a leading authority on the theoretical application of industrialization processes to building. His ideas have already been presented in a number of publications, only a few of which have, regrettably, been translated into English. The main merit of Professor Ciribini's approach is his placing of the problem of the industrialization of building in its proper perspective and characterizing the phases or levels of mechanization in terms of general categories, without getting involved in the detailed description of individual technologies. Professor Ciribini is essentially concerned with the problem of what he defines as *comprehensive design* of which he identifies the essential stages in relation to the building process.

What is missing from this apparently comprehensive range of preoccupations is not so much a theoretical view of some of the problems (in which our Italian colleagues excel) or a detailed description of individual techniques (which a book of this kind could never cover adequately), but rather something in between, which would enable the reader to understand which of the particular conditions prevailing in Italy at the moment (economic, social, technological and, why not, political) are related, or would be relevant, to a given trend of evolution of building activities towards those more industrialized forms so adequately described by some of the participants.

It is interesting to note how certain forms of factory production of large building components or elements (which in fact is what most people mean when they talk about industrialization of building) have spread in the last few years from the two or three West European countries which had taken the lead in the early 'fifties. It would be even more interesting to know why this is happening, to what extent the changes that are taking place are in the right direction and if they represent a permanent feature or a passing fashion. It is apparent from the above that the reviewer is critically inclined to the latter interpretation.

DUCCIO A. TURIN

QUEST FOR IDENTITY

TORONTO—NO MEAN CITY. *By Eric Arthur. University of Toronto Press.* $15 *(de luxe edition* $50*).*

Confronted by many recent, large-scale demonstrations of characterless uniformity on the one hand and by rootless, artificial novelties on the other, contemporary designers of buildings can afford to turn a more understanding eye toward the ecological implications of local architectural environment. The topological quest involves a search for values that are antithetic to those of the antiquarian or the eclectic, and certainly more subtle.

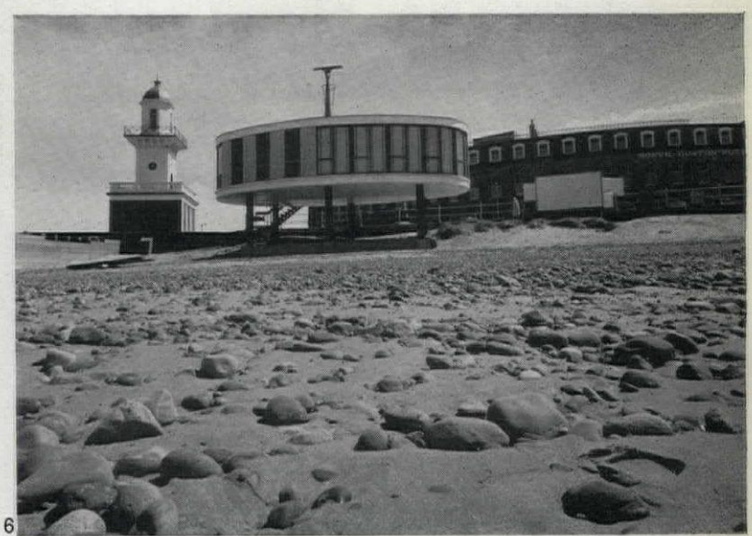
It is natural that this concern with place is somewhat self-conscious in the New World where whole nations are 'immigrants,' and society is so largely transient. Europeans may find it strange, indeed, to see such preoccupation with apparent nineteenth-century 'leftovers'; but in many great cities of North America architectural history has been compressed by the rate of technological and social change. Suddenly, almost overnight, yesterday's familiar landmark, perhaps less than a hundred years old, takes on an aura of irreplaceability and new respect. Lacking the Old World luxury of time for a leisurely historical shakedown of their architectural heritage, many cities are rapidly destroying the remnants of whatever character they may once have had. Thus, a preliminary overview becomes urgent.

Toronto—No Mean City adds an ambitious volume to recent literature exploring the identity of a sprawling metropolis to its original site and to its heritage of nineteenth-century building. A native antipodean, Professor Arthur acquired his pride as a citizen by years of involvement as architect and teacher, not by a technicality as did St. Paul who inspired the provocative sub-title. Toronto's quest for a symbol has been well advertised since 1957 when it launched the international competition for what the Mayor hoped would be 'the finest city hall in the world.' It should be no surprise to recall that author Eric Arthur, of Toronto University's School of Architecture, served as the chairman of this competition, which drew 520 entries from 44 countries.

He gives us a documented survey of the architectural and social history of Toronto from 1615, when the 'Carrying Place' was merely a well-defined French-Indian portage, to its establishment as the British town of York in 1793. The restoration of its Indian name was not approved until 1834, when the town had grown to nearly ten thousand inhabitants and was described (in 1836) by an unhappy Londoner as 'most strangely mean and melancholy.' Taunted by this low opinion, Professor Arthur records architectural accomplishments to the 'threshold of the twentieth century,' closing his account with a concise epilogue, which brings the reader up to 1964. Two generous appendices give us a brief history of the architectural profession, and a catalogue showing the origin of street names. The scholarly notes, bibliography and index are most useful and should encourage others to accept Professor Arthur's invitation to carry on.

BUFORD PICKENS

Remembering the mess that such things as radar and telecommunications often make of the landscape we can be grateful for the neat design of this radar station on the beach at Fleetwood, 6*: a modern equivalent of the Functional Tradition exemplified in the lighthouse seen beyond it. The radar building is by Roger Booth, Lancashire County Architect.*



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Slim circular pilotis *of a Gatwick Airport kind, impeccably shuttered with the grain of the boarding left exposed, are ingredients which every style-fancier can confidently attribute to post-1950 Brutalism, influenced by the late works of Le Corbusier. But style is not everything and the 'last form-giver' may not always have been first. The maturity of the weathering in these concrete columns photographed by Edwin Johnston gives a clue to an astonishingly early date and an equally astonishing place—for details, see the article 'Pre-Corb' on pages* 291-295.

Elisabeth Beazley

THE INDEFATIGABLE IMPROVER*

It was not until the second half of the eighteenth century that the unproductive, dangerous Welsh mountains were found to be sublimely picturesque. From around 1750 the trickle of pioneering romantics gradually grew to a seasonal torrent of tourists. But it was a fashion that subsided quickly with the first autumn gust. No-one could be expected to tolerate the interior of the Principality after early September; if he did there might be no escape, for the 'roads' would soon become impassable. All agreed that the heart of Wales, the great mountain region running down from Snowdonia, was marvellously picturesque in direct proportion to its desperate material poverty. The peasants, whom the tourists found to be civil and obliging as guides, lived precariously from one harvest to the next. One poor season meant hunger; two, starvation.

Buried in this tremendous mass of mountain and poverty lay unsuspected wealth: slate. Grazing its extensive if thinly covered hill-sides were hundreds of thousands of Welsh sheep. Much of their wool was exported raw to the new English manufactories, causing chagrin to the few who could see the possibilities of the industrial methods which might be developed in Wales as in England. Woollen mills (other than fulling mills) powered by water were still almost unknown in 1800; weaving and spinning was a home industry, but the cosy picture which this evokes meant little to those who could not even afford to buy the raw wool.

Materially, two things were vital. Capital to be invested in the potential industries of the remote parts of Wales, and a system of communications and transport which would allow products to be exported. But even had these been available the almost universal apathy that prevailed would be the worst obstacle to be overcome. The landlords were chiefly absentee; the middle classes minute; it was a peasant community and the peasants were too preoccupied with survival to have the surplus energy to better their lot.

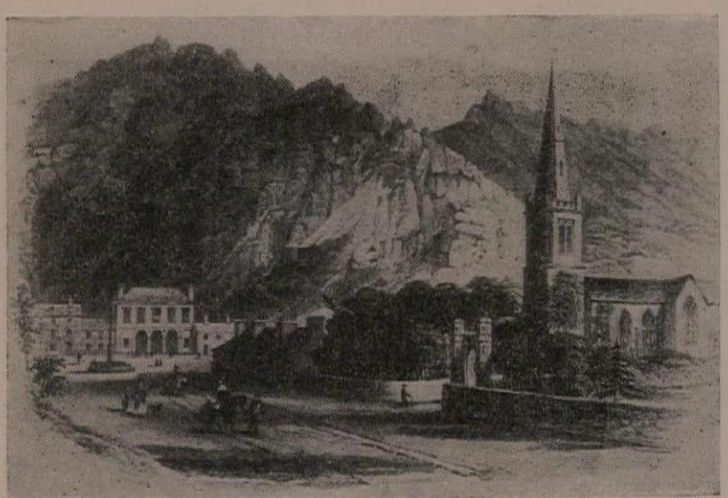
It was utterly different from the situation in England at the turn of the century where, despite the continuation of the war and the parlous financial state of the country, the topography was daily altered for better or worse. The enclosure movement was nearing its culmination; new roads, canals and harbours were planned; industries sprang up as did new resorts. Brighton would soon be taking over from Bath as the first place of fashion; the seaside had come into its own and the railway age was just round the corner. The possibilities were becoming too great and the work too exacting for the old eighteenth-century pattern where so much was achieved by a amateur gentleman and his land agent, considering their estates in the round as a microcosm as the great world beyond. The new schemes required professionals or single-minded men—idealists working within the extreme limits of their chosen line.

Against this background of rising specialism coupled with the general apathy towards any improvement of condition in the interior of Wales, William Madocks (1773–1828), a surprising character by any count, is

* The extraordinary man who is the subject of this article is also the subject of a book by Miss Beazley to be published next month: *Madocks and the Wonder of Wales* (Faber & Faber, 36s.).

the more astonishing. Tradition, spiced with legend, describes him as a wealthy landowner with philanthropic leanings who, with professional assistance, built an immense embankment across an estuary in North Wales to keep out the sea; later he was thought to have fled the country to avoid his creditors. The facts are different and much more fascinating; the embankment was only part of a far wider plan which included both the whole region and the communications between Dublin and London; it was achieved by an amateur (in the true sense of the word) chronically in debt. Since Madocks was a prolific letter writer many of his ideas and frustrations come across in the epistles which he dashed off to his loyal and long-suffering Welsh land-agent, several hundred of which have survived.

Madocks was the third son of one of the most eminent and rich King's Counsel in England and grew up in fashionable, extravagant English society. The family were North Wales landed gentry of several hundred years standing so, naturally enough, the estates, along with most of his father's fortune, were entailed in the eldest son. William, by the standards of his colleagues, inherited little when his father died, and it was assumed that he would also lead a successful career at the Bar. He was intelligent, amusing and sociable. But this was only one side of his personality. His sentiments were often out of tune with the confident young landed gentry whose company he so much enjoyed. He stood for parliamentary reform throughout its most unpopular period; for religious toleration when it was little positively practised; he loathed violence during one of the toughest wars in our history. This side of his character found some



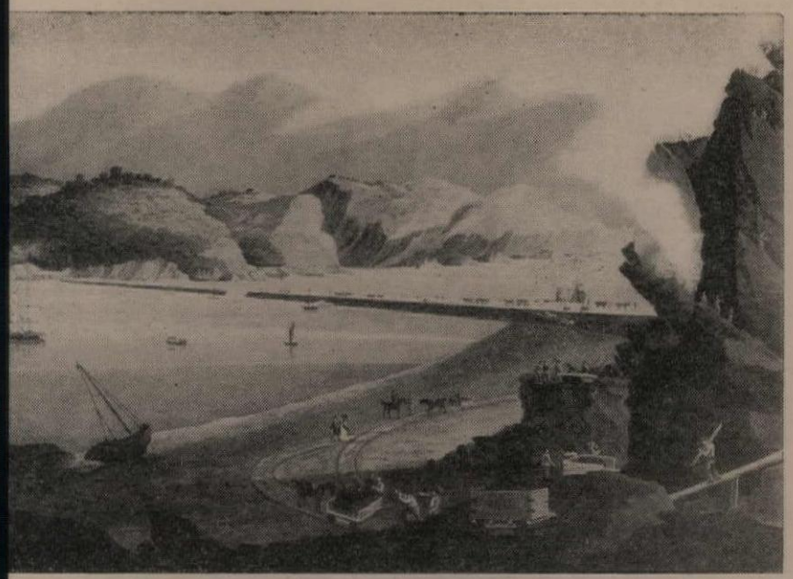
An engraving of Tre Madoc which Madocks used as his letter-heading.

outlet in parliament (he was member for Boston for eighteen years and showed consistently radical leanings) but his political career took time from his other burning interest: Wales, and particularly the remote interior. Although the fashionable vanguard of society then delighted in Welsh scenery, and no-one enjoyed the awful and the picturesque more than he, Madocks was also possessed by an extraordinary desire to do something about opening up the poverty stricken mountain region, an idea which to both absentee landlord and hard-drinking small farmer was novel, and suspect.

It was only too evident to himself (but not his family) that a legal career would severely cramp these aspirations. So for that matter would any other profession. Madocks was ideally suited either to be an eldest son of his own generation or to be born several generations later to be a regional planner. In throwing over the chance of a lucrative career, he embarked on a life in which the pacifying of creditors was to devour an enormous amount of time and energy. Undauntable optimism possibly blinded him from the hard fact that others might not see the soundness of his very expensive schemes. He probably conceived his extraordinary plan at about the age of twenty-five, but it is very difficult to know how far reaching it was at that stage; it was still developing when he died thirty years later and only reached maturity in the mid-nineteenth century. In retrospect this may sound a satisfactory pattern, but it meant for him a life of constant frustration and much actual misery brought about by poverty and ill-health. Luckily he had that kind of temperament which thrives on contrast and which would sink disappointment 'in drafts of brisk champagne' if it happened to be available.

It is difficult to know whether it was actual shortage of cash, or the legacy of eighteenth-century amateurism that led him to undertake his immense schemes with little or no outside professional help. His indomitable agent, John Williams, had been a garden-boy before his employment by Madocks. Between them they achieved what would now be the job of a great team of experts: planners, civil engineers for dams, roads, harbours and railways, architects and landscape architects, surveyors, industrialists, agriculturists and foresters, sales promotion experts and publicity men. With amateurish optimism they undertook the lot. (To make life more complicated, during Tremadoc's social hey-day, neither of them was married, and Madocks's business letters are spiced with urgent domestic details concerning the arrangements for house-parties, the engagement of staff and the food to be ordered.)

Madocks's great plan and its execution must be kaleidoscoped here. The seed seems to have germinated slowly. When he came down from Oxford as a landless younger son he could do no more than talk about the splendid improvements, scenic and scientific, in which his friends indulged with such relish. He was itching actually to run up those gothic ruins and equally keen to try out the latest grass seeds or newly imported larch trees on some mythical enclosure. The outlook seemed hopeless: land prices had risen everywhere because of the war and his requirement, cheap land capable of scientific improvement in ruggedly romantic scenery, seemed insoluble. Then, in 1798, some poor land on the edge of the great estuary of Traeth Mawr which separated the counties of Caernarvon and Merioneth, came up for sale. His mother advanced the legacy due under her will and he was able to buy. In 1800 he embarked on his first enclosure scheme and, under the guidance of a professional engineer, James Creasey, embanked about 1,000 acres of marsh bordering his small estate. They were blessed with a long hot summer and work went with a swing. It provided relief for 200 men whose families were near



The embankment over Traeth Mawr, as it was in 1810.

destitution as a result of the failure of the previous harvest. This was the beginning.

At this same time the Act of Union between England and Ireland was ratified and Madocks realized that this meant that communications between the two capitals would at last have to be improved. Pressure from the Irish MPs forced to make the journey to Westminster would see to this. There were then two claimants to the position of Irish packet station, Porthdinllaen on the north coast of Caernarvonshire, and Holyhead on Holy Island adjoining Anglesey, itself separated from the mainland by the formidable Menai Strait. Both were then little more than natural rocky anchorages. The Porthdinllaen route from London to Dublin was the most direct. If it was chosen the road would automatically open up that desperately poor region then cut off from the outside world. It would also mean that the stage coaches rattled past the gate of Madocks's delightful modern house (the Press, perhaps slightly surprised both by its style and simplicity, described how it 'was built more for a convenient residence than for splendour of show'). A most excellent state of affairs for a highly sociable planner.

First an efficient road system would have to be created. The Porthdinllaen protagonists set to work on new turnpikes and Madocks piloted bills both for them and the port through Parliament. With typical optimism he also built an inn with coach-houses and stables on the reclaimed land near his house. Once the mail route was established, the embryonic town of Trè Madoc, which he was already planning here as a market town, would also become the first halt on the journey. It would thus have a second *raison d'etre*, which was essential if the town was to hum socially as well as to thrive economically. It had been sited near the crossing of the Traeth and linked to the navigable river by a canal. Since Porthdinllean was out on a limb at the nearest point convenient to Dublin, it would be too distant to serve as a harbour for exports so another port, near the mouth of the estuary (Ynys Cyngar) was petitioned in Parliament.

One of the first buildings in the new town was a handsome five-storey Manufactory where spinning (and later weaving) were to be done by the most modern machinery using water power. But Trè Madoc was to be a town in every sense of the word. Early buildings included a church (new-fangled gothic) and a magnificent chapel (this caused considerable comment at a time when few non-conformist buildings were being erected); the town-hall (classic) consisted of a market hall which could be converted into the auditorium of a theatre. It faced the Market Place, whose other three sides were made up of houses (sensibly urban), shops and two more inns. This was the hub of the town, and the siting of the town-hall under a great crag which had once been a cliff at the edge of the Traeth gave it an importance out of all proportion to its actual size.

A key to Madocks's success as a planner was this tremendous sense of the scenic potentialities of a site. Another was his sense of drama and the importance of a feeling of liveliness which should contrast with the empty solitude of its surroundings. Trè Madoc was to be a town from the start. Its two main approaches were named Dublin Street and London Street and when the embryonic hamlet was described as a 'village' this was firmly scratched out in favour of 'Borough.' Everything was to add to its urbanity and importance; for instance Madocks might alter the site for some cottages on the grounds 'I have been thinking that whatever we build there *will be out of sight* and there will be a sum of money laid out without improving the apparent size of the town.' Tree planting, flagpoles and follies received as much attention as did the town privy (gothic), and the race course, a most important attraction.

The only obstacle on the Porthdinllaen route was the crossing of Traeth Mawr; either over the treacherous sands when the tide was out, or 'in a small leaky skiff.' This considerably excited the dramatic instincts of the tourists but the romance of the situation was lost on more serious travellers. The idea of damming the whole Traeth had been mooted several times during the eighteenth century and, as far back as 1625, Sir Hugh Myddleton (of London's New River fame) had been asked to undertake it. He declined being 'grown into years, and full of busines . . . which maketh me verie unwillinge to undertake anie other worke; and the least of theis, whether the drowned lands or mynes, requireth a whole man, with a large purse.'

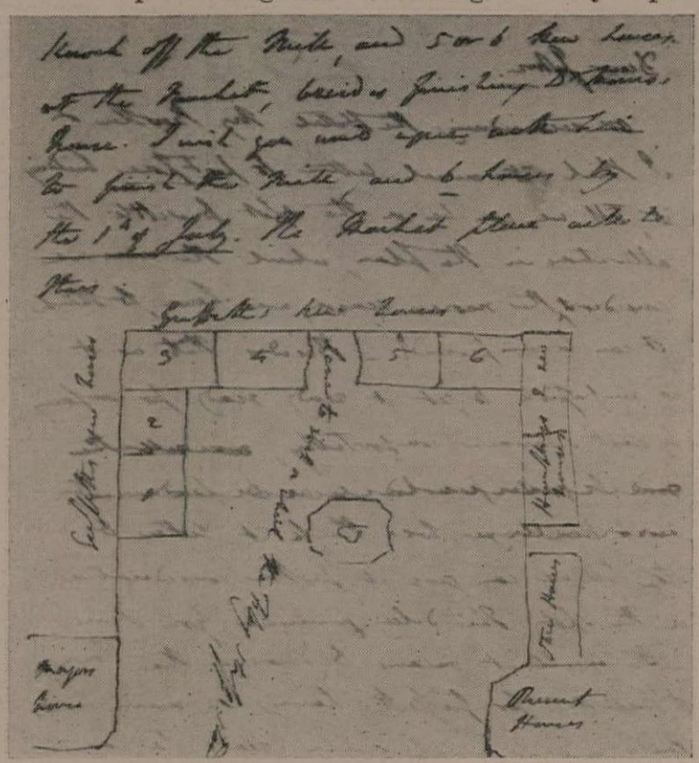
By 1806, with his town just beginning, Madocks was agog with the idea of doing just what Myddleton and other engineers had turned down. It would certainly be a tremendous work, quite different from the 1800 embankment which was simply a matter of enclosing a small inlet. Now a mile-long dam was to take both the brunt of the sea and the spate of the river. An army of men would have to be imported, housed and fed, quarries opened and railways laid down. But Madocks was undeterred; he was piloting yet another bill through Parliament in the name of Creassy (the engineer of the 1800 embankment): his eldest brother John seems to have been borrowing the money with the family estates as security. With professional guidance and financial backing all seemed set fair. Then, within a few days of the introduction of the bill to the Commons, John Madocks was suddenly

dead. Not long after this Creassy also died, leaving young William Madocks on his own.

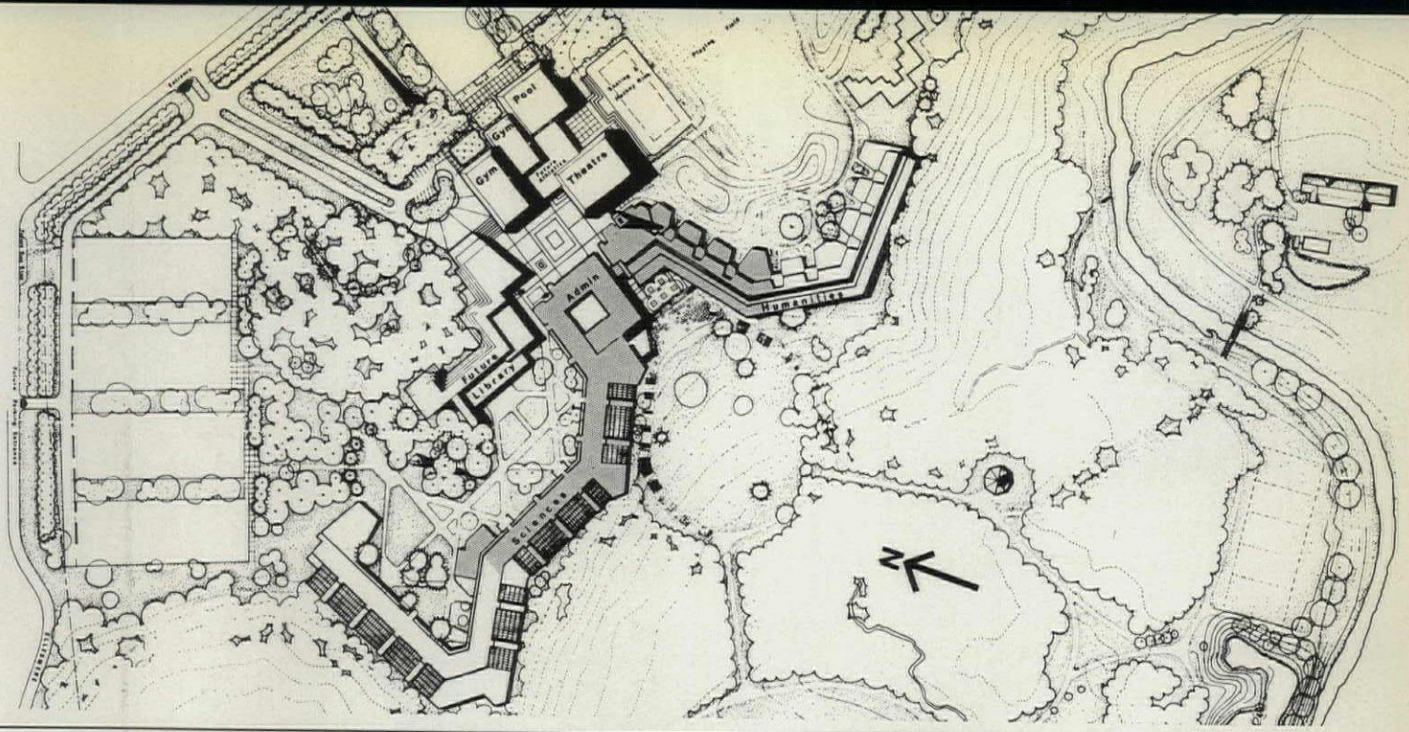
It was then that he showed his awe-inspiring inability to realize his limitations. The truth of Sir Hugh Myddleton's warnings about the cost and the need for a whole man had not diminished. With practically no financial backing and with his agent, the ex-garden boy, as executive engineer, Madocks launched his tremendous scheme. He himself was often to be away since the battle for parliamentary reform was about to enter a new phase, so neither of Myddleton's stipulations was heeded. Like the new town, much of Madocks's great embankment was designed by post.

Its construction, the gigantic struggle to close the gap (it took over three years), the jubilation which followed and the disaster when a tremendous tide with a south-westerly gale behind it breeched the bank near mid-point, are described by contemporary letters. So is the galvanizing effect of the tragedy on Madocks's neighbours. The army of men and horses which gathered to battle with the sea must have presented an astonishing spectacle on that lonely estuary.

In the doldrum years that followed Madocks could easily have slipped over to the Continent, as was customary for those in pecuniary difficulties, but in the face of bankruptcy he stuck things out. He seems to have been a compulsive planner. Often crippled by gout and unable to afford even the coach fare home from London, he could not stop thinking out how the region might be improved; he saw things as they might be and not as they were, and as a whole made up of dependent parts. The miry swamp of the Traeth was already, in his eyes, well drained and scientifically farmed land with the embankment standing firm against the tides. When things were at their bleakest he wrote to his agent 'I assure you I employ my mind incessantly in thinking how to compass those important objects necessary to complete the system of improvements in Snowdonia, any one of which wanting, the rest lose half their value. If I can only give them *birth, shape* and *substance* before I die, they will work their own way to posterity.' He went on to explain how necessary it was 'to complete the system in all its parts, and to reckon nothing done, till the harbour and the rail road, which includes the additions and repairs necessary to the perfect security of the bank, are established, and the road to Harlech with the Traeth Bach Bridge opened, a line to Trawsfynydd following of course.' Nor would the scheme be completed until 'the clay-burning system is introduced generally—the very best means of improving the agriculture—nor until means are taken to attract sea-bathers, for which the steam-boats from Liverpool have made so good an opening.' A contemporary writer had good reason to exclaim 'Nothing seems to escape that Gentleman's reach of mind.'



At this stage the second part of the great plan had not taken shape. This was to be based on the harbour of Port Madoc which scoured itself out at the end of the embankment, and the brilliant idea of bringing a railway right from the slate quarries above Ffestiniog to its newly built quays. By the early 1820's a great wave of speculation had engulfed North Wales and Madocks was no longer alone in seeing the possibilities. His health had been steadily worsening but his ideas were never more exuberant when he died on his way home from Naples in 1828. Had he lived to see them come to fruition even Madocks might have been surprised by their prosperity. In 1845, with the Festiniog Railway a proud engineering achievement, 43,000 tons of slate were exported and 29,000 tons of shipping were required to clear the cargoes handled by the port. Welsh slate was soon to be roofing buildings as distant as Buenos Aires and Western Australia. In return consumer goods were imported and the people no longer lived on the verge of famine. The embankment itself prospered (it still carries the main coast road) and Trè Madoc, though it never grew beyond village size because of Port Madoc's importance, recently became a mecca for planning and architectural students. Madocks's back-of-an-envelope type scrawls have at last been carefully drawn and measured.



site plan:
stage one
tinted

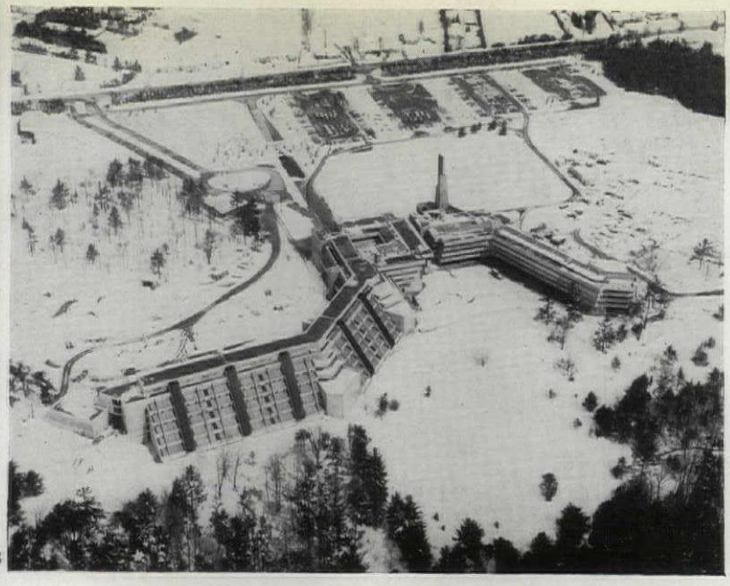
COLLEGE, TORONTO UNIVERSITY | *co-ordinating architect* **JOHN ANDREWS**

architects for stage one **PAGE AND STEELE** *in association with John Andrews* | *photographs by John Reeves*

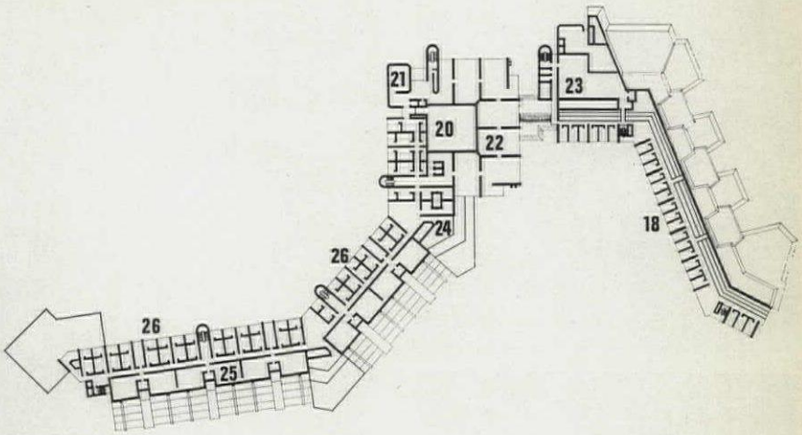
1

CLOSED CIRCUIT

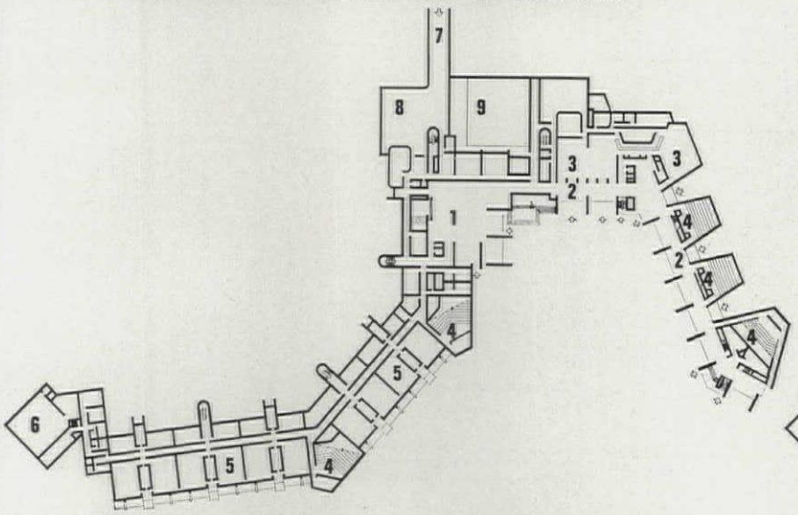
COLLEGE, TORONTO UNIVERSITY



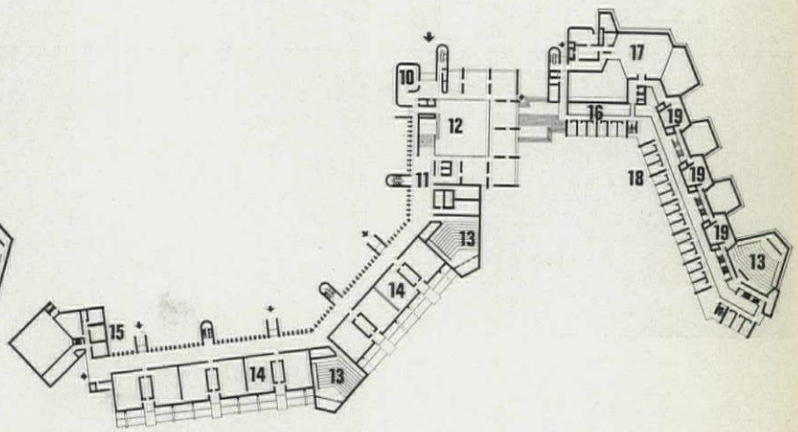
1 (page 245), the college seen from the valley to the south. 2 (opposite), close-up of the administration block, left, and the refectory and humanities wing, right. 3, aerial view from the south-west.



plan at level 5



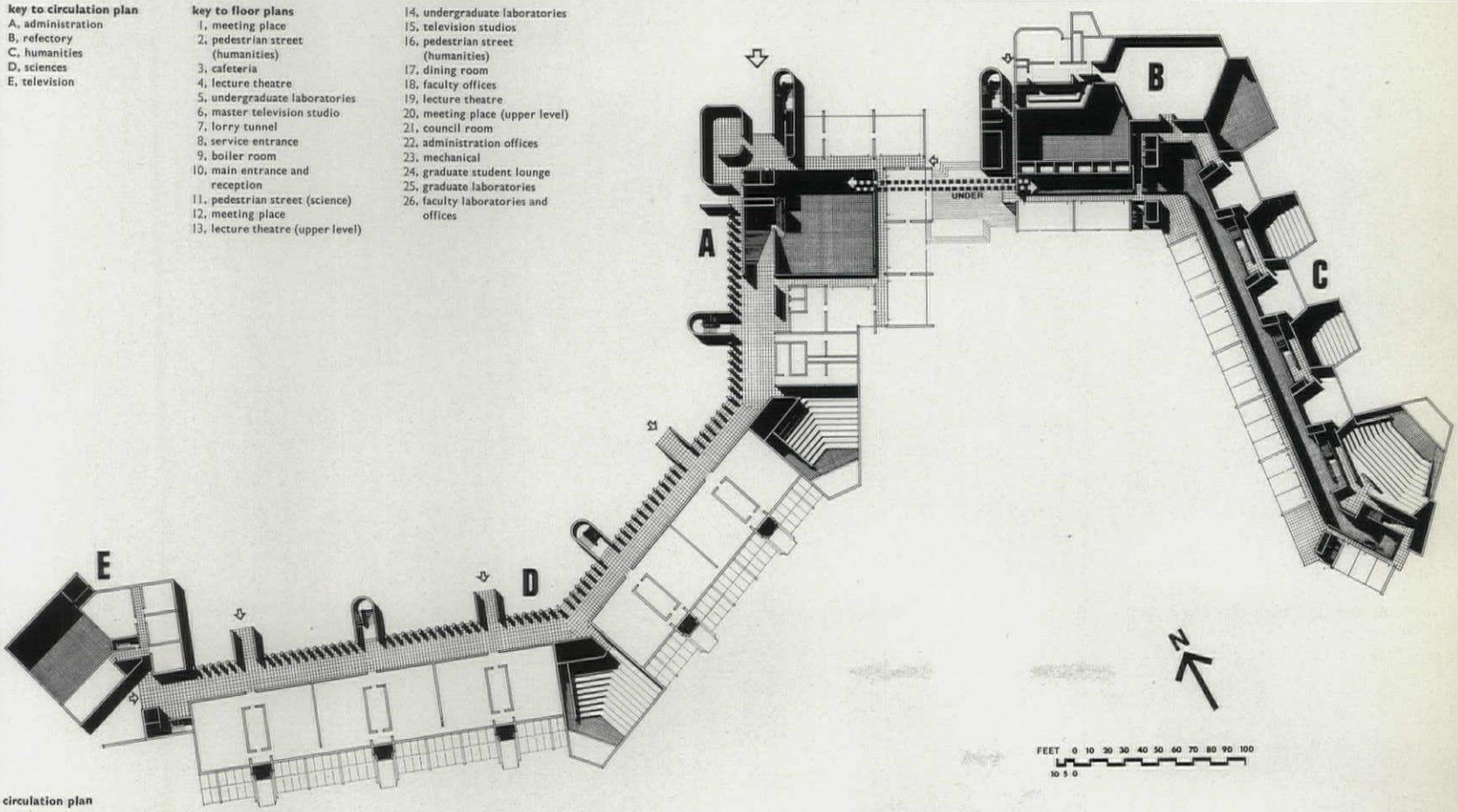
plan at level 2 (shown to half the scale of circulation plan)



plan at level 3

key to circulation plan
A, administration
B, refectory
C, humanities
D, sciences
E, television

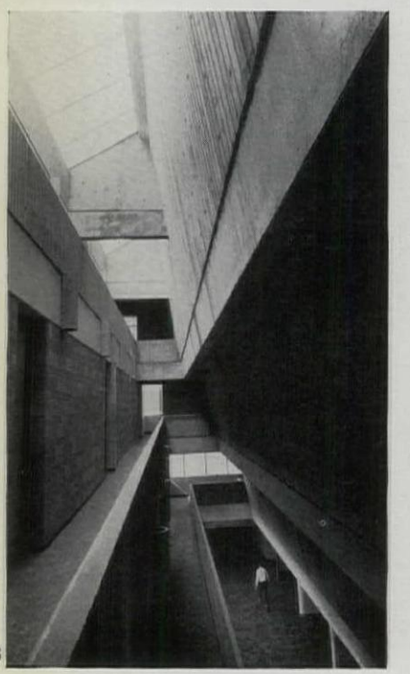
key to floor plans
1, meeting place
2, pedestrian street (humanities)
3, cafeteria
4, lecture theatre
5, undergraduate laboratories
6, master television studio
7, lorry tunnel
8, service entrance
9, boiler room
10, main entrance and reception
11, pedestrian street (science)
12, meeting place
13, lecture theatre (upper level)
14, undergraduate laboratories
15, television studios
16, pedestrian street (humanities)
17, dining room
18, faculty offices
19, lecture theatre
20, meeting place (upper level)
21, council room
22, administration offices
23, mechanical
24, graduate student lounge
25, graduate laboratories
26, faculty laboratories and offices



circulation plan

4

5



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4, looking from the humanities wing towards the administration block. 5, looking upwards in the humanities wing and, 6, the interior street. 7, the meeting place, which rises through four storeys of the administration block.

7

journals. Our respect for his achievements and encouragement is not lessened by noticing that, while he avoids the particularism and provincialism of much research into 'vernacular architecture' over here, he is as ready as we are to generalize too easily and to take sides too enthusiastically. Structural similarities between a barn in England and one in Belgium do not prove a 'Cistercian carpentry tradition,' and I would be more guarded than Professor Horn about accepting Morris's dating of Great Coxwell before 1250. The corbels would allow it, but other details, if primary, would argue for a slightly later date. Nevertheless, one must be grateful that serious discussion of a too neglected subject is directed to a new public.

Professor Horn's co-author, Mr. Born, is responsible for the painstaking production of the book as well as for all the drawings. Mathematically, the survey is unexceptionable, but Mr. Born is not an antiquary by instinct or training. His analysis of joints and assemblage is incomplete, his representation of texture is unconvincing and his Osbert Lancaster-like figures rather absurd. In fact, everything in the volume that stems from the school of architecture has an affectation of the 1930's and would have seemed less dated had it been nearer in spirit to William Morris. STUART EBORALL RIGOLD

FARM FORM

FARM BUILDINGS. *Volume 1. By John B. Weller, Crosby Lockwood. 55s.*

Good reference books on building construction are rare, and there are even fewer that attempt to describe the techniques suited to the construction of buildings for agriculture. In fact until the publication of this book no such comprehensive study had been made since the last century, when methods of farming were very different. The volume is the first of a series, the second volume being already in preparation. It is concisely written, well ordered and adequately illustrated with photographs, drawings and diagrams. It is an essential reference book for all those concerned with the construction and conversion of farm buildings.

Volume 1 has three parts. The first is called The Function of Farm Buildings, and includes sections on relevant legislation, finance and grant aid, and on the pitifully inadequate building research facilities available to farmers at the present time. The second part is called Mechanical Handling of Materials and the information included here is important because the increasing use of mechanical equipment and automation is having profound effects on the economics, magnitude and physical form of holdings and the buildings they need. In the third part particular building types are described in detail under three headings: Storage Buildings, Processing Buildings and Production Buildings. There is an appendix called Livestock Buildings as an Investment.

The schedule of contents for the second volume shows that it will be devoted to detailed studies of typical building elements. It will be divided into four parts: Structure above Ground Floors, Structure below Ground Floors, Services, and Materials and Fittings. While applauding the comprehensiveness of Mr. Weller's achievement and intentions it is to be hoped that he may find some sensible place in which he can discuss the difficult question of the appearance of farm buildings realistically. The functions and the finance of these buildings are complex but it must not be forgotten that their forms predominate in the rural landscape which everybody experiences and hopes to enjoy from time to time. JOHN VOELCKER

BUILDING PAPERS

INDUSTRIALIZZAZIONE DELL'EDILIZIA. *Dedalo Libri*, 1965. *Italian lire* 16,000.

Edited by the Institute of Architecture of the Faculty of Engineering, University of Bari, this is a collection of the papers submitted to a course organized at the university during the academic year 1963–64, with the participation of numerous Italian experts plus a handful of international vedettes (Konrad Wachsmann, Gérard Blachère, Milan Zlokovic). Like most exercises of this kind, its presentation is regrettably unbalanced. The general title is used to cover a wide range of subjects only remotely related to it, including a long essay by Marcello Grisotti on the history of the modern movement from the first industrial revolution onwards and an impressive paper (embellished by a bibliography of some 200 titles) reviewing the theory of modular co-ordination from Plato down to its most recent applications in Montenegro. One of the most interesting (if not original) contributions is a translation of extracts from the French equivalent to the 'Principles of Modern Building,' edited by the Paris Centre Scientifique et Technique du Bâtiment. This particular paper is concerned with the criteria for judging the quality of building materials, components and functional elements, with some reference to the problems of non-conventional systems of construction.

The variety of subjects covered is so great that it is difficult for somebody not having taken part in the debate to express a judgment on the validity of the conclusions of the course. But the most original contribution is, no doubt, that of Professor Ciribini, the Director of the Centro per la Ricerca Applicata sui Problemi della Edilizia Residenziale, and a leading authority on the theoretical application of industrialization processes to building. His ideas have already been presented in a number of publications, only a few of which have, regrettably, been translated into English. The main merit of Professor Ciribini's approach is his placing of the problem of the industrialization of building in its proper perspective and characterizing the phases or levels of mechanization in terms of general categories, without getting involved in the detailed description of individual technologies. Professor Ciribini is essentially concerned with the problem of what he defines as *comprehensive design* of which he identifies the essential stages in relation to the building process.

What is missing from this apparently comprehensive range of preoccupations is not so much a theoretical view of some of the problems (in which our Italian colleagues excel) or a detailed description of individual techniques (which a book of this kind could never cover adequately), but rather something in between, which would enable the reader to understand which of the particular conditions prevailing in Italy at the moment (economic, social, technological and, why not, political) are related, or would be relevant, to a given trend of evolution of building activities towards those more industrialized forms so adequately described by some of the participants.

It is interesting to note how certain forms of factory production of large building components or elements (which in fact is what most people mean when they talk about industrialization of building) have spread in the last few years from the two or three West European countries which had taken the lead in the early 'fifties. It would be even more interesting to know why this is happening, to what extent the changes that are taking place are in the right direction and if they represent a permanent feature or a passing fashion. It is apparent from the above that the reviewer is critically inclined to the latter interpretation.

DUCCIO A. TURIN

QUEST FOR IDENTITY

TORONTO—NO MEAN CITY. *By Eric Arthur. University of Toronto Press. $15 (de luxe edition $50).*

Confronted by many recent, large-scale demonstrations of characterless uniformity on the one hand and by rootless, artificial novelties on the other, contemporary designers of buildings can afford to turn a more understanding eye toward the ecological implications of local architectural environment. The topological quest involves a search for values that are antithetic to those of the antiquarian or the eclectic, and certainly more subtle.

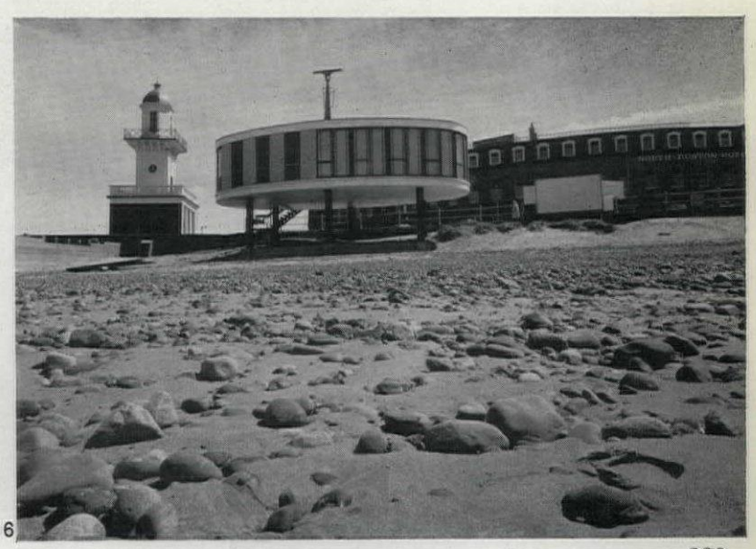
It is natural that this concern with place is somewhat self-conscious in the New World where whole nations are 'immigrants,' and society is so largely transient. Europeans may find it strange, indeed, to see such preoccupation with apparent nineteenth-century 'leftovers'; but in many great cities of North America architectural history has been compressed by the rate of technological and social change. Suddenly, almost overnight, yesterday's familiar landmark, perhaps less than a hundred years old, takes on an aura of irreplaceability and new respect. Lacking the Old World luxury of time for a leisurely historical shakedown of their architectural heritage, many cities are rapidly destroying the remnants of whatever character they may once have had. Thus, a preliminary overview becomes urgent.

Toronto—No Mean City adds an ambitious volume to recent literature exploring the identity of a sprawling metropolis to its original site and to its heritage of nineteenth-century building. A native antipodean, Professor Arthur acquired his pride as a citizen by years of involvement as architect and teacher, not by a technicality as did St. Paul who inspired the provocative sub-title. Toronto's quest for a symbol has been well advertised since 1957 when it launched the international competition for what the Mayor hoped would be 'the finest city hall in the world.' It should be no surprise to recall that author Eric Arthur, of Toronto University's School of Architecture, served as the chairman of this competition, which drew 520 entries from 44 countries.

He gives us a documented survey of the architectural and social history of Toronto from 1615, when the 'Carrying Place' was merely a well-defined French-Indian portage, to its establishment as the British town of York in 1793. The restoration of its Indian name was not approved until 1834, when the town had grown to nearly ten thousand inhabitants and was described (in 1836) by an unhappy Londoner as 'most strangely mean and melancholy.' Taunted by this low opinion, Professor Arthur records architectural accomplishments to the 'threshold of the twentieth century,' closing his account with a concise epilogue, which brings the reader up to 1964. Two generous appendices give us a brief history of the architectural profession, and a catalogue showing the origin of street names. The scholarly notes, bibliography and index are most useful and should encourage others to accept Professor Arthur's invitation to carry on.

BUFORD PICKENS

Remembering the mess that such things as radar and telecommunications often make of the landscape we can be grateful for the neat design of this radar station on the beach at Fleetwood, 6: a modern equivalent of the Functional Tradition exemplified in the lighthouse seen beyond it. The radar building is by Roger Booth, Lancashire County Architect.



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Slim circular pilotis *of a Gatwick Airport kind, impeccably shuttered with the grain of the boarding left exposed, are ingredients which every style-fancier can confidently attribute to post-1950 Brutalism, influenced by the late works of Le Corbusier. But style is not everything and the 'last form-giver' may not always have been first. The maturity of the weathering in these concrete columns photographed by Edwin Johnston gives a clue to an astonishingly early date and an equally astonishing place—for details, see the article 'Pre-Corb' on pages* 291-295.

Elisabeth Beazley

THE INDEFATIGABLE IMPROVER*

It was not until the second half of the eighteenth century that the unproductive, dangerous Welsh mountains were found to be sublimely picturesque. From around 1750 the trickle of pioneering romantics gradually grew to a seasonal torrent of tourists. But it was a fashion that subsided quickly with the first autumn gust. No-one could be expected to tolerate the interior of the Principality after early September; if he did there might be no escape, for the 'roads' would soon become impassable. All agreed that the heart of Wales, the great mountain region running down from Snowdonia, was marvellously picturesque in direct proportion to its desperate material poverty. The peasants, whom the tourists found to be civil and obliging as guides, lived precariously from one harvest to the next. One poor season meant hunger; two, starvation.

Buried in this tremendous mass of mountain and poverty lay unsuspected wealth: slate. Grazing its extensive if thinly covered hill-sides were hundreds of thousands of Welsh sheep. Much of their wool was exported raw to the new English manufactories, causing chagrin to the few who could see the possibilities of the industrial methods which might be developed in Wales as in England. Woollen mills (other than fulling mills) powered by water were still almost unknown in 1800; weaving and spinning was a home industry, but the cosy picture which this evokes meant little to those who could not even afford to buy the raw wool.

Materially, two things were vital. Capital to be invested in the potential industries of the remote parts of Wales, and a system of communications and transport which would allow products to be exported. But even had these been available the almost universal apathy that prevailed would be the worst obstacle to be overcome. The landlords were chiefly absentee; the middle classes minute; it was a peasant community and the peasants were too preoccupied with survival to have the surplus energy to better their lot.

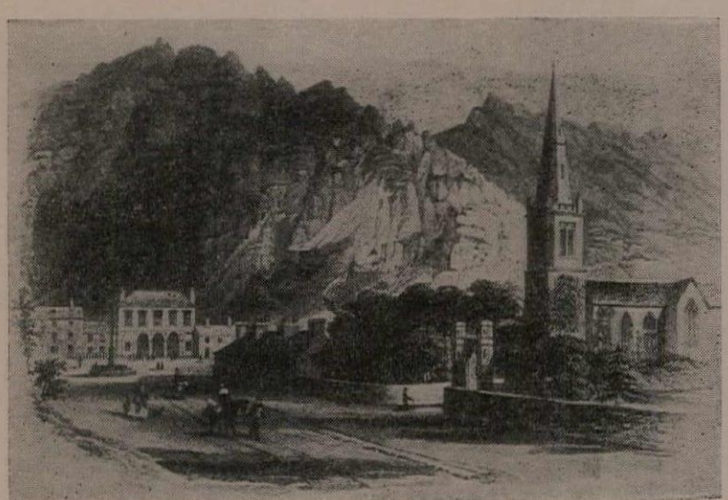
It was utterly different from the situation in England at the turn of the century where, despite the continuation of the war and the parlous financial state of the country, the topography was daily altered for better or worse. The enclosure movement was nearing its culmination; new roads, canals and harbours were planned; industries sprang up as did new resorts. Brighton would soon be taking over from Bath as the first place of fashion; the seaside had come into its own and the railway age was just round the corner. The possibilities were becoming too great and the work too exacting for the old eighteenth-century pattern where so much was achieved by a amateur gentleman and his land agent, considering their estates in the round as a microcosm as the great world beyond. The new schemes required professionals or single-minded men—idealists working within the extreme limits of their chosen line.

Against this background of rising specialism coupled with the general apathy towards any improvement of condition in the interior of Wales, William Madocks (1773–1828), a surprising character by any count, is

* The extraordinary man who is the subject of this article is also the subject of a book by Miss Beazley to be published next month: *Madocks and the Wonder of Wales* (Faber & Faber, 36s.).

the more astonishing. Tradition, spiced with legend, describes him as a wealthy landowner with philanthropic leanings who, with professional assistance, built an immense embankment across an estuary in North Wales to keep out the sea; later he was thought to have fled the country to avoid his creditors. The facts are different and much more fascinating; the embankment was only part of a far wider plan which included both the whole region and the communications between Dublin and London; it was achieved by an amateur (in the true sense of the word) chronically in debt. Since Madocks was a prolific letter writer many of his ideas and frustrations come across in the epistles which he dashed off to his loyal and long-suffering Welsh land-agent, several hundred of which have survived.

Madocks was the third son of one of the most eminent and rich King's Counsel in England and grew up in fashionable, extravagant English society. The family were North Wales landed gentry of several hundred years standing so, naturally enough, the estates, along with most of his father's fortune, were entailed in the eldest son. William, by the standards of his colleagues, inherited little when his father died, and it was assumed that he would also lead a successful career at the Bar. He was intelligent, amusing and sociable. But this was only one side of his personality. His sentiments were often out of tune with the confident young landed gentry whose company he so much enjoyed. He stood for parliamentary reform throughout its most unpopular period; for religious toleration when it was little positively practised; he loathed violence during one of the toughest wars in our history. This side of his character found some



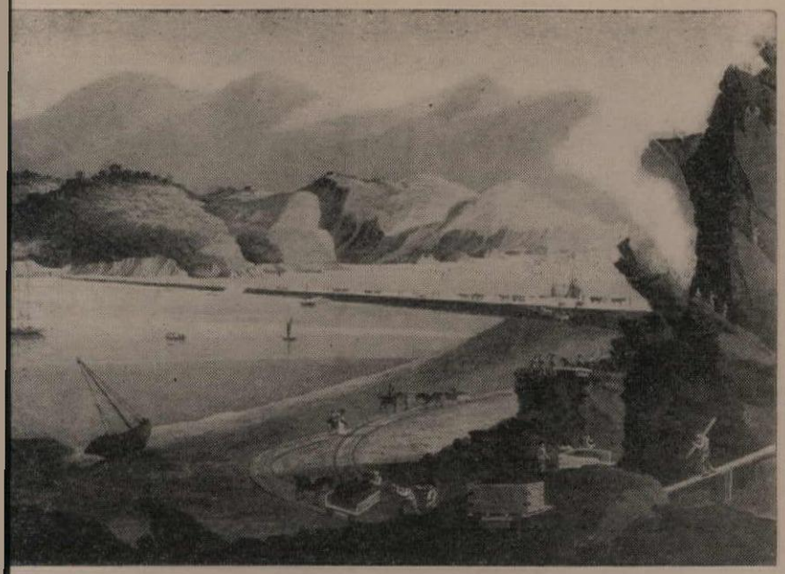
An engraving of Tre Madoc which Madocks used as his letter-heading.

outlet in parliament (he was member for Boston for eighteen years and showed consistently radical leanings) but his political career took time from his other burning interest: Wales, and particularly the remote interior. Although the fashionable vanguard of society then delighted in Welsh scenery, and no-one enjoyed the awful and the picturesque more than he, Madocks was also possessed by an extraordinary desire to do something about opening up the poverty stricken mountain region, an idea which to both absentee landlord and hard-drinking small farmer was novel, and suspect.

It was only too evident to himself (but not his family) that a legal career would severely cramp these aspirations. So for that matter would any other profession. Madocks was ideally suited either to be an eldest son of his own generation or to be born several generations later to be a regional planner. In throwing over the chance of a lucrative career, he embarked on a life in which the pacifying of creditors was to devour an enormous amount of time and energy. Undauntable optimism possibly blinded him from the hard fact that others might not see the soundness of his very expensive schemes. He probably conceived his extraordinary plan at about the age of twenty-five, but it is very difficult to know how far reaching it was at that stage; it was still developing when he died thirty years later and only reached maturity in the mid-nineteenth century. In retrospect this may sound a satisfactory pattern, but it meant for him a life of constant frustration and much actual misery brought about by poverty and ill-health. Luckily he had that kind of temperament which thrives on contrast and which would sink disappointment 'in drafts of brisk champagne' if it happened to be available.

It is difficult to know whether it was actual shortage of cash, or the legacy of eighteenth-century amateurism that led him to undertake his immense schemes with little or no outside professional help. His indomitable agent, John Williams, had been a garden-boy before his employment by Madocks. Between them they achieved what would now be the job of a great team of experts: planners, civil engineers for dams, roads, harbours and railways, architects and landscape architects, surveyors, industrialists, agriculturists and foresters, sales promotion experts and publicity men. With amateurish optimism they undertook the lot. (To make life more complicated, during Tremadoc's social hey-day, neither of them was married, and Madocks's business letters are spiced with urgent domestic details concerning the arrangements for house-parties, the engagement of staff and the food to be ordered.)

Madocks's great plan and its execution must be kaleidoscoped here. The seed seems to have germinated slowly. When he came down from Oxford as a landless younger son he could do no more than talk about the splendid improvements, scenic and scientific, in which his friends indulged with such relish. He was itching actually to run up those gothic ruins and equally keen to try out the latest grass seeds or newly imported larch trees on some mythical enclosure. The outlook seemed hopeless: land prices had risen everywhere because of the war and his requirement, cheap land capable of scientific improvement in ruggedly romantic scenery, seemed insoluble. Then, in 1798, some poor land on the edge of the great estuary of Traeth Mawr which separated the counties of Caernarvon and Merioneth, came up for sale. His mother advanced the legacy due under her will and he was able to buy. In 1800 he embarked on his first enclosure scheme and, under the guidance of a professional engineer, James Creasey, embanked about 1,000 acres of marsh bordering his small estate. They were blessed with a long hot summer and work went with a swing. It provided relief for 200 men whose families were near



The embankment over Traeth Mawr, as it was in 1810.

destitution as a result of the failure of the previous harvest. This was the beginning.

At this same time the Act of Union between England and Ireland was ratified and Madocks realized that this meant that communications between the two capitals would at last have to be improved. Pressure from the Irish MPs forced to make the journey to Westminster would see to this. There were then two claimants to the position of Irish packet station, Porthdinllaen on the north coast of Caernarvonshire, and Holyhead on Holy Island adjoining Anglesey, itself separated from the mainland by the formidable Menai Strait. Both were then little more than natural rocky anchorages. The Porthdinllaen route from London to Dublin was the most direct. If it was chosen the road would automatically open up that desperately poor region then cut off from the outside world. It would also mean that the stage coaches rattled past the gate of Madocks's delightful modern house (the Press, perhaps slightly surprised both by its style and simplicity, described how it 'was built more for a convenient residence than for splendour of show'). A most excellent state of affairs for a highly sociable planner.

First an efficient road system would have to be created. The Porthdinllaen protagonists set to work on new turnpikes and Madocks piloted bills both for them and the port through Parliament. With typical optimism he also built an inn with coach-houses and stables on the reclaimed land near his house. Once the mail route was established, the embryonic town of Trè Madoc, which he was already planning here as a market town, would also become the first halt on the journey. It would thus have a second *raison d'etre*, which was essential if the town was to hum socially as well as to thrive economically. It had been sited near the crossing of the Traeth and linked to the navigable river by a canal. Since Porthdinllean was out on a limb at the nearest point convenient to Dublin, it would be too distant to serve as a harbour for exports so another port, near the mouth of the estuary (Ynys Cyngar) was petitioned in Parliament.

One of the first buildings in the new town was a handsome five-storey Manufactory where spinning (and later weaving) were to be done by the most modern machinery using water power. But Trè Madoc was to be a town in every sense of the word. Early buildings included a church (new-fangled gothic) and a magnificent chapel (this caused considerable comment at a time when few non-conformist buildings were being erected); the town-hall (classic) consisted of a market hall which could be converted into the auditorium of a theatre. It faced the Market Place, whose other three sides were made up of houses (sensibly urban), shops and two more inns. This was the hub of the town, and the siting of the town-hall under a great crag which had once been a cliff at the edge of the Traeth gave it an importance out of all proportion to its actual size.

A key to Madocks's success as a planner was this tremendous sense of the scenic potentialities of a site. Another was his sense of drama and the importance of a feeling of liveliness which should contrast with the empty solitude of its surroundings. Trè Madoc was to be a town from the start. Its two main approaches were named Dublin Street and London Street and when the embryonic hamlet was described as a 'village' this was firmly scratched out in favour of 'Borough.' Everything was to add to its urbanity and importance; for instance Madocks might alter the site for some cottages on the grounds 'I have been thinking that whatever we build there *will be out of sight* and there will be a sum of money laid out without improving the apparent size of the town.' Tree planting, flagpoles and follies received as much attention as did the town privy (gothic), and the race course, a most important attraction.

The only obstacle on the Porthdinllaen route was the crossing of Traeth Mawr; either over the treacherous sands when the tide was out, or 'in a small leaky skiff.' This considerably excited the dramatic instincts of the tourists but the romance of the situation was lost on more serious travellers. The idea of damming the whole Traeth had been mooted several times during the eighteenth century and, as far back as 1625, Sir Hugh Myddleton (of London's New River fame) had been asked to undertake it. He declined being 'grown into years, and full of busines . . . which maketh me verie unwillinge to undertake anie other worke; and the least of theis, whether the drowned lands or mynes, requireth a whole man, with a large purse.'

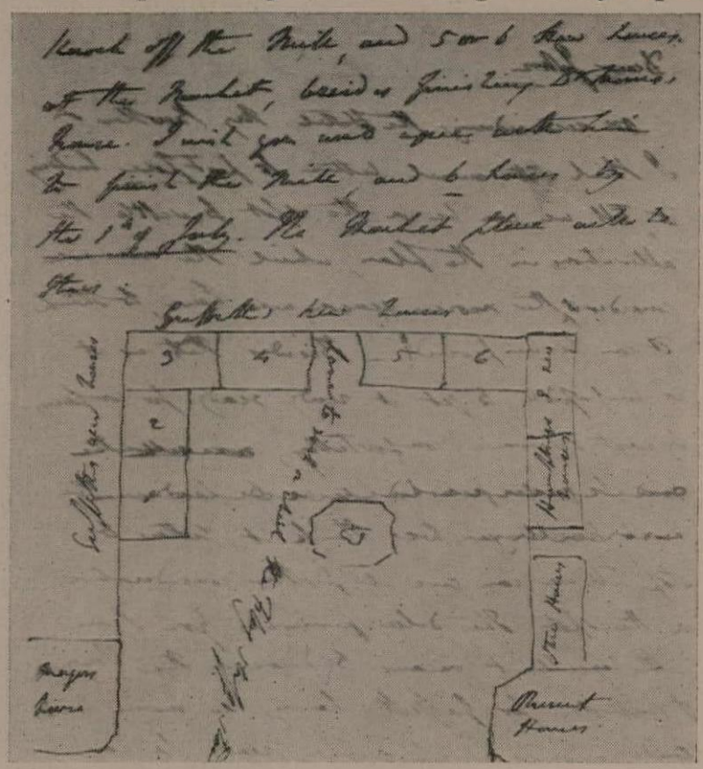
By 1806, with his town just beginning, Madocks was agog with the idea of doing just what Myddleton and other engineers had turned down. It would certainly be a tremendous work, quite different from the 1800 embankment which was simply a matter of enclosing a small inlet. Now a mile-long dam was to take both the brunt of the sea and the spate of the river. An army of men would have to be imported, housed and fed, quarries opened and railways laid down. But Madocks was undeterred; he was piloting yet another bill through Parliament in the name of Creassy (the engineer of the 1800 embankment): his eldest brother John seems to have been borrowing the money with the family estates as security. With professional guidance and financial backing all seemed set fair. Then, within a few days of the introduction of the bill to the Commons, John Madocks was suddenly

dead. Not long after this Creassy also died, leaving young William Madocks on his own.

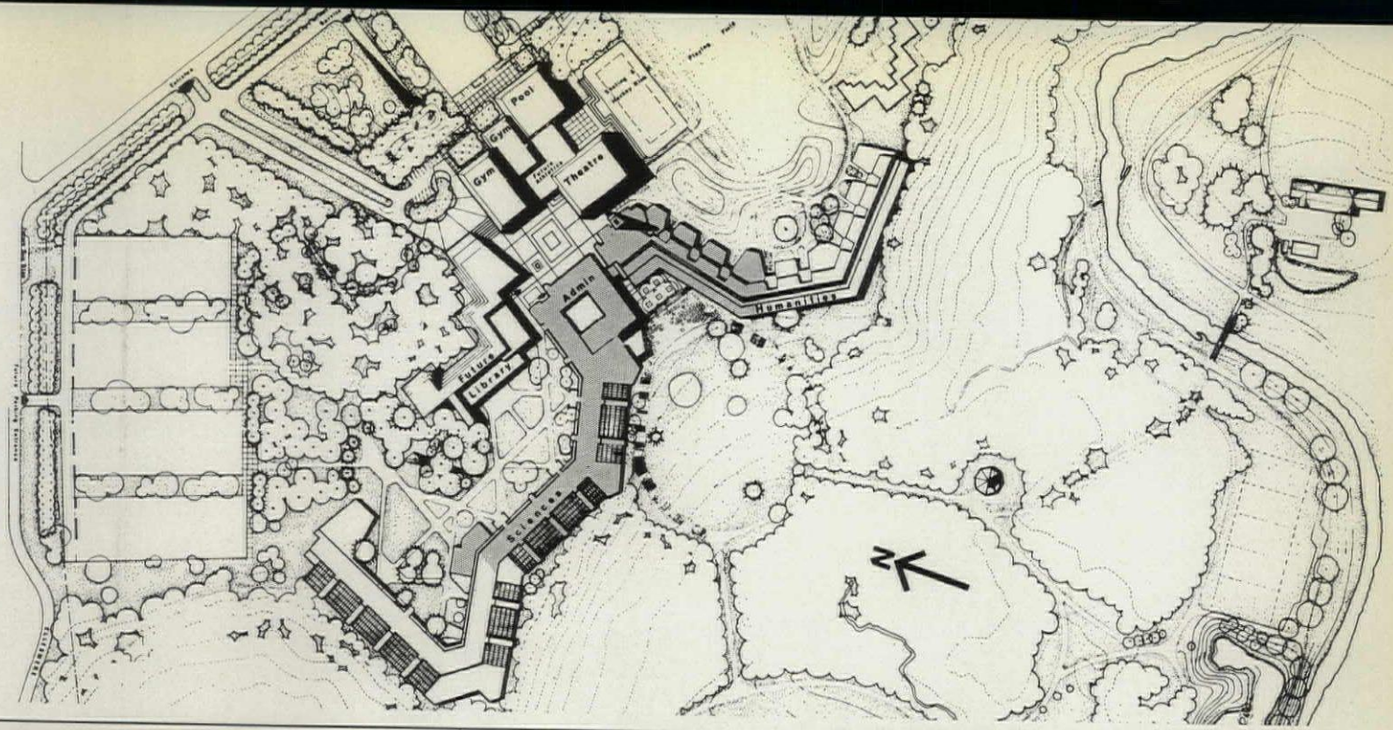
It was then that he showed his awe-inspiring inability to realize his limitations. The truth of Sir Hugh Myddleton's warnings about the cost and the need for a whole man had not diminished. With practically no financial backing and with his agent, the ex-garden boy, as executive engineer, Madocks launched his tremendous scheme. He himself was often to be away since the battle for parliamentary reform was about to enter a new phase, so neither of Myddleton's stipulations was heeded. Like the new town, much of Madocks's great embankment was designed by post.

Its construction, the gigantic struggle to close the gap (it took over three years), the jubilation which followed and the disaster when a tremendous tide with a south-westerly gale behind it breeched the bank near mid-point, are described by contemporary letters. So is the galvanizing effect of the tragedy on Madocks's neighbours. The army of men and horses which gathered to battle with the sea must have presented an astonishing spectacle on that lonely estuary.

In the doldrum years that followed Madocks could easily have slipped over to the Continent, as was customary for those in pecuniary difficulties, but in the face of bankruptcy he stuck things out. He seems to have been a compulsive planner. Often crippled by gout and unable to afford even the coach fare home from London, he could not stop thinking out how the region might be improved; he saw things as they might be and not as they were, and as a whole made up of dependent parts. The miry swamp of the Traeth was already, in his eyes, well drained and scientifically farmed land with the embankment standing firm against the tides. When things were at their bleakest he wrote to his agent 'I assure you I employ my mind incessantly in thinking how to compass those important objects necessary to complete the system of improvements in Snowdonia, any one of which wanting, the rest lose half their value. If I can only give them *birth*, *shape* and *substance* before I die, they will work their own way to posterity.' He went on to explain how necessary it was 'to complete the system in all its parts, and to reckon nothing done, till the harbour and the rail road, which includes the additions and repairs necessary to the perfect security of the bank, are established, and the road to Harlech with the Traeth Bach Bridge opened, a line to Trawsfynydd following of course.' Nor would the scheme be completed until 'the clay-burning system is introduced generally—the very best means of improving the agriculture—nor until means are taken to attract sea-bathers, for which the steam-boats from Liverpool have made so good an opening.' A contemporary writer had good reason to exclaim 'Nothing seems to escape that Gentleman's reach of mind.'



At this stage the second part of the great plan had not taken shape. This was to be based on the harbour of Port Madoc which scoured itself out at the end of the embankment, and the brilliant idea of bringing a railway right from the slate quarries above Ffestiniog to its newly built quays. By the early 1820's a great wave of speculation had engulfed North Wales and Madocks was no longer alone in seeing the possibilities. His health had been steadily worsening but his ideas were never more exuberant when he died on his way home from Naples in 1828. Had he lived to see them come to fruition even Madocks might have been surprised by their prosperity. In 1845, with the Festiniog Railway a proud engineering achievement, 43,000 tons of slate were exported and 29,000 tons of shipping were required to clear the cargoes handled by the port. Welsh slate was soon to be roofing buildings as distant as Buenos Aires and Western Australia. In return consumer goods were imported and the people no longer lived on the verge of famine. The embankment itself prospered (it still carries the main coast road) and Trè Madoc, though it never grew beyond village size because of Port Madoc's importance, recently became a mecca for planning and architectural students. Madocks's back-of-an-envelope type scrawls have at last been carefully drawn and measured.



site plan: stage one tinted

COLLEGE, TORONTO UNIVERSITY | *co-ordinating architect* **JOHN ANDREWS**

architects for stage one **PAGE AND STEELE** *in association with John Andrews* | *photographs by John Reeves*

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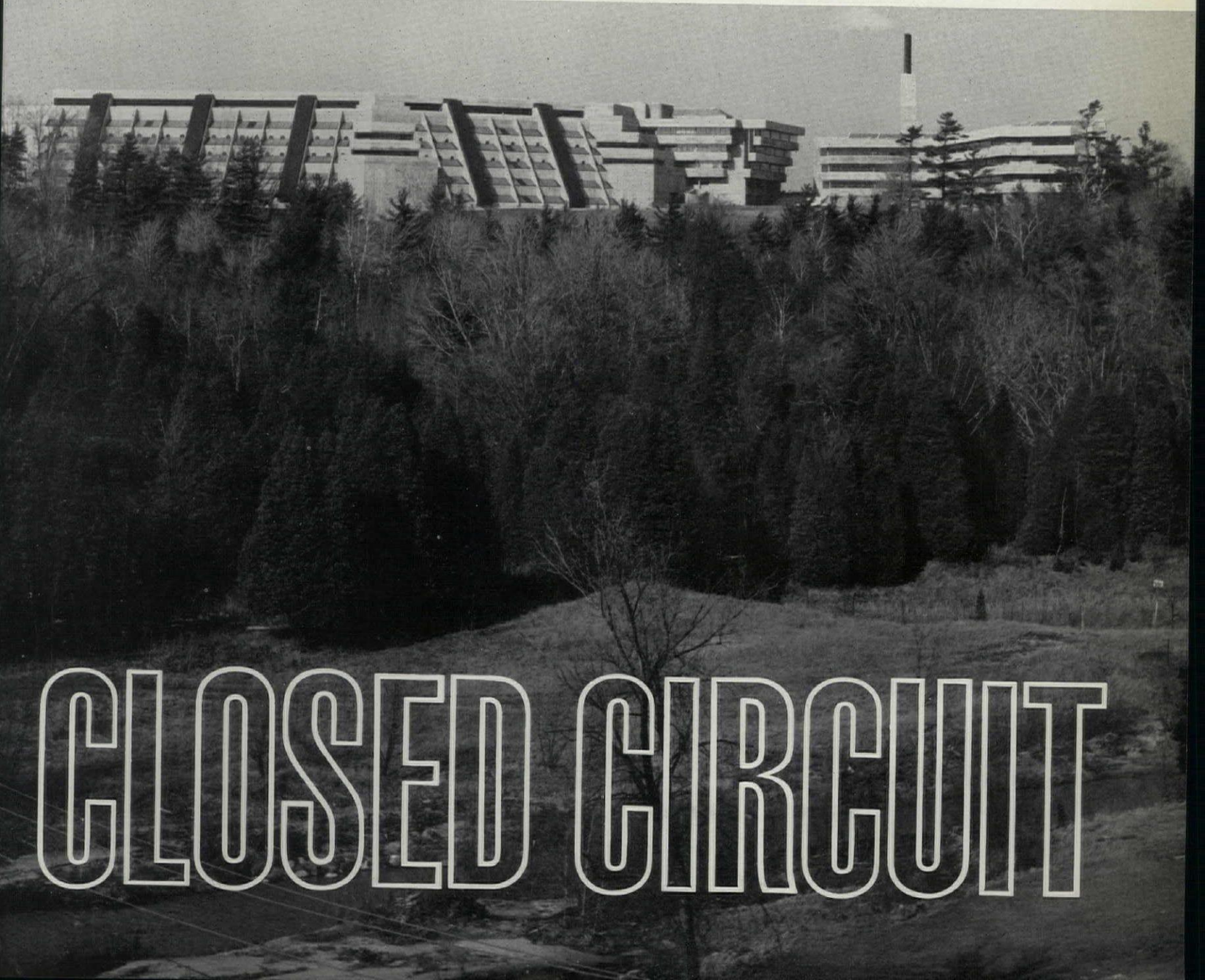
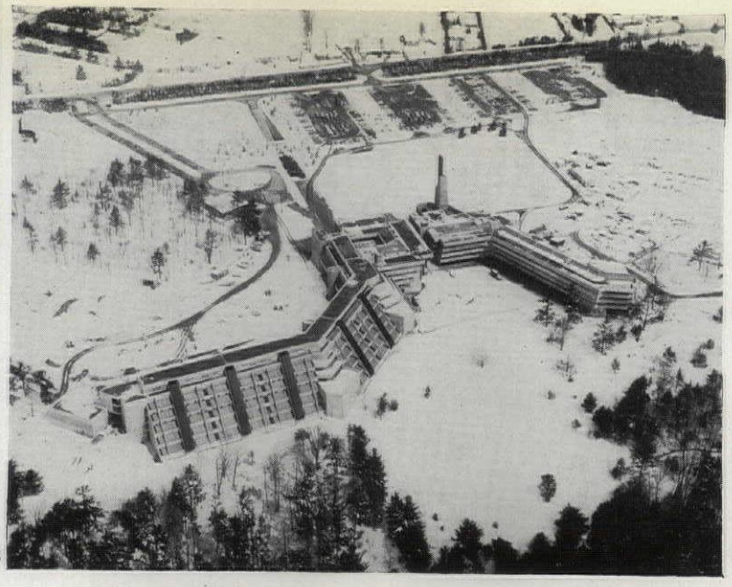
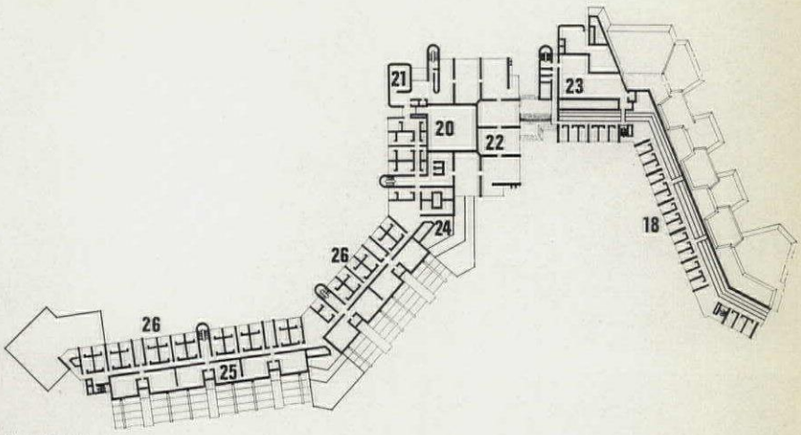


CLOSED CIRCUIT

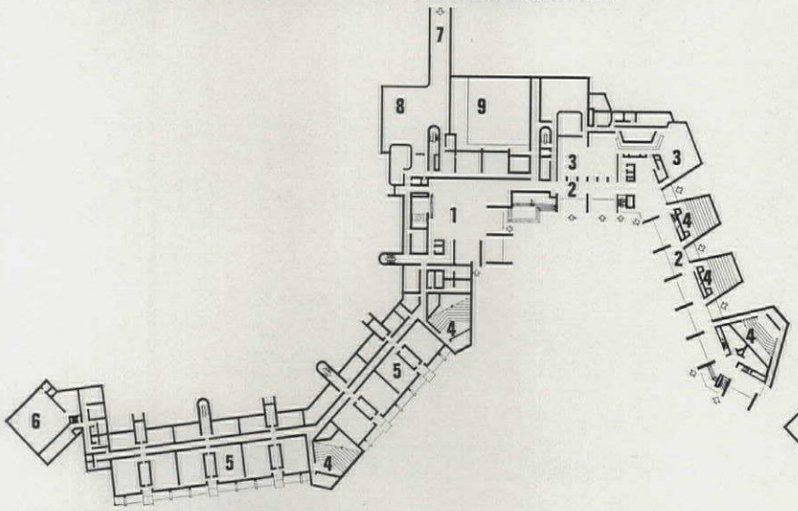
COLLEGE, TORONTO UNIVERSITY



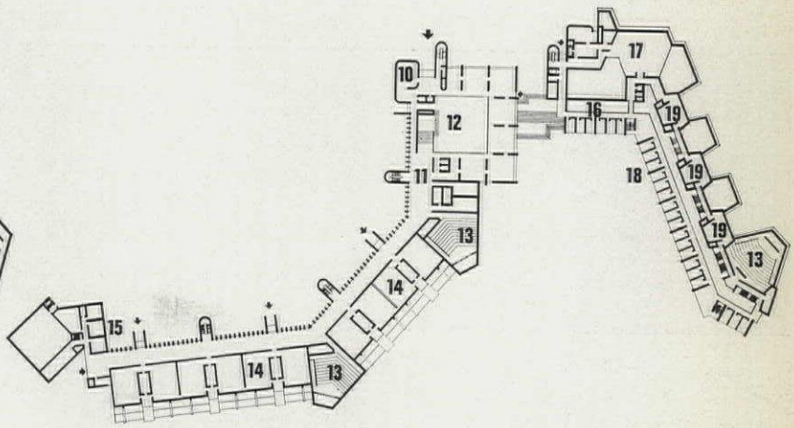
1 (page 245), the college seen from the valley to the south. 2 (opposite), close-up of the administration block, left, and the refectory and humanities wing, right. 3, aerial view from the south-west.



plan at level 5



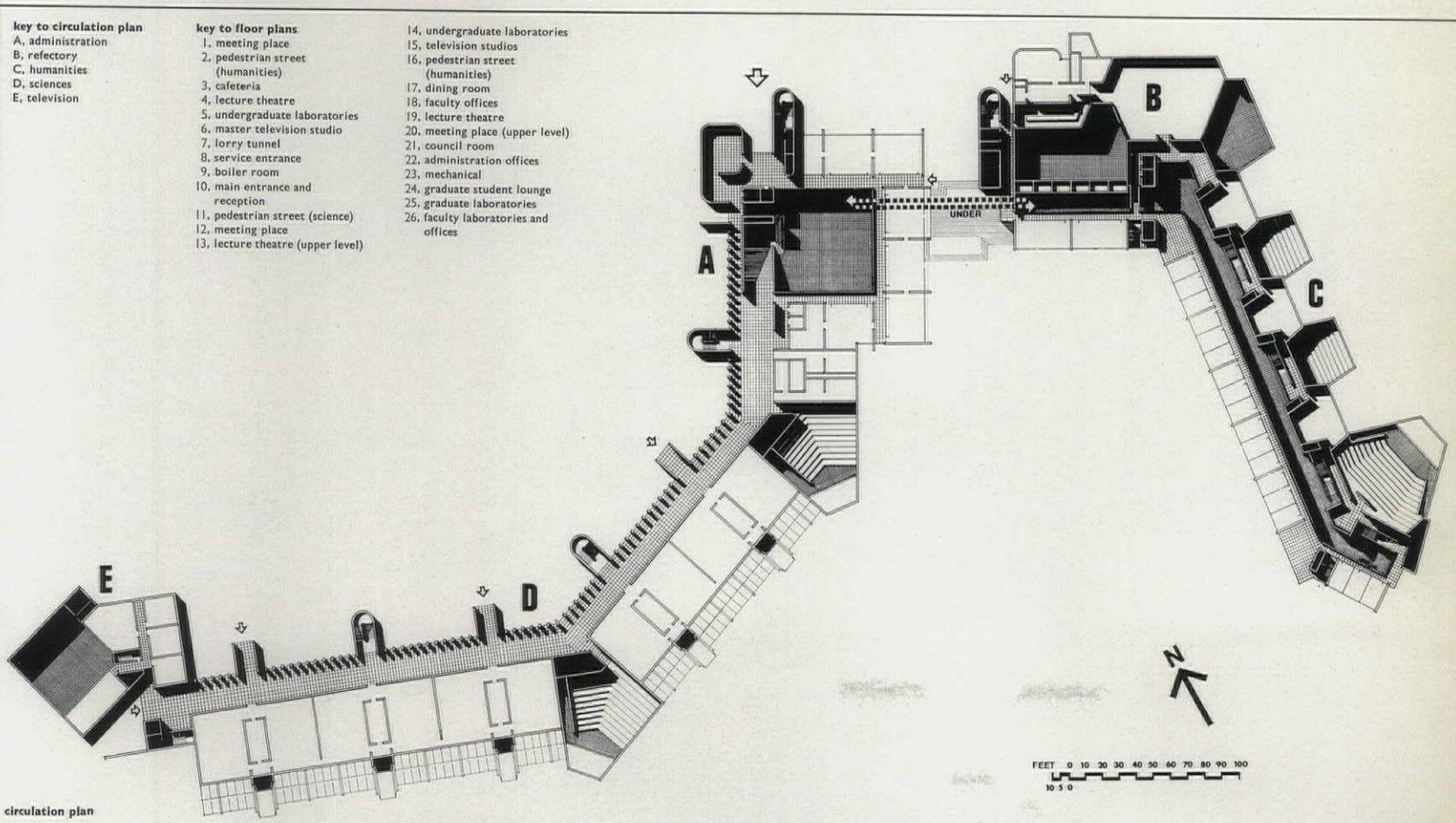
plan at level 2 (shown to half the scale of circulation plan)



plan at level 3

key to circulation plan
A, administration
B, refectory
C, humanities
D, sciences
E, television

key to floor plans
1, meeting place
2, pedestrian street (humanities)
3, cafeteria
4, lecture theatre
5, undergraduate laboratories
6, master television studio
7, lorry tunnel
8, service entrance
9, boiler room
10, main entrance and reception
11, pedestrian street (science)
12, meeting place
13, lecture theatre (upper level)
14, undergraduate laboratories
15, television studios
16, pedestrian street (humanities)
17, dining room
18, faculty offices
19, lecture theatre
20, meeting place (upper level)
21, council room
22, administration offices
23, mechanical
24, graduate student lounge
25, graduate laboratories
26, faculty laboratories and offices



circulation plan

4

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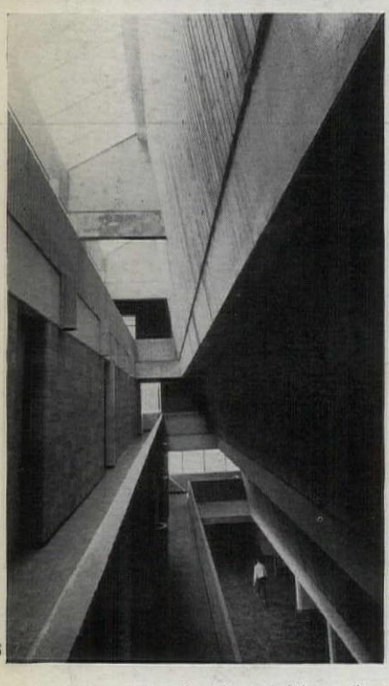


6

4, looking from the humanities wing towards the administration block. 5, looking upwards in the humanities wing and, 6, the interior street. 7, the meeting place, which rises through four storeys of the administration block.

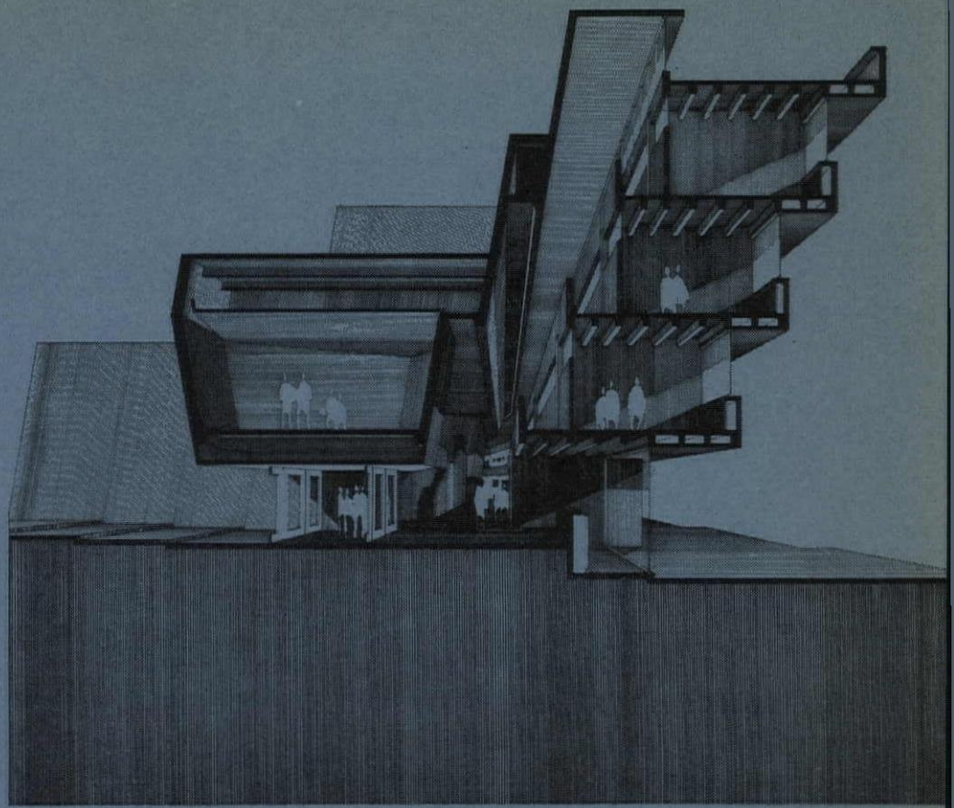
7

Scarborough College, which has provided the opportunity for a young Canadian architect to rethink totally the nature of an expanding campus, based on teaching by closed circuit television, is the first major self-contained part of the University of Toronto to be situated in the suburbs, twenty miles away from the congested central site which will eventually be used for graduate studies only. Planned for an initial intake of six thousand students (comparable with an English ' new university '), the first stage has been completed just over two years since preparation of the master plan. Such speed has been made possible by the adoption of the critical path method with advice from a firm of management consultants, and by appointing the general contractor at an early stage on a fixed fee basis, with all sub-contracts let on open competitive tendering.

The 200-acre site is a ' conservation area ' with a heavily wooded valley and a small river. Buildings being permitted on only fifty acres, the architects have restricted them to the plateau on the north side, where there is better climate and easier accessibility. The building mass itself follows the line of the steep slope which defines the plateau, car parking and future expansion being allowed for on the flatter land beyond. Field research in botany, zoology and climatology will be possible in the valley, the winding woodland paths of which are landscaped in direct contrast to the centralized controlled environment of the buildings, secure from Toronto's extremes of climate.

The single meandering structure, five to six storeys high, is entered from the north side to the main circulation spine (see plan) two or three levels up. The three main parts of the building are distinguished with startling clarity: a central administrative and social focus, a science wing to the west and a humanities wing to the east. Although in the upper levels a main entrance gap is left between administration and science, circulation throughout is by means of enclosed and weatherproof pedestrian streets, skylit or glass-walled.

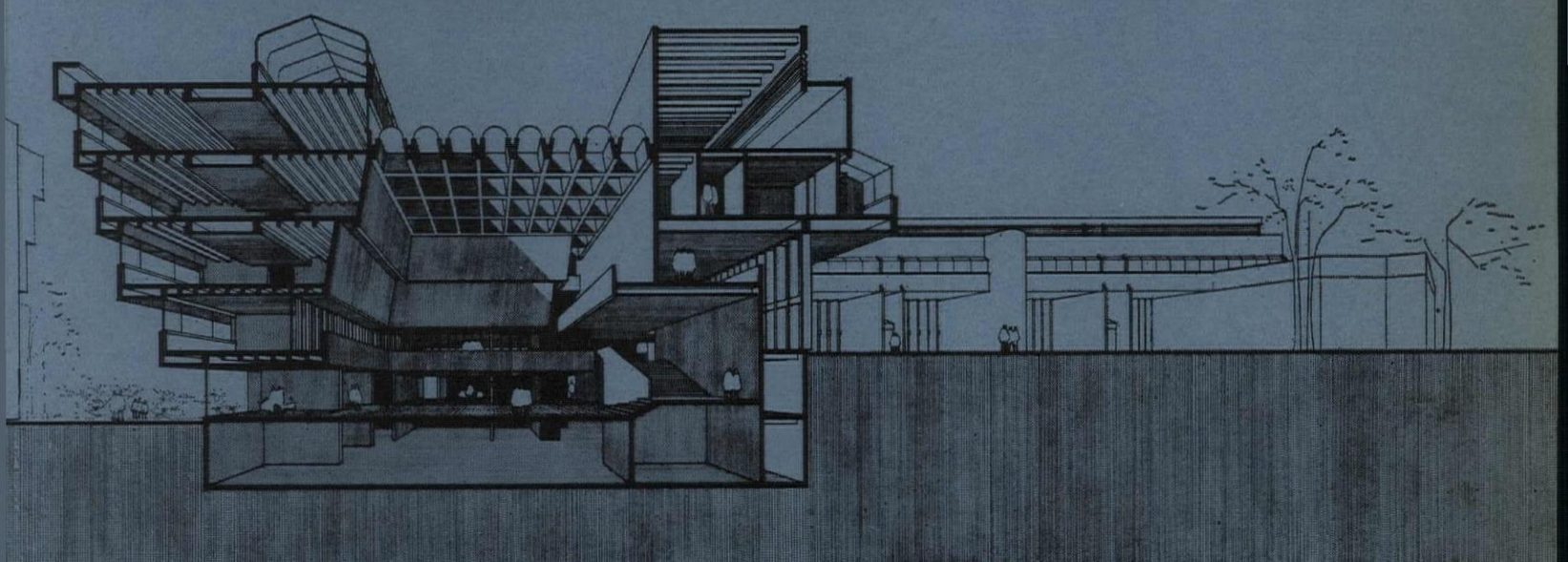
The science wing's elevations are expressive of three types of internal space: the skylit laboratories, grouped two by two around preparation rooms; the lecture theatres, arranged as the ' knuckles ' which enable the block to change direction, with terraces over them in front of student lounges; and the services, straddling



cut-away perspective through humanities wing

the entire building on the top floor and passing downwards to each preparation room in a giant sloping duct large enough to accommodate maintenance men. The sloping south wall, by allowing skylights on each floor, gives the laboratories plenty of wall space, with only small round-headed windows for outside views; it also allows laboratories of varying size on different floors, their average size of twenty student places being conditioned by distances from the closed circuit television screens, which are operated from the main television studio at the western end of the science wing. On the north side access to the upper floors is provided in rounded stair towers.

The humanities wing is distinguished by the way in which the three levels of faculty offices on the west step outwards as ' natural sun screens ' in a reverse slope to the science wing. This enables dramatic diagonal toplighting of the central circulation gallery

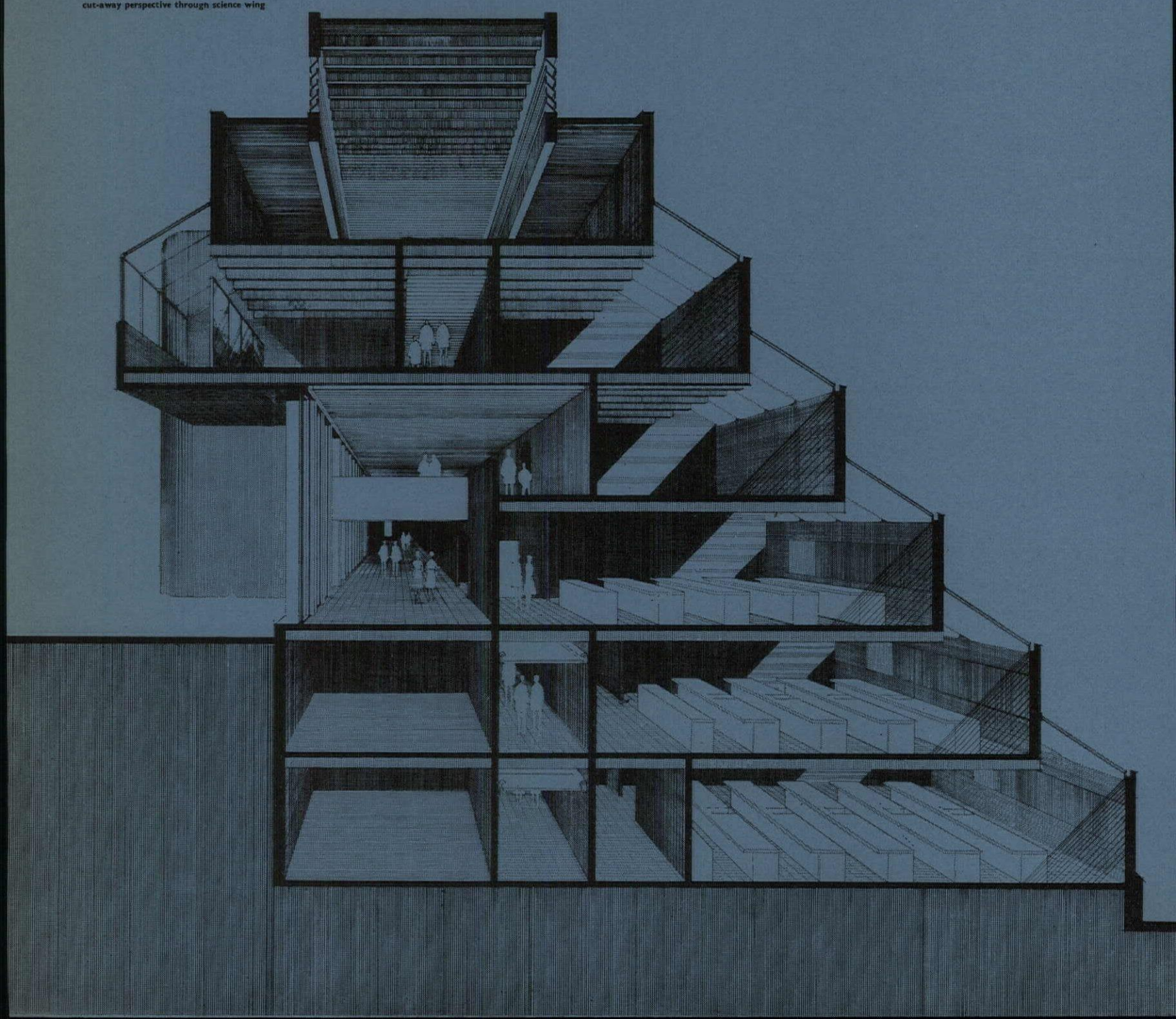


cut-away perspective through meeting place and administration block

with access balconies which runs down the centre of the wing below these three levels, with side lighting of the ground floor as well. The lecture theatres occupy the east side, those of 200 seats at ground level having inward-sloping walls and those of 100 seats at first-floor level having outward-sloping walls—both forms being justified for acoustic reasons. The three largest auditoria (250 seats) are placed again at the corners of the linear layout, which will later extend to both east and west. At the western end of the humanities is the splay-walled boiler house with its triple stack.
The difference of a storey between the circulation streets of the two wings is reconciled in the rooflit 'meeting place' which forms the covered core of the central quadrangle of administrative offices and social facilities. In form this quadrangle (see section) continues the low access side of the science wing on the north and the stepped out cantilevers of the humanities wing on the south. The four-storey coffer-roofed meeting place, lit also from oblique angles at the side, is surrounded by broad galleries leading to bookstores, offices, library (in stage one only), cafeteria and kitchen, faculty dining room, and a group of seminar rooms.
Concrete has been used throughout as the main building material, rugged on the outside where exposed to the weather and smoother inside where close to people. Windows and doors have natural wood frames; floors in the circulation spaces are of quarry tile, with concrete flagstones on the outside terraces; and wide areas of glazing are used in roofs as well as walls.
Planner, Michael Hugo-Brunt. Landscape architect, Michael Hough. Partner-in-charge (Page and Steele), Robert Anderson. Engineering consultants, Ewbank Pillar and Associates.

8 (facing page), the south side of the science wing, showing the skylit laboratories and sloping service ducts.

cut-away perspective through science wing



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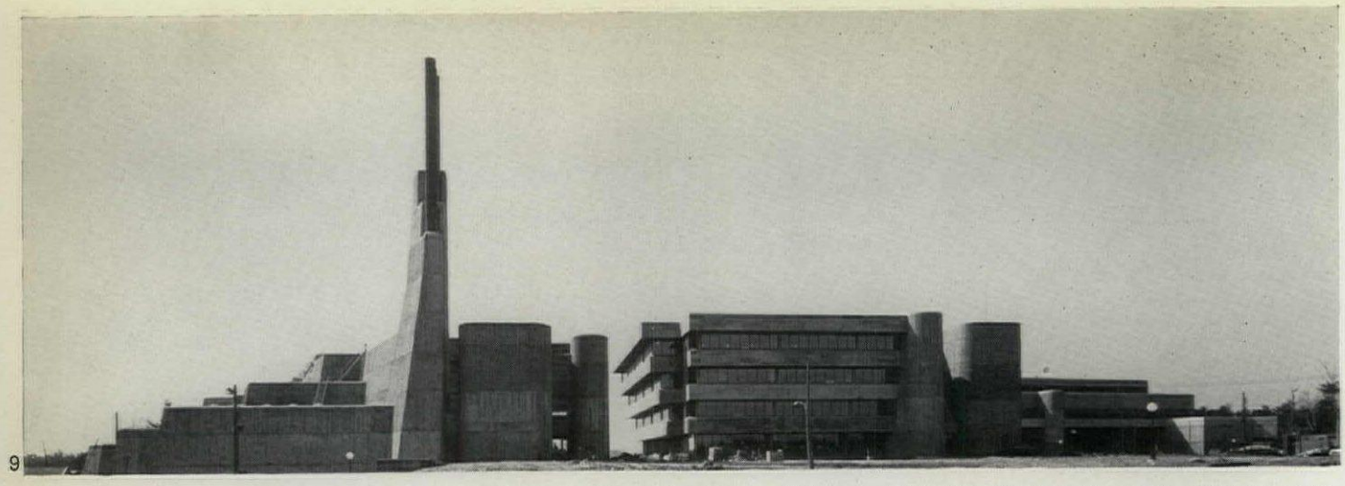

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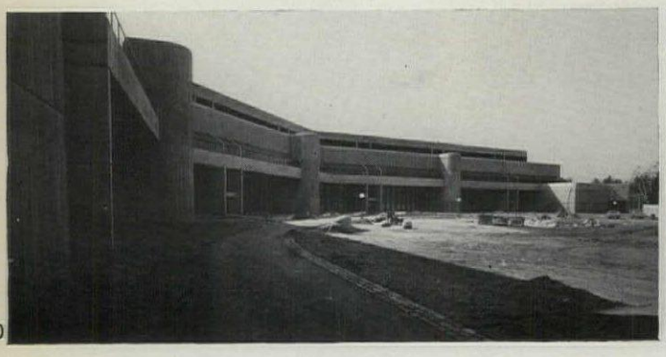
9, from the north, with the triple stack of the boiler house on the left, and the administration block in the centre. 10, the north side of the science wing. 11, inside one of the science wing laboratories. 12, pedestrian street and gallery in the science wing.



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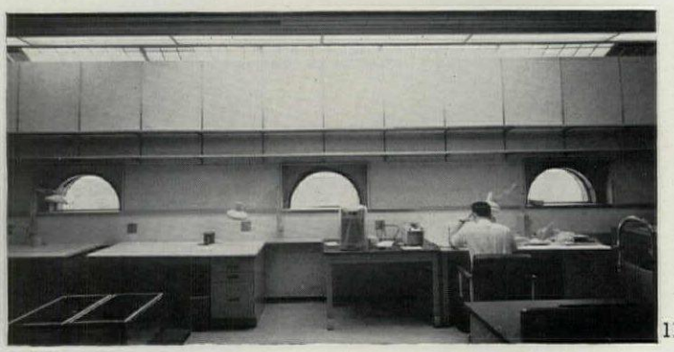

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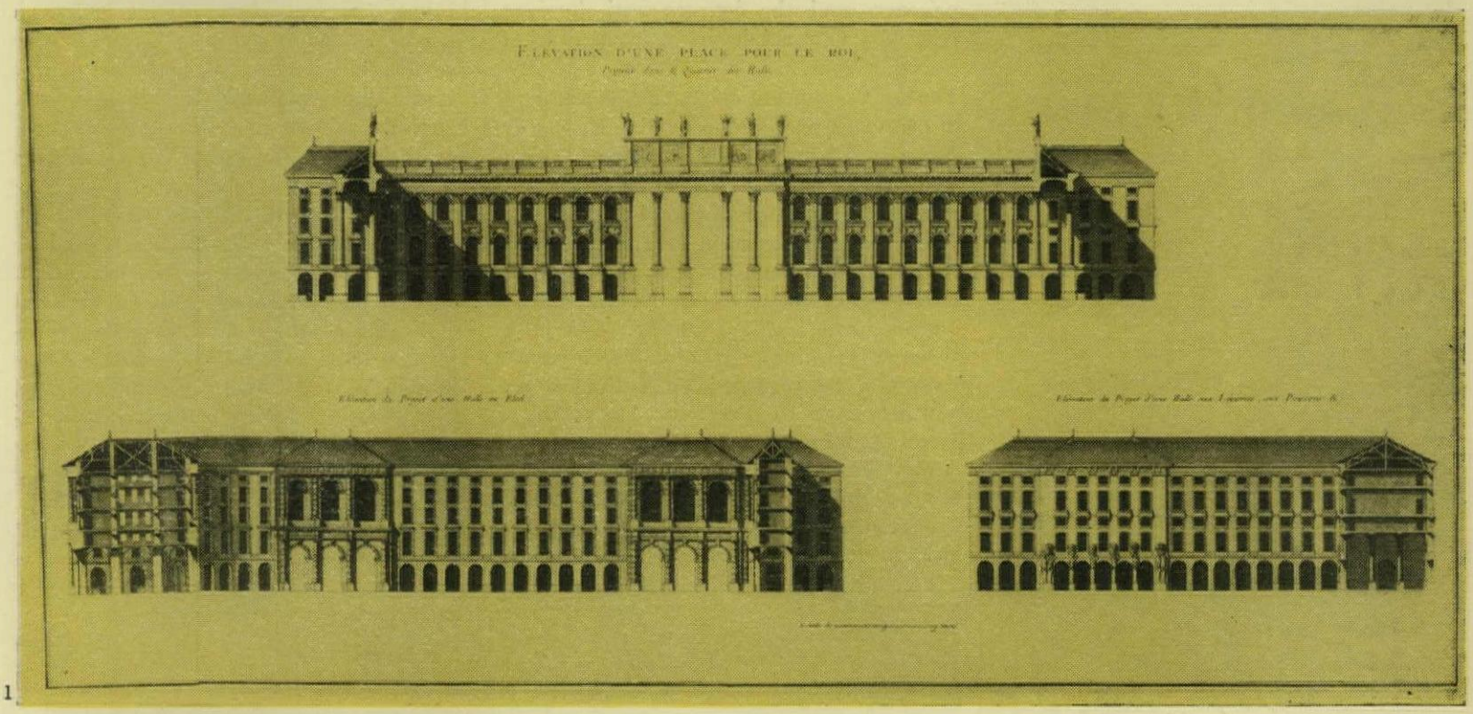
12

COLLEGE, TORONTO UNIVERSITY

THE FUNCTIONAL & THE IDEAL
IN LATE EIGHTEENTH-CENTURY FRENCH ARCHITECTURE

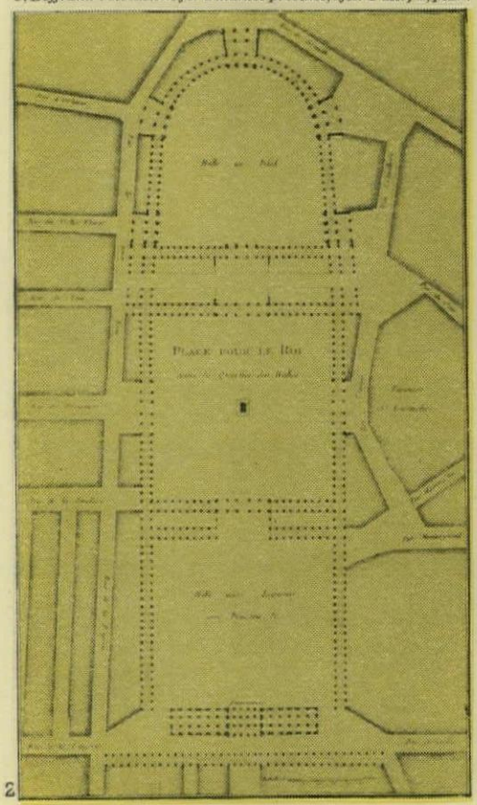


1

HELEN ROSENAU

The works of Boullee, Ledoux and the other French architects of the time of the French Revolution have chiefly been looked at in terms of aesthetic and stylistic fashion. Dr. Rosenau re-examines the same work from the point of view of its functional origin and shows these architects as having an important place in the functional tradition.

1, Boffrand's elevations for a market precinct, after Patte; 2, plan.



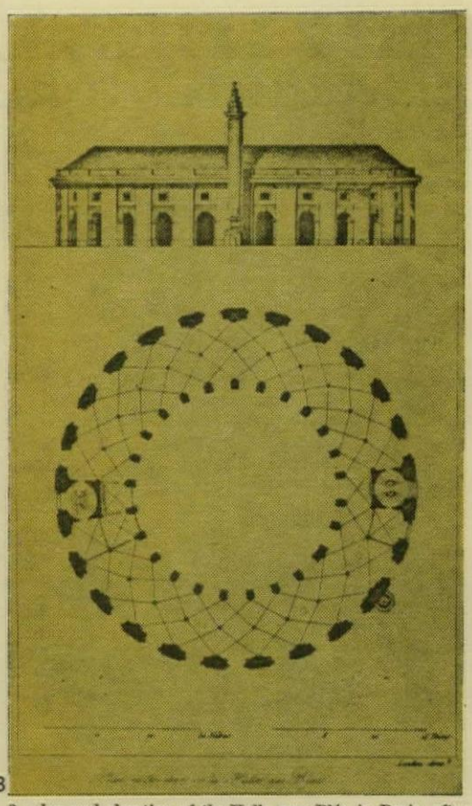
2

In England the so-called functional tradition has been particularly associated with the industrial structures, such as factories, docks, warehouses and bridges, of the early nineteenth century.[1] But forerunners of this functional style existed in France in the late eighteenth century, although the purposes of the buildings were frequently more complex and, therefore, the functional approach to architectural design has not always been fully appreciated.

The background for this development may be found in the intellectual life of pre-revolutionary France. The basic concepts were defined in Diderot's and d'Alembert's *Encyclopédie* as *Caractère . . . La manière qui lui est propre.*[2] Of additional importance was another concept, based on Helvetius, which gained in popularity: the distrust of the unnecessary. In his *De l'homme* (1773) he writes of *deux classes de citoyens, l'une qui manque du nécessaire et l'autre qui regorge de superflus.* The broad middle-class in between he hardly mentions. It was the pressures of political discontent and the rising population in Paris leading to aggravated social problems which interested him.[3]

The main architectural impulse thus came from newly and consciously recognized ideological attitudes corresponding to new social needs and aspirations. It led to an interesting development of planning and building, based on *caractère* and the eschewing of the *superflu*.[4] An example of this changing attitude is one of Boffrand's unexecuted plans, published by Patte in his work on projects for a *place* for Louis XV, *Monumens érigés en France à la gloire de Louis XV* in 1755. The design is of a large precinct, consisting of three squares. The first was to be a vegetable and fish market, the second the setting for the statue of the King, the third, rectangular and closed by an exedra, the grain market, on the site of the Hotel de Soissons, 1 and 2. Patte mentions the Greeks and Romans as models, and compares the projected statue of Louis XV with the one erected in Rome to the Emperor Trajan in his forum. The difference between the cosmic connotations of the forum and those of the commercial market was of no concern to Patte.[5] Among the projects published by Patte, Boffrand's plan is unique, inasmuch as the others are either connected with town halls, as in Paris, Rouen, or Rennes, the Hôtel des Fermes, as in Nancy, or with residential districts. Boffrand's elevations for the market squares are of a monumental order including sculpture. For the vegetable market he proposes caryatids carrying plants and fruit, i.e. expressing the function of the place.

In 1763 the *Halle aux Blés* by Camus de Mézières was begun, one of the really important structures in the history of art, or what the Germans call a *Schoepfungsbau.* According to Legrand and Landon, it gave an impression of massive ancient theatres and amphitheatres, consisting of a circular colonnade, a *chemin de ronde*, surrounding a central open space. Over this open market in 1783



3

3, *plan and elevation of the* Halle aux Blés *in Paris, after Landon.* 4, *part elevation and plan for a House of Correction for galley slaves near Brest.*

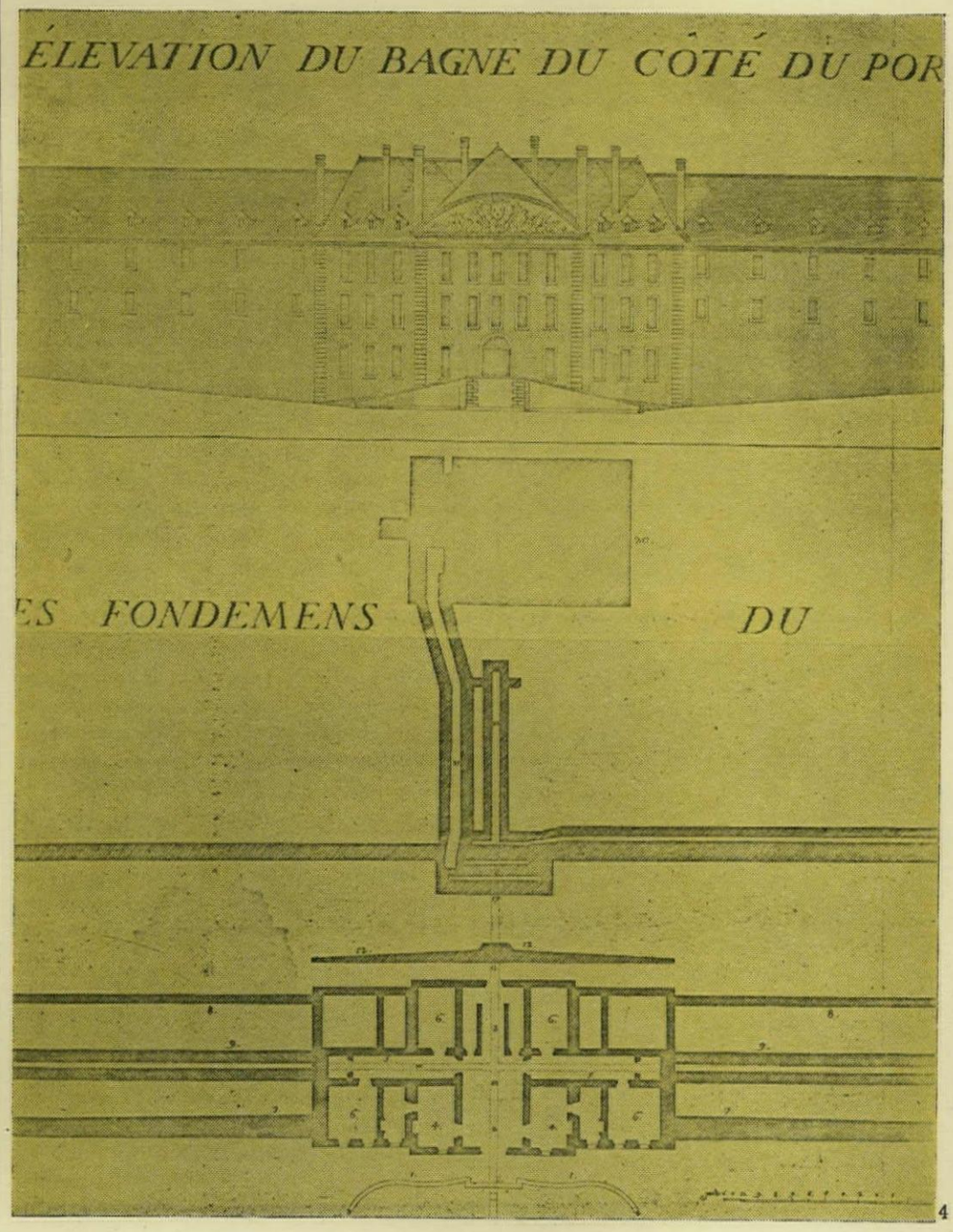
Legrand and Molinos erected a timber dome, and this in turn was replaced by an iron construction after a fire in 1802, by Bélanger. The *Halle aux Blés*, 3, may well, in its final form, have influenced the dome of the Reading Room in the British Museum.[6]

Another project of social importance was for a prison for galley-slaves, 4, a *bagne* near Brest, designed about 1757 in conjunction with the building of three berths for ships, by the architect A. Choquet de Lindu (1712-90). Engravings of the projected buildings appeared in Choquet's *Description des trois formes du Port de Brest . . .*, Brest, 1757. Subsequently he erected some of them, and described them in the *Supplément* of the *Encyclopédie* of 1776, and his illustrations were adapted to appear in the accompanying Plates of 1777. The *bagne* was the prison for former galley-slaves. They had been removed from the hulks in 1748. It is not only interesting to note the scale of the project, intended for 20,000 prisoners, but also the emphasis given to sanitary arrangements, such as latrines, piped water and conduits[7]. This so far minimal amount of social conscience in the equipment of prisons was shortly after developed in Beccaria's study on *Crimes and Punishments*, first published in a French translation in 1766[8]. A century later it led Victor Hugo to a romanticized version of the subject in *Les Misérables*, in which the hero is a galley-slave. The contrast between the sumptuous central mansion of the commanding officer and his staff and the prisoners' wards expresses the conventional attitude of the period, but the spaciousness of the arrangements for the prisoners and the concern with hygiene tells of a new emphasis on humanitarian considerations.

The most significant change in the planning of prisons is represented by the *Maison de Force* in Ghent with its octagonal plan based on an ancient citadel. John Howard reproduces it in the half-completed stage, 5. The building, planned in 1771, was erected between 1772 and 1775, owing to the initiative of Vilain XIIII, for the moral improvement of prisoners, especially through learning a trade. Vilain may, therefore, be regarded as a thinker on parallel lines to Beccaria, but with a greater emphasis on practice.[9]

Although Howard's own prison designs are not influenced by the central plan, the plan of the *Maison de Force* must have been known to Samuel and Jeremy Bentham, and may be regarded as a partial model for the *Panopticon*, 6, which Jeremy published in 1791.[10] It was the principle of inspection which was paramount, the inspectors looking outward. Bentham was particularly interested in the possible adaptations of his scheme, for prisons, 'houses of industry,' poor houses, hospitals, schools, and other purposes.

Another example of functional planning is the radial hospital plan, as designed by Petit in 1774. In his *Mémoire sur la meilleure manière de construire un hôpital de malades*, he was aware of the current of public opinion in Paris, which was shocked by the insanitary conditions then prevalent, especially at the Hôtel-Dieu. A fire there in 1772 had made the problem even more pressing. Radical reform was necessary, according to Petit, and a new type of building was to be developed on a clear and, if possible, hilly site outside Paris. In this connection, as Petit points out, it should be remembered that hospitals in



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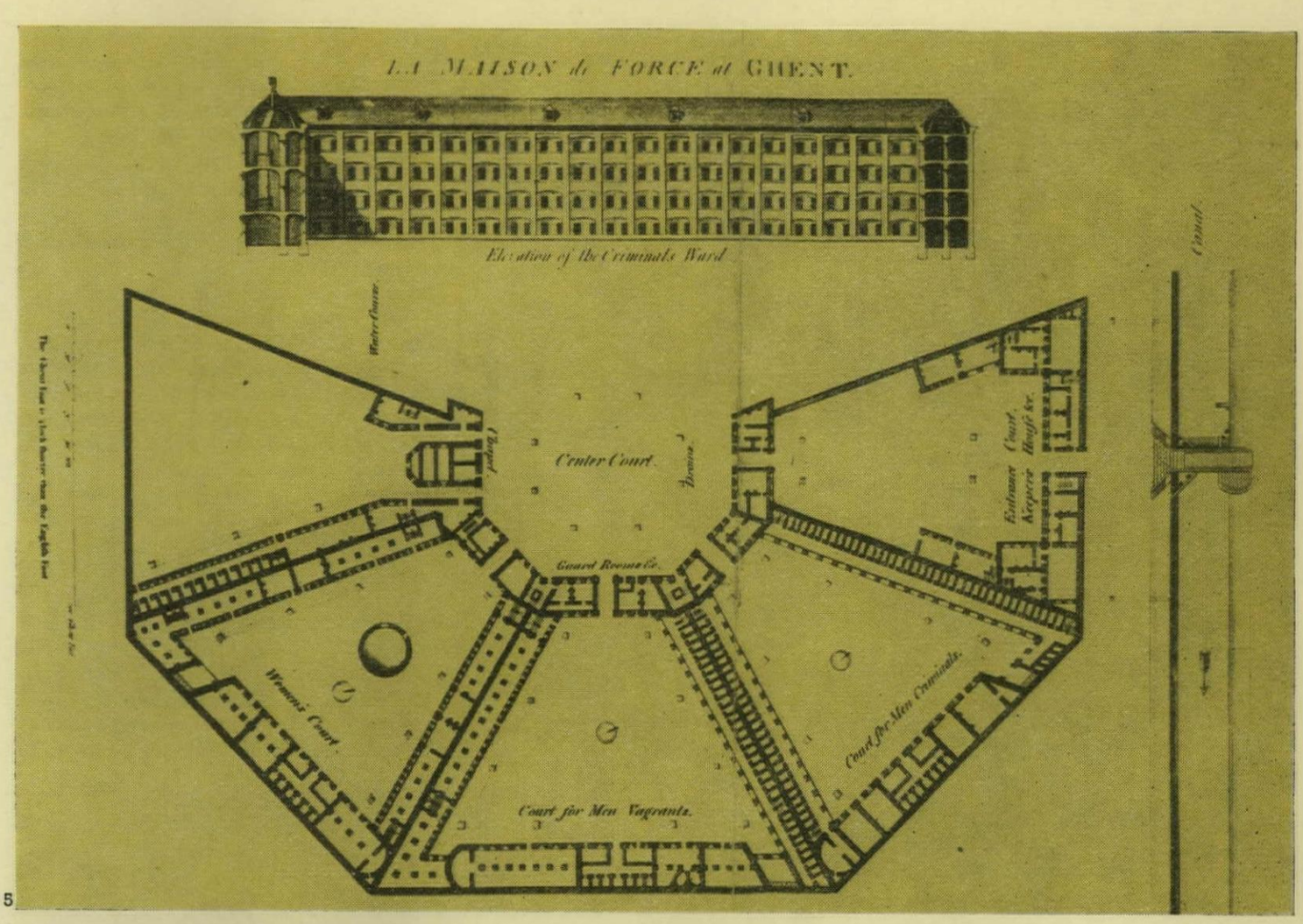


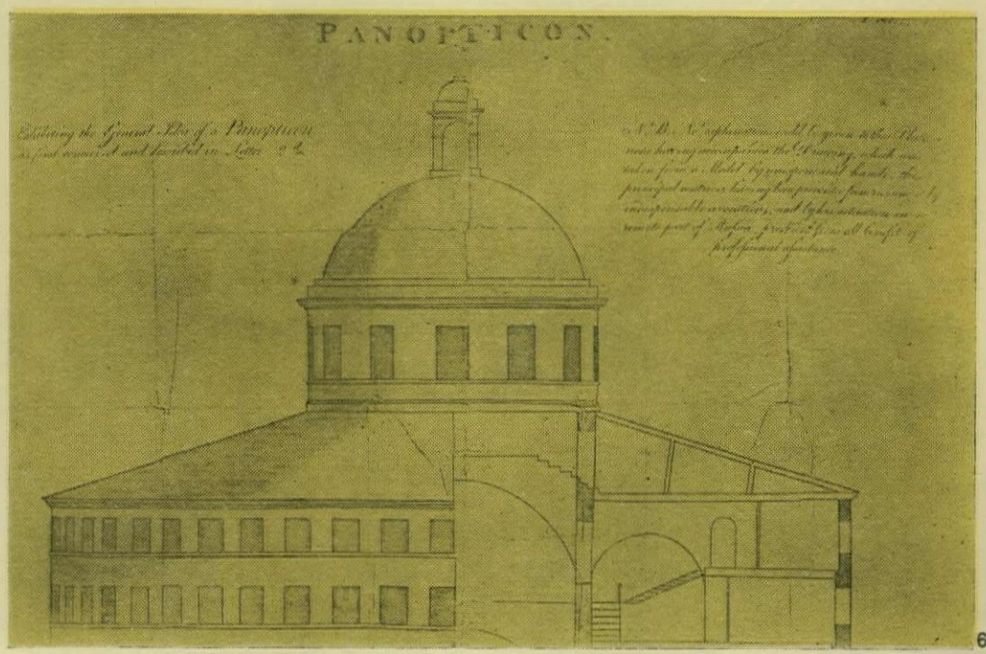
5

5, *elevation and plan of the* Maison de Force *at Ghent, after John Howard,* 6, Panopticon—*elevation after Bentham.*

the past had to be located near churches which provided the necessary funds; in his own period they possessed funds of their own. Petit rejected a site previously proposed by Patte, adjacent to the Seine on the Ile des Cygnes, in favour of the hills of Belleville north-east of Paris, and, at that time, outside the city.[11] For the sake of convenience, however, Petit wished to retain within the city, on the old location, the equivalent of a present-day out-patients' department. Having discussed the importance of a dry, hilly site and healthy air, in order to avoid infection, Petit proceeds to enumerate the two main principles according to which, in his view, hospital buildings should be designed, namely easy access and maximum accommodation for patients. He explains that, for these reasons, the traditional square layout should be avoided, since it makes ventilation and communication between the wards difficult. He advocates a circular plan with six radial wings (this number could be varied if necessary) and a surrounding colonnade, 7, and quotes the architect Prunneau de Mont-Louis in support of his views.[12]

The new Hôtel-Dieu was to be located near another subsidiary hospital, in order to isolate contagious patients—here specialization is seen in its infancy. Petit suggested a central cone to allow good ventilation, and this incorporated a chapel on the ground floor, 8. The patients, numbering about 5,000, were to be guarded from infection by the subdivision of the large four-storey wards, which were to be partitioned into small cubicles or *loges*, to be assigned to individual patients. This was at that time, and even is today, very progressive.[13] Petit was responsible for the basic programme of the hospital. The workmanlike execution of the engravings is by Pierre-Claude Delagardette.

Whilst Petit's treatise failed to achieve wide recognition, his main propositions were popularized by Claude-Philibert Coquéau, a polymath, and the architect Bernard Poyet, who aroused violent controversy. In their *Mémoire sur la nécessité*



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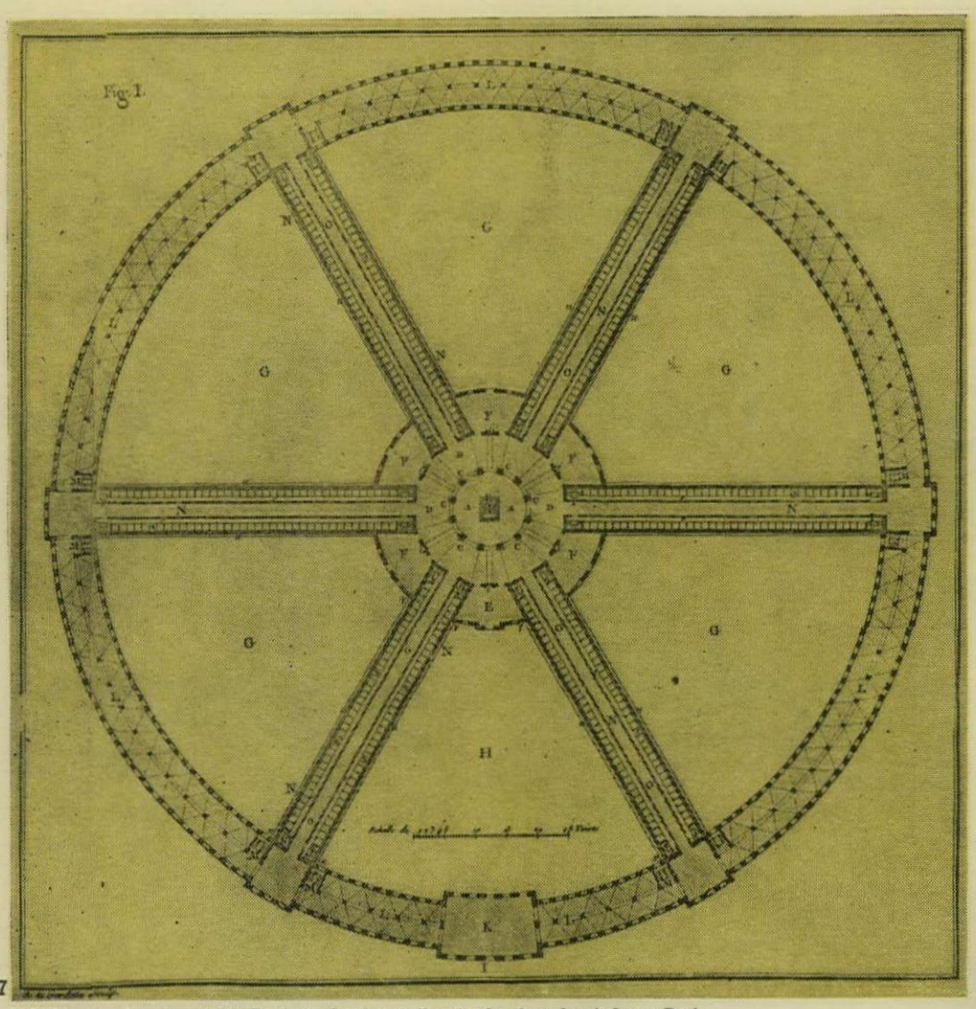


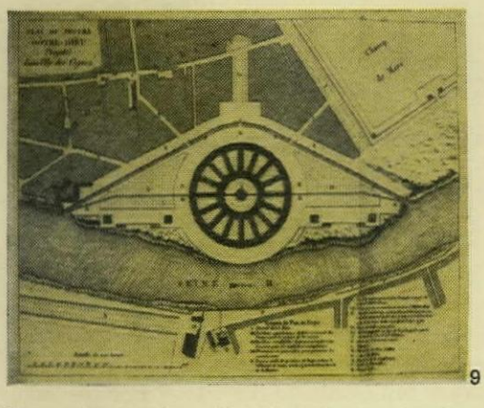
7

7, Petit's plan for a hospital in Paris; 8, elevation. 9, Poyet's plan for a hospital near Paris.

de transférer et reconstruire l'Hôtel-Dieu de Paris of 1785 (and several later editions), they imitated the circular plan, replacing, however, the suggested six radial wards by sixteen; they retained the chapel as a central feature, but added an inner colonnade to Petit's external one. The layout, 9, is therefore more cramped than Petit's.[14]

In spite of Petit's utilitarian explanation of his plans, he reflects the progressive thought of his period, which tended to concentrate on the interests of the common man, the citizen. In his *Avertissement* Petit states: 'Je pense d'ailleurs que, quand il s'agit du bien public, chaque Citoyen est obligé d'y contribuer suivant son pouvoir.' This statement is reminiscent of the concern with the 'citizen' in Montesquieu's *De l'esprit des lois* and especially of the chapter on hospitals, in which the obligation of the state to provide 'assured subsistence' is regarded as a right.[15]

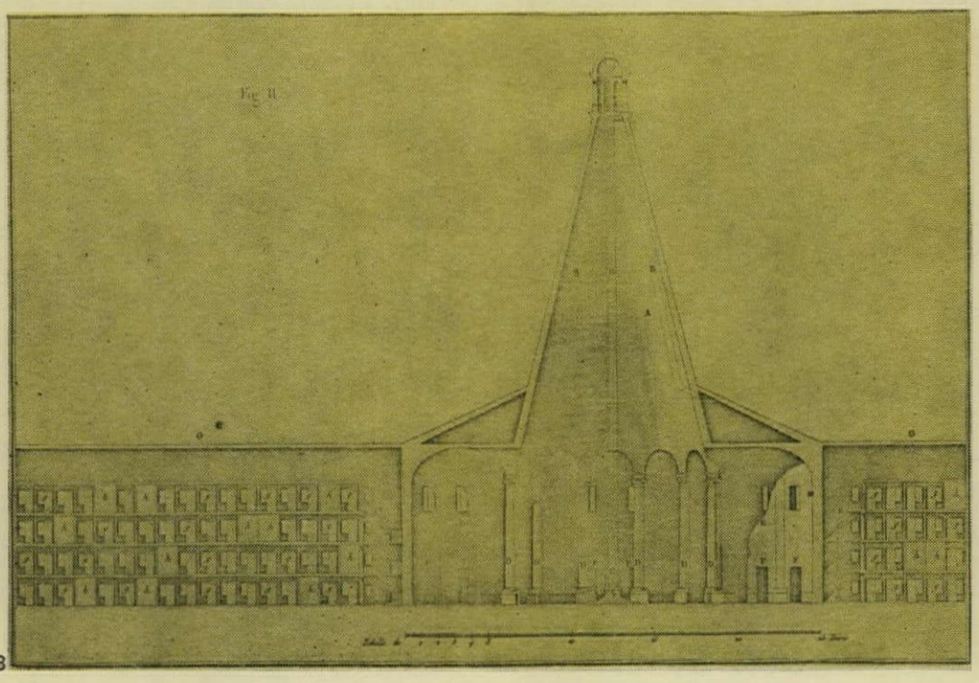
Architecture applied to an educational purpose may be seen in the designs by Hoüel for a civic monument, *Projet d'un Monument Public*, published in 1799. It was based on Boullée's Cenotaph for Newton of 1784 and buildings derived from it, but Hoüel added a dynamic and educational element, since he invented what appeared to be almost a mobile teaching aid: the *geographie* of the globe, which seemed to rest on clouds, and thus suggested movement, was to show stars on the sites of the victories of the French Republic. 'Un globe en tous les tems, n'est égal qu'à lui-même. C'est de l'égalité le plus parfait emblême,' writes Hoüel in a poem.[16] In this manner the globe, 10, lent itself as a symbol to the egalitarian and humanitarian aspects of the eighteenth century.



9

It may be worth noting that the popularity of the central plan enriched a wide variety of eighteenth-century projects and reconstructions. It appears clearly for example in the Comte de Caylus's illustration of an ancient 'Biducean' monument published in 1764, which forms the vestibule of the church at Lantef. It is characterized by a double row of pillars and openings, reminiscent of the radial *Halle aux Blés*, with a tree growing exactly in the centre; this evocative, symmetrical as well as picturesque design, 11, combined for Caylus patriotic and classical elements.[17]

One of the most significant aspects of architecture in the late eighteenth century is the hankering after a gigantic scale. A few examples must suffice. Gondoin's famous *Ecole de Chirurgie* in Paris included a theatre for 1,400 students and fourteen professors, Poyet's hospital was to cater for about 5,000 patients, and Robespierre wanted an assembly hall for 10,000 citizens. Vast numbers had previously been employed in the clearing and building of



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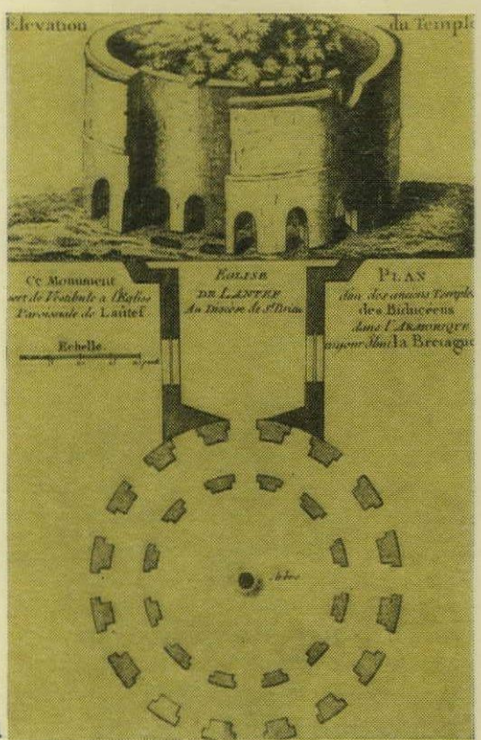


11

10, *Hoüel's design for a civic monument.* 11, *elevation and plan of a temple, after Caylus.* 12, *part of Patte's ideal plan for Paris.*

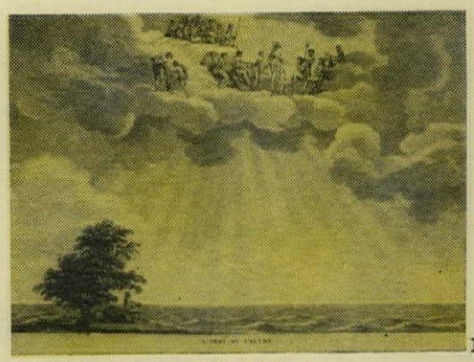
royal palaces. The novelty consists in the wide range of very large secular building during the late eighteenth century, because of the pressure of population, especially in Paris.[18]

From this point of view Patte's ideal plan for Paris, published in his *Monumens* in 1765, is prophetic. By assembling numerous projects connected with the erection of a *place* for Louis XV within the existing layout of Paris, he transcended the essentially Baroque approach of long vistas culminating in isolated buildings, as seen in the Rome of Sixtus V, or the Invalides and the Val-de-Grâce in Paris. He foreshadows a type of multi-focal planning which breaks up the large city into smaller, but still considerable, units, and thus allows provision for increasing population. Patte's plan, therefore, 12, also embodies a functional approach, not only with regard to size, but also to a variety of functions. (*Cf.* the discussion of Boffrand's market precincts above.)

The buildings here discussed are frequently described as belonging to the neo-classical style, and this is indeed true of their structural grammar, which appears to be based on an adaptation of the classical orders and influenced by Antiquity. But it should be remembered that this period is also characterized by the beginnings of scientific archaeology as a discipline in its own right. Furthermore, it developed a novel emphasis on the rational interpretation of structure, distrusting or eschewing unnecessary ornament.

When Ledoux stated that to build for the poor puts the architect in a favourable position because he has to avoid the superfluous and to concentrate on the essential, his approach is not so much neo-classical as consciously functional. In contrast to his romantic evocation of the poor man's shelter, *L'abri du pauvre*, 13, he developed functional concepts of towns and villages, and Boullée introduced historical continuity into planning by relating novel buildings to ancient sites. This is clearly demonstrated, for example, in his design of 1781 for an opera house, 14, set as a simple domed drum shape against the pile of the Tuileries, with its vertical chimneys. Boullée's concern with security against fire reveals his functional approach, whilst the Corinthian orders represent the neo-classical idiom. This building, therefore, sums up the aspirations and traditions of the age.[19]

It is not surprising that the functional impact on individual buildings is also felt in utopian planning. Ledoux's *Prospectus* for his *Architecture*, describing an ideal new town, can be compared with the views of Babeuf, the revolutionary on the advantages of village life. Furthermore in Dubois de Fosseux's *Correspondence* with Babeuf ample references are found to a brochure, probably of 1786, the prospectus of a work planned in eight volumes by a person calling himself *L'Avant-Coureur du Changement du monde entier.* This pamphlet was regarded by Dubois as

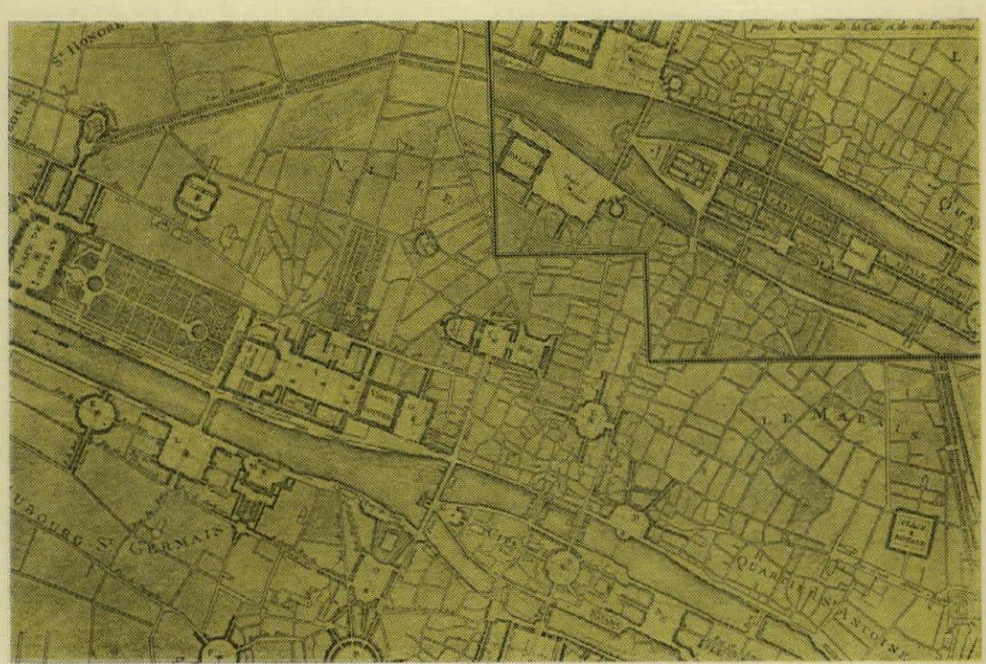


13

13, The Shelter of the Poor, *by Ledoux.*

both 'extraordinary and original.' The work, according to Dubois' brief account, was to deal in its first part with the prevalent misery of the population, in the second with its causes, which unfortunately are not enumerated by Dubois. The third part was to treat the underlying principles of action, and the fourth was intended as a blue-print of future happiness for all citizens, their wives and their children. Better food, clothing, lodgings lighting, heating and education all were to come in. Each member of the population, working according to individual capability, would have more leisure, greater freedom and other desirable things. The fifth part was to deal with the provision of money, without taxation of the poor, presumably by levies on the rich. The sixth and last part was to refute all objections to the scheme.

It is unfortunate that Dubois in his pros-



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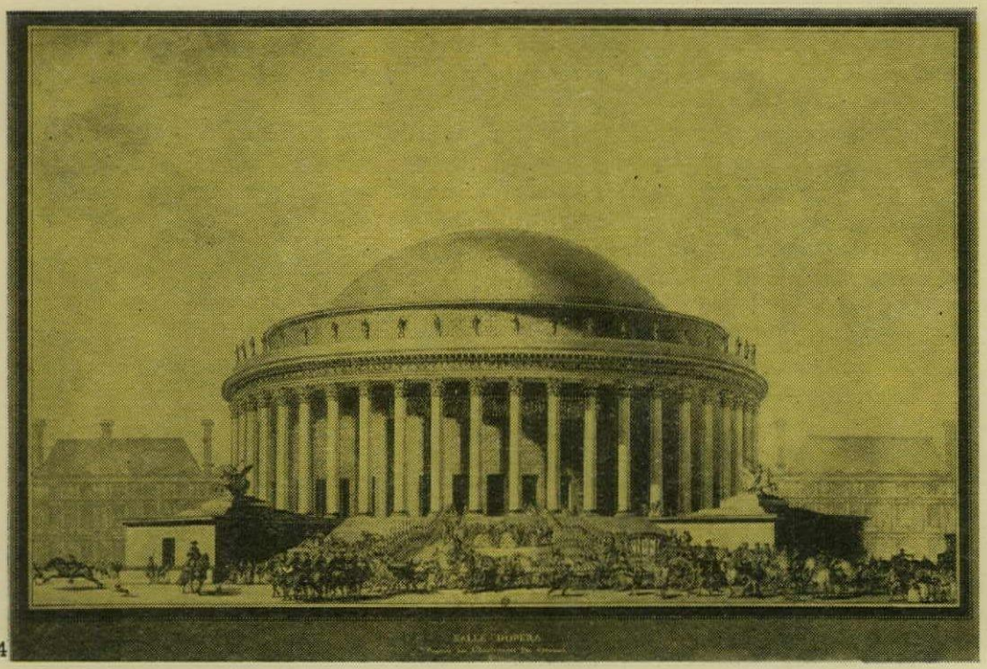

14

14, *Boullées design for a Paris opera house*, 1781.

pectus omits all detail. He suggests 1,000 new towns, 100 colleges for apprentices, 1,500 villages and 330,000 farms, and this mixture of practical and utopian considerations is also a characteristic of the period and seems to be indebted to Morelly's *Code de la Nature* of 1755; here condemnation of private property is based on the laws of nature and leads to the suggested planning of cities of equal size, but designed for the expansion of the constituent quarters. Numerous other examples of this type of planning could be mentioned, such as a project by the Freiherr von Munster of 1770, described in a letter to the German-Jewish philosopher Moses Mendelssohn. Munster owned an underpopulated island, on which he wished to settle, in the true spirit of the French Enlightenment, equal numbers of Jews and Christians, in order to practice toleration and co-operation. Mendelssohn's reply to the suggestion was however sceptical and evasive, and the plan was not implemented.[20]

The thoughts and designs described and illustrated in this article represent the demands and aspirations of an intellectual and professional élite, who had no means of realizing them. Hence the ideal or utopian element appears paramount. It should be remembered, however, that what we have seen was more than a theoretical exercise. It represents an attempt at producing working models for future developments, in which dynamic conceptions of planning replace the traditional static conceptions.

ACKNOWLEDGMENTS

I wish to thank M. J. Adhémar and the staff of the Cabinet des Estampes Bibliothèque Nationale in Paris, M. P. Lavedan and M. and Mme. Hautecoeur for their interest in my work. I also wish to thank Mr. James Palmes and the staff of the Royal Institute of British Architects for their untiring co-operation, and the University of Manchester for Grants for Research Abroad.

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[3] Cf. the present writer in *Gazette des Beaux-Arts*, March, 1964, pp. 173 ff. On the antecedents of the French Revolution see. A. Cobban: *The Myth of the French Revolution*, London, 1954.

[4] *Annales Historiques de la Révolution Francaise*, 1963, p. 439. Helvetius, London ed. 1773, II, p. 169. The idea is present in Ledoux, with regard to the shelter of the poor. *'Il n'est pauvre que du superflu.' L'architecture considérée sous le rapport de l'art . . .*, Paris, 1804, p. 105 f, pl. 33. Cf. also Ledoux's indictment of the *Palais des Plutus modernes.*

[5] Cf. F. E. Brown: Roman Architecture, New York and London, 1963, Section 33ff.

[6] J. G. Legrand and C. P. Landon: *Description de Paris* vol. II, Part III, Paris, 1806–9, pp. 29ff. J. Stern: *A l'ombre de Sophie Arnould. F. T. Bélanger* II, 1930, pp. 233ff.

[7] *Encyclopédie*, Supplement on Bagne, with plates.

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[10] Another possible source for Bentham can be found in fortifications. Cf. the Marquis de Montalembert's: *La fortification perpendiculaire*, I, Paris, 1776, passim. Cf. also *Panopticon: or the Inspection House . . .*, London, 1791; French ed., Paris, 1791. D. L. Howard: *The English Prisons* London, 1960.

[11] Petit, p. 5 f. P. Patte: *Monumens érigés en France à la gloire de Louis XV*, Paris, 1765, p. 213.

[12] Prunneau de Mont-Louis was a judge in a competition, won by Patte, for the church of Bolbec. Ch. Bauchal: *Nouveau Dictionnaire Biographique . . .*, Paris, 1887, p. 433.

[13] Petit, pp. 11 f.

[14] Poyet was regarded as a plagiarist by his contemporaries Cf. *Un Bon Homme aux Etats Généraux sur quelques objects relatifs aux arts: sur M. Poyet et les plagiaires.* This seems justified, at least in this instance, when remembering that Coqueau was concerned with hospitals as early as 1776, and that Petit had developed the radial plan. Cf. the writer's article in the *Zeitschrift für Nunstgeschichte*, 1964, pp. 124ff.

[15] *Oeuvres complètes*, ed. by R. Caillois, Paris, 1951, pp. 712 ff.

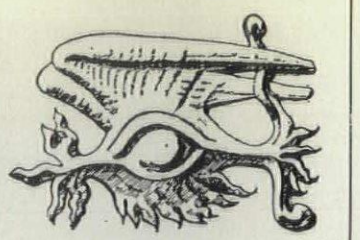
[16] H. Rosenau: *Boullée's Treatise on Architecture*, London, 1951, passim. J. Hoñel: *Projet d'un monument public*, 14 Brumaire, an 8. Cf. *Zeitschrift für Kunstgeschichte*, note above. The term *géographie* is used for the decoration of a *celestial* or *terrestral globe* by Philibert de l'Orme in his *Nouvelles Inventions pour bien bastir et à petits fraiz*, I, Paris 1561, fol. 32r.

[17] *Recueil d'antiquités*, Paris, 1752–64, VI, pl. CXXIV.

[18] J. Gondoin: *Description des Ecoles de Chirurgie . . .*, Paris 1780, passim, pl. VI. On the population problem cf. M. Reinhard: *Histoire de la population mondiale*, Paris, 1949, passim. As a major source: *Tableau de Paris*, written by S. Mercier and published anonymously. New ed. II, Amsterdam, 1782, pp. 123 ff.

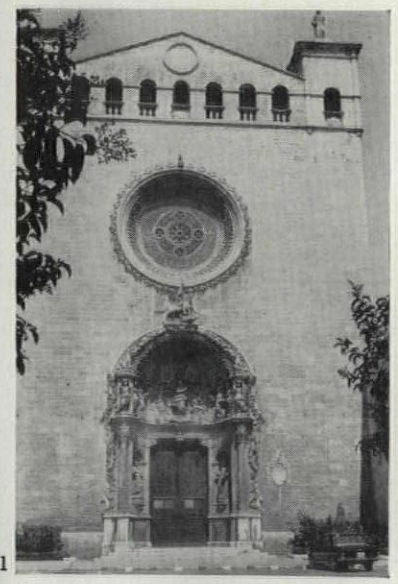
[19] C.-N. Ledoux: *L'architecture considérée sous le rapport de l'art . . .*, pl. 33 and text thereto, pp. 104 ff. *Boullée's Treatise on Architecture*, ed. H. Rosenau, pp. 16 f, and pp. 55 ff. Also in *Gazette des Beaux-Arts*, March, 1964, pp. 178 ff.

[20] The Ledoux *Prospectus* is rare, but is found in two copies in the Sir John Soane Museum. Cf. *Gazette des Beaux-Arts*, op. cit. above. V. Advielle: *Gracchus Babeuf et le Babouvisme*, Paris, 1884, 2nd part II, pp. 32 f., 120 f. and passim. M. Mendelssohn: *Gesammelte Schriften*, V, 1844, pp. 623 ff. *Code de la Nature*, probably Paris, 1775, pp. 198 f.



the exploring eye

The church of the Convent of San Francisco in Palma, Majorca, was started in 1271 and was completed in the fourteenth century. The magnificent facade and main doorway were added late in the seventeenth century by the architect and sculptor Francisco Herrera, who was commissioned to come to the island in 1680 to begin work on it. He spent his youth in Rome and, after finishing his work on the church of San Francisco, he settled in Majorca and worked on the church of San Nicholas de Tolentino, where he designed an octagonal dome with colossal busts and a clock-tower. In the cathedral he decorated the chapels of St. Anthony and Saints Martin and Bernard and made an equestrian statue for the chapel of St. Martin. His son, Gregorio, was a sculptor and a painter, who worked a little in Palma but mostly in other parts of the island.



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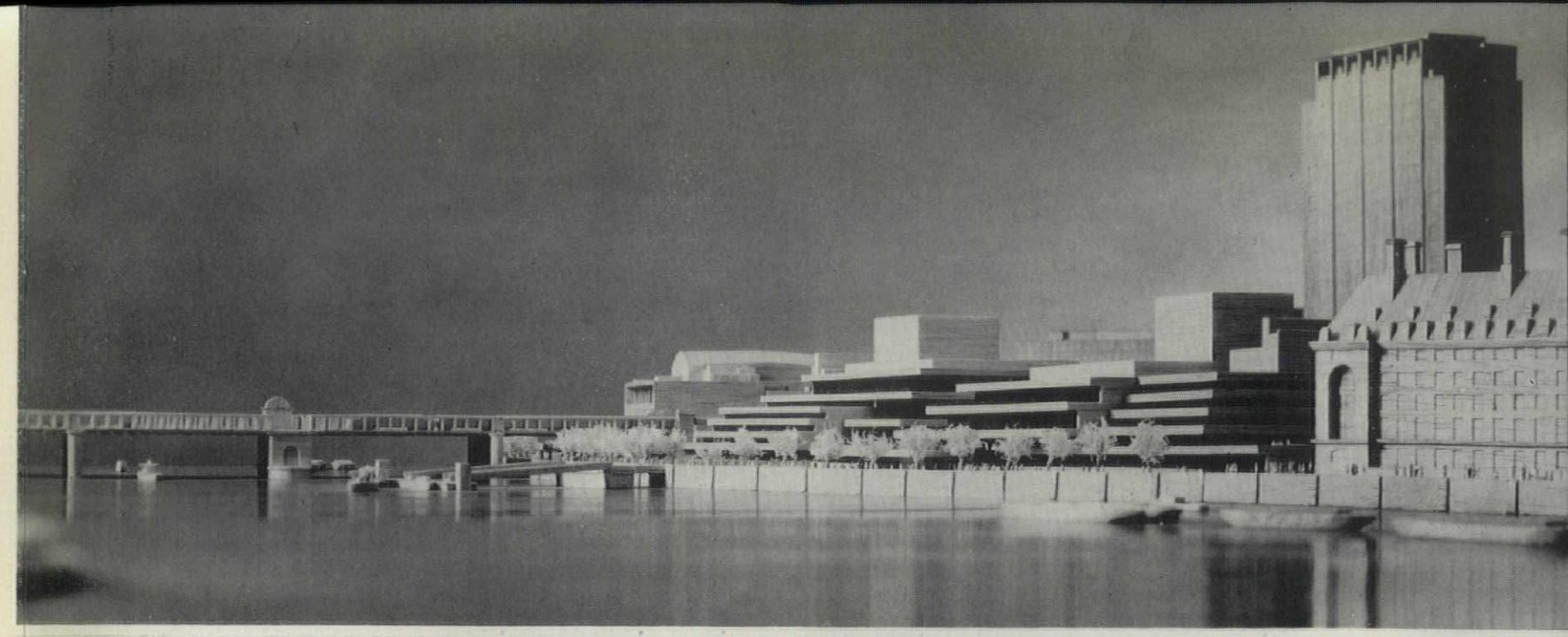
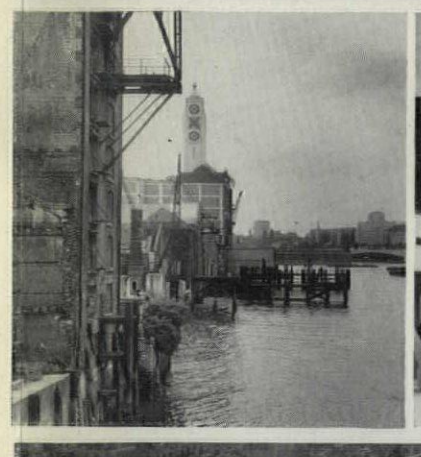
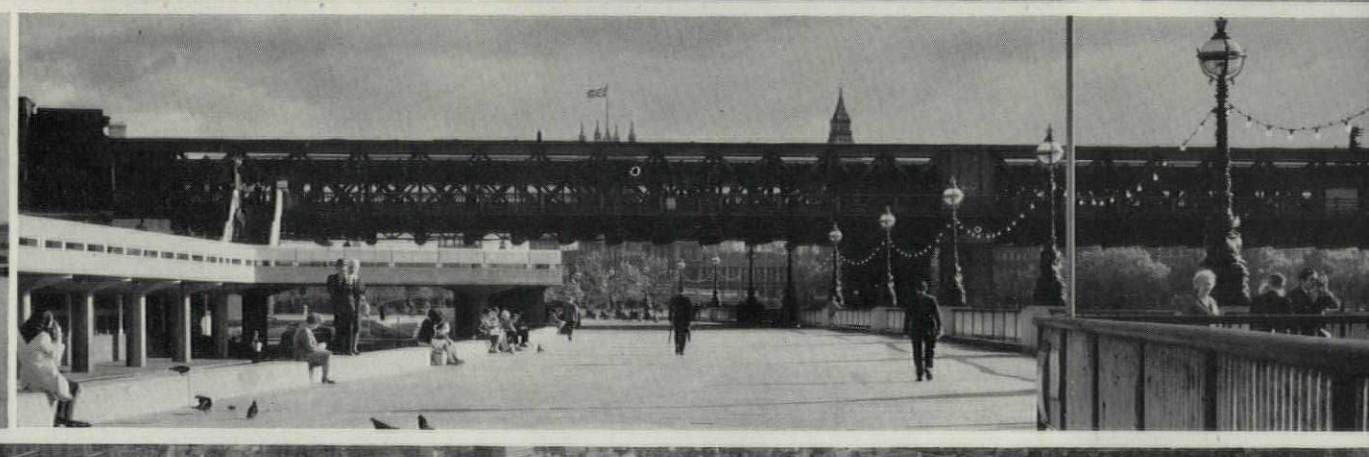
1, the main facade of the church of San Francisco.
2, carved column and cherubs by the main door.







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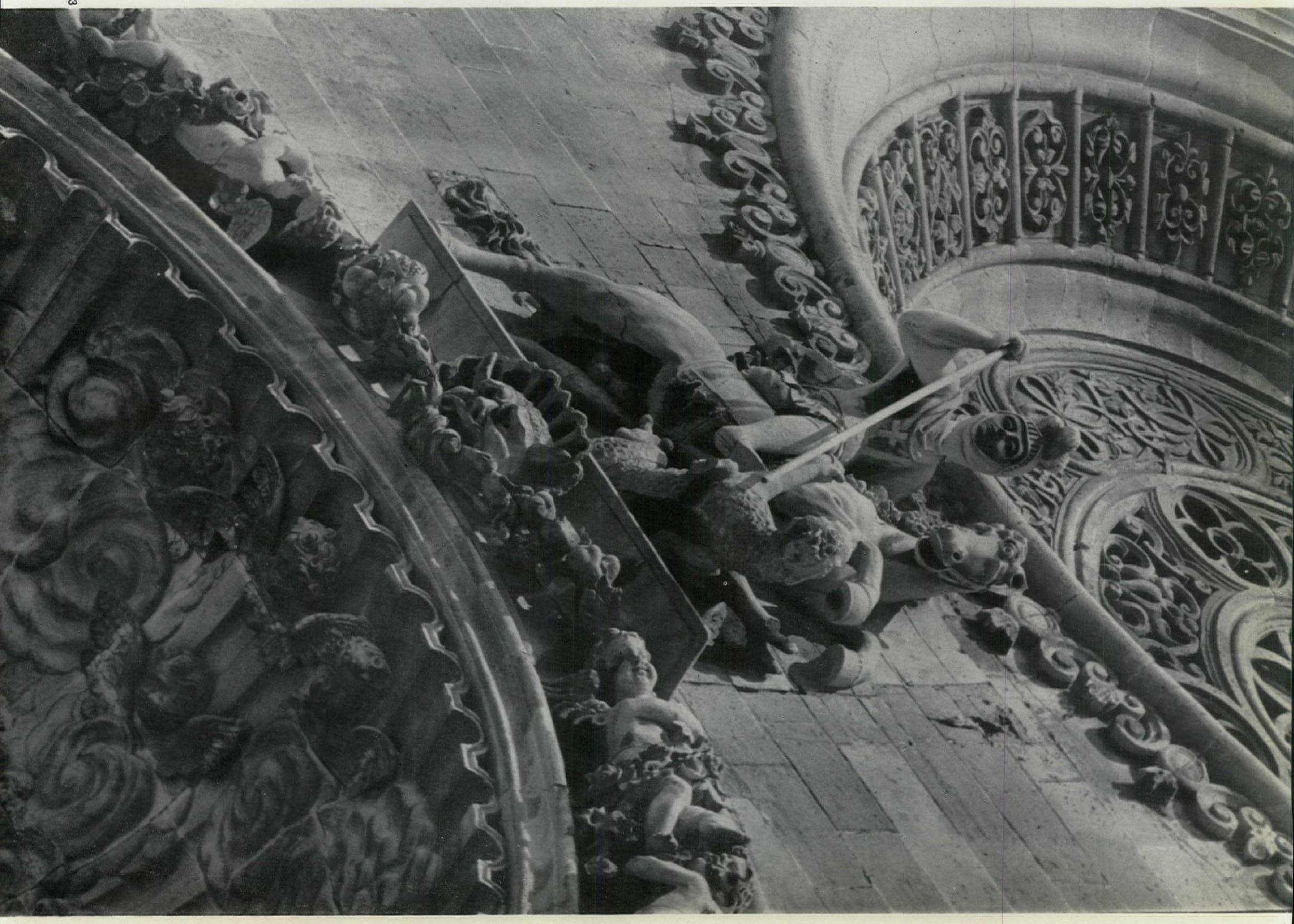
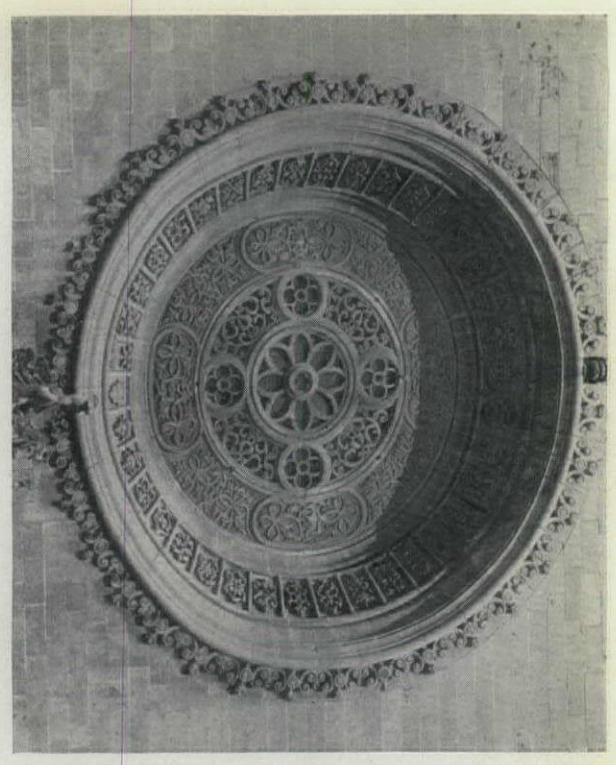


3, sculpture of St. George and the dragon over the main door. 4, rose window and, 5, tympanum on the main facade. 6, figure on the right of the doorway. The carving is by Francisco Herrera.

4



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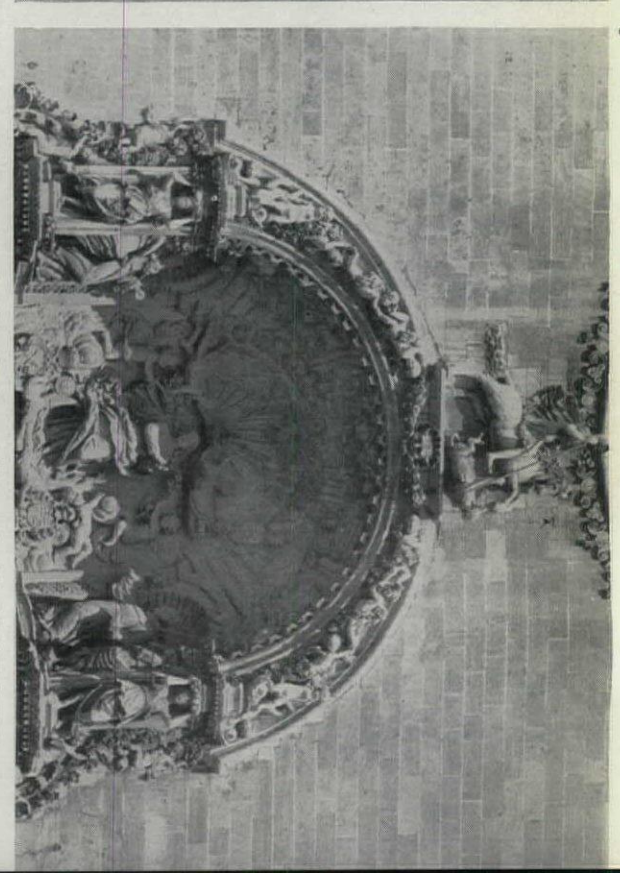


6

Facing page, top: Model of Denys Lasdun's National Theatre scheme, with the Shell tower behind. Centre left: warehouses by Blackfriars Bridge. Centre right: the promenade by the Festival Hall. Bottom: aerial view of the South Bank. (Key: a, Southwark Bridge; b, Blackfriars Bridge; c, Waterloo Bridge; d, Hungerford Bridge; e, Westminster Bridge; f, Waterloo Station; g, Shell tower.)

TOWNSCAPE

Kenneth Browne

WEST END 3.
SOUTH BANK
NEW TOWN

Why new town? Because here, on South Bank, is the golden opportunity to build a new West End to relieve the pressures on the old. Before the existing West End is completely wrecked, development pressures should be diverted here, to an area absurdly underdeveloped considering its central position. Where also, unlike the present West End, there are few fine buildings which must be kept. But, unless the chance is seized now it will be lost, frittered away in unco-ordinated rebuilding.

The argument that the area is too remote is seen to be invalid when you look at the map (see above). The area of South Bank which directly affects the West End, that is between Lambeth and Blackfriars bridges, is contained in a great curve of the river with St. George's Circus equidistant from the City, Fleet Street and Westminster and the Festival Hall no further from the Strand than Piccadilly Circus. Again the shortest route between Westminster and the City is via South Bank. Distance then is no objection, but precedent and communications really are. However, it is worth noting that the removal of Shell to South Bank has already stimulated commercial interest there which is likely to grow. As for communication, the important thing is visible connection. It must be linked to the present West End in such a manner that the river ceases to be thought of as a barrier. Also there needs to be a strong enough magnet to attract the crowds there as the Festival of Britain did in 1951.

If the opportunity is in fact wasted, it will be for lack of a sufficiently bold conception of what it might become. Piecemeal rebuilding will then obstruct future opportunities and high building, not directed to any overall effect, wreck it as urban landscape. But another danger is the over-emphasis on culture. Zoned as a 'cultural centre' by the GLC, the riverside could easily become too serious and too stodgy, a perch for culture vultures only.

CHARACTER

This would be a pity, as for centuries South Bank was London's pleasure ground and it could be so again. The success of the Festival of Britain showed that. Then, for a brief season, the whole place was literally set alight, the gaiety irresistible with bands, gay crowds and light-hearted buildings brilliantly set against a changing backdrop of the river. This set the pace, giving high hopes for the future of South Bank: hopes so far unrealized. As long ago as 1949 Gordon Cullen foresaw the danger* that strict zoning might turn this into 'a cultural centre enveloped nightly in gloom' if the vitality injected by the forthcoming Festival was not maintained. Again, in 1951†, he showed how this could be avoided, using the ideas thrown up by the Festival in a more permanent form. Today these lessons seem to have been forgotten. Surely it is time to relearn them.

The main object must be to bring the South Bank really within the orbit of the West End. With sky-signs advertising its attractions across the river it should contain theatres, dance halls, exhibitions, restaurants, bowling alleys, pubs, sports arenas, pleasure gardens, bandstands, the lot; reached from the river by gay landing stages and waterside piers. Also there should be plenty of houses for people who want a cosmopolitan life near the centre of London.

SCALE

However, only tackled in a big way can this be made to work, so formidable the are traffic problems. Indeed, it seems clear that this is a case for rebuilding on a multilevel system, with complete segregation of people above the traffic, not the half-hearted measures that no one bothers to use. With few buildings which must be preserved, unlike the existing West End, here is the chance to do things on a sufficiently large scale (learning from the draughty mistakes of Route 11 and the traffic domination of Elephant and Castle).

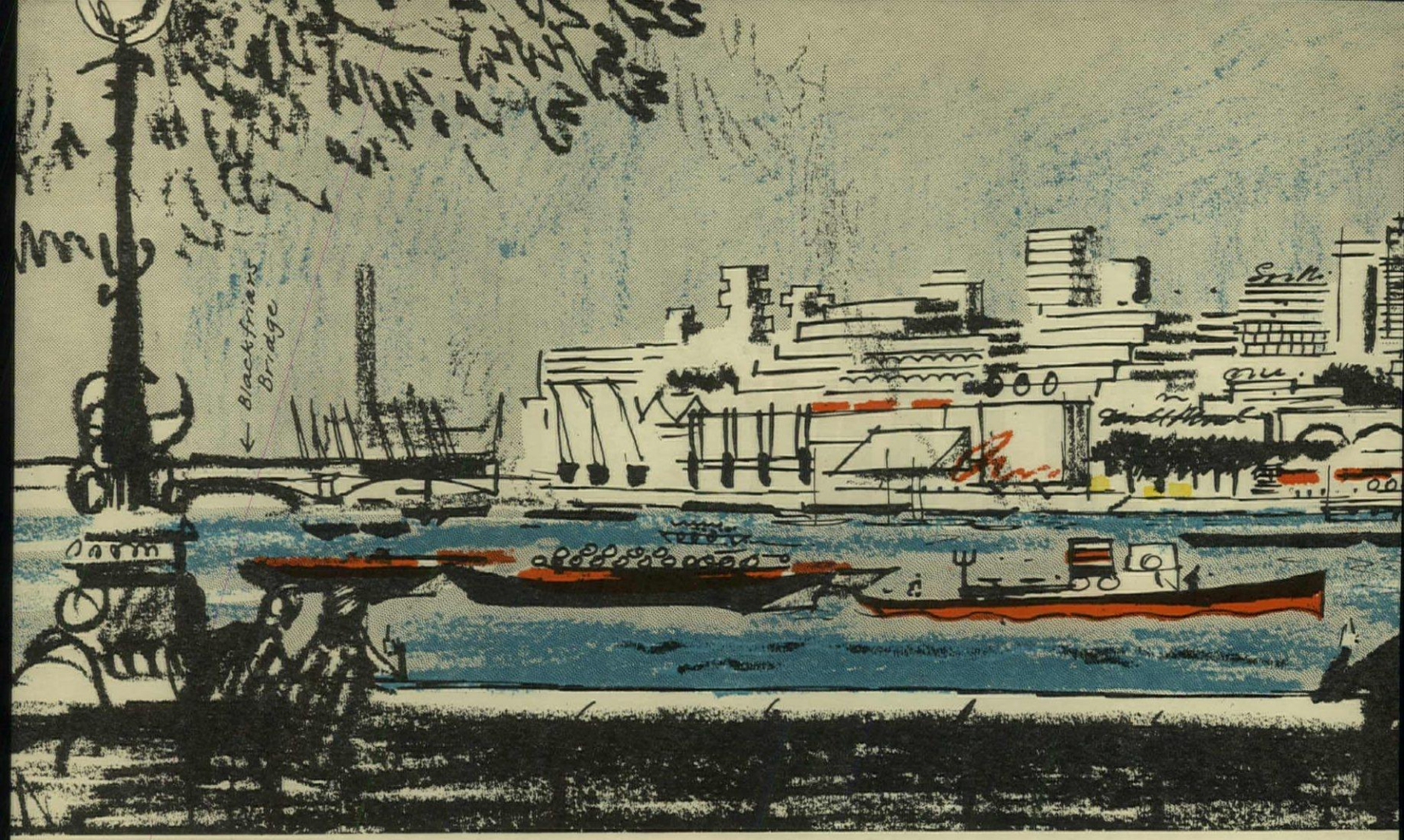
Waterloo station seems to be the key to all this. At the centre of the river's curve, its platforms are already at a raised level and even now, if you know how, you can walk above the traffic from the station to the opposite side of the river. (And to see how cleanly this can be done, look at the bridge spanning between buildings across York Road.) It is not difficult, then, to imagine Waterloo re-developed as a giant transport interchange, possibly combined with a new Charing Cross station moved south of the river and with travelator links to the Strand, as Professor Buchanan has suggested. The new combined station would have concourses, squares and a network of pedestrian spaces lined with shops at the present platform level (i.e. above the traffic) and rising from them high towers of offices and flats. In fact, office buildings, rightly discouraged elsewhere in central London, could well be encouraged here where secondary transport would be unnecessary.

RIVER VIEWS

The river must be the starting point in talking about the South Bank as townscape, for here are the most important open views in London, views which in some cases have already been sadly marred by the mad folly of allowing high building near St. Paul's. This has reduced the splendid dome in some cases (as seen from Hungerford Bridge, for instance) to merely one incident among many. Enough to make Canaletto weep.

But if, for instance, you look across to South Bank from Victoria Embankment in front of the Temple you see a stretch of riverside crying out for attention, 2. Today it is just a dreary mess of unrelated stores, warehouses and sheds with the ungainly bulk of Shell rearing up on the right like some giant's wardrobe dumped down on Thameside; the whole scene as inspiring as cold porridge. Yet it is a magnificent site right opposite Somerset House, one of the finest buildings in London. Today, it looks more like Tilbury. But this stretch of river could look very different with a concentration of new building such as we have described; perhaps as shown in 1, a shallow pyramid of towers, the highest over Waterloo station and along Waterloo Road and with multi-level lower buildings terracing down to the Thames. The foreshore would be alive with entertainments of all kinds closely linked to the river with its jetties and pleasure craft. This concentration of high towers at Waterloo in the centre of the river bend would also work visually from all angles up and down stream and not obstruct the remaining views of St. Paul's. Also the now disruptive vertical of Shell could be neutralized, absorbed in the general massing.

* 'Bankside Regained' by Gordon Cullen. AR, January, 1949.
† 'South Bank Translated' by Gordon Cullen. AR, August 1951.



1 South Bank revived

LIVE LINK

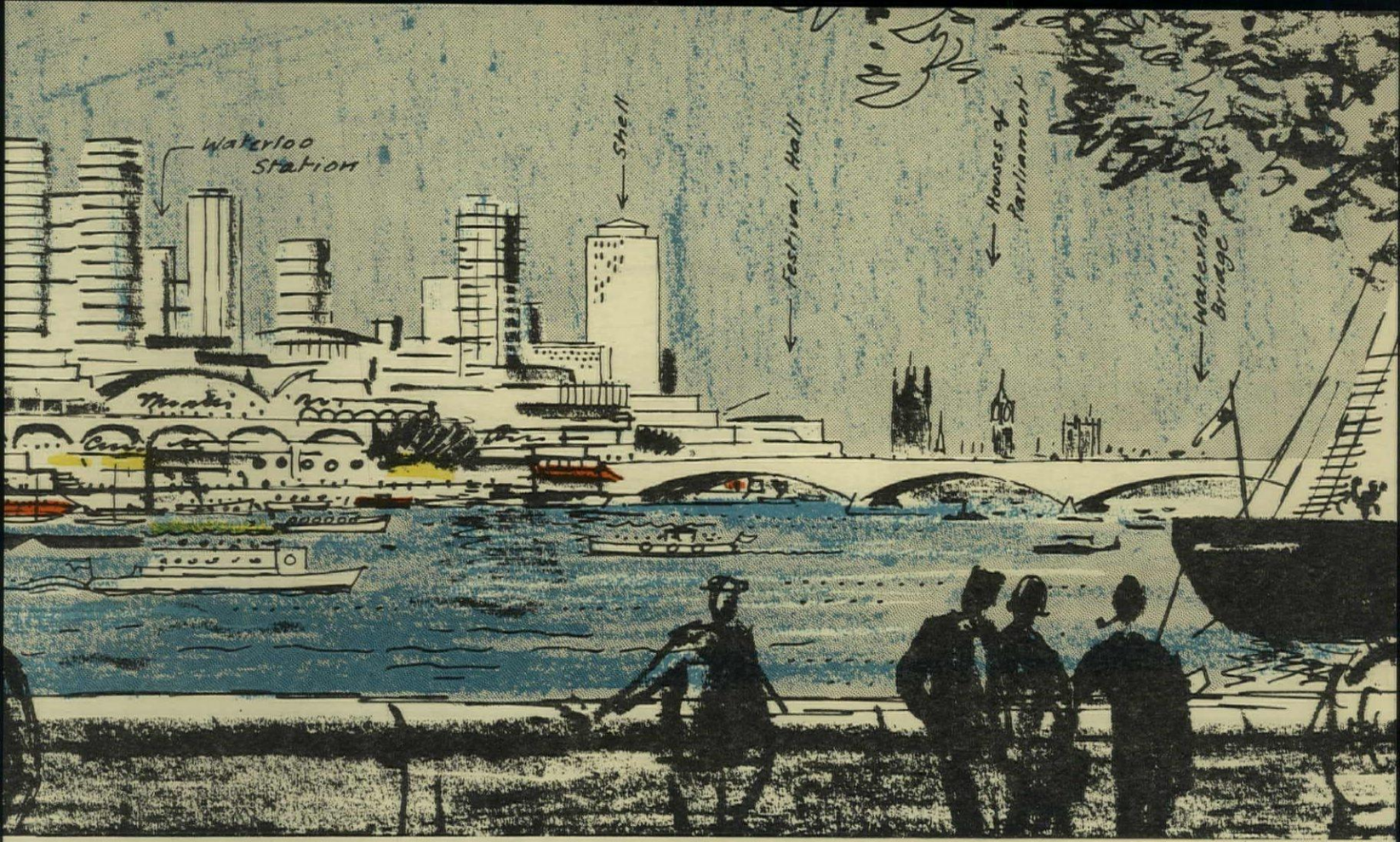
But the effectiveness of any attempt to revive the South Bank will depend largely on the closeness with which it can be linked to the existing West End. The links must seem inevitable and inviting. For example, Hungerford bridge, the present foot route to the Festival Hall, is today as dismal and uninviting as it could be—a bleak catwalk on the side of a railway bridge, so narrow that two people can scarcely pass. But this bridge is in an important strategic position, for it points straight at the heart of the West End, at Leicester Square and Piccadilly Circus. The present structure, an eyesore anyway, should be replaced in such a way as to offer a direct pedestrian link between the Strand, South Bank riverside and Waterloo station. Broad and lined with shops, cafés and pubs, it should be a street crossing the river, 3, and with a restaurant in the middle giving splendid views up and down river, 4. It could be glazed against the weather and its form would depend on the transport needs (5 A and B show in diagram two versions, with and without the railway). If Charing Cross station were moved to South Bank, then a travelator system would be incorporated in the bridge for rapid cross-river transit, with wide footpaths for more leisurely walkers. Such a broad high-level connection, together with the terraces of the proposed Opera House, would help to break the seemingly impassable barrier created by the Shell complex. But the bridge structure must not be so bulky as to obstruct the important river views to Parliament and St. Paul's.

SOUTH BANK RIVERSIDE

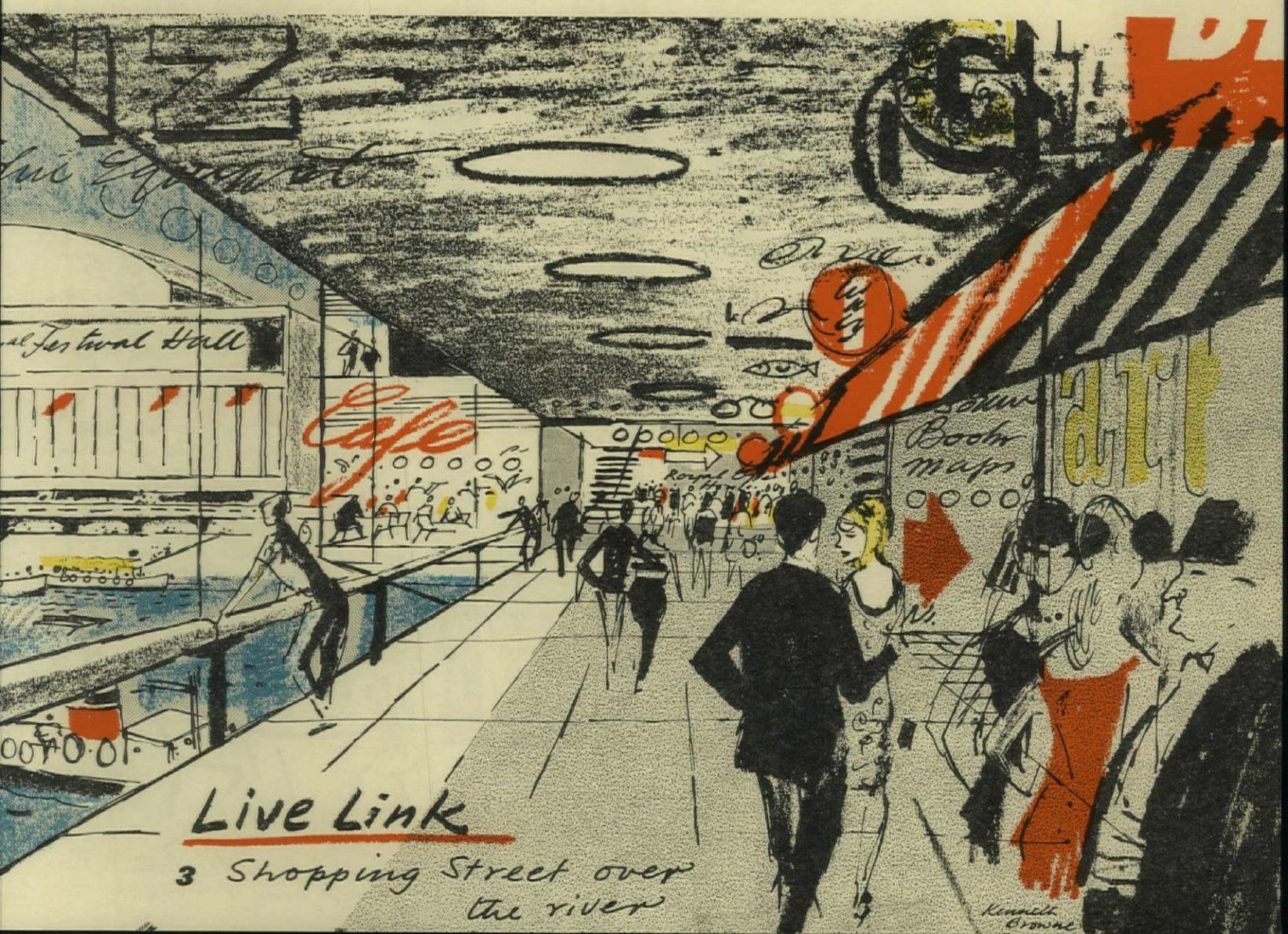
Here is the chance to give London a real waterfront, something missing for the last 200 years. However, south of Westminster Bridge the rebuilding of St. Thomas's Hospital needs careful watching. The existing buildings have a fine skyline and present a quiet and civilized frontage of repetitive court and wing to the river. They are also good cross-river neighbours to the Houses of Parliament. But the design for the new hospital suggests an attempt to cram far too much on to a limited site and in consequence the sheer bulk of building right on the riverside is likely to overpower the Palace of Westminster opposite. North of Westminster Bridge, the stretch which most concerns us here, the danger is that having rightly kept the roads away from the river, unlike on the Victoria Embankment opposite, and so made a traffic-free river walk possible, the GLC will end up by making it all too polite; just chunks of building standing well back from an over-wide promenade. This has happened already between Westminster and Waterloo bridges and it looks as though the same treatment may be intended right up to Blackfriars. This must not happen. Today, when you come down from Westminster Bridge, the heart-chilling dreariness of the promenade in front of County Hall is like bureaucracy personified—no joy anywhere. But no matter if that comes later as it did in 1951 when the great space next door, vacant ever since, was filled with people and gay with lights. Today it is just a respectable overwide promenade. This is the site of the National Theatre and Opera House and Denys Lasdun's design for them suggests a brilliant solution to a difficult problem. Faced with building directly in front of Shell, what do you do? Wisely, instead of trying to compete with the great, soulless office cliffs and tower, he has used them as foil to his multi-terraced composition, which has a strong but lively facade to the river (see page 262). The Opera House has been shelved but is an essential part of the design, for as townscape the theatre will not work without its mirror image. But the river front itself needs more interest than the present featureless wall; and this might be provided by a large entertainment pier and boat station running through beneath Hungerford Bridge and along in front of the Festival Hall. Placed directly opposite Charing Cross, the magnet needs to be at full charge.

Under Hungerford Bridge you come out in front of the Royal Festival Hall and the new Recital Hall and Art Gallery which are now building. They are impressive buildings well linked by a terrace on massive columns and the ramps and steps are bold and imaginative. But still the promenade runs, wide as a race track, in front of them and by now you

2 *South Bank now: seen from the Victoria Embankment in front of Somerset House.*



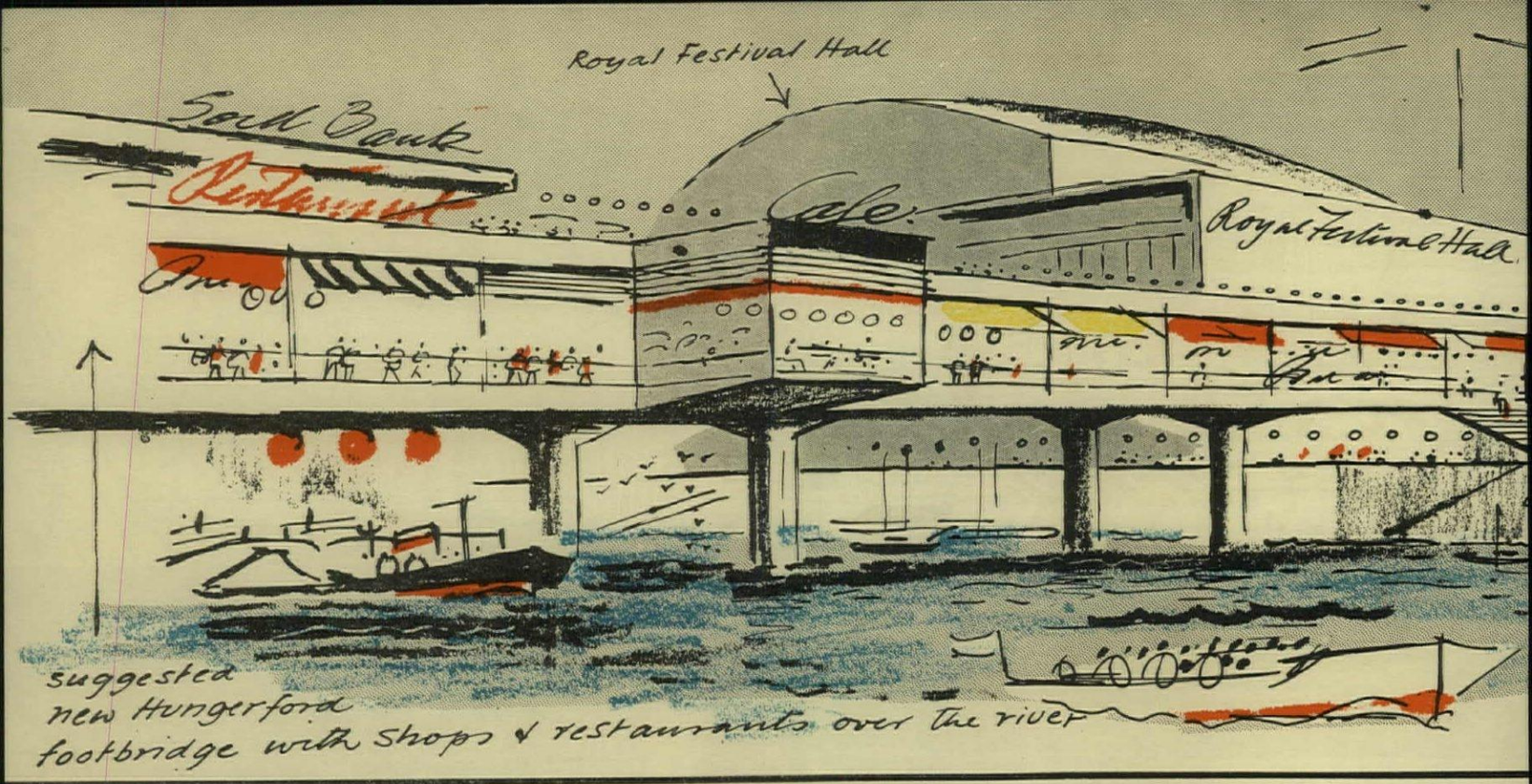
Kenneth Browne



Live Link

3 Shopping Street over the river

Kenneth Browne



6

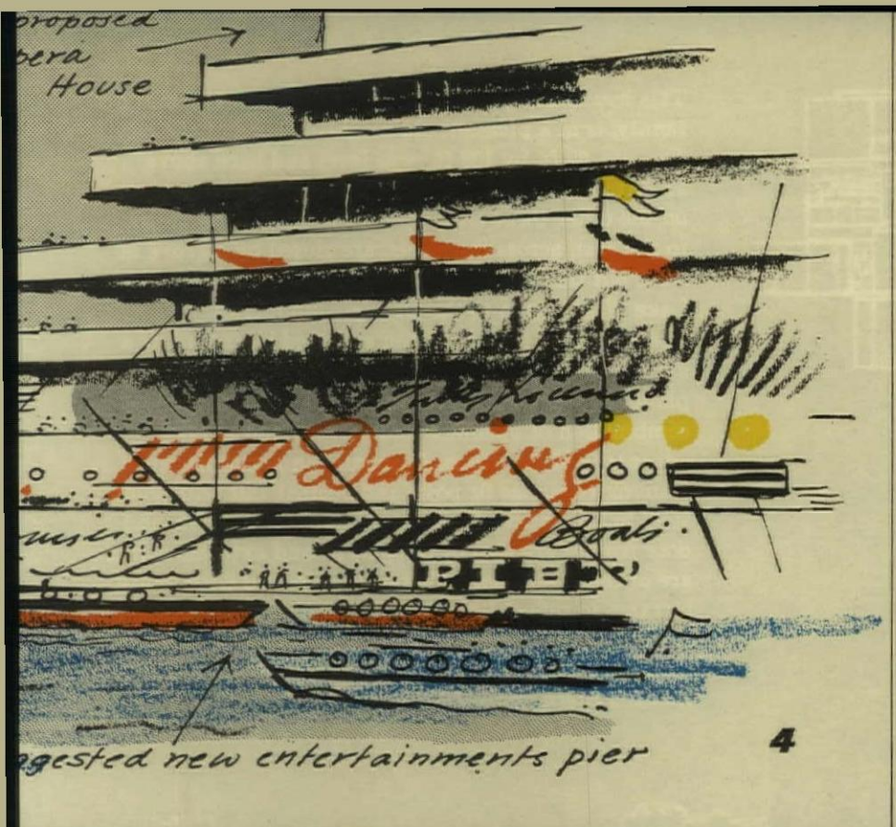
begin to feel the strain—a certain bleakness, especially in our climate.

Until recently this was the site of six cantilevered lookout platforms (designed by Eric Brown and Peter Chamberlin for the Festival) which sailed gaily out over the river: light elegant structures in contrast with the permanent buildings behind, they sounded just the right carefree note that was needed. But the guardians of 'culture' have won and the platforms have gone.

SENSE OF RIVER

But it is this sense of river, a feeling of intimate contact with boats, watermen and gulls, which people want, and those lookout platforms were one way of expressing it. Apart from piers and jetties there are many other ways in which the necessary immediacy can be captured. Sketches 6-8 show three. One way is to bring buildings out over the river so that the walk passes underneath them. From above you have the sensation of being afloat, while below there is shelter (glazed or open)—enclosure replaces exposure. (Remember the 1951 Riverside Restaurant.) Elsewhere pedestrian squares might be raised over the traffic and bounded by terrace houses overlooking the river, with slot

7



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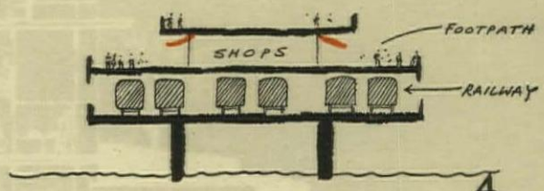
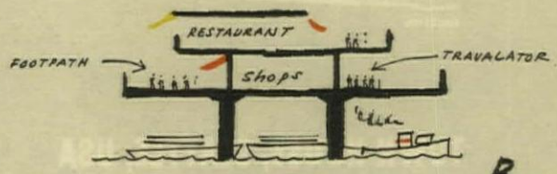
Live Link (contd.)



A



B

possible SECTIONS

an alternative elevation

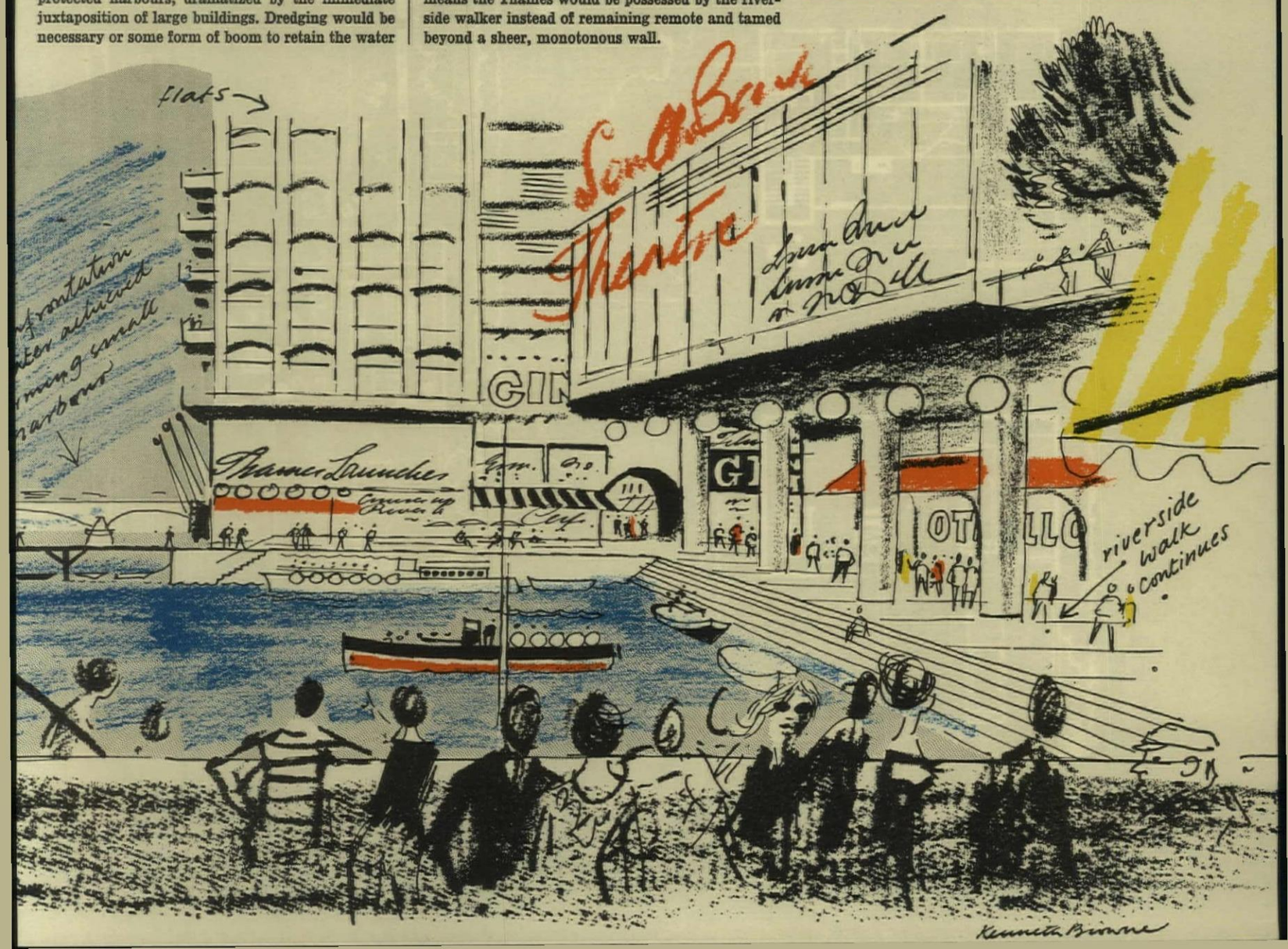
5

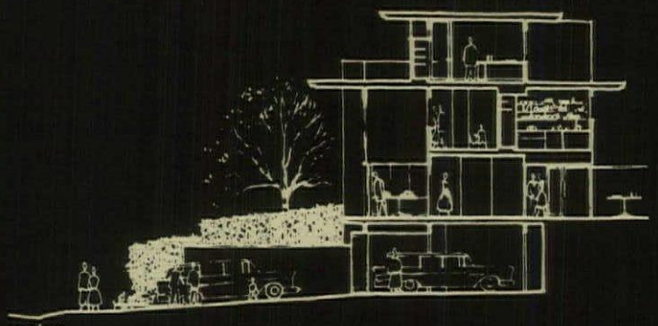
views down to it; a slice of river brought into the town, 7. The river walk could continue by the waterside but steps would lead up to the contrasting enclosure of the squares.

Again, the river could be indented to form small protected harbours, dramatized by the immediate juxtaposition of large buildings. Dredging would be necessary or some form of boom to retain the water at low tide, but the effect could be splendid, 8 (as at Queenhithe Dock east of Blackfriars Bridge, the nearest thing to Venice in London). Here the river walk is shown passing through the colonnade of a theatre with steps down to the water. By such means the Thames would be possessed by the riverside walker instead of remaining remote and tamed beyond a sheer, monotonous wall.

Immediacy

8

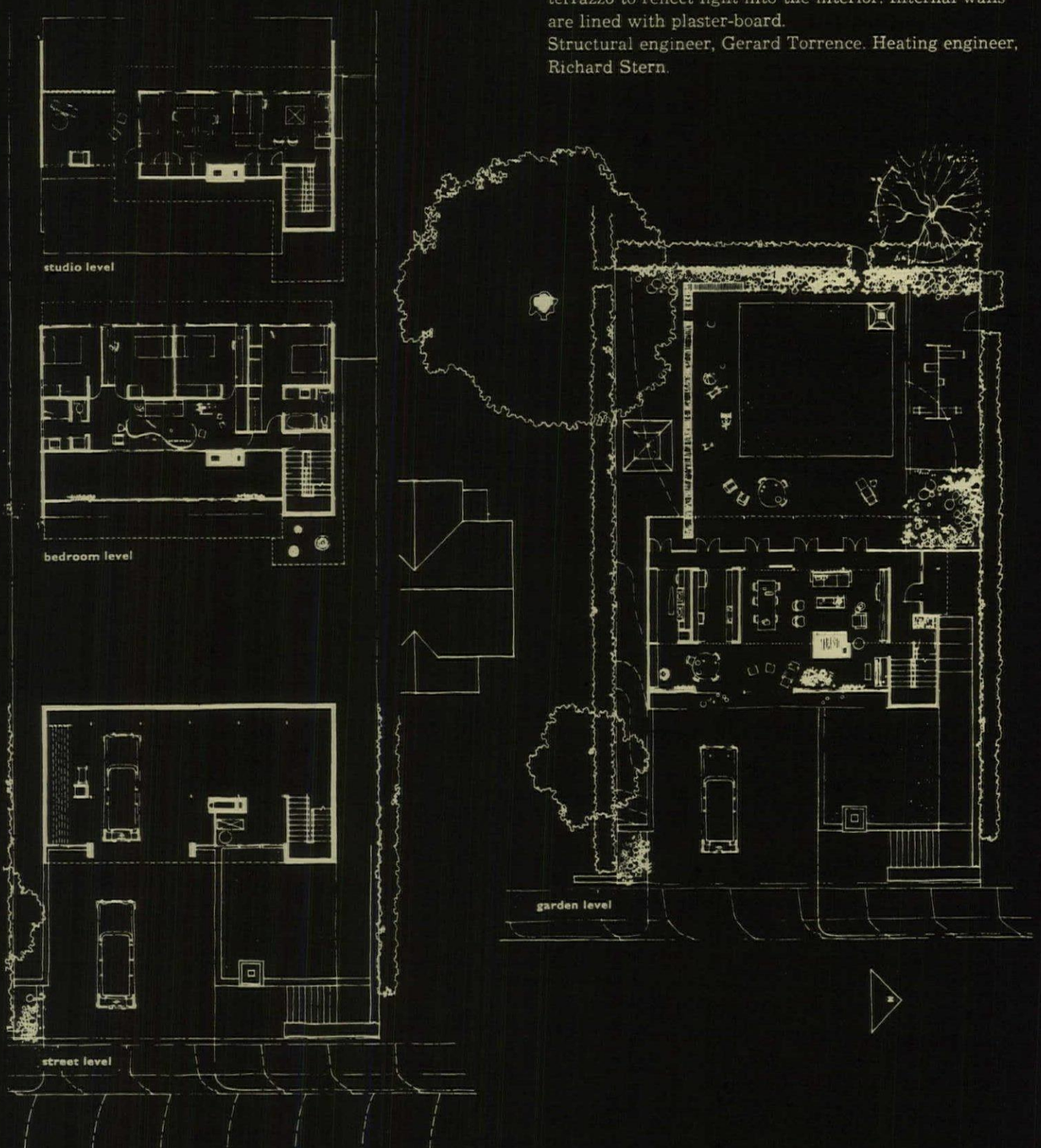




section

TOWN HOUSE, SEATTLE, USA

This house, designed for a university professor and his family, is in a pleasant old neighbourhood of the city. The site, 60 ft. by 100 ft., was level and bare above an 8 ft. bank along the street frontage but surrounded on the other three sides by high hedges. The views to the east, across the street, are closed by a grove of trees but there are open views south-eastwards over Lake Washington to the Olympic Mountains.
The restricted area has been enlarged by including a garden in the living space, and the house has been planned on several levels to provide the right combination of openness and privacy and to take advantage of the views. Construction is mainly wood framing (Douglas fir posts and beams), but with some steel to take heavy loads on long spans. Window and door frames are also of Douglas fir and external soffits are of cedar boarding. Terraces are paved with white terrazzo to reflect light into the interior. Internal walls are lined with plaster-board.
Structural engineer, Gerard Torrence. Heating engineer, Richard Stern.



TOWN HOUSE, SEATTLE, USA

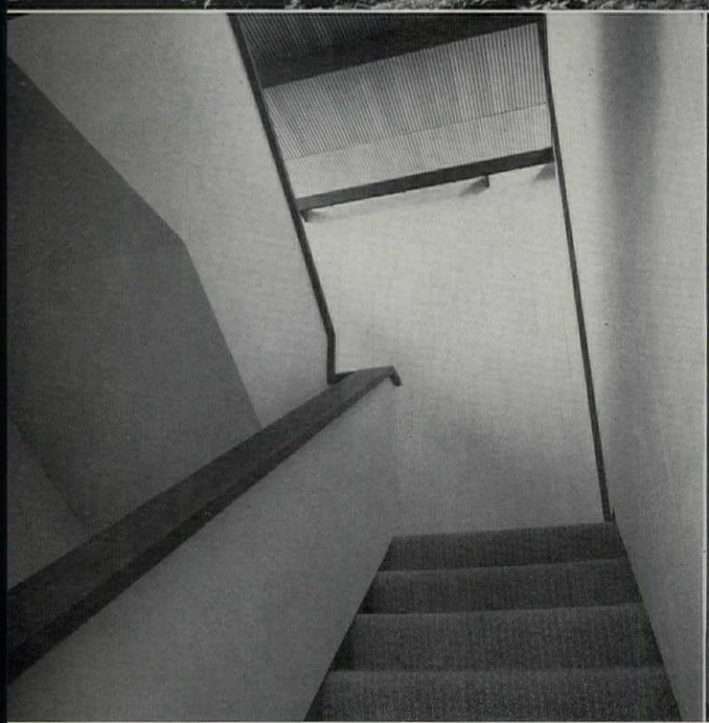
architect **KEITH R KOLB**

photographs by Hugh N Stratford

1, from the east, showing the double-height sitting area with the bedroom floor set back above.

TOWN HOUSE, SEATTLE, USA

2



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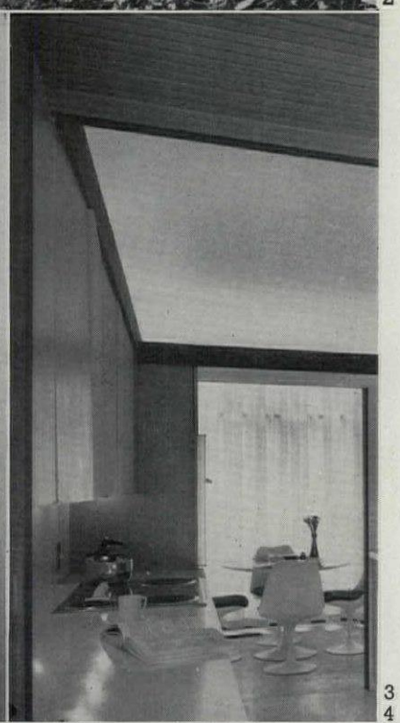


4

5

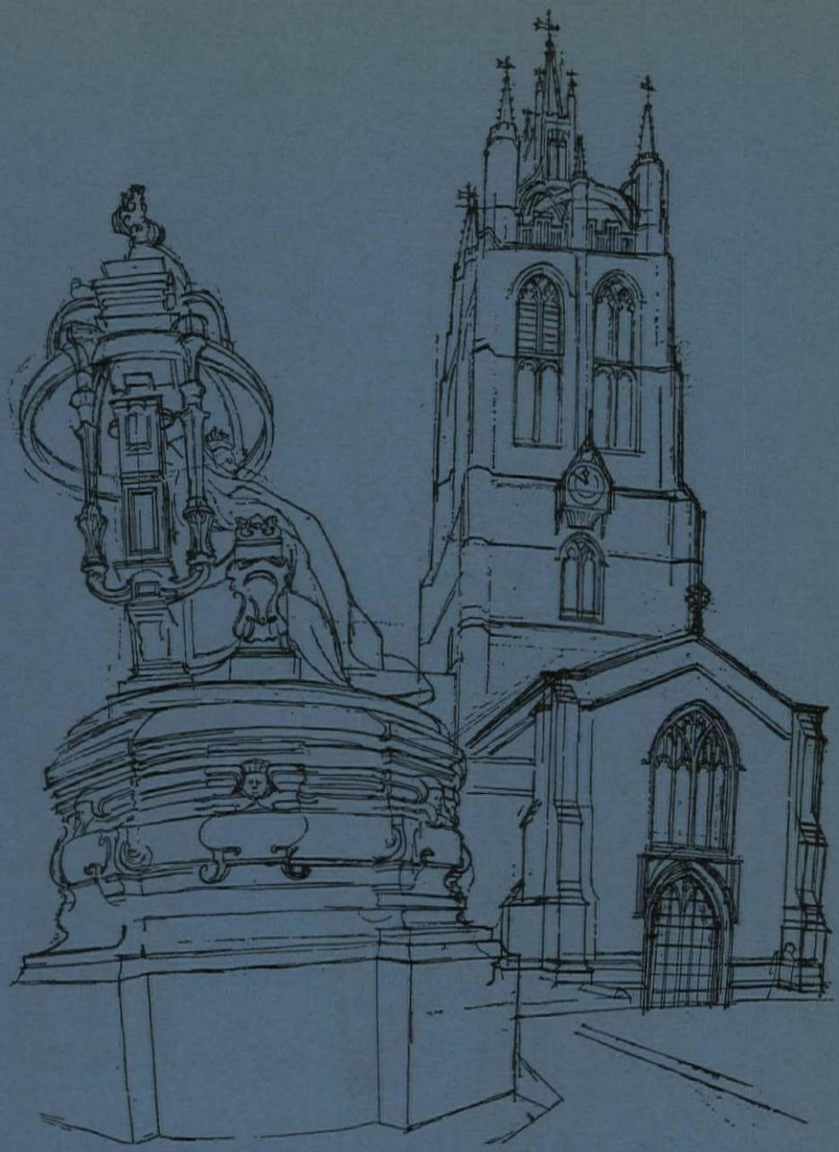
2, from the north-east, showing the canopy projecting over the staircase. 3, looking up the staircase. 4, the dining area seen from the kitchen. 5, the garden elevation, showing the open terrace by the studio on the top floor.

16

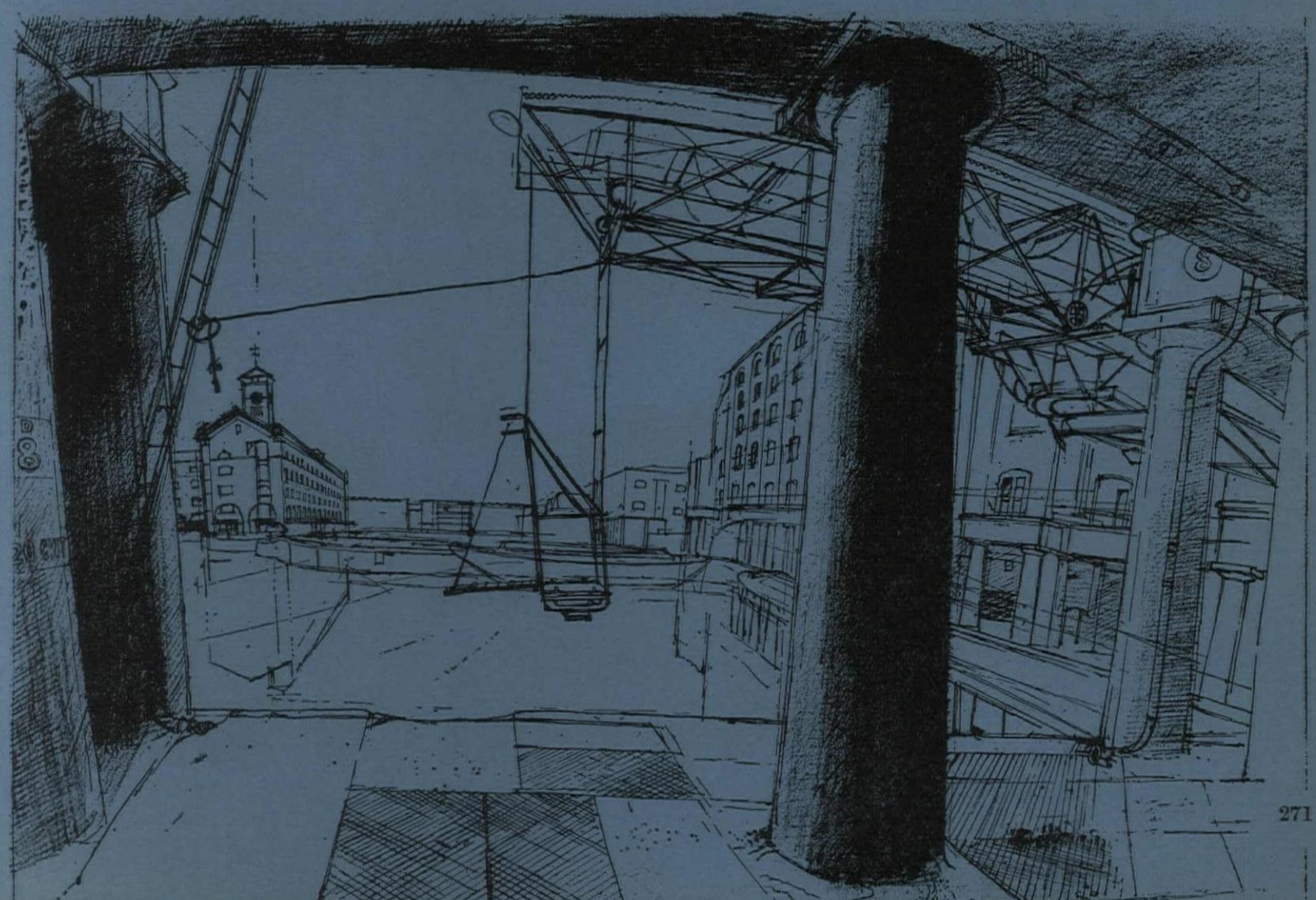
contemporary draughtsmen

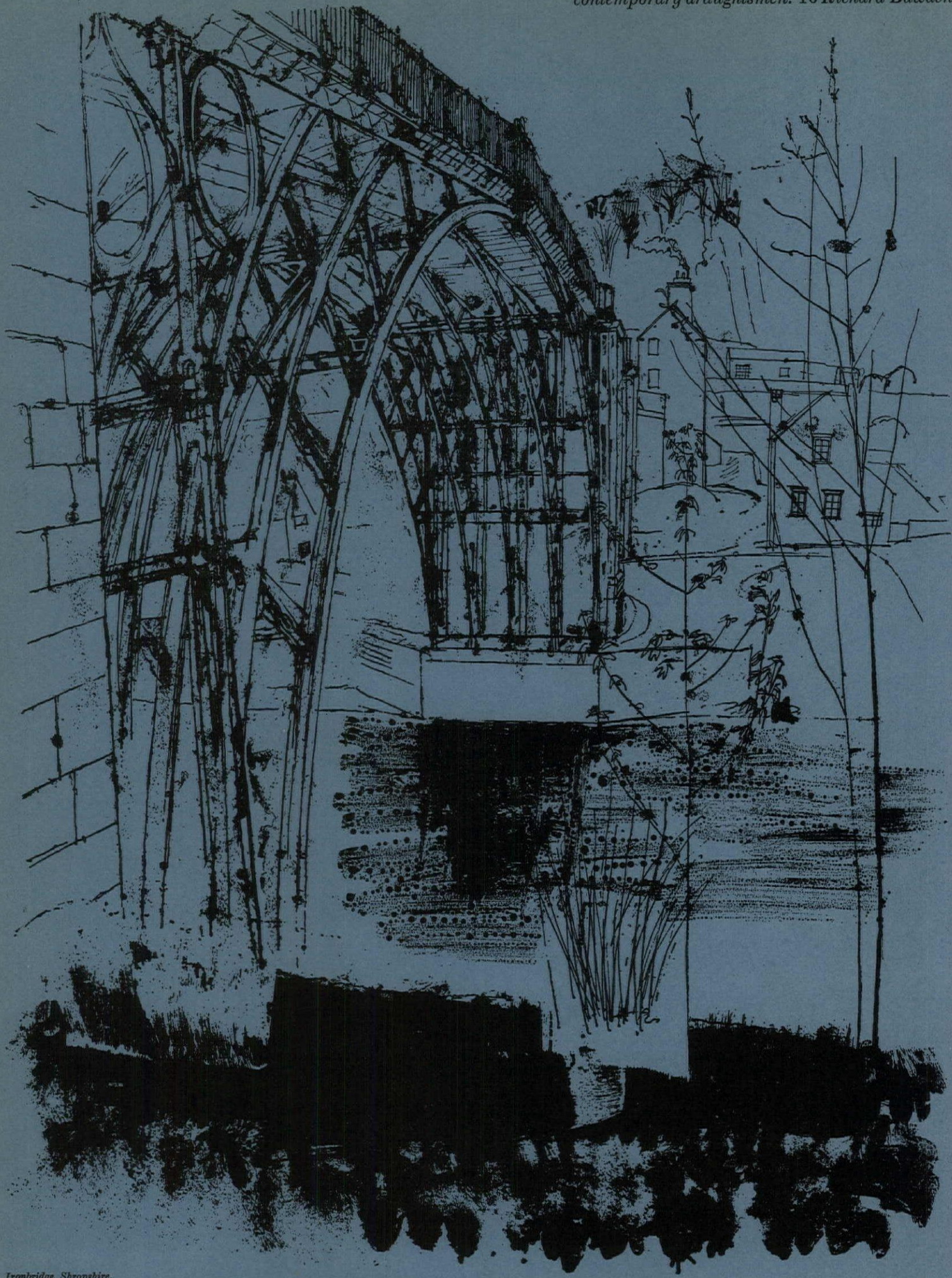
Richard Bawden

Richard Bawden studied at three London art schools—Chelsea, St. Martin's and the Royal College of Art (where he was a founder member of the Anti-Ugly group). Apart from teaching at two art schools, he is now mainly interested in print making and has had several exhibitions, including one at the Curwen Gallery last month where he exhibited a series of lithographs called 'Monuments of the Industrial Revolution'. The illustrations reproduced here are the black and white drawings for four of this series.



Above, Stephenson's High Level Bridge, Newcastle. Right, Queen Victoria memorial by Sir Alfred Gilbert, outside St. Nicholas' Cathedral, Newcastle. Below, Telford's St. Katharine dock, London.





Ironbridge, Shropshire.

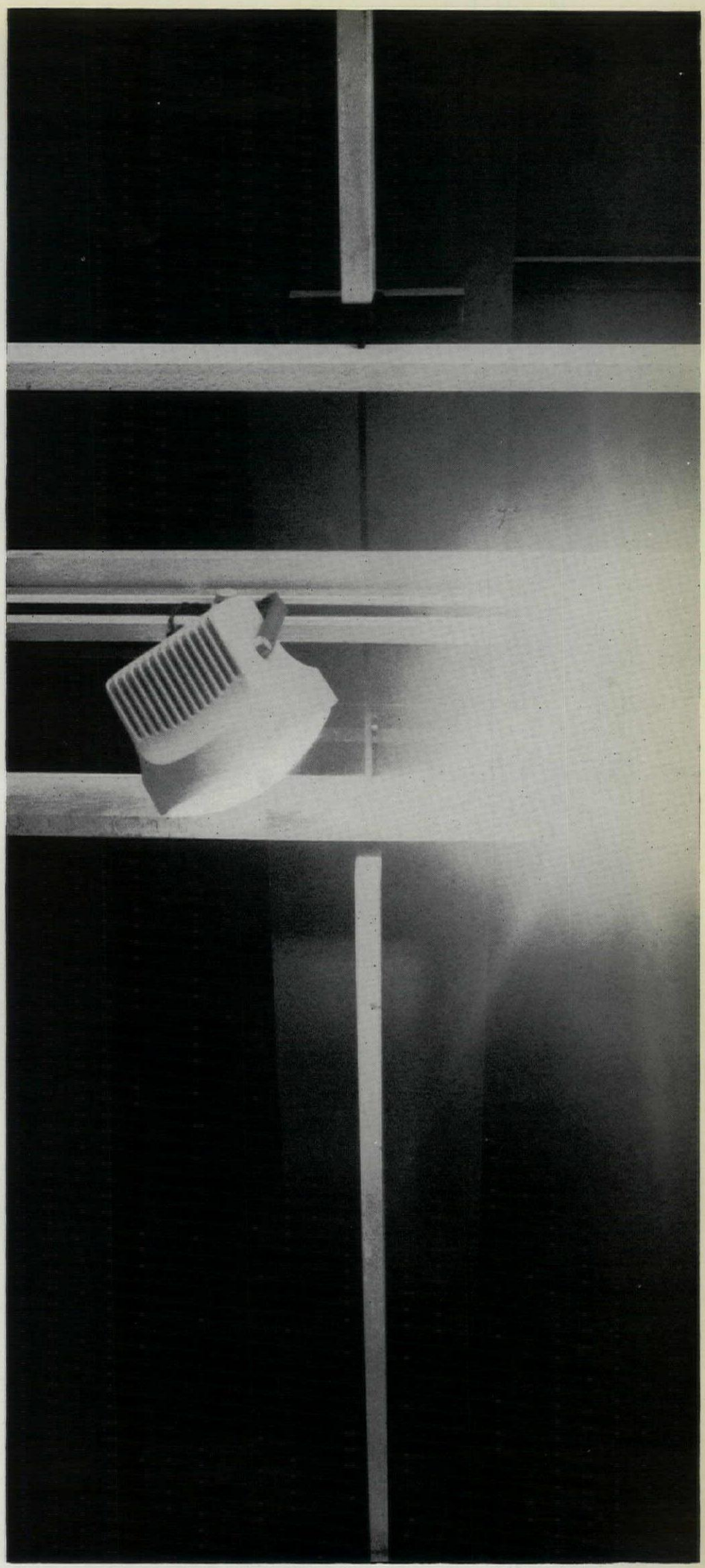
Two showrooms

photographs by W. J. Toomey

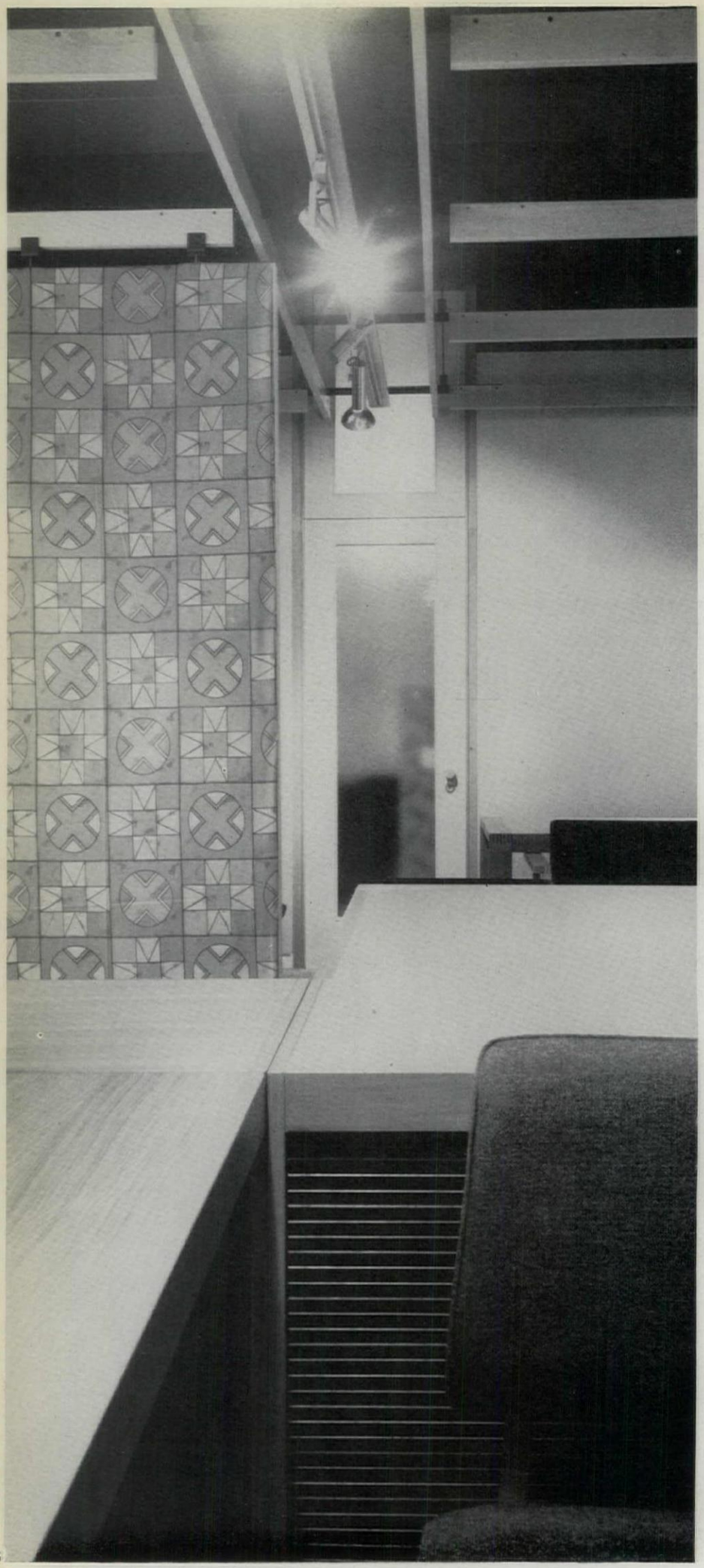
Furniture Showroom, Charlotte Street, London

designer: Martin Grierson

This showroom for the Aston Cabinet Co. (manufacturers of wooden office desks) occupies the ground floor and basement of an office block. On the ground floor are a display area and sales offices. The basement has been converted into a display area, and to disguise the existing beams and services the ceiling has been painted dark brown, and has suspended from it a timber grid containing a proprietary lighting system.



1, *the lighting grid on the basement ceiling.*



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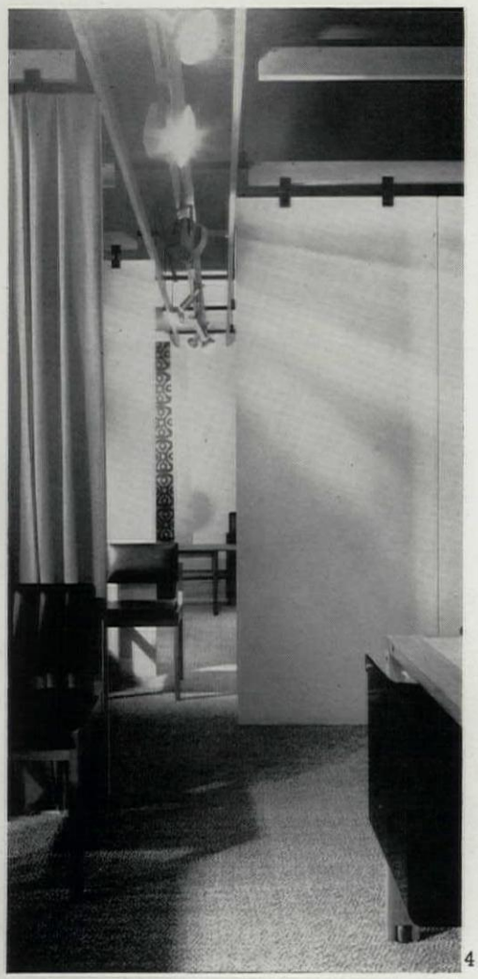

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2, 4, the basement display area. Movable panels are of plastic laminate with an expanded polystyrene core. The carpeting is sisal. 3, looking towards the sales manager's office on the ground floor. A mirror strip is placed between the ceiling and the top of the partitioning.

Showroom, Charlotte Street, London

Furniture Showroom, Rathbone Street, London

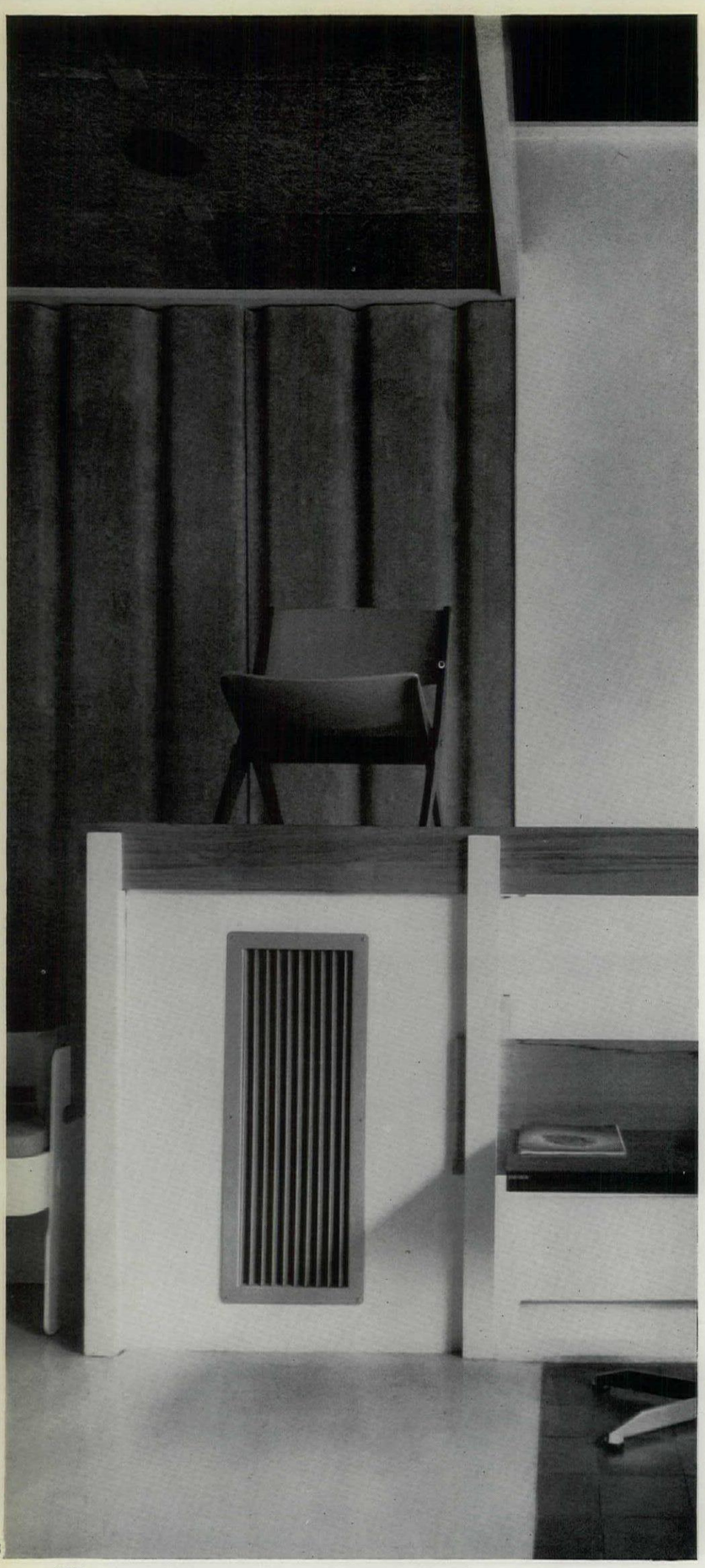
designer: Peter Dickinson

This showroom, for Race Furniture, also occupies the ground floor and basement of an existing office block, but in this case it was a Victorian building sub-divided into small offices. The two floors were converted into open-plan display areas and to cover the uneven wall surfaces, fireplaces and services, the walls of the ground floor have been clad with corrugated asbestos panels. These were applied with the reverse side outwards, the natural finish providing a neutral background for the display of furniture and fabrics. To reduce the height of the area, part of the ceiling was lowered by suspending concrete woodwool slabs from steel plates and rods. At the end of the showroom is a raised platform for domestic-size displays, off which are two small offices.

1

2

1, *the spiral staircase installed to connect the ground floor and basement.* 2, *the ground floor display area, looking towards the raised platform.*



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Showroom, Rathbone Street, London

3, part of the ground floor display area, showing the corrugated asbestos cladding and the suspended ceiling of concrete woodwool slabs. Flooring is partly linoleum and partly quarry tiles.

Antony Dale

LISTING AND PRESERVING HISTORIC BUILDINGS: 2

In the August, 1965, AR Mr. Antony Dale, Chief Investigator of Historic Buildings at the Ministry of Housing and Local Government, contributed a survey of the procedure for listing and preserving historic buildings as it exists in fifteen European countries. On the following pages is a similar survey, also by Mr. Dale, of the procedure in the USA, Canada, South Africa, Australia and New Zealand.

The United States

The preservation of historic buildings by private individuals and groups in the United States has a long history stretching back to the acquisition of Mount Vernon from the Washington family by public subscription in 1856. The Society for the Preservation of New England Antiquities, which is probably the most important regional preservation society in the country, was founded in 1910. It now owns 57 properties in the five New England states valued at over 3 million dollars. The National Trust for Historic Preservation, modelled partly on the English National Trust, was not originated until 1949. The best known example of private preservation in the United States is probably Williamsburg, Virginia, for the restoration of which the late John D. Rockefeller Junior provided over 68 million dollars since 1926.

Attention was not turned to historic districts of towns until the nineteen-thirties. Charleston, Carolina, was the first town to provide funds for the delineation of its 'old and historic district'. A survey, prepared by a landscape architect and town planner in 1931 entitled 'This is Charleston,' was published in 1941. A survey of the Vieux Carré of New Orleans was recently financed by the Schleider Foundation and carried out by Tulaine University but has not been published. Similar private surveys of buildings of architectural interest have been made in other places like New York, Chicago and Georgetown, DC. But (with one recent exception) no actual municipal legislation protects the districts surveyed in these towns other than special historic zoning provisions in Charleston and New Orleans, with the result that many of the buildings recorded in the surveys have since been destroyed.

No federal legislation of any kind relating to historic buildings existed until 1935. The Historic Sites Act of that year empowered the Secretary of the Interior to 'make a survey of historic and archaeologic sites, buildings and objects for the purpose of determining which possess exceptional value as commemorating or illustrating the history of the United States.' This survey divides the field of American history and pre-history into 22 major themes. On the basis of these themes sites and buildings are selected by historians of the National Park Service and submitted to the Consulting Committee for the National Survey of Historic Sites and Buildings and subsequently to the Advisory Board on National Parks, Historic Sites, Buildings and Monuments. The Advisory Board recommends to the Secretary of the Interior the final selection for registration.

These must be structures or sites of secular character which are connected with outstandingly important events, persons, ideas or ideals in the nation's history dating from more than 50 years beforehand; those which embody the distinguishing characteristics of an outstandingly important type of architecture or architect; or in the case of archaeological sites those which are productive of outstandingly important information. Every site or building chosen must have integrity in the sense that it is substantially intact and genuine. Buildings of religious significance, birth and burial places are not included.

The National Survey is gradually being published and when completed by 1966 will comprise 16 volumes. In addition, authoritative studies of individual items in the Survey are published from time to time. Over 10,000 items have been recorded, but nearly half these have been destroyed since the date of record. This is partly due to the fact that, in selecting buildings for recording, emphasis has always been placed upon those under threat of demolition.

Historic sites and buildings cannot be saved from demolition by public action and acquired for the Nation except by Act of Congress. On the advice of the Advisory Board on National Parks, Historic Sites, Buildings and Monuments a few sites and buildings have however been so acquired and are administered by the National Park Service. In his selection the Minister of the Interior is guided by the considerations that the site or building must stand out in national significance; that it is needed to fill a gap in a theme or period amongst those already acquired; that it is suitable for effective preservation and use, and that its acquisition is feasible in terms of finance. By 1960 it was recognised that the number of sites or buildings which could be acquired was only a very small proportion of the total. The Registry of National Historic Landmarks was therefore instituted to recognise and encourage the continuation of efforts for preservation being conducted by state, local and private agencies and to call attention to those sites of exceptional value that need to be preserved.

Potential National Historic Landmarks are selected by the same process as all the Historic Sites and Buildings included in the National Survey. The Director of the National Park Service then approaches the owners of the sites to invite their co-operation. This is entirely voluntary, and they may refuse. But if they accept they must agree to preserve the historical integrity of the site or structure and to use it for purposes consistent with its historical character. When an owner accepts these obligations he is issued with a certificate of the status of the site and a bronze plaque to be affixed thereon, and the Landmark is entered in the national Registry Book. Six hundred such National Historic Landmarks have been registered.

This process provides encouragement and recognition to the numerous state organisations, patriotic groups, historical societies and private individuals who, in America, have hitherto been the agencies securing the preservation of historic buildings.

But the feeling is greatly increasing that this is not sufficient and that either state or federal legislation is required. A Special Committee on Historic Preservation was formed in 1965 which has recommended extensive action at federal, state and local levels to secure some degree of preservation of historic buildings.

Meanwhile in the same year, 1965, the City of New York has passed its own local law with the object of protecting some historic districts and individual buildings. Part of its preamble is worth quoting. The Council felt that many buildings in the city of special character or special historical or aesthetic interest or value, or which represented the finest architectural product of distinct periods in the city's history, and even whole districts, had been destroyed, despite the feasibility of preserving them and without adequate consideration of the irreplaceable loss to the aesthetic, cultural and historic values of the city. The standing of the city as a world-wide tourist centre and world capital of business, culture and government could not be maintained or enhanced by disregarding its historical and architectural heritage and by coutenancing the destruction of its cultural assets. It was therefore declared to be the purpose of the law to protect the districts and buildings which reflect the city's cultural, social, economic, political and architectural history, to safeguard its historic, aesthetic and cultural heritage and to foster civic pride in the beauty and noble accomplishments of the past.

The provisions of the law are very complicated. It established a Landmarks Preservation Commission of eleven members who were to comprise at least three architects, one historian, one planner or landscape architect and one realtor. The first function of the Commission is to designate, after a public hearing, a list of

historic districts and of landmarks with the immediate area surrounding them. An historic district can be any area containing buildings which are of special character or of special historical or aesthetic interest or value, or which represent one or more periods or styles of architecture typical of one or more eras in the history of the city, or which cause such an area, by reason of such factors, to constitute a distinct section of the city. A landmark is any building, structure, place, work of art or other object constituting a physical betterment of real property which is at least 30 years old and which has a special character or special historical or aesthetic interest or value as part of the development, heritage or cultural characteristics of the city, state or nation. With a landmark is designated the surrounding area to be affected by the designation.

The designation of historic areas and landmarks must be submitted to various public bodies including the City Planning Commission and the Board of Estimate. The former must, after a public session and within 30 days, submit a report to the latter recommending acceptance, moderation or rescission of the designation. The Board of Estimate must then, within 90 days, decide whether the designation shall be approved, modified or rejected. If approved, the designation is registered with the City Registrar. Thereafter owners and occupiers of land or buildings designated as landmarks or as being within an historic area cannot demolish, destroy, alter or add to their property without first obtaining from the Landmarks Preservation Commission a certificate of appropriateness or a certificate that the proposed work will have no effect on the exterior of the building. An application for such must be considered within 30 days. Such a certificate will not be granted for any work which would destroy or adversely affect external architectural features or be out of harmony with the character of the district. In the event of rejection the owner can demand a consultation with the Commission.

When an application for the demolition or alteration of a landmark is made an owner can at the same time claim that the building is not capable of giving a reasonable return, which is defined under the Act as 6 per cent on the valuation of the property, and that the proposed work is a genuine attempt to secure that the property does give such return. The Landmarks Commission must then determine, within 90 days, whether this claim can be substantiated. If it decides that it can, it must endeavour to devise, in consultation with the owner or any experts that it may choose to consult, how the property can be preserved and also rendered capable of earning a reasonable return. Any such plan may include partial or complete tax exemption or remission and the authorisation of other works that would not spoil the character of the building. If, after a public session, the Commission decides that tax exemption or remission would meet the case, then it will refuse to issue a certificate of appropriateness, though the plan devised must also be approved by the Board of Estimate.

Failing the possibility of the problem being solved by complete or partial tax exemption or remission, the Commission can endeavour to find a purchaser or tenant of the building who is prepared to take the building without making unsuitable alterations to it, and the existing owner is then obliged to sell or lease it to this person. If no such purchaser or tenant can be found within 180 days and if the owner refuses the plan of tax exemption or remission proposed by the Commission, the latter can recommend the City Council to acquire a specified appropriate protective interest in the building. Should the City Council fail to acquire the building, the owner would then be free to carry out the demolition or alteration originally proposed.

Minor works of alteration which do not normally require planning permission in the case of ordinary buildings must have the prior permission of the Landmarks Commission. Owners are bound to keep in repair the exterior of landmarks and such portions of the interior which, if not maintained, would cause the exterior to deteriorate. Requirements of the Fire Brigade or other Government Departments do not overrule the necessity for owners to obtain the permission of the Landmarks Commission before work is carried out. Works to property belonging to the city which is designated as a landmark must receive the permission of the Landmarks Commission in the same way as for private property. Penalties for infringing the Act were fixed at between 100 and 1,000 dollars and/or one year's imprisonment.

The only historic district so far designated under this Act is Brooklyn Heights, a mid-nineteenth century development of about 50 blocks and 1,300 dwellings overlooking the harbour which had already been registered as a National Historic Landmark. Only one objection was raised at the public hearing. Two other districts appear to have been contemplated in 1965 but have not yet been confirmed. These were parts of Greenwich Village and a section on Greene Street between Canal Street and Broome Street which is called the cast-iron district because it contains a number of nineteenth-century commercial buildings with cast-iron fronts. 51 individual landmarks have been designated. Five of these are churches or places of worship. Several others are public buildings.

Canada

Under the Federal law of Canada an Historic Monuments Commission has been established for the preservation of historic buildings and sites. But the only means of preserving such buildings or sites is for the State to acquire and maintain them. The provinces have their own laws on the subject. Quebec, being the oldest province, has taken the most active steps for the preservation of historic buildings. The Historic Monuments Act, 1963, of that province, replacing the Historic or Artistic Monuments and Sites Act 1941, empowered the Minister for Cultural Affairs to appoint an Historic Monuments Service under normal civil service procedure. It also set up an Historic Monuments Commission consisting of the Minister or his representative, the director of the Historic Monuments Service, who acts as secretary of the Commission, and five other members appointed by the Lieutenant-Governor of the province in Council.

As far as individual buildings are concerned the Commission may, with the consent of the owner, classify any property which has an historic or artistic interest, together with such property as is necessary to isolate, clear, improve or otherwise enhance any classified property. This classification is registered in the Land Registry and runs with the land. Classified property cannot be destroyed, altered, restored, repaired or changed without the consent of the Commission. The Act does not give any power to classify property without the consent of the owner. But the Minister can, on the recommendation of the Commission, acquire property once classified either by agreement or expropriation. He can also contribute to its maintenance or restoration or make grants to societies and corporations having objects similar to those of the Commission.

Much wider powers, however, were provided for the protection of historic urban areas which are called in the Act historic localities. The Lieutenant-Governor in Council can, on the recommendation of the Historic Monuments Commission, declare any municipality or part of a municipality where a concentration of immovables of historic or artistic interest is situated to be an historic locality. In such an area no construction, repair, alteration or demolition of immovables can be effected except by the permission of the Commission. Anyone contravening this regulation can be compelled to reinstate or remove the work done. The Commission can also make regulations controlling signs or advertisements in declared historic localities. Seven such historic localities have been declared under the Act, namely the area of Quebec within the town walls, the old port section of Montreal, and parts of Trois-Rivières, Beauport, Sillery, Charlesbourg and Chambly.

The Province of Ontario has a law of 1953 which enables the appropriate member of the Executive Council acting as a Minister to set up an advisory board for the consideration of archaeological and historic sites and to designate such sites where no excavation may take place without the consent of the Minister and the finds must be placed according to his discretion. Little use has however been made of this Act. Toronto is at present considering the introduction of legislation to protect its older buildings which would for the most part date from the nineteenth century.

South Africa

The first protective legislation in South Africa was the Bushman Relics Protection Act 1911, which dealt only with the pre-historic rock paintings ascribed to bushmen. The Natural and Historical Monuments Act 1923 first established an Historical Monuments Commission, but this had relatively little power or money behind it. The present position derives from the Natural and Historical Monuments, Relics and Antiques Act 1934, which was amended in 1937. This established a Commission for the Preservation of Natural and Historical Monuments, Relics and Antiques, appointed by the Minister of Education, Arts and Science, which receives an annual grant from the Government. The first function of the Commission is to advise the Minister on the proclamation of monuments, relics and antiques.

A monument can be any land, building or object of aesthetic, historical or scientific value or interest, including land with scenery of great beauty and land containing rare flora or fauna. A relic can be any fossil, stone, painting or other archaeological remains of Bushmen or pre-European inhabitants of the country. Antiques are movable

objects of aesthetic, historical, archaeological or scientific interest which have been in South Africa for more than 100 years. The Commission must give private owners one month's notice of its proposal to recommend the proclamation of a monument. During this period the owner can lodge an objection with the Commission. The matter is then decided by the Minister. The proclamation, when made, is registered with the Registrar of Deeds, who must endorse the title-deeds of the property accordingly. Owners must inform the Commission of any sale, mortgage or lease of any proclaimed object. They may not destroy, damage, alter, restore or repair a proclaimed object without the Commission's consent. Monuments are periodically inspected by members of the Commission, the police or the Public Works Department.

The Commission can also erect tablets in suitable places commemorating historical events which occurred there. It is empowered to acquire land or objects by gift or purchase by agreement and to assume control of such, if requested to do so, as trustee for the State. It has a special power to assume control of monuments on Crown land which are under the control of a local authority if they are not being properly maintained. Since the Act of 1934 came into force, 189 historical monuments and 43 scientific and natural monuments have been proclaimed in the four provinces. The former range from the Castle in Cape Town to the first gold power-plant site at Eersteling, the latter from pre-historic rock paintings to Table Mountain. 65 bronze tablets have been erected on proclaimed sites and 106 on unproclaimed sites.

Australia

Australia has no federal legislation for the preservation of buildings of historic interest. But one State, Tasmania, has state legislation on the subject. The Scenery Preservation Act of 1915 set up a Scenery Preservation Board with power to acquire land and buildings for preservation. It runs eight National Parks and smaller Reserves. The Board has a Historic Sites, Buildings and Monuments Section which now controls eighteen properties ranging in size from the whole convict settlement of Port Arthur to a toll-house.

In New South Wales the Cumberland County Council, which is the planning authority for Greater Sydney, has appointed a Historic Buildings Committee to compile a list of buildings of historic interest in two categories. This so far comprises nineteen buildings in Class A and seventeen buildings in Class B. These have moreover been described in two well illustrated volumes. By an ordinance of the County of Cumberland Planning Scheme no building proclaimed on the Council's list can be demolished or altered without the consent of the Council. The Council can also acquire or be requested by the owner to acquire any building on their list for public use and enjoyment.

This is the limit of official action on the subject. But each State in the country has its own National Trust, established by Act of Parliament, some of them very recently. These Trusts have local branches throughout the State. All those that have yet had time to do so have begun to draw up their own lists of buildings whose preservation is essential or desirable, usually in three or four categories. The information is collected by volunteers in different places and therefore varies considerably in quality. But it is submitted to the headquarters of the Trust so that it may be co-ordinated by a central committee and in due course become the Trust's official list for that State. Over 800 items have already been submitted in Victoria. It is the intention of the Trusts to issue plaques for attachment to the buildings recorded and that at least all those buildings included in the highest category should be preserved, if necessary by public acquisition. The National Trust of New South Wales, which is the oldest of the State Trusts, founded in 1945, already owns several properties. The Trust for Victoria, which was not founded till 1956, owns one house and that for Tasmania, founded in 1960, two properties. The Trusts for Queensland, Southern Australia and Western Australia have not been in existence long enough to acquire any properties but intend to do so when the need arises. In the case of the older Trusts the State Governments have made grants to assist their work.

New Zealand

In New Zealand the preservation of historic buildings and sites is entrusted to the New Zealand Historic Places Trust which was established by Act of Parliament in 1954 and amended in 1957 and 1963. This Trust is somewhat unusual in that it combines something of the functions of a Historic Buildings Commission advising a government on the continental model with those of the English National Trust. The chairman of the governing body is appointed by the Governor-General in Council. The Secretary for Internal Affairs and the Director General of Lands, or their representatives, are automatically members. Various national institutions and societies have the right to nominate members. The Trust also has individual associate members who pay a subscription and elect a representative to the governing body.

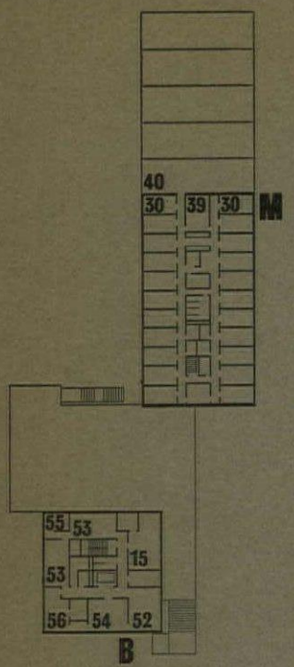
The income derived from subscriptions is only a small proportion of the Trust's income and, though it is not a governmental organisation, the bulk of its funds come from an annual parliamentary grant. This has risen from £4,500 in 1958 to £16,000 in 1965.

The functions of the Trust are to foster public interest in places and things of national or local interest, to provide information about these, to record and mark them, and to maintain and preserve or assist in maintaining or preserving them. Places or things of national or local interest are defined as lands associated with the early inhabitants of New Zealand, the Maories, early European visitors or settlers; buildings or places associated with events of national or local importance, including trees, rocks or caves; national objects associated with the legends and mythology of the period before European colonisation; and chattels of special importance. Land given or bequeathed to the Trust is free of land tax, rates, stamp duty, estate duty, or gift duty even if the gift is made within three years before the death of the donor.

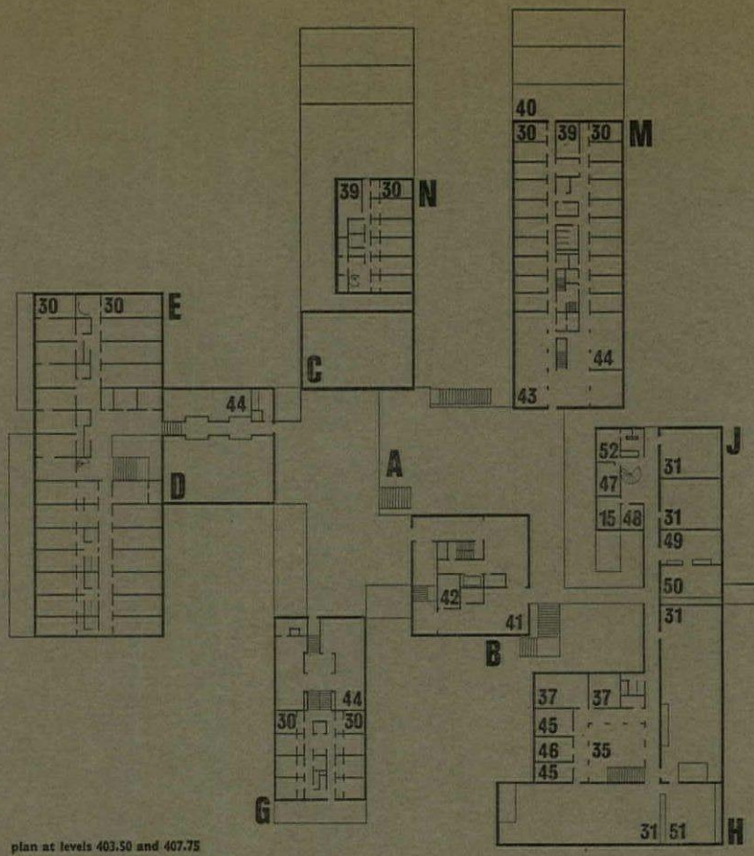
During the eleven years in which the Historic Places Trust has existed it has itself acquired the legal ownership of only two properties: the Old Vicarage and Mission House at Waimate North, which is a timbered building erected in 1832 and the second oldest house in New Zealand, and the Pirongia Redoubt. It has however accepted responsibility for the maintenance of a number of other buildings and sites. The most normal procedure is for the Trust to co-operate with other bodies in a joint work of preservation. It can make a single or an annual grant to other bodies for the preservation of buildings or sites.

Under the Reserves and Domains Act of 1953 the Trust has negotiated with the Crown and private owners the creation of six Private Historic Reserves for which it has accepted control and part financial responsibility. In cases where the Trust has failed to secure the preservation of historic sites this has been due to lack of co-operation from private owners (since no power of coercion exists) rather than to a lack of funds. 53 plaques and 23 noticeboards have been erected by the Trust on historic sites.

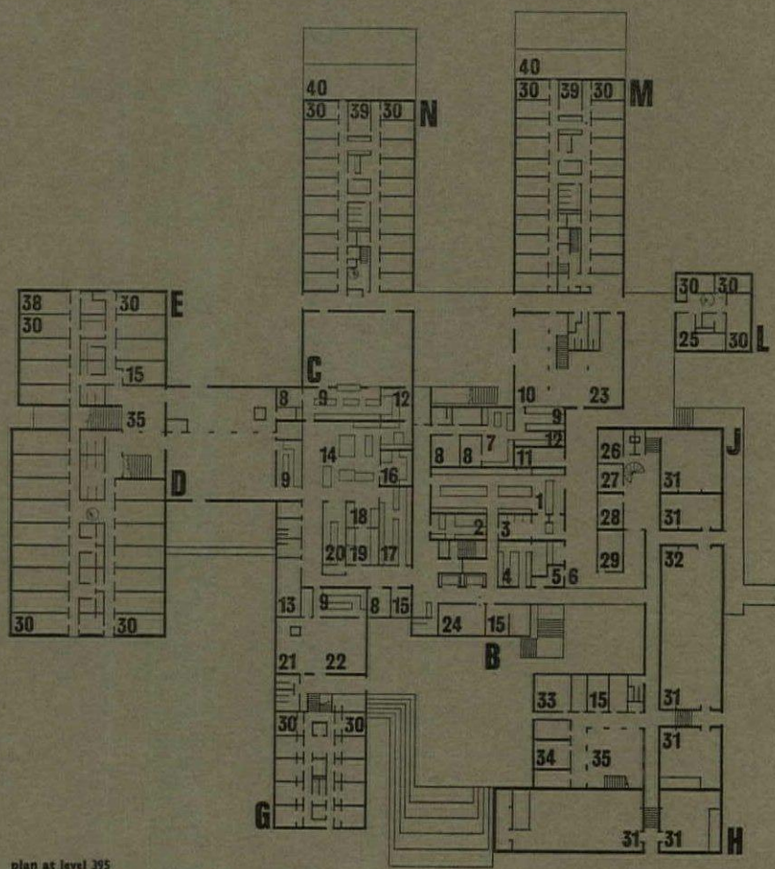
QARANC



plan at levels 420.50 and 424.50



plan at levels 403.50 and 407.75



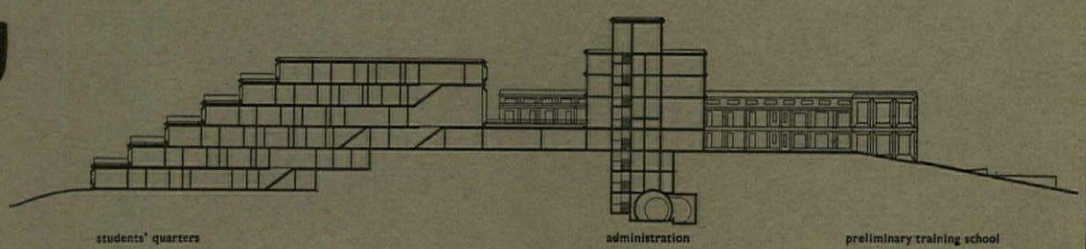
plan at level 395

key
A, central area
B, administration
C, rank and file mess
D, officers' mess
E, officers' quarters
G, sergeants' quarters
H, preliminary training school
J, training establishment
K, gymnasium
L, NAAFI quarters
M, PTS barracks
N, TE barracks

1, quartermaster's stores
2, baggage
3, tailor
4, bedding store
5, post office
6, shopping street
7, NAAFI kitchen
8, store
9, servery
10, junior ranks' club
11, hairdresser
12, wash up
13, staff
14, kitchen
15, office
16, pastry
17, dry goods
18, larder
19 butchery
20, vegetable preparation
21, coffee lounge
22, dining room
23, visiting
24, civilian canteen
25, sitting room
26, information
27, senior instructor
28, military law
29, church room
30, bedroom
31, classroom
32, assembly room
33, commandant
34, sister tutor
35, entrance hall
36, fencing room
37, instructor
38, housekeeper
39, sitting room
40, terrace
41, museum
42, lift motor
43, lounge
44, games
45, study
46, assistant sister tutor
47, o.i.c. students
48, chief instructor
49, crafts, hobbies
50, library
51, sanitary annexe
52, waiting

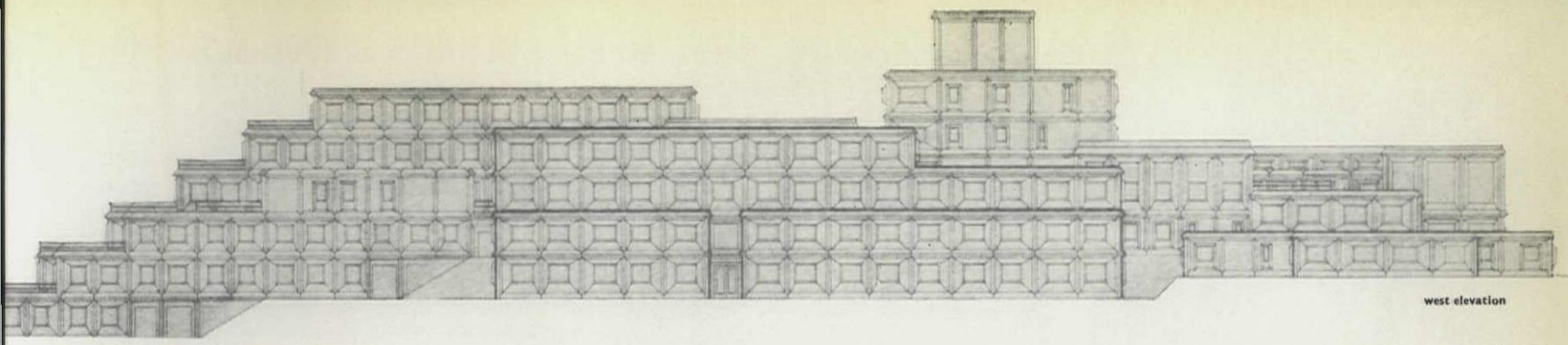
80 40 0 20

NURSES' TRAINING SCHOOL, ALDERSHO



students' quarters administration preliminary training school

cross section



west elevation

NURSES' TRAINING SCHOOL, ALDERSHOT

architects **BUILDING DESIGN PARTNERSHIP**

in association with the Ministry of Public Building and Works

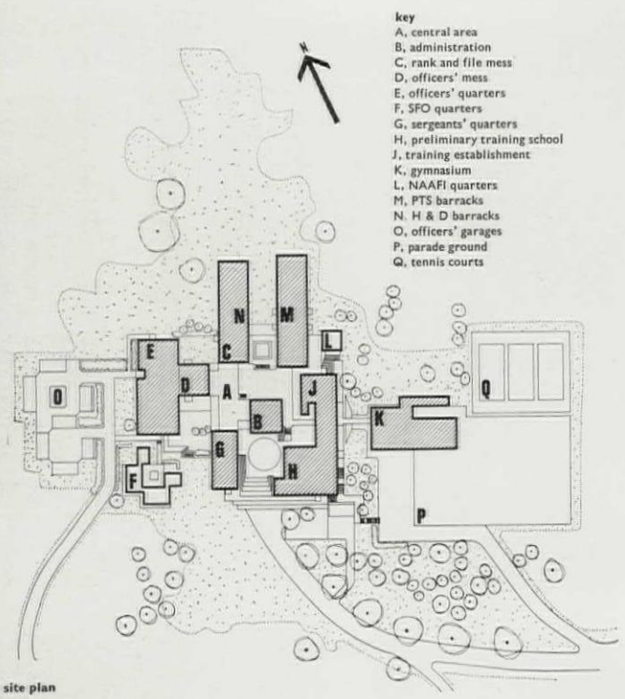
photographs by H de Burgh Galwey

1

NURSES' TRAINING SCHOOL, ALDERSHOT

The new residential and teaching headquarters for Queen Alexandra's Royal Army Nursing Corps, which was previously accommodated in two hutted camps, is one of the first major projects to be completed within the same architects' overall Barrack Development Plan for Aldershot, approved in 1961. Like the recently completed Montgomery Lines, QARANC is part of a consistent effort by BDP to develop a flexible architectural vocabulary within the discipline of a contractor's proprietary building system (G80).

The redevelopment of Aldershot is intended as a showpiece of the 'new model army' under the Gibson regime of Government architecture. QARANC has the further advantage of a splendid site, selected personally by the Prince Consort, on which the Royal Pavilion was built in 1854. That rational and twentieth-century-looking timber bungalow (one of its lodges survives on the main road) was demolished in 1963, but its landscaped plateau, surrounded by twenty acres of lawns and mature trees, acts as the focus of the new building group. The aim has been to centralise activities, instead of scattering huts among the trees in the usual manner. The roof of the central kitchen and stores is used as a paved square around which the rest of the accommodation is grouped, buildings stepping down



site plan

the slopes to north and south. The main service access is through the Victorian tunnel which originally connected the Pavilion (by means of a hoist) to service buildings at a lower level; from the tunnel, service lifts now connect to all levels of the central administration tower and medical centre. The original drive is still the main route of vehicular access and is connected by steps to the central square.

The two main bedroom blocks for staff and trainees are stepped northwards to provide roof terraces in front of communal sitting rooms at each level, the individual

1 (previous page) and 2, one of the stepped bedroom blocks, with terraces at the end of each floor.

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3, from the south, showing the steps up to the central square and the administration block. 4, the paved central square, looking towards the sergeants' mess. 5, inside a bedroom in one of the main bedroom blocks.

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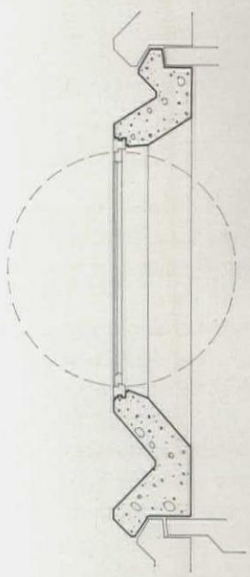
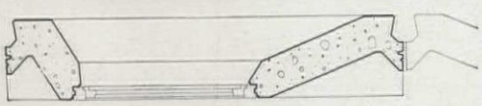
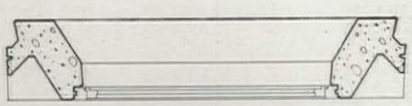


section of window panel (scale 1/40 : 1)



window panel with window positioned left of centre



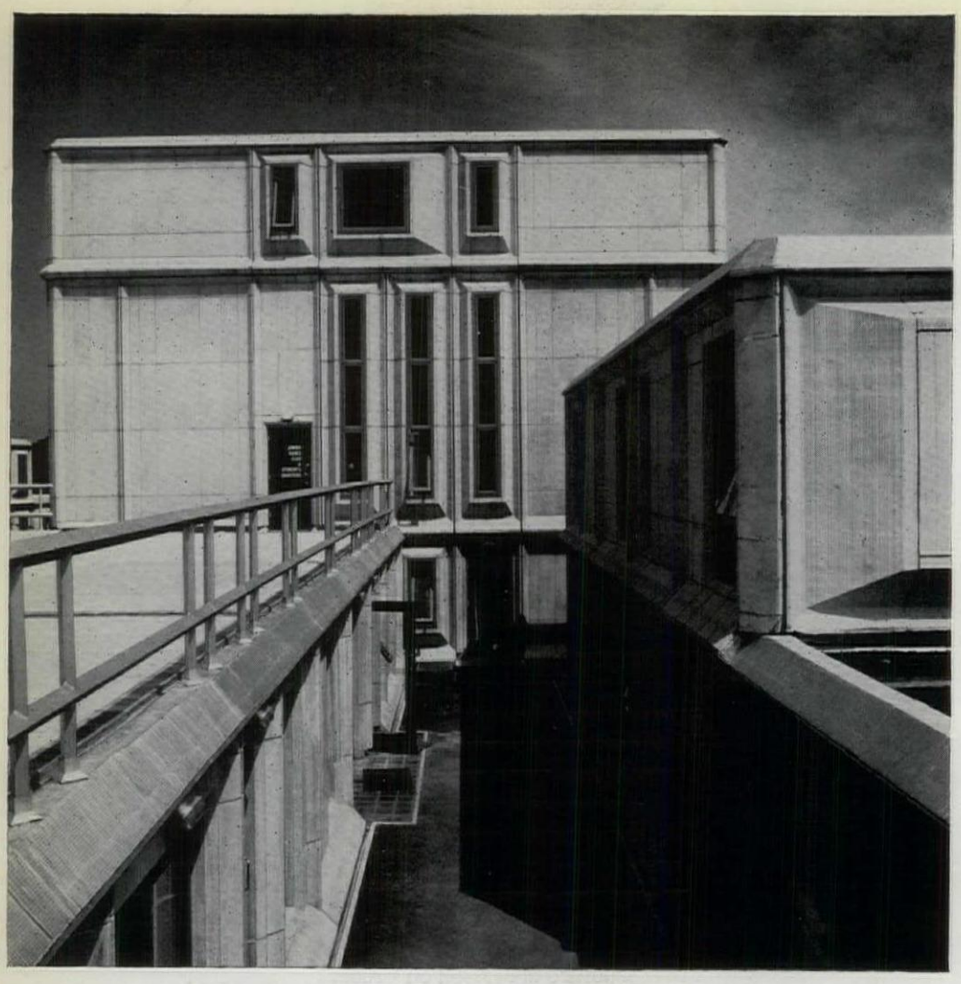
window panel with window positioned on centre line

rooms all facing east or west. The communal rooms for the other ranks within these blocks are administered by the NAAFI, who provide supplementary meals and snacks there. The main dining halls and serveries for officers, senior NCOs and other ranks are arranged around the central kitchen, thus avoiding the normal extravagance of separate kitchens and separate budgeting. A pedestrian street gives access to the group of post office, hairdresser's shop, tailor's shop, sports store and quartermaster's store. The officers' mess and residential quarters form a large block on the west side of the square, with privacy maintained by architectural means instead of siting the mess as an isolated pavilion. Military and nursing instruction rooms are contained in the corresponding block to the east which is linked by bridges to the central square and to the gymnasium; the latter is built on columns to provide a covered drill area below which is an extension to the parade ground. Three tennis courts are set in a clearing north of the parade ground.

The structural components of the G80 system include precast concrete internal and external walls, in situ concrete floors and terrace roofs, and timber joists for other roofs. There are no concrete columns or beams. Early discussion by the team of architects, engineers and contractors enabled the selection and design of production plant suitable for the job. The size of the largest wall panels, 20 ft. by 15 ft., was controlled by the capacity and reach of the contractor's crane and the size of the site factory casting bed. Three-quarters of the structure is carried on precast cross walls; loadbearing external walls, where needed, are flat in profile. The non-loadbearing panels, providing deeply splayed windows with a machine modelled external finish, are made of a lightweight aggregate concrete poured into glass fibre moulds, which were made up in sections so that the size of the mould could be varied according to the number and type of sections used. Timber windows were placed in the mould before the concrete was poured. Internal walls are plastered. Electrical services were pre-designed so that conduits and outlet boxes could be cast into the panels and in situ concrete floors.

Internally, the concrete walls were cast vertically in steel moulds; this allowed direct painting of the concrete surface. Non-loadbearing internal walls are of brick, plastered or left fairfaced and painted. Ceilings are painted concrete, or softwood boarding where timber beams occur. Floors are generally covered in linoleum, with wood blocks or tiles in special areas. The concrete stairs have rubber treads, risers and nosings. The doors in the concrete walls had their softwood frames cast with the panel. The students have built-in wardrobes and study tables; most other furniture was supplied by the Ministry. The total cost of the buildings was about £700,000.

Associate in charge, Robert Smart. Assistants, John H. Moore, Nicholas Galpin, A. K. Saunders and Keith Tait. Group partner, David Rock. General partners, G. Grenfell Baines and John Wilkinson. Quantity surveyors (also BDP): associate in charge, Kenneth Milburn; assistant, Robert Stratfield. Structural engineers, Malcolm Glover and Partners. Mechanical and electrical engineers, Hoare, Lea and Partners. Civil engineers, W. V. Zinn and Associates. (For sub-contractors, see page 310.)



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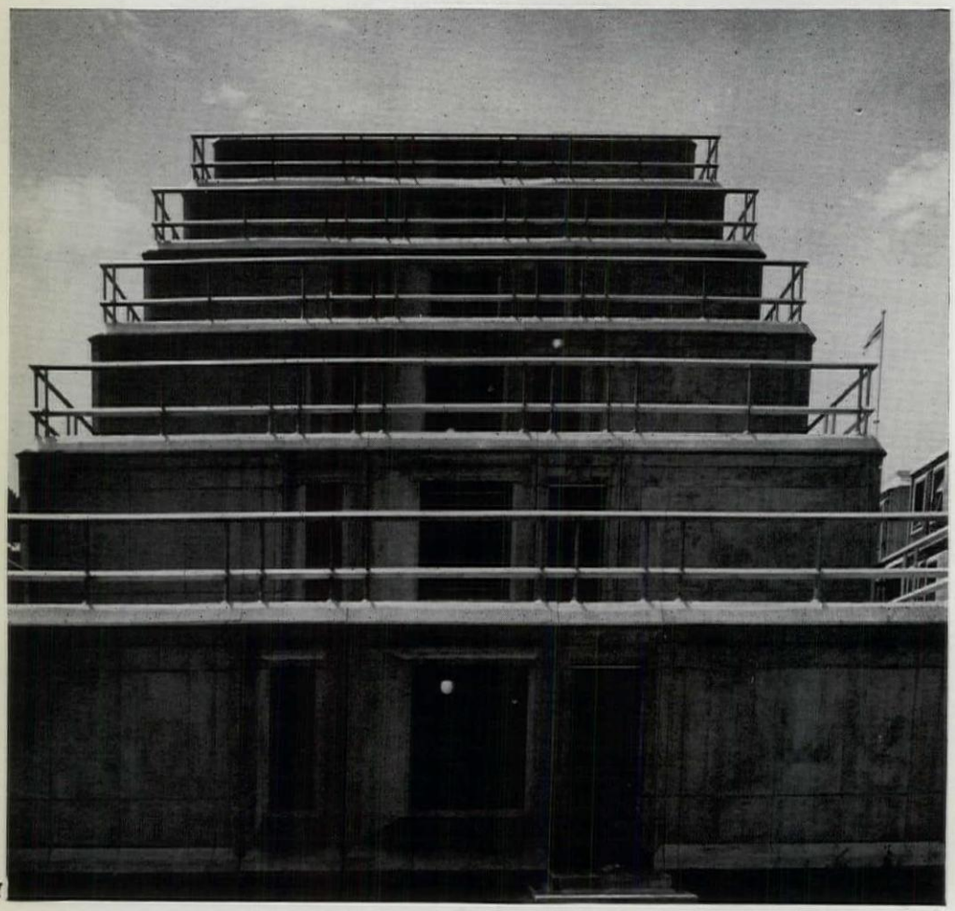

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6, looking north along the pedestrian street between the quartermaster's stores (left) and the training establishment (right); at the far end is the junior ranks' club. 7, the north end of one of the stepped bedroom blocks.

NURSES' TRAINING SCHOOL, ALDERSHOT

INTIMATIONS OF IMMORALITY

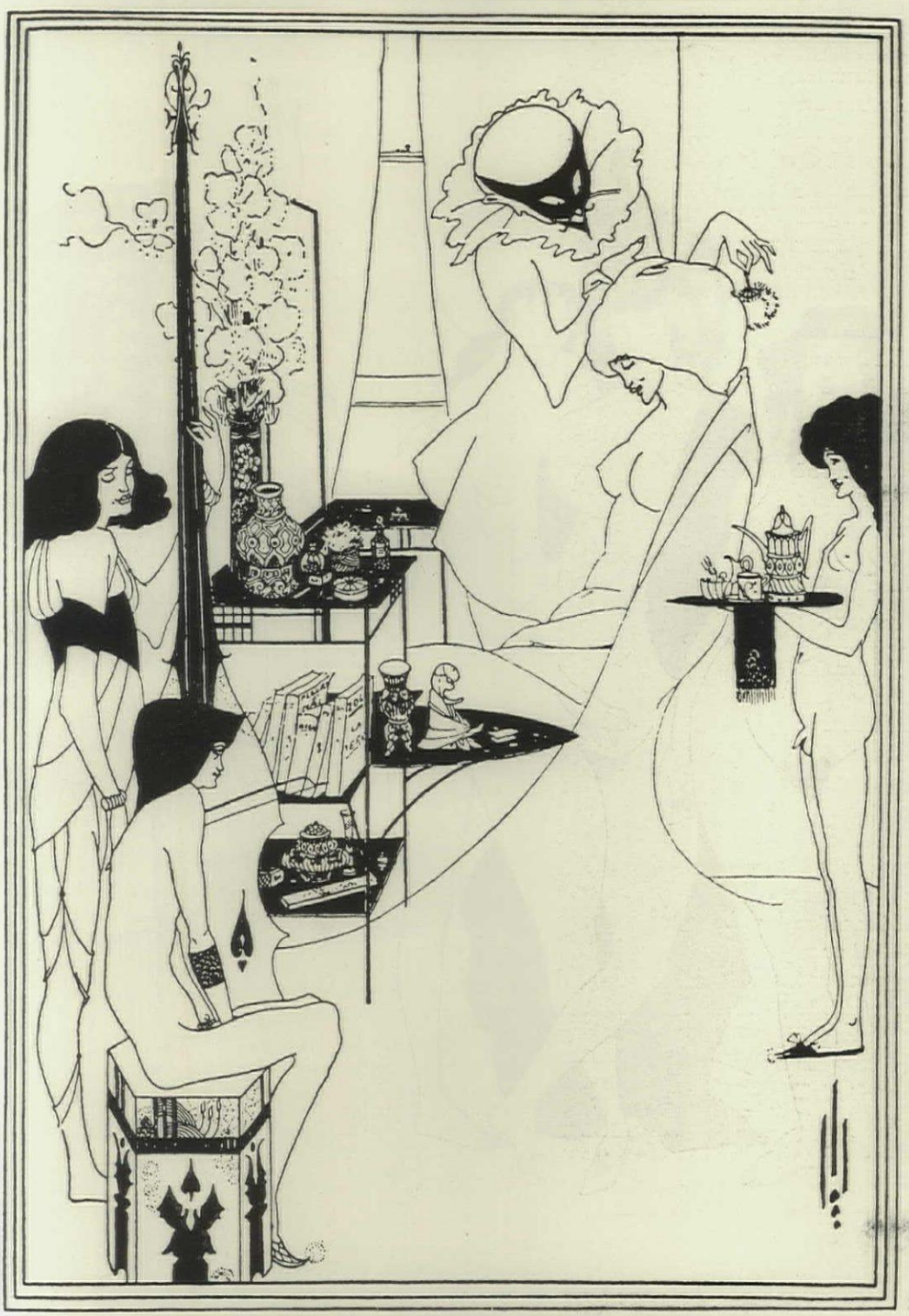
Frank Whitford

He does not shock as he once did, yet the mythology surrounding his name is as powerful as ever. When he died at the age of 26, Aubrey Beardsley was one of the most imitated and discussed of contemporary English artists. He had been at work for less than five years, notorious for something less than three, and had never drawn from life let alone enjoyed the benefits of a formal art training.

Beardsley was in part responsible for the making of his own myth. He read *The Gentle Art of Making Enemies* and, basing himself on Whistler, worked hard at being a wit. Like Huysmans' hero he cultivated seclusion, and after his day as a clerk at the Guardian Insurance offices went to work in a darkened room (which was in any case decorated with black wallpaper and furniture) by the light of candles set in two graceful ormolu Empire candlesticks. He had, it was whispered, actually tried hashish in the studio of M. Toulouse-Lautrec, and when he played the piano he would have a human skeleton sitting beside him on the piano-stool. And the reputation of Mr. Danby Weirdsley (as *Punch* called him) was most definitely enhanced by the atmosphere of decadence and evil breathed by the characters he created in his drawings. His work acted, in the words of Sir Kenneth Clark, as 'a kind of catmint to adolescents' and continued to do so for almost thirty years.

Although the master of a minor art, Beardsley was enormously influential. With his work English Art Nouveau reached its high point and he had a discernible effect on many of the pioneers of modern art; on Munch, Kandinsky, Klee, and even initially on Picasso. When he was twenty-one the principal article in the first issue of *The Studio* was devoted to him, and a year before (in 1892) no less a celebrity than the President of the *Salon des Beaux Arts*, Puvis de Chavannes, praised him as 'un jeune Anglais qui fait des choses étonnantes.'

Beardsley's style, although uniquely personal



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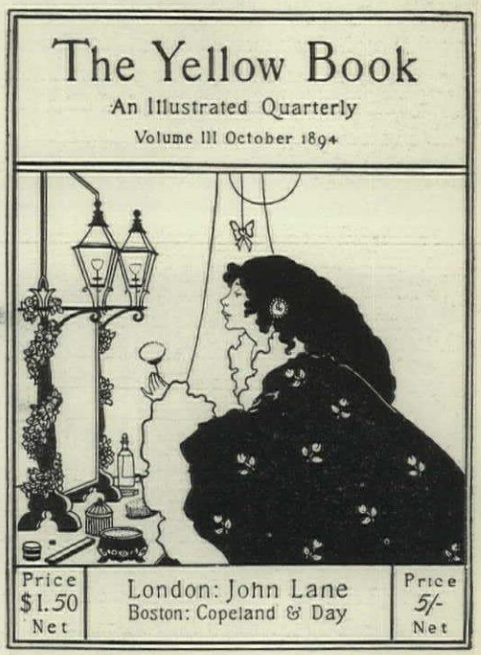

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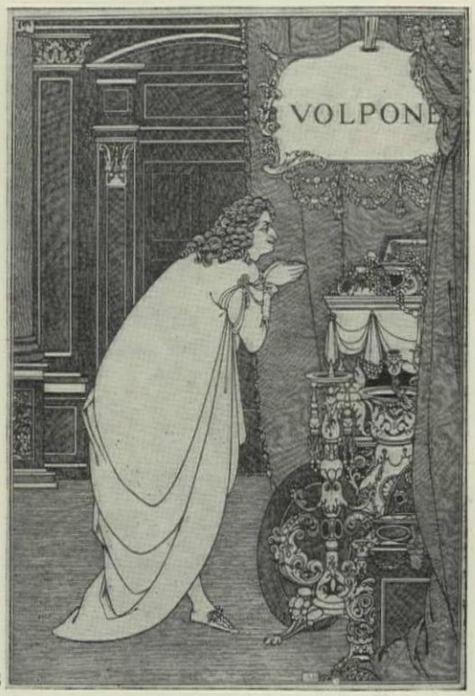
1, *Aubrey Beardsley's cover for* The Yellow Book; 1894. 2, *'The Toilette of Salome';* 1893.



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3, *Beardsley's frontispiece to Ben Jonson's* Volpone; 1898. 4, *'The Abbe,' from Beardsley's book* Under the Hill; 1896. 5, *Lysistrata haranguing the Athenian Women', from* The Lysistrata of Aristophanes; 1896.

and inimitable, was formed and modified by various and often disparate influences. During the work on the *Morte d'Arthur* illustrations it grew from its beginnings in a pastiche of the Pre-Raphaelite manner to an authoritative maturity in an astonishingly short time. Once this maturity had been reached, further influences did not usurp the powerful originality of Beardsley's own handwriting. They were, in fact, not so much influences as quotations, and references to, say, Mantegna, Utamaro or Attic Vase Painting were made in the spirit of historicism and were part of an involved and esoteric performance which the artist gave for the sophisticated members of his audience.

One of the artists Beardsley most admired was Watteau, and just as Watteau had played with mimicry of an Eastern style in his chinoiserie, so Beardsley would play with a mimicry of the Japanese genius. In terms of Beardsley's stylistic development his later use of French rococo elements in his drawings seems entirely logical, but they are also perfectly apposite in the place he puts them to work—in illustrations for Pope's *Rape of the Lock*. This use of a specific set of forms stimulates associations

5

which add weight to the literary content of the subject. Just as Pope himself enriched the surface of his verse with quotations from, and allusions to, well known authors, so Beardsley alludes to a limited number of artistic forms, intending that they should be recognized and appreciated as improvisations.

Roger Fry was, of course, right when he said that Beardsley was '. . . a confirmed eclectic, borrowing from all ages and all countries,' but eclectic can also be used in the good sense and although Beardsley leaned heavily on tradition he remained coldly aloof from it. In many of his drawings elements from quite dissimilar styles combine happily. They do not pervert each other but co-exist in that spirit of 'pleasant estrangement' which was one of the most important principles on which Art Nouveau was based. What gives Beardsley's style immediate visual coherence is the faultless sense of surface pattern, the unerring balance between black and white, which he doubtless learned in part from the work of some of his most advanced contemporaries in France. (In this connection it is interesting to speculate on whether he did in fact meet Maurice Denis on his trip to Paris and St. Germain-en-Laye towards the end of his life.)

A recognition of the interpenetration of Beardsley's work by apparently disparate elements can also bring closer an understanding of his attitude to eroticism, for it was clearly ambiguous and not without a certain puzzling complexity. The myth is again clear enough even though it certainly emphasizes this aspect of his work too strongly. Beardsley is said to have been a connoisseur of the erotica of world literature and to have had 'an intuitive knowledge of evil and secret things that reached back beyond the memory of a single generation' (Martin Birnbaum in *Jacovleff and Other Artists*). In spite of a wholly contemporary love for recondite subjects, however, and the strong atmosphere in many of the drawings which suggest the virtues of vice and promiscuity in a very general way, the number of specifically sexual images and direct sexual references is small.

Moreover, where sexual imagery does appear, it is so transformed by the seductive power of Beardsley's line, so sublimated into the overall sense of decoration and design, that it frequently ceases to be sexual at all. The drawing for the frontispiece of the *Lysistrata* is a celebration of the penis. It is explicit and anatomically precise. But it is treated so gracefully and decoratively that it has more meaning as good design than as genitalia. Apart from the graceful delineation of the dancer's sex in 'The Stomach Dance' the drawing looks harmless enough, but some of the pleats in the costume of the grotesque old musician can be read as a penis. This witty ambiguity occurs again in the title-page for *Salome*. The horned bi-sexual statue on the left has been given large sex-organs, but once we have noticed that the nipples are eyes, then the torso becomes a face with the pubic hair a moustache and the penis the tongue hanging out beneath it. Shocking this most certainly was (Beardsley had to amend the proofs for publication) and it still is startling, but even though we have since been further educated by Magritte in this sort of erotic imagery, in Beardsley it remains simply a witty device almost completely desexualized by the power of its own conventions.

Baudelaire's notion of the dandy is often used in connection with Beardsley, and the artist's emotional force is everywhere sublimated into an overriding sense of detachment.

6

6, *Aubrey Beardsley: 'The Stomach Dance';* 1893.

His passions are sterilized. His drawings have a strange effect of austerity which is intense but cold, and is brought to such a pitch that it could either be impassioned or completely passionless. 'He is not seductive,' wrote Fry, 'nor voluptuous. There is even a touch of hieratic austerity and pomp on his style.'
The real force of Beardsley's eroticism derives from something essentially removed and indirect. His are intimations of immorality (the phrase is Sir Kenneth Clark's) not baldly stated facts. The sense of evil which pervades *Messalina Returning Home*, for example, comes not so much from the facial expressions as from the design itself, from the predominant black from which the isolated details emerge, and from the almost abstract configurations of Messalina's feather hat and the sinister curve of the left-hand side of her cloak.

Beardsley was an admirer of Bresdin, Odilon Redon's teacher, and of Redon himself, and it is in terms of the expressive power of Beardsley's lines, decorations and shapes that it becomes meaningful to speak of his affinities with the French Symbolists. With an awareness of psychology and a visual education now conditioned to the terms of abstract art, we can better understand in what way Beardsley's formal means carry his ideas so completely, and that it would be rash to speak of his work in terms of the traditional division between form and content. The massive Beardsley exhibition, at the Victoria and Albert Museum throughout the summer, was the most comprehensive tribute to the artist ever staged. It conclusively demonstrated Beardsley's contribution to Art Nouveau and to the spirit of modernism.

NASON & NEWMAN

Housed in an old secondary school, the Art Department of Barnet College of Further Education has recently begun holding exhibitions in what was the old school gymnasium. Independent of the usual commercial pressures, this out-of-town gallery is intended for showing not only student projects, group work and so on, but also the occasional invitation exhibition. The second of these, opening later this month, consists of recent paintings by Brian Newman and Gerald Nason. Following what appears to be standard practice amongst young painters today, these two work at comparatively unrelated four-day-a-week jobs in order to carry on painting. Although both were trained in the Stained Glass Department of the Royal College of Art, Brian Newman is currently an exhibition and display designer, Gerald Nason a graphic-designer cum journalist; a reflection, perhaps, of the malaise of the art-school teaching set-up in this country.

Two paintings which will be in the exhibition at the Art Department of Barnet College of Further Education this month: 7, *Gerald Nason: 'The Sheriff and the Bedbug';* 1966. 8, *Brian Newman: 'Composition with Figures';* 1965.

7

8

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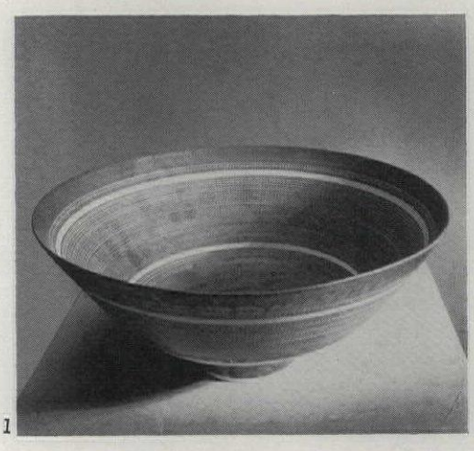
Design Review

New products chosen and annotated by Ronald Cuddon

DR

Pottery

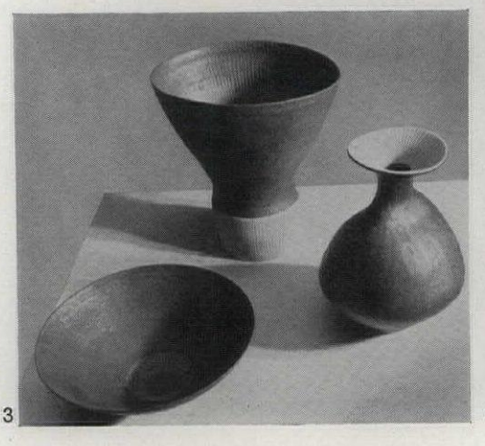
Too many studio potters, whether consciously or unconsciously, compete against machine techniques instead of concentrating on glazes, textures and forms that are beyond the capabilities of the machine, applying them to those individual pieces which, although functional in character, are not needed for constant and everyday use. As soon as the hand potter has to make a tea set, he is at a hopeless disadvantage; it is a struggle to manufacture by hand identical cups to fit identical saucers. The mass-produced article has smooth, easily cleaned surfaces, can be regularly and superbly formed, and is easily replaced if broken. Manufacture by hand cannot compete with these qualities. Working with clay has a therapeutic value, but this is only a secondary influence on the mainstream of industrial design; at its worst it is a folksy cottage craft for those with time and clay on their hands.



1

2

An outstanding exception to this rough rule is Lucie Rie, whose recent exhibition at the Berkeley Gallery, Mayfair, reaffirmed her ability to make a contribution of first-rate significance to contemporary design. She is an established studio potter whose pieces are coveted by the connoisseur but are also respected by those who are not in complete sympathy with the design approach or modelling technique. She achieves a synthesis between remarkable skill in the manipulation



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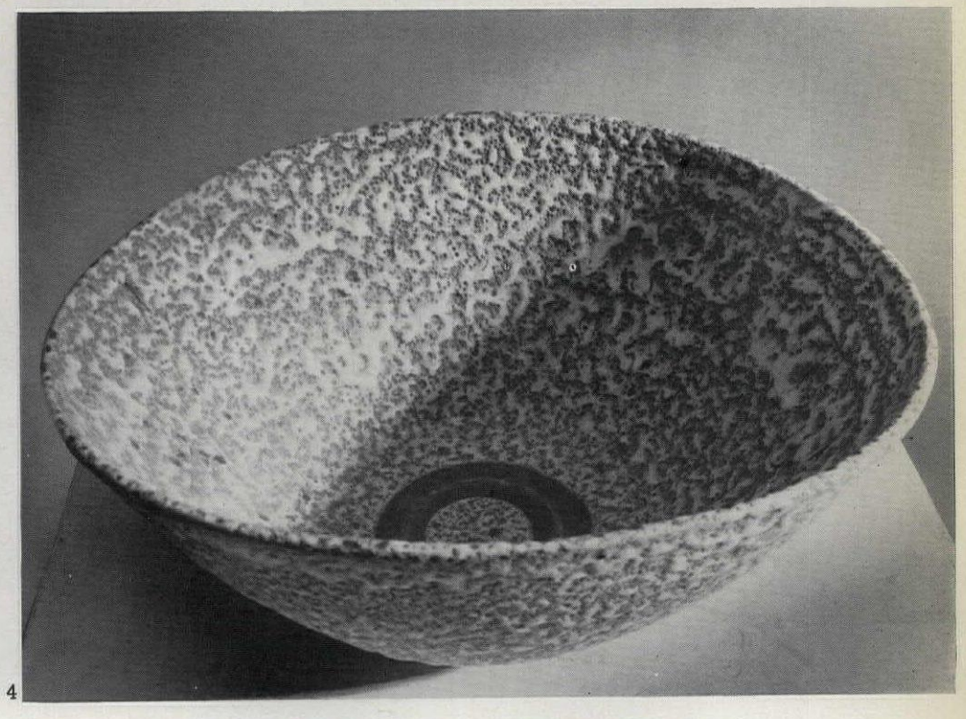


4

DR

of a raw material and a profound understanding of pure form, texture and decoration. The delicate sgraffito patterns, 1, 2 and 3, and the volcanic textures, 4, emerge organically from the structural form like the veins of a leaf or the bark of a tree. The metallic glazes seem not to be applied but to be in the nature of clay itself. Her pots have a timeless and eternal quality, 3 and 5, as though dug from the earth, relics of some ancient civilization, and yet they have a sparkle and sophistication that is essentially of our own time. Some of the pots are intended for fairly regular use, as in the case of tea pots, coffee pots and jugs, 6, but they are still highly individual collector's pieces. Spouts and handles are homogeneous and structurally integrated, unlike the stuck-on appendages of most hand and machine made pottery. There are two minor criticisms to be made, both however surely discounted by the visual and tactile rewards. These are that many of the bowls are so reduced at the base as to make them vulnerable to tipping

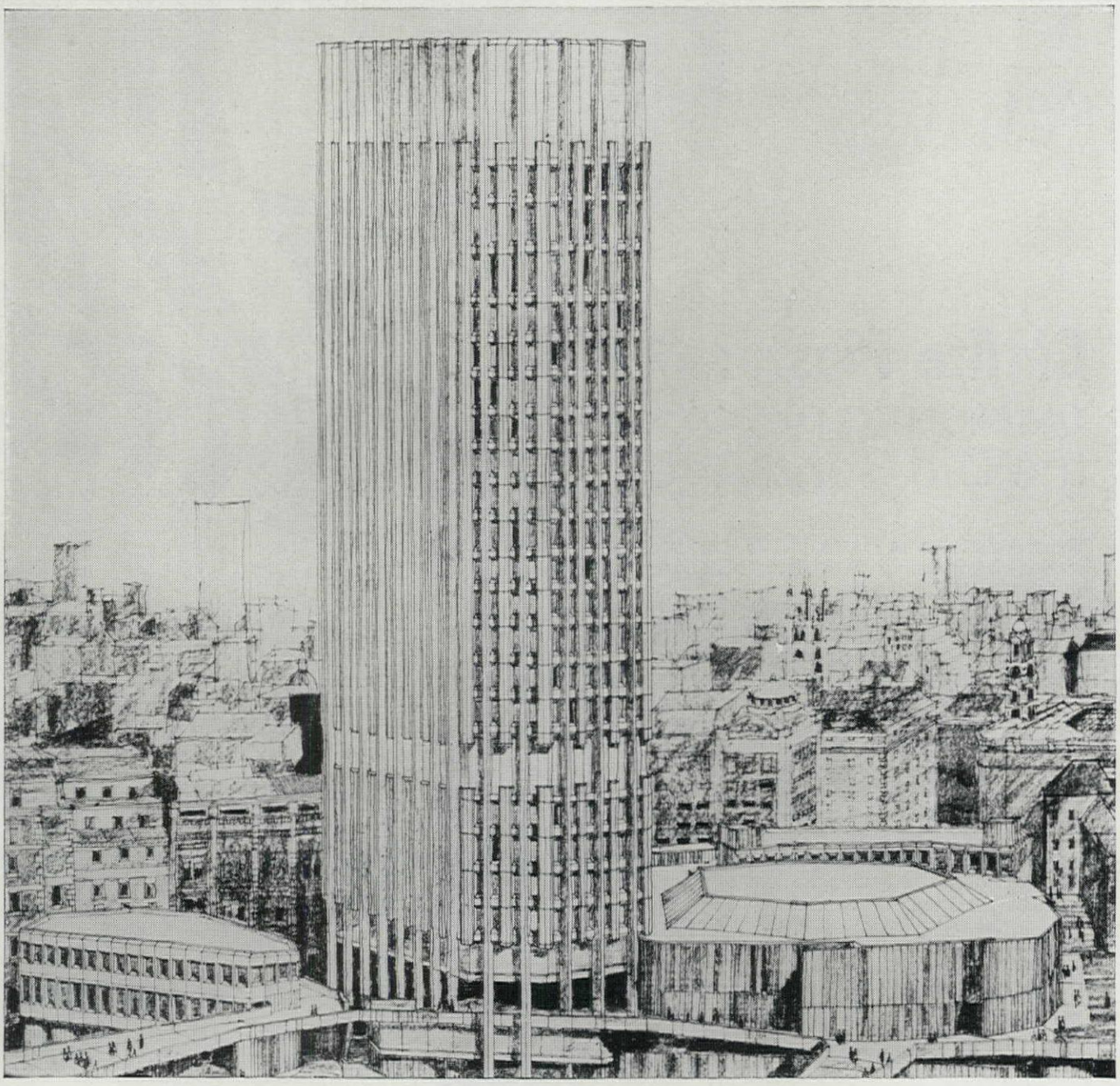
5

6

when in use; and the fragile feathered rims do not express the essential characteristics of clay.
In contrast to Lucie Rie's work, Dan Arbeid's pot, 7, seems to accept and exploit the chunky plastic quality of wet clay. The robust expression of his rim, recalling melon rind, is just as valid and immensely satisfying.

Product: Pottery
Manufacturers: Lucie Rie, Dan Arbeid

7



MISCELLANY

concrete

Freestanding *pilotis* and rough-boarded *béton brut* have been familiar trademarks of post-Corbusian brutalism since 1950. Those seen in the frontispiece to this issue (page 240) date from 1916 and stand in a prominent position on the Thames estuary at Erith, twelve miles east of London Bridge. They were the first major work here of the Danish civil engineers, Christiani and Nielsen, and their architect was Percival M. Fraser, now aged eighty-four, whose young assistant, Stephen Rowland Pierce, was largely responsible for making the project one of the earliest examples in this country of reinforced concrete dramatized in its naked form, 1. Erith Oil Works were built in 1913–17 at a cost of £700,000 for the processing of peanuts and palm kernels into vegetable

1

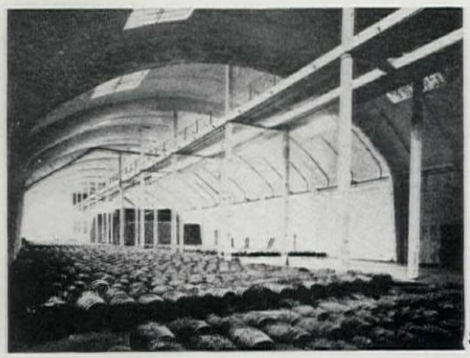
2

oil, which was then urgently needed in wartime for margarine. In the part for which Christiani and Nielsen and Rowland Pierce were responsible (right of 2), conveyor belts lead from the riverside jetties through a magnificent double-span warehouse to a fortress-like cluster of storage silos. The administrative offices and the actual processing plant, by contrast, were mainly steel-framed and built by conventional building contractors (Bovis and Ling's of Frith); they were clothed externally with the normal trappings of neo-classicism, cornices and capitals of stucco with starved pilasters of red brick; yet it was this part which Fraser chose to have exhibited at the Royal Academy of 1922. The extraction plant building suffered a sad sea-change on its clean and graceful concrete frame during construction, and Christiani and Nielsen themselves advertised in the technical papers another conventionally clad structure, the brick and stucco boiler house, although there the chimney at least was a structural feat, sixty metres high and only three inches thick at the top.

Fraser was a member of the first generation of English designers in 'ferro-concrete' (as it was then usually called). Articled to Thomas Arnold, he served as assistant to the Woolwich borough engineer and the LCC architect, and set up in practice in 1905 on being commissioned to design J. C. Field's candle and night-light works at Rainham in Essex, just across the river from Erith. The reinforced concrete method used at Field's was basically that of Edouard Coignet, whose works (in both senses) Fraser visited on a trip to Paris. He also visited Denmark, which was equal to France in pioneering the new methods. Field's was probably England's first wholly reinforced concrete building to be architect-designed—piles, roof, floor and walls. Industrial buildings had the advantage of being outside the normal set of local authority byelaws. In London the King Edward VII Building of the General Post Office had its foundation stone laid in the same year as Field's, 1905, but the reinforced concrete design in the Hennebique system for the Sorting Office behind was not begun until 1907. Sir Henry Tanner, the GPO architect, was a friend of Fraser's, being a fellow founder-member of the Concrete Institute; their deputation to Paris in 1909 (Tanner spoke fluent French) saw an early Coignet roof of 1852 opened up to reveal its iron reinforcement still in pristine condition.

Fraser was given the Erith job on the recommendation of one of the engineers for Field's, because the site problems were similar: piles had to be driven from thirty to seventy feet through reclaimed marshland to reach solid gravel. Christiani and Nielsen were imported, because the owners of the Erith Oil works, started on the site in 1907, were the Danish firm of Aarhus Oliefabrik (although by 1914 they had become a subsidiary of the Maypole Dairy Co.). Dr. Rudolf Christiani and Captain Aage Nielsen had started their engineering firm in 1904, and had devised a patent system for the construction of quays. Their English branch, the third outside Denmark, was established in 1913 when they were commissioned to build a jetty for the Tunnel Portland Cement Co. at West Thurrock in Essex. The Erith job followed later in the year, beginning also with a jetty. Knud Holst and C. F. Lunoe were project manager and assistant project manager (Holst and three later Christiani and Nielsen assistants, Arup, Kier and Peter Lind, later set up their own engineering firms). Because of the ignorance of reinforced concrete in England, the foreman, Erik Broe (who remained with the firm in England until 1959), brought with him a dozen Danes skilled in steel fixing, but they soon became homesick and English workers had to be trained instead.

The line of conveyance from jetties to silos begins with two upper level bridges, which lead from the riverside past an oil tank house (also concrete) into the warehouses, where they form a separate structure, 3, within each of the two magnificent spans (each 120 metres long, 30 metres wide and 13.4 metres high). Originally a second

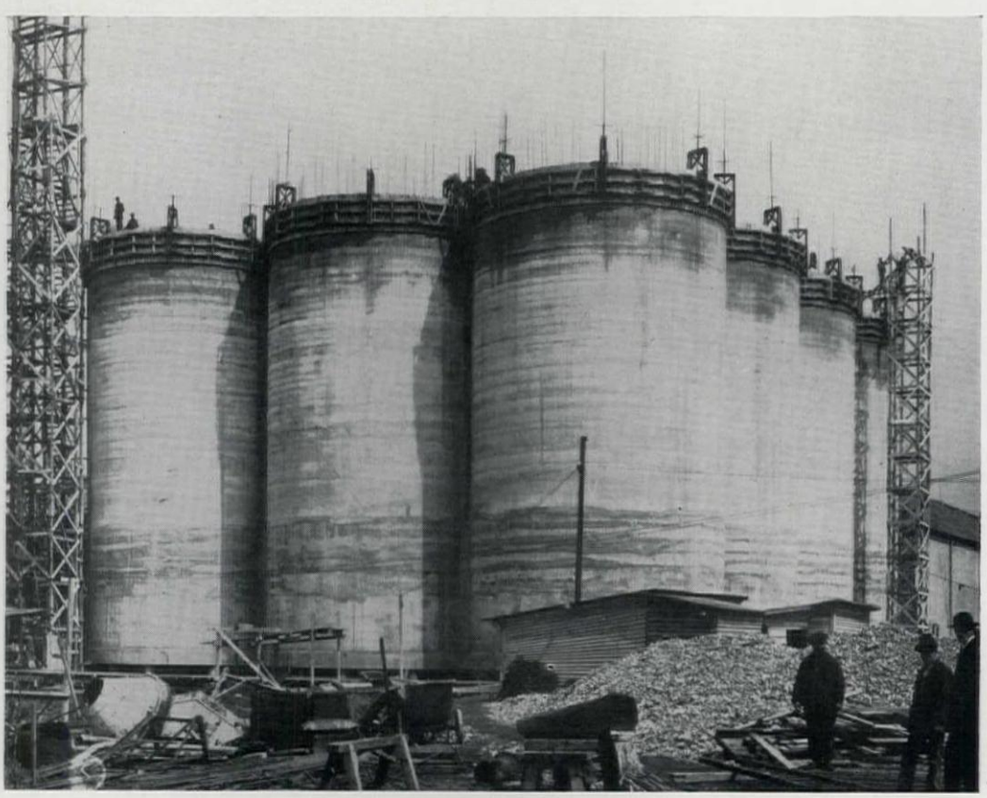


3

conveyor belt ran below floor level. The fair-faced concrete structure is still in excellent condition except that the floor has sunk under the weight of the lorries which now enter to remove the sacks.

The climax of the Erith Oil Works was the cluster of twenty-four silo towers, eighteen for palm kernels and six for peanuts. Each of them is thirty metres high and ten metres in diameter. The fifteen interstices, the concave diamond shape of which called for highly ingenious carpentry, are also used for storage, allowing originally a total maximum weight loading of 28,000 tons (now reduced to 22,000 tons). Apart from wood-framed access towers the concrete structure was formed entirely from within, without external scaffolding, 4.

[*continued on page* 294



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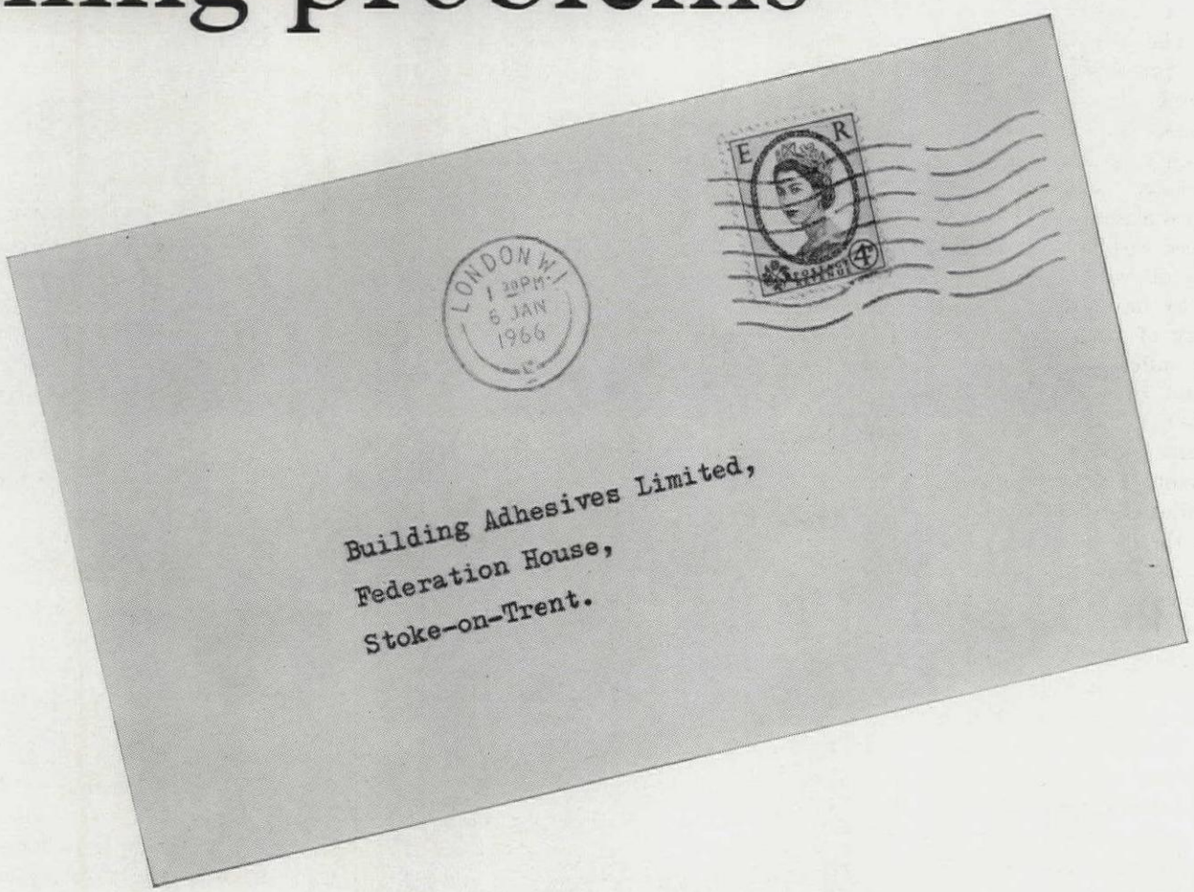

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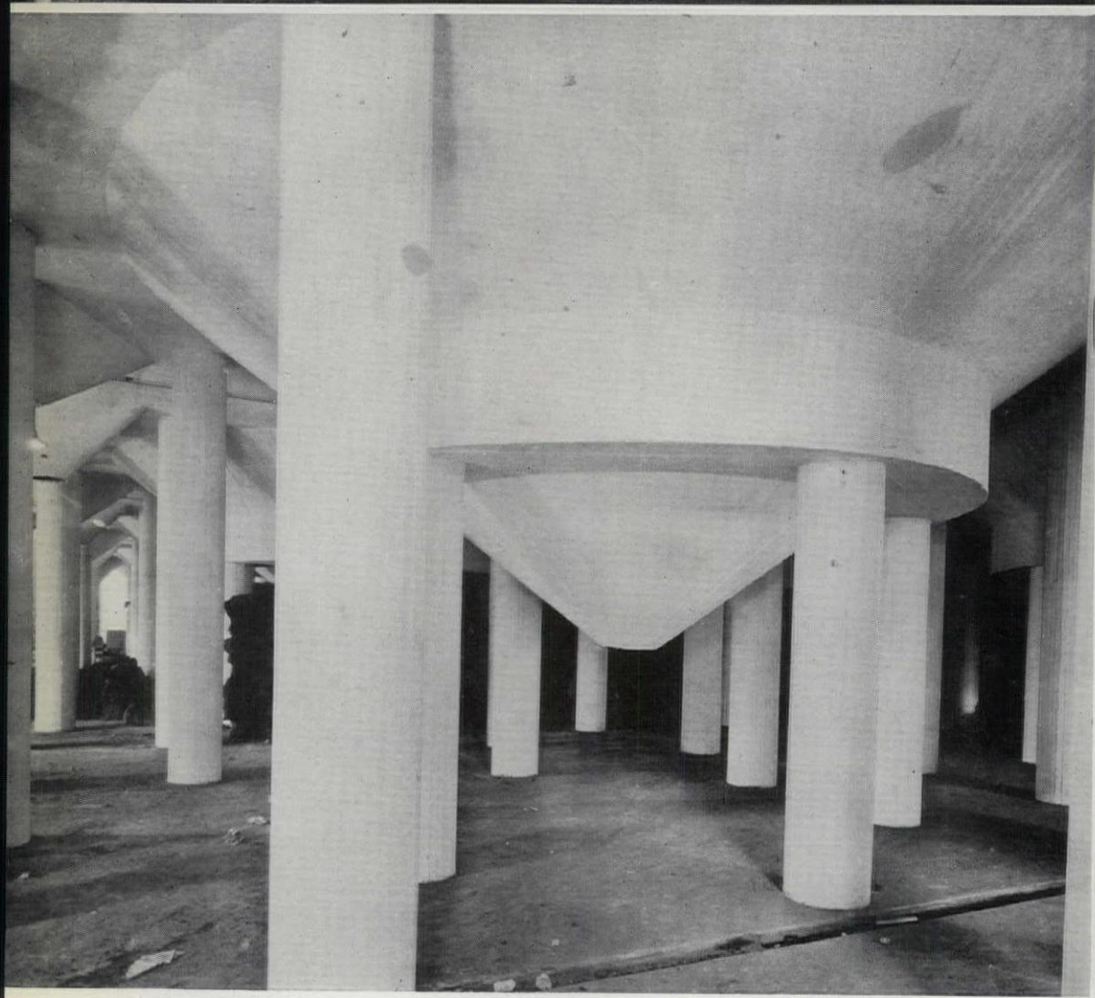
continued from page 292]

Specially constructed movable forms were used, the working platforms being raised by screw jacks. In 1927–28 Christiani and Nielsen designed a similar group of silo towers at Aarhus for the headquarters of Aarhus Oliefabrik.

Pierce undoubtedly expended most effort on designing the roofing, where the three curved sheds housing the pulleys and maintenance areas are expressed in segmental gables with classically inspired tripartite lunette windows. Only the straight parapet draws attention to the false height each carefully waved gable has been given in relation to the shed behind. Compared with most roof structures, this can be counted an honourable success, apart from the lettering which BOCM have since slammed across it, 5. The play of vertical curves against horizontal curves preserves the giant scale without compromise. Unfortunately the rough concrete of the cylinders has recently been clothed with a shabby patent rendering, because of spalling on the original surface.

5


6


7

It is the ground floor which is not merely good but, for its date, revolutionary. There is no classical artifice here. On the outside, where the funnels taper inwards, the load is transferred to freestanding *pilotis*, 6, gracefully slim and impeccably shuttered. The simple undulating curtain wall enclosing the working areas within must always have been merely rendered, and the contrast between its smooth, soft surface and the rough-shuttered concrete, seen in 1, effectively expresses it as a non-loadbearing 'skin.' The main walls are draped over the columns with the same logic. The space within, with its torrents of nuts rattling on to floor level conveyor belts, was always a *cathédrale blanche*, 7, an industrial retrochoir disappearing into the colonnaded distance, which the white dust of fast-moving vegetable matter has helped to keep pure.

Rowland Pierce, who died last February in his seventieth year, remains rightly famous as co-author, with C. H. James, of Norwich City Hall, 'the most successful English public building of between the

wars' (Pevsner); and his early career throws an interesting light on the Erith work. From Hastings School of Art he joined a local architect, Arthur Wells, whose brilliant son, Randall Wells, was then working on a house (unidentified) near Battle. In 1913 he went to London with Randall Wells to work on the remarkable reinforced concrete designs for the Board of Trade competition and for the Bush House site in Aldwych, described by Nikolaus Pevsner and Enid Radcliffe in their article on Wells in AR, November, 1964. Two things Pevsner did not mention: that Wells had already in 1906–7 designed and supervised the building of the reinforced concrete structure of E. S. Prior's St. Andrew, Roker, and that in 1914 Wells made another competition design, not in concrete but with an extremely Ruskinian facing in coloured marbles, for a bank in Milan or Turin. Pierce worked on the Board of Trade and on the bank design, which was sent off two days after the outbreak of war and was never seen again. He then worked for the young Edward Maufe on the neo-Grec Capital and Counties (now Lloyd's) Bank at St. Albans and for Sir John Burnet (his special hero) on the restrained neo-Georgian Institute of Chemistry in Russell Square. In 1915 he secured the job of assistant to Percival Fraser at Erith (as such being preserved from military call-up). After a breakdown in health he rejoined Fraser in 1918, moving a year later to the newly established office of J. M. Easton and Howard Robertson, where he worked on a scheme for houses of modular concrete blockwork (Homes for Heroes, no doubt). Finally in 1921 he won the Rome Prize, excavating at Agrigentum and writing a thesis on Domitian's villa at Albano, before returning to teach at the AA.

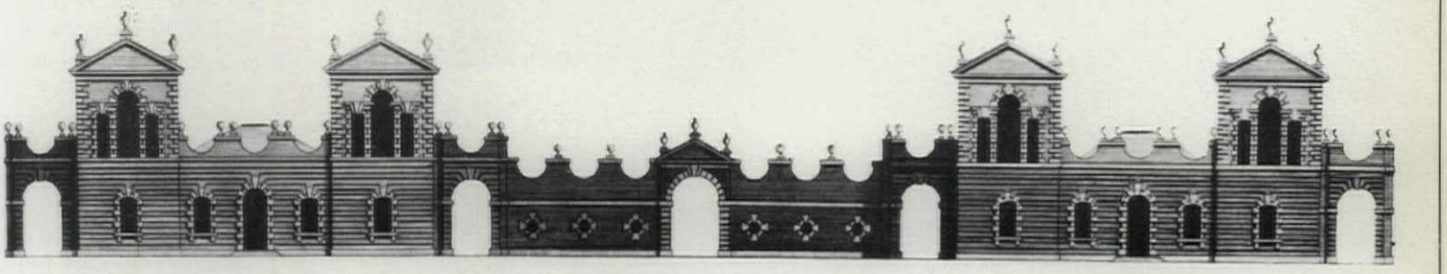
All these complex strands in Pierce seem united at Erith: the structural invention and feeling for surface texture of Wells, the Roman gravity of Burnet and a scholarly enthusiasm for Imperial baths and basilicas, transformed into a conscious visual analogy with modern engineering. It was also an expression of the 'brutalism' —in the best of senses—in Pierce's own personality, his somewhat harsh integrity and his hatred of fashionable shams.

NICHOLAS TAYLOR

This article has been made possible by generous help from Mr. Fraser and the late Rowland Pierce; from Dr. D. B. Lockhart and Mr. Shaw, of British Oil and Cake Mills Ltd., the Unilever subsidiary which now occupies Erith Oil Works, and from Mr. R. M. Titford, of Christiani and Nielsen.

history

THE DOGG KENNELL ATT HAMILTON



(generall Front towards the North of the Dogg Kennell att **Hamilton** *Situate att the head of the South Avenue a mile Distant from it Fronting the* Palace

1

Chatelherault, the red stone summer palace of the Dukes of Hamilton, lies in the remains of the ducal park to the east of the burgh of Hamilton. It is a long building (the facade is 280 ft.), set on a rise of high ground overlooking the gorge of the River Avon and the ruins of the first Hamilton house, Cadzow Castle. The palace was designed and built for James, the fifth Duke, probably by William Adam about 1732—at least he was working on a new parish church in Hamilton at that time and there is a plate in *Vitruvius Scoticus*, 1. Also many of the architectural details repeat motifs and ideas used in other projects by Adam, including Hamilton Church.

Chatelherault was chiefly designed as an eye-catcher, closing the view south through the famous double avenue of trees from the great gallery of Hamilton Palace (demolished in 1927). The central section was a screen, 2, behind which were kennels. The plate in *Vitruvius Scoticus* is inscribed 'the dogg kennell att Hamilton.' Behind these again and enclosing them were high, Italianate terrace gardens planted with trees and shrubs and intersected by walks.

At its eastern and western parts the facade was terminated by tower blocks arranged in pairs with a low pavilion set between each pair. The eastern group housed the servants, while the ducal apartments were in the second block overlooking the river and the woods. They consisted of half a dozen rooms primarily for entertaining, with the pavilion as a banqueting-room from which the central light of a Venetian window led to the gardens. The room was elaborately decorated and had a coved stucco ceiling,

[*continued on page* 297

lighting concepts . . .

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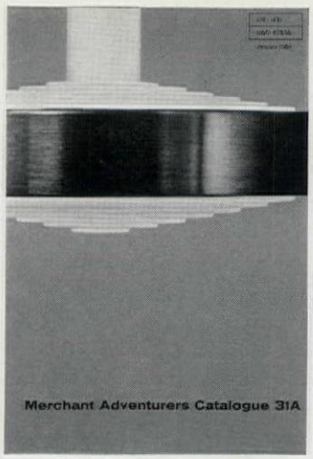

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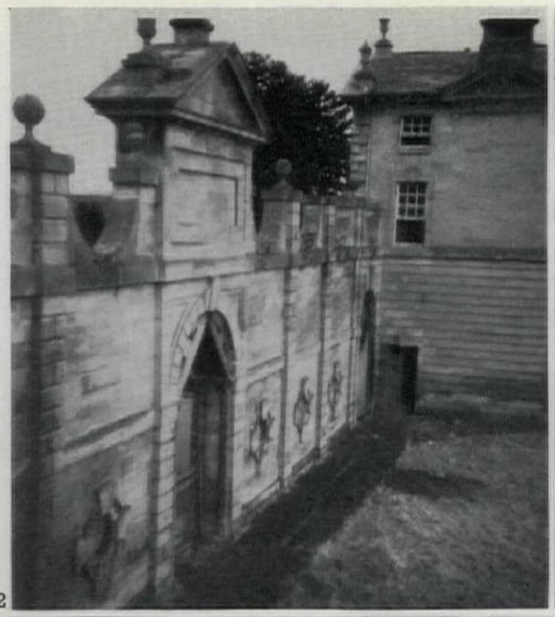
continued from page 295

the work almost certainly of Thomas Clayton. With its figures, ducal coronets and festoons of foliage it was rococo rather than baroque. This room was destroyed by fire in 1944.

Only one room is now intact. The rich plasterwork, 3, covers the rose-pink walls and the ceiling in that profuse, exuberant and over-decorative style favoured by William Adam at other houses, such as the Drum. Four portrait medallions, each set in a cartouche, are surrounded by garlands and bows. One of the heads is of a young man, his hair bound with vines, while tendrils, leaves and grapes fall about him. His companion is an old man, sunken-faced and bearded. The fireplace—*à la* Wilton—bears a coronet amidst swirling foliage, and in the deep cove of the ceiling there is more foliage intermixed with trophies of the chase. The ceiling's central panel, 4, bears a seated figure of the goddess Diana of the chase, a faithful hound by her side and a light feminine bow in her hand. In this room, handsome despite the depredations of time and the spoliation of man, the only jarring feature is the Venetian window, filling the north wall, which is too cramped in its proportions to have the breadth and grace of the one in the banqueting-room. It was in any case a solecism to have such an important feature lighting such a small space.

In its derivatives Chatelherault is a fascinating study. It owes much to another Scottish architect—James Gibbs—notably in the richness of decoration and in such details as the deep-cut cornices and the broad splays of the window mouldings. It also owes something to Vanbrugh. There probably never was any prototype or model for Chatelherault although the screen is a revamping of Adam's earlier colonnades, such as Mavisbank (1723).

Chatelherault stands at the edge of a great sand quarry. Recently the owners of the estate applied for planning permission to extend the quarry, which would have destroyed Chatelherault. Lanarkshire County Council refused permission for fifteen years, so reprieving the summer-palace. The latest news (this August) is that the Secretary of State has upheld the refusal, saying that to regard the building as beyond repair is premature. But although is it listed in the 'A' category nobody seems prepared to undertake rescue operations. The present duke has given £1,000 for the removal and reconstruction of the one complete room. However, any hopes of government-sponsored aid seem to have been killed by the decades of neglect by the owners. The real answer would be to remove the structure. But where to and for what



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purpose? Possibly the twentieth century has no need for fantasy and so Chatelherault should be allowed to slide into the sand quarry. Yet possibly, in permitting that, we show less intelligence than the patron and architect who created not only a superb ducal folly but a unique piece of architecture containing some of the finest plasterwork of the eighteenth century.

JAMES MACAULAY

travel

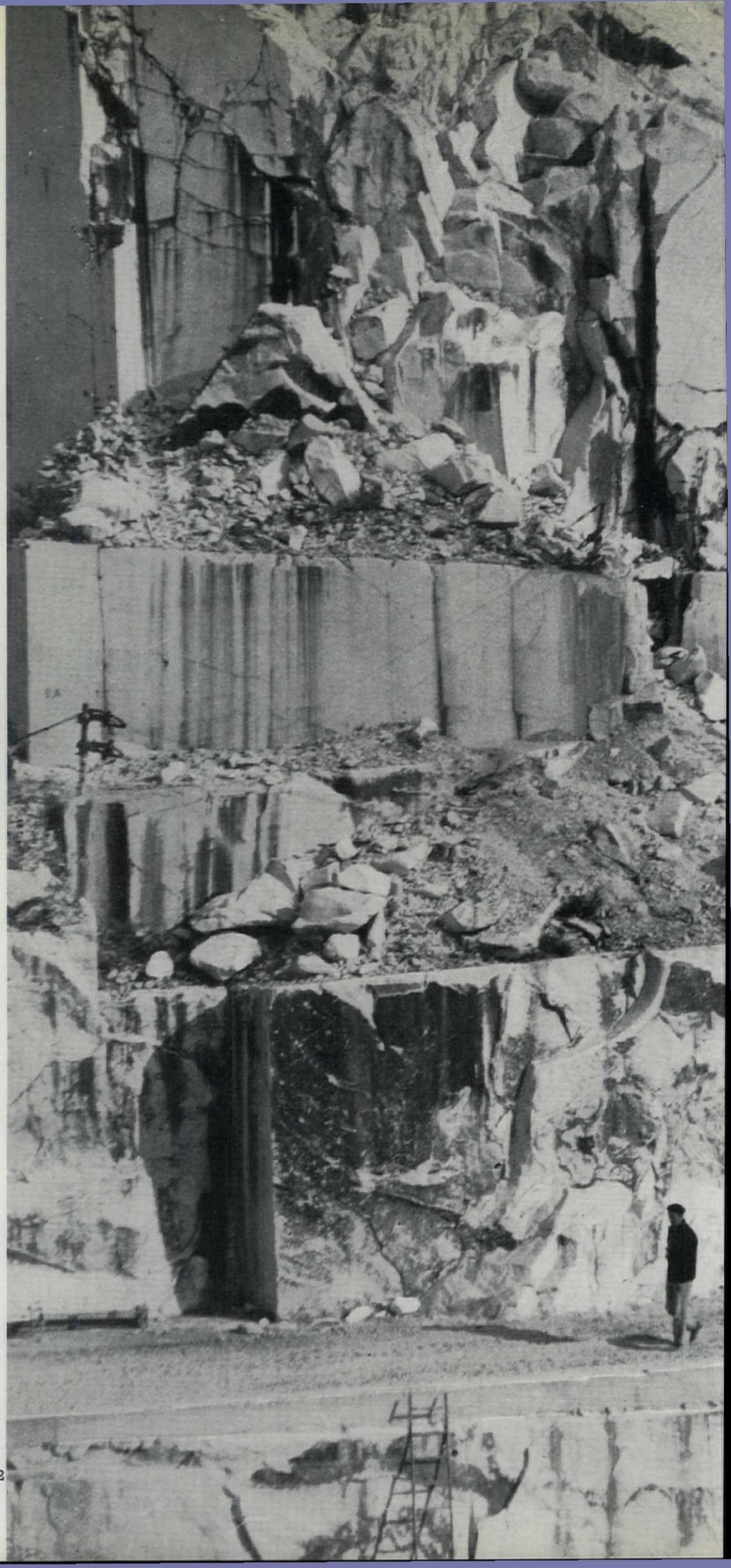
SCULPTORS' ELDORADO

1

1, the marble lion that presides over the fountain in the Piazza Alberica, Carrara. 2, the Ravaccione quarry, Carrara, with the Flemish sculptor Norman Mommens prospecting for marble.

Carrara is a small city (pop. 64,000) with a modern town-hall and a medieval sewage system. It is not the town which fires the imagination, but the Apuanian Alps which rise abruptly from the narrow plain and lock it from the east, a wall of mountains whose slopes are scored with flashing white moraines. These lunar alps which, seen from the train, appear to be streaming with white marble, a sight noble and desolate at once, have given to Carrara a lustre reflected in the name of Michelangelo.

Anyone courageously stopping before going south to Lucca or north to Lerici, must not be surprised to find himself, after a taxi ride up a wide boulevard flanked with nineteenth-century villas and new apartment houses, passing the post-office (a marble-faced edifice frankly inspired by Mussolini) dumped in the main piazza where the first things he sees are a marble foal, a marble reproduction of Cellini's boar and a couple of jazzy office blocks. The antidote is to drive on at once to the Piazza Alberica, the old heart of the town glowing red and chrome with peeling stucco, and slump into one of a staggering



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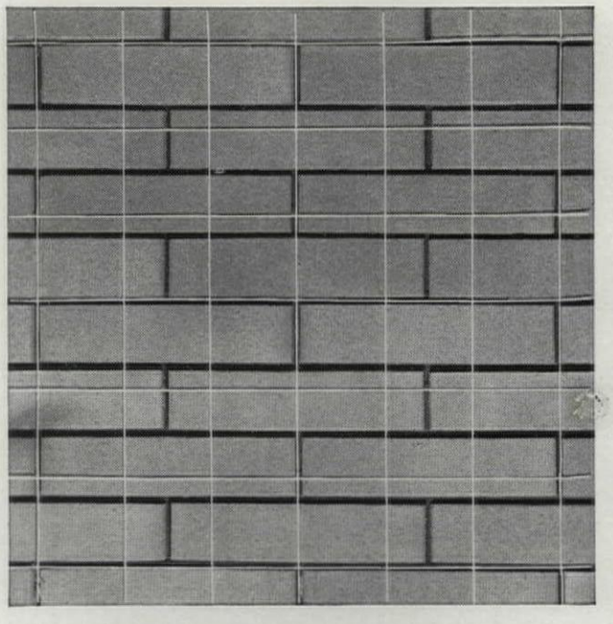

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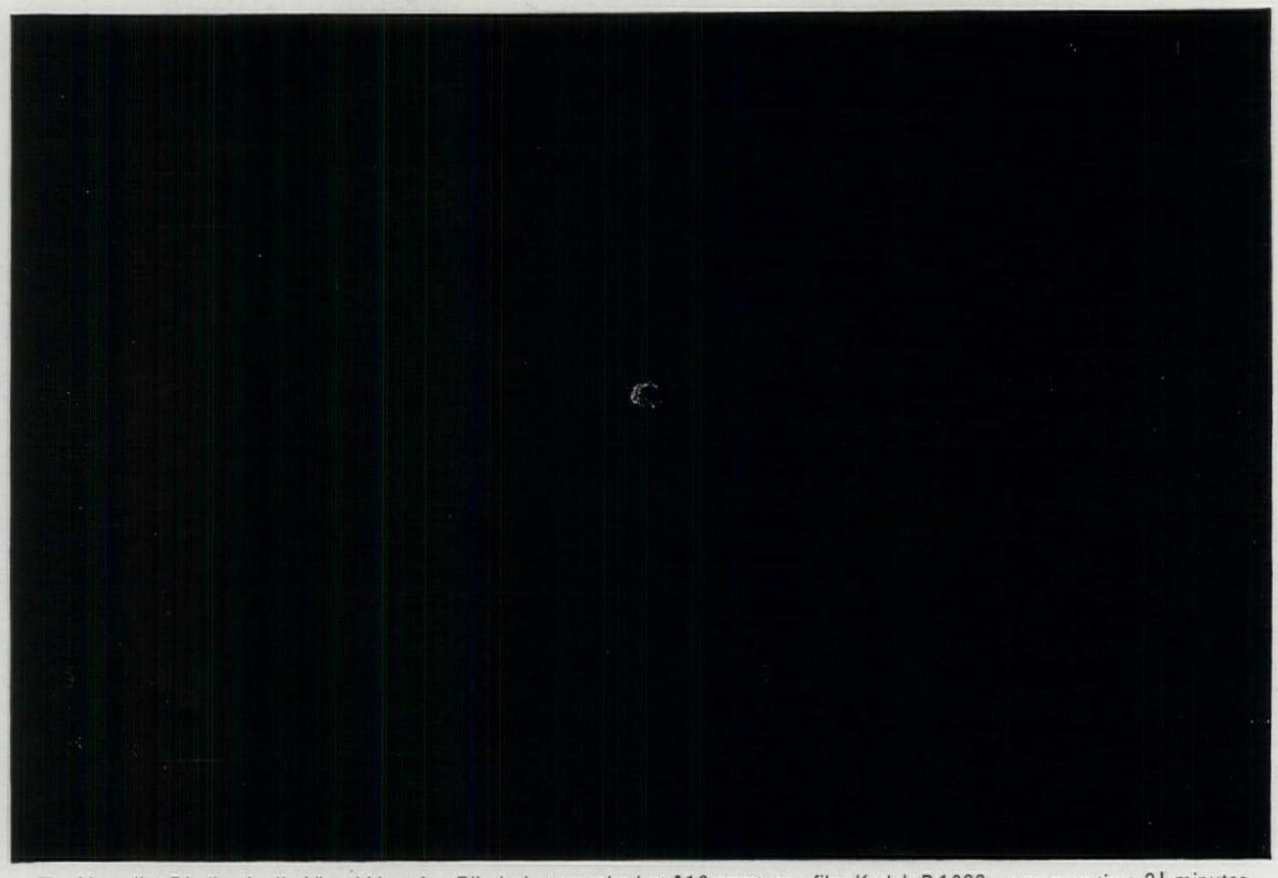

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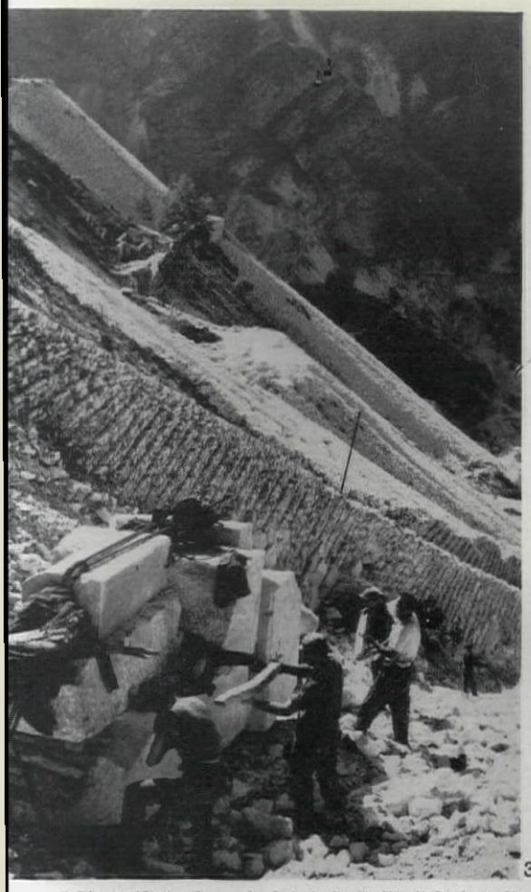

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3, Lissatori letting down a load. 4, the Studio Nicoli. In the studio are shown, among other pieces, a baigneuse *for a Sicilian client, one of Signori's Stations of the Cross for the Rouault exhibition in Geneva, an unfinished Calvary and a plaster model of The Shepherd of the Clouds by Viani.*

number of wine shops patronized by retired quarrymen swallowing their pensions.

The Carrarese have only in the last fifteen years been precipitated from their medieval past, and the semblance of prosperity is epitomized by washing machines installed in kitchens dependent upon wells, fountains and rainwater. In unseen workshops men in self-made paper hats, like bishops' mitres, like doges' caps, powdered in fine white dust and deafened prematurely by the whine of mechanical tools, still work from 7 till 5 and overtime to draw minimal pay. Working in marble is called by them *l'ultima mestiere*, the last profession, which takes five years of apprenticeship to master and which, with the advent of pneumatic tools, looks remarkedly like sweated labour. This life of grinding work, perpetual improvisation and unquenchable good humour is Carrara's gold, unassayed.

Half of Italy's white and coloured marble comes from the mountains behind Carrara and the sister-city of Massa, where it is sawn and shipped from the little port on the Tirrhenian Sea five miles to the west, which also acts as clearing house for the world's marble, Greek, Swedish, Turkish, Canadian, Portuguese. The marble zone extends into the province of Lucca southwards, where Serravezza, Pietrasanta, Montignoso are important centres. The business of marble is extracting, squaring up, transporting, sawing, polishing. The best marble comes from the top of the mountain, which is why even the crests are eaten out. The extraction is done by a system of sawing by elicoidal wires invented in 1854 by the Belgian Henri Chevalier, and by blasting. The blocks are squared up laboriously by hand with 6 lb. hammers on the mountain sites, and until recently, and since Roman times, were, let down the steep moraines, 'cushions' composed of fragmented marble, on oak sleepers dangerously despatched by a bunch of individualists called *lissatori*, intrepid freelancers on whom the quarry-owners depended. In the last three years hairpin roads have been constructed up these primordial *pistes* and most of the 200 odd *lissatori* have abandoned their gear to become truckdrivers, and now bring as much as 30 tons of marble down the precipitous water-eroded valleys, the *canali*, to the sawmills along the Carrione's riverbed.

If the main business is the supply of sawn marble, striated, veined, cloudy, grey, black and white for home and export as building material, an important subsidiary is the manufacture of quarrying machinery for export. Technically Carrara has the lead in this. The marble industry has been hit both by the Italian crisis which has paralyzed building and the raising of import duties by other countries, including Britain. The crisis also affects

4

5, Victorian miscellanea in a corner of the Studio Nicoli.

the production of funerary monuments in ordinary and statuary marble, of saints, madonnas, piety's setpieces, for which there is a strong American demand, and what is called Art Marble manufactured in small workshops all over the town. Visitors, however, are increasing in number with the haphazard developments along Marina di Carrara's beach, and for them are made pawky reproductions of Michelangelo's David in miniature, the Winged Victory, onyx ducks and mice.

Since the source of marble workmanship, the *Scuola di Marmo*, professes only to be a *scuola di misura*, which means that instruction culminates in the mechanical techniques of copying, there is no impulse in the direction of live carving in these workshops. And since the material has been discredited in the last 25 years for creative purposes owing to its associations, expense and weight, it looks as if marble is in a poor way as far as sculpture is concerned. To re-establish this lost connection the *commune* does its utmost to attract Italian and foreign artists and the attention of the press by holding a sculpture *Biennale* which last year was removed from the palmtree precincts of the Accademia and newly sited in the open near the beach. The purchase during this event of Carmassi's onyx torso by the American film director John Huston is taken as an indication that stone (as opposed to bronze, wood, scrap and plastic) is now 'in'; so is the acceptance of a mayoral invitation to Carrara by the 'bronze age' sculptor Chadwick. If marble's reinstatement is impending, it is probably due to the exasperation of the wealthy who, briefly deluded by the significance attributed to kitchen-taps, initialled soupcans, outsize toothpaste tubes and crushed motorcars now lean towards objects whose negotiable value is assured, pure marble and pure gold.

A little stream of sculptors, from Afghanistan, America, Belgium, Czechoslovakia, Finland, France, Germany, Hungary, Israel and Mexico have come here to do their own work. As Carrara's well-lit nineteenth-century studios are now garages, store houses, coal and petrol dumps, they ultimately find their way to the Studio Nicoli in the Piazza San Francesco where friendship is offered to artists in the same breath as working space. This magnificent place, littered with rhetoric congealed in plaster, on the margin of commerce, on the margin of art, has become by hospitable impulse, by tolerance, by old tradition and *laisser aller*, and through the commercial inefficiency inseparable from the anarchic resourcefulness of the Carrarese, the marginal land where carving can escape the old bondage which divides conception from execution. In this studio master craftsmen work side by side with brash apprentices. Here the works of some of Italy's leading sculptors, Signori, Viani, Pietro Cascella, Carmassi, Alfieri, are made, and Bruno Giorgi's 50-ton sculpture for Brasilia is being executed at the same time as Books of Life are manufactured by the gross for

the English market and saints are carved to size. This remarkable survival from the Victorian past, whose founder Prof. Carlo Nicoli specialized in statues of colossal size, is menaced by a current form of gigantism, concrete apartment blocks which threaten to invade the piazza the studio now dominates. Here is the centre of foreign sculptors, in fact if not in name, and while it survives the visiting sculptor has no need to assail the fortifications of the *commune* with a summary of his unspectacular needs—a supply of marble, a place to work, a list of lodgings. He takes refuge in the unstinted hospitality of the Nicoli Studio. PATIENCE GRAY

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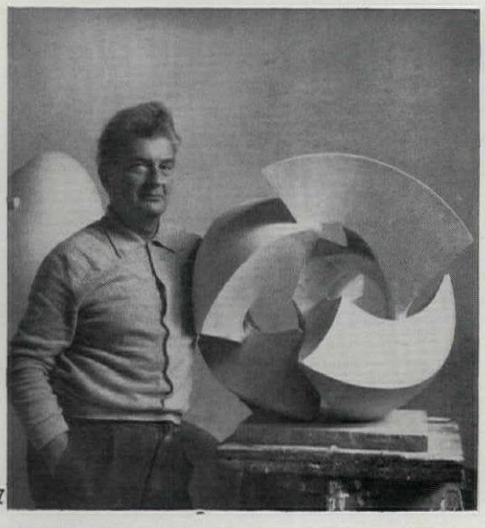

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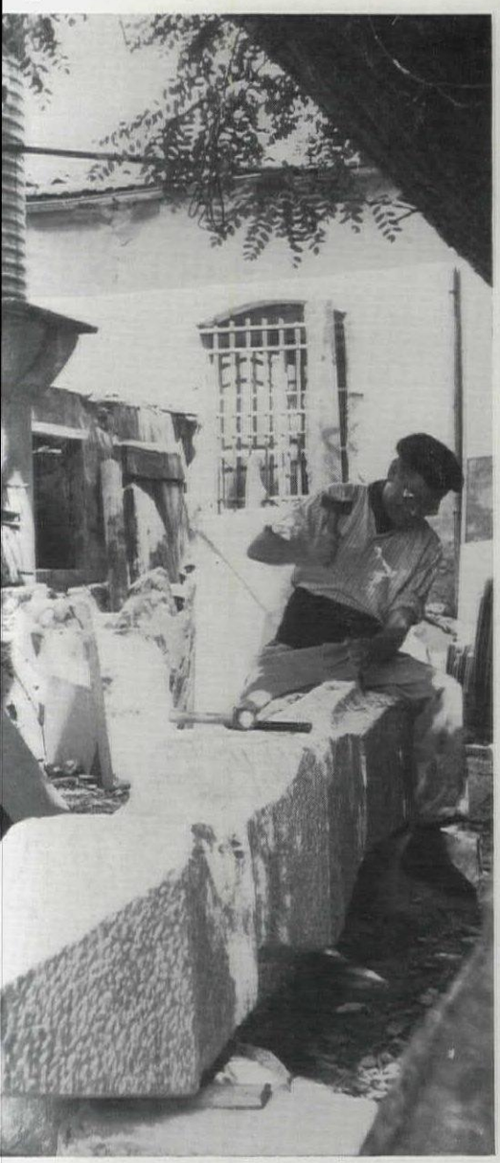

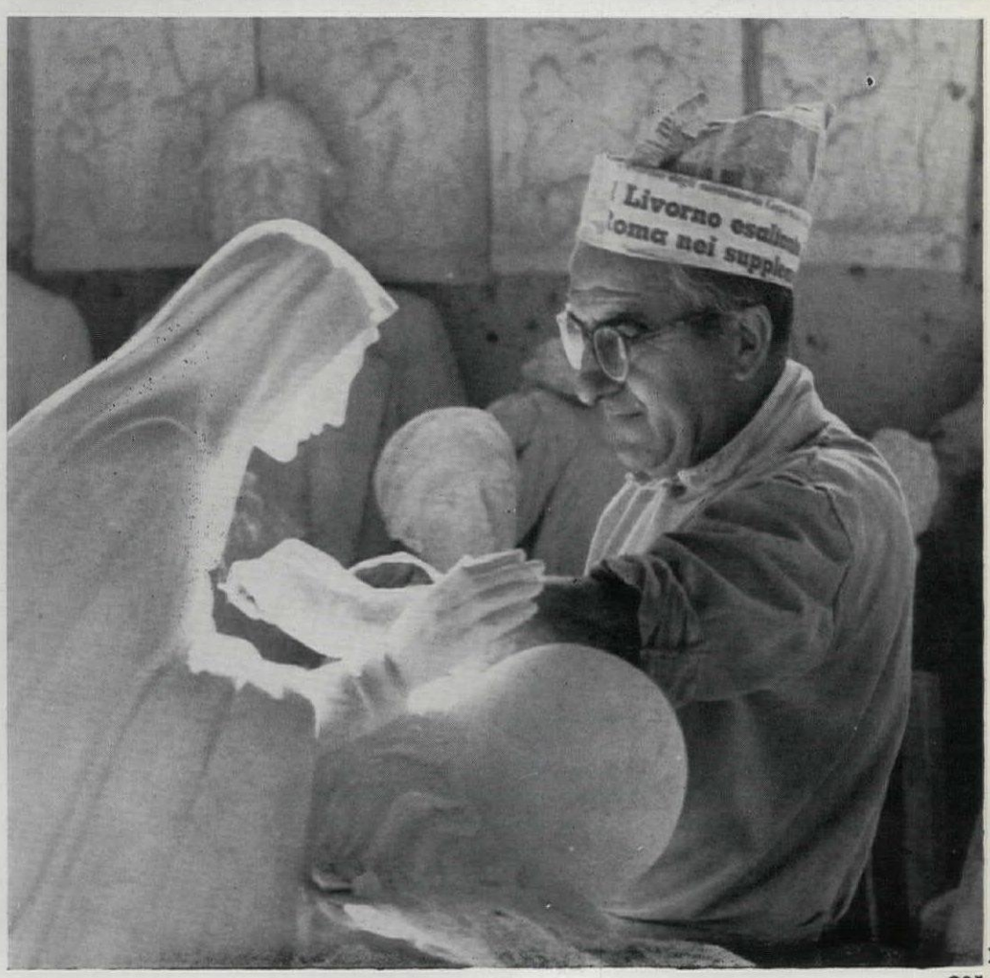

10

sculptors' eldorado

6, P. Alfieri (in white overalls) with his 'Olives in the Desert' a lid for a marble sarcophagus, made in the Studio Nicoli (Carlo Nicoli is in the white shirt). 7, Bruno Giorgi with a model of his 50-ton sculpture, 'Meteor', for a lake-side site by the Ministry of Foreign Affairs at Brasilia. 8, Norman Mommens starting work on a sculpture outside the Studio Nicoli. 9, Ceccardo, the most highly skilled craftsman in the Studio Nicoli, with a bust of Marie Antoinette. 10, Artigiano and a pietá.

The Bathroom

The fittings which are incorporated in our bathrooms have changed little in design over many years. Styling has been applied as was well illustrated by Lawrence Wright's book, Clean and Decent, *but basic functional design has been largely ignored. On July 31st* 1963, The Architects' Journal *published an article by F. A. Hornibrook questioning w.c. design. This provoked a spate of controversy. Now Alexander Kira has produced a book covering all aspects of bathroom fittings. This article by Selwyn Goldsmith examines this book and describes some of the ideas and conclusions which it contains.*

A 116 page paperback research report from the USA entitled *The Bathroom, criteria for design** does not sound exciting. It is. It is a very remarkable and extraordinarily fascinating document, the product of eight years' intensive investigation into the design criteria of all aspects of personal hygiene. Previous reports have revealed that there are architects who are obsessed by such problems as the shape of the w.c. This is a document which they will relish.

Some indication of the scope of the report is given by selected headings from the contents page:

Historical and cultural aspects of personal hygiene attitudes, practices, and accommodations.

Major personal hygiene activities—problems and criteria for equipment design.

Body cleansing: Social and psychological aspects; Anatomy and physiology of cleansing.

Elimination: Social and psychological aspects; Attitudes towards elimination processes and products; Confusion between elimination and sex organs and functions; Privacy; Attitude formation and training. Physiology and anatomy of, and design considerations for, defecation. Physiology and anatomy of, and design considerations for, urination.

Other related activities—general problems, and criteria for design: Miscellaneous hygiene and grooming activities; Personal non-hygiene activities.

Design criteria for complete hygiene facilities: Approaches to a total facility.

The study was carried out in three major phases: 1, an extensive search of the existing literature; 2, a field survey of current attitudes, practices and problems, documented in a research report by Professor Marilyn Langford, *Personal hygiene attitudes and practices in* 1,000 *middle-class households*, published in 1965 by Cornell University; and 3, a laboratory investigation of the problems and needs posed by the principal personal hygiene activities. Alexander Kira, the author of the report, is Associate Professor of Architecture at Cornell University. During the course of the study he was assisted and advised by a team of specialists and research workers. The report, as he admits in his preface, is solely his responsibility. There is no need for apologies. It is apparent from the study that Kira is not only an architect. He is also a philosopher, a psychologist, a social scientist, an anatomist, a physiologist, an anthropometrician and a humorist. And, most importantly, he can write. It is refreshing to find a scientific research worker who says 'throughout this report the reader will come across very general terms . . . in some instances, definitions, terms, and statements are used which may strike some readers as obvious, pedantic, or even unnecessary. On the basis of the author's experience during the course of this investigation, such occasionally plain and labored speaking has proved to be essential in order to clearly define terms, to establish certain basic premises and to identify problems.'

The bidet

The author's capabilities as a psychologist are especially relevant, for as he shows clearly 'There are almost as many psychological and cultural problems to be solved in developing design criteria (in the bathroom) as there are pur physiological or functional ones, a in some instances, it may almost said that *the* problems to be sol are the psychological and cultu ones.' As an example of the do inating influence which psychologi attitudes can have on the design a use of bathroom facilities K discusses the bidet: 'Both the activ and the equipment in this case highly charged emotionally. . Through misunderstanding and n information, the bidet has beco associated in the average perso mind with sex and sex-rela usage. . . . The misconception, s widely held, is that the fixture solely to be used for douching vagina, contraceptively or otherw and for the washing of the vul region after intercourse. The er is sometimes further compounded the belief that the fixture and genital cleansing function is u only by, and is only necessary f prostitutes or loose women. From historical standpoint, it is relativ easy to see how such an associat could come about; first, as a res of the veil of secrecy . . . and seco because the first large-scale cont Americans had with the fixture v in France during World War I often presumably under circu stances which could give rise to su impressions.' Kira quotes the actions of people who were int viewed regarding the use of a bid extending from 'I don't need 'I wouldn't want anyone to know needed to use it,' to 'It might be right if I could have it in a separ compartment where guests could see it,' and 'What would I tell children?' Because of its embarrass sexual connotations the bidet v never become a generally accep piece of equipment in Americ bathrooms, despite the well-kno (and admitted by Kira)preoccupat that American people have with things hygienic. It is interesting speculate whether there is a simi non-future for the bidet in Brita Extrovert architects may campa among their clients for bidet stallation, but how much success v they have? As Kira says, 'This i good example of the kind of ultim practical influence our attitudes c have on otherwise purely functio design criteria.'

The lavatory basin

The report examines in detail t functions and characteristics of t four principal bathroom fixtures the lavatory basin, the bath, t shower and the w.c. The lavato basin has to accommodate t principal functions—hand washi and face washing. In domes situations it is desirable that should also accommodate hair wa ing. For any of these needs the ba with rim set at the conventio height between 30 in. and 32 in. is t low. One of the critical problems respect of the lavatory basin conflicting criteria for people different height. 'On the one ha equipment should be designed so to permit optimum human functio ing and also so as to accommod the largest number of users regardl of their sizes or capabilities. On t other, the variations in a to

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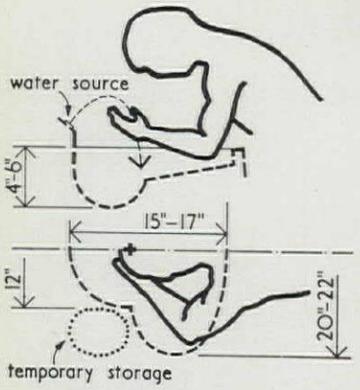
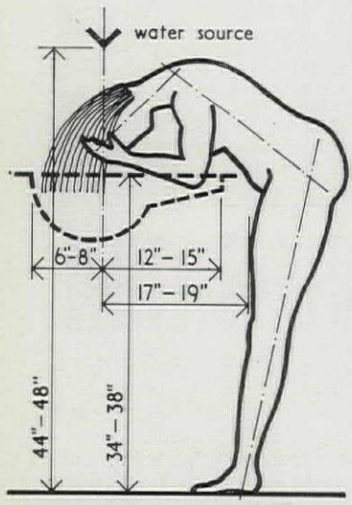
* By Alexander Kira. Cornell Univers 1966. Obtainable from Center for Housin Environmental Studies, 109 West Sib Cornell University, Ithaca, NY 14850, p $7.00.

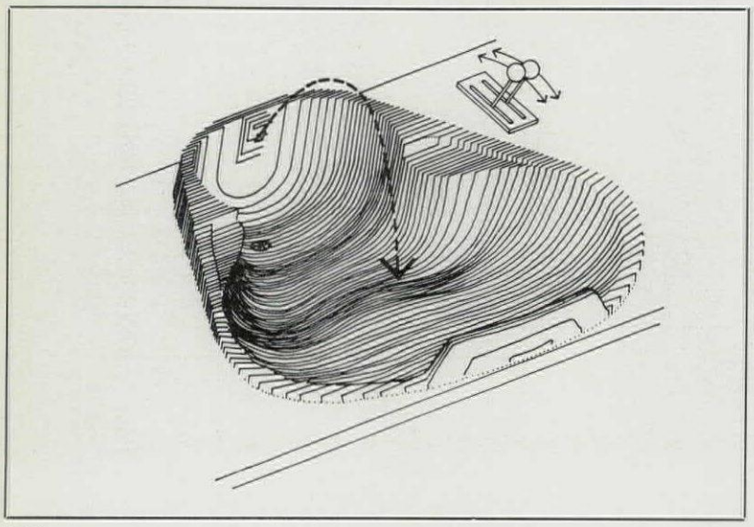


1, dimensions and shape necessary for equipment for washing hands and face. (Illustrations based upon those in The Bathroom, criteria *for* design.)



2, dimensions and shape necessary for equipment for washing hair.

3, experimental lavatory basin incorporating suggested criteria.



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population are so large that it becomes virtually impossible to design in any meaningful way for such a conglomerate group. What is ideal for a child is not ideal for a full grown man and vice versa. Similarly, what may be ideal for the "average" user is likely not to be ideal for the two extremes of size, for example.' At the lower end of the scale the design population is limited by the age at which children can achieve a reasonable measure of independence from adults in peforming hygiene functions, i.e. at or around age five. Obviously small children cannot comfortably use a basin fitted at the conventional level. The best solution seems to be to provide them with a temporary aid, e.g. a footstool, so that they can use a standard facility. 'This does not mean that children under five should be totally ignored, but equipment designed for a total population cannot at the same time be geared to small children as well. Therefore, children under five are not included in "normal" population but are considered secondarily in the design of each fixture.'

In the large scale study of personal hygiene practices it was found that 94 per cent of the people studied regularly washed their hands under a stream of running water rather than a pool of water. The water source in the conventional position is a handicap to this operation: 'virtually every lavatory on the market today is still nothing more than an old-fashioned wash basin fitted up with running water and a drain. Without exception, the water source is obviously intended solely for filling the basin and is located so that the spout is at or below the rim of the basin and only an inch or two from the back wall of the basin. The result is first, that it is extremely difficult to get one's hands under the stream and second, since the location of the water source governs the positioning of the hands, one is forced to assume a very tiring and uncomfortable posture because of the low heights at which lavatories are commonly mounted.'

A study was made of the posture of a variety of subjects who were asked to pretend to wash their hands first in the abstract, then with a given basin height but no water source, and finally with a given water source but no basin. As a result of this study it was determined that the most comfortable height of the water source for hand washing would be at approximately 42 in. over a basin rim between 36 in. and 38 in. The optimum heights for face washing, on the evidence of a similar study, were found to be about 2 in. lower. For hair washing it was discovered that optimum heights were 46 in. for the water source and 36 in. for the basin height. In the experimental facility devised by Kira to accommodate all three functions a fountain type of water source is incorporated. This avoids the need for an adjustable height water source, and also resolves the problem of interference of the face or back of the head with a high level water spout. The contours of the bowl are determined by the configurations and range of body movements involved in the performance of the three activities. To avoid reaching across the basin the controls are set asymmetrically to one side. A raised 'splash' lip is provided at the front edge of the basin. There is a pressure regulating device to keep the stream within the container, and the height of the stream may be modified at will. An incidental advantage is the natural usefulness of the facility as a drinking fountain.

Bath v shower

The two common methods of body cleansing—the bath and the shower—have significant differences psychologically. The bath is relaxing, luxurious, feminine, soothing, sensually enjoyable. The shower is refreshing, revitalizing, masculine, fast, efficient, spartan, invigorating, businesslike. 'In terms of overall design criteria both shower and bath methods of cleansing should be continued since, at least from a psychological viewpoint, each satisfies particular needs.' 'Relative to other personal hygiene activities, body cleansing is a complex, strenuous, time-consuming, and sometimes potentially hazardous undertaking. When we examine body cleansing from an overall point of view, we find that it is composed of several major components, of which the actual washing process is only one. These are: getting in and out of the fixture; relaxing, which in this case must be viewed as a distinct subactivity; and cleansing, which consists of wetting, soaping, massaging, and rinsing.' In the case of the bath getting in and out is a major component of the overall activity. 'The basic process is one of stepping, or climbing, over a barrier into a hard and slippery container and then lowering (and raising) the body from a standing to a reclining position. At each step, the body is momentarily off-balance and is in danger of slipping and falling because the normal frictional resistances which keep us balanced are greatly reduced with a wet glass-like surface. The key to minimizing these hazards is to provide for auxiliary support devices on which the body can be braced. In this respect it must be noted that the old-fashioned high-sided tub, which has been criticized as being "unsafe," is actually safer from the standpoint of access than the modern low-sided tub, *if* no convenient support is provided—which it almost universally is not. The higher the side, the easier it is merely to reach out and steady oneself on the rim of the tub. A tub in the normal modern range of 12 to 16 inches is so low that it is almost impossible to steady oneself on the rim and one is forced to find some other source of support.'

Discussing the problems (e.g. reduced strength, loss of balan failing vision, excess weight, creased flexibility of movement) aged, handicapped, pregnant a overweight people, Kira says 'wh in some instances these incapacit may be quite critical they represe for the most part, not new proble but only more severe degrees those encountered by the "norma population and already discuss It is also important to note that t proposed approaches to th problems need not alter, th merely gain in significance. Wh might otherwise be regarded refinement now becomes a necessit adequate support, seats, hand-spra proper fitting design and locati and other considerations. Becau man is such an adaptive animal can obviously be argued that ma of these proposals are "unnecessar since we have all managed one w or another to do without them these years. Without attempting this time to answer that argume it is equally obvious that th proposals do become "necessary" all of us sooner or later.'

The experimental solution whi Kira proposed for bathing is called relaxing/washing facility. It is bas on a thorough investigation of us requirements, involving tests amo a variety of people ranging in heig from 4 ft. to 6 ft. 2 in. Since it designed to cater as much relaxation as for active cleansing, is contoured with back and he rest so that the user can lie back a stretch out comfortably. It is d signed with foot support in the cent for short people, and with pockets left and right to cater respective for the average 5 ft. 6 in. individu and the longer 6 ft. person. There is seat at the foot end to facilitate t washing of lower limbs. The drain at the head end, and the botto of the bath has a reverse slope, i from foot to head end, to countera the tendency in conventional bat to slide away from the backrest. T bath is equipped with an ashtr and storage space for reading matte Kira emphasises that this is o solution only, and that where facility is to serve special needs, e use by disabled people or the washi of small children, different solutio might be more appropriate. He sa 'This is not to suggest that a series highly specialised facilities a necessarily desirable but rather th facilities should be designed specific purposes, and that a "u versal" facility such as we a familiar with at present fulfils function adequately.'

The shower

An interesting fact to emerge fro the survey of personal hygie practices in 1,000 households w that 40 per cent of all adults who ha a bath and shower combination their homes never used the bath f taking a bath, but only as a receptac for the shower. To accommoda those people who wash by means of shower and have no use for a bat Kira has devised an experiment total facility for showering. 'Th enclosure is treated as a single un and incorporates a built-in seat and recessed shelf with built-in lightin Grab bars are located at the entr and horizontally along the far sid where they would always be a cessible while in the shower. Th controls are located at the entry such a way that they can be easil reached from outside the enclosu

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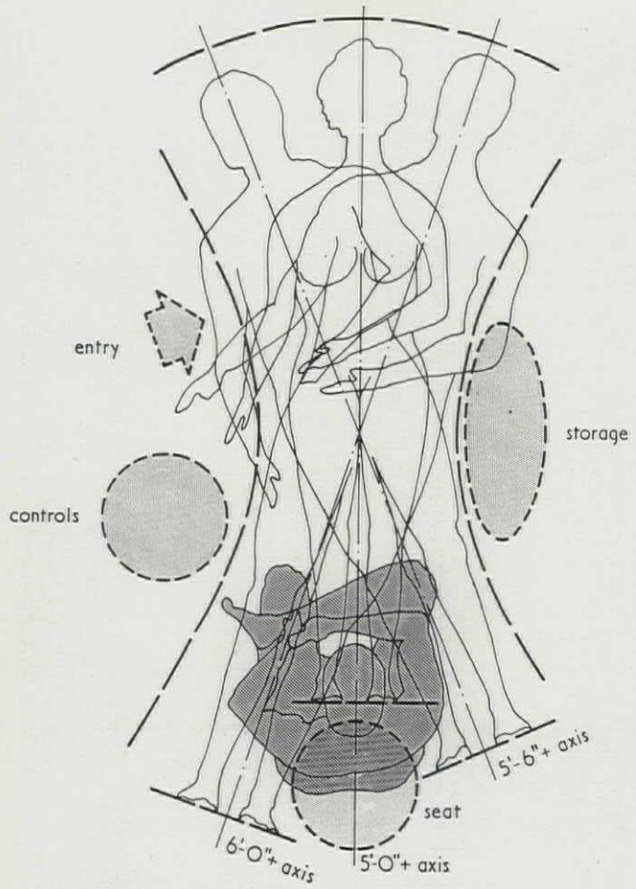
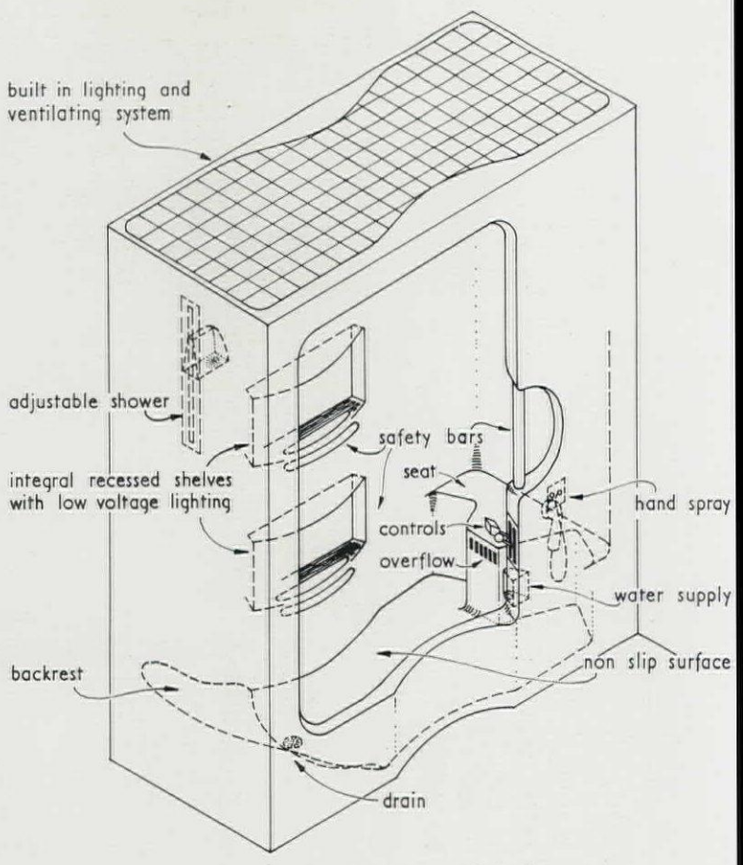


4, schematic plan arrangement for a relaxing/washing facility.



5, experimental relaxing/washing facility incorporating suggested criteria.

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while making the initial water adjustments, and from any point within the enclosure. The controls themselves are based on the direct and obvious action of a throttle: pulling either the hot or cold lever down (or both simultaneously) turns the water on, the volume and temperature being directly related to the position of the levers. Pushing the levers up shuts off the water. The primary adjustable shower head is supplemented by two auxiliary waist-level sprays and a hand-spray.'

The w.c.

The author says that his study has been 'conceived within the framework of contemporary western culture.' 'American culture' might have been more appropriate. One would like to imagine that English cultural attitudes are not always as inhibited as American ones. In Britain we do at least have public lavatories, however nasty they may be. They do not masquerade in obscure places as 'restrooms,' 'comfort stations,' or 'lounges.' But our solutions are similar, and they are conditioned by engrained attitudes which, as Kira points out, are frequently attributable to a confusion between elimination and sex organs and functions. Elimination, a universal and perfectly natural process, is embarrassing because of the close anatomical correspondence between the body parts used for elimination and those used for sex. Why else, he enquires, do we segregate the 'ladies' from the 'gentlemen'?

Kira is particularly critical of conventional w.c. design. The contemporary w.c. is a product of civilisation, unknown in primitive societies. Its most undesirable feature is the high seat, which has helped to inflict on millions of people the disabling condition known as 'the Great American Disease,' i.e. constipation. Physiologically the most desirable answer is a supported squat posture, rather than the commonly assumed seated posture. Kira recognises that for elderly people the need to have the seat at a height from which it is easy to rise is an important criterion. But this is not a sufficiently compelling reason for the general adoption of high seats: 'Admittedly the problems of the aged will not be resolved by expecting them to use a squat plate, but it is not unreasonable to suppose that the use of a substantially lower water closet over a period of year

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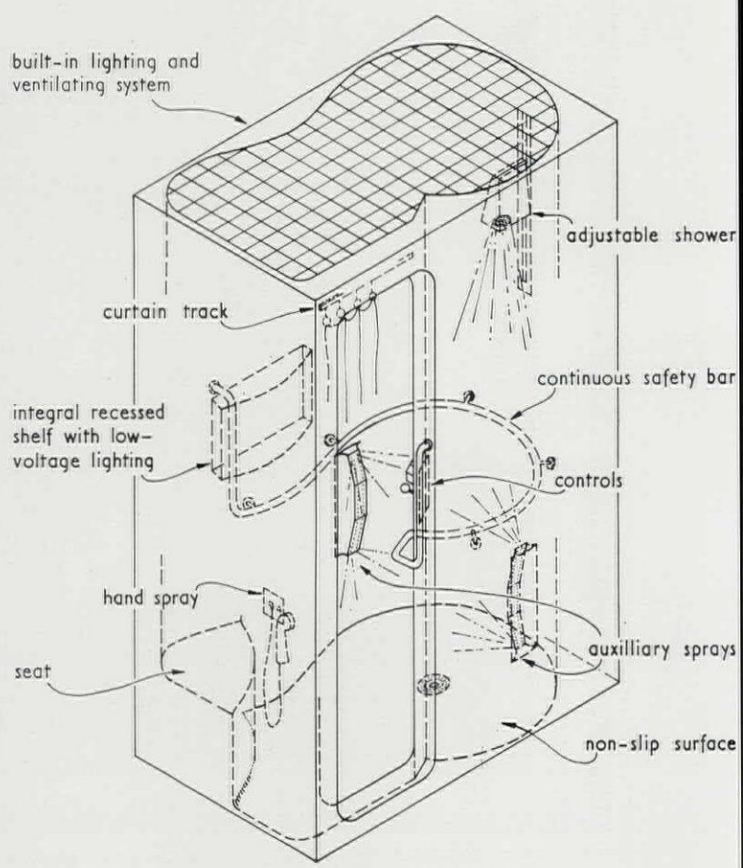
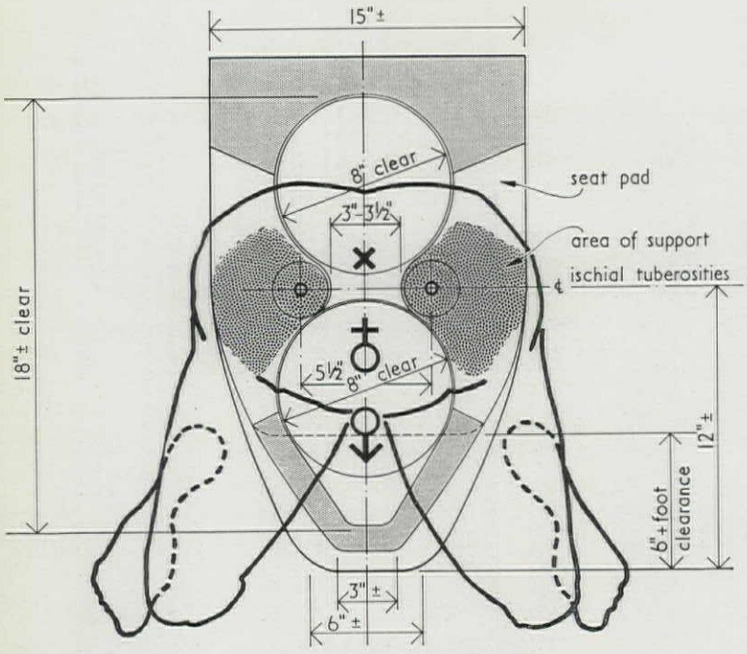
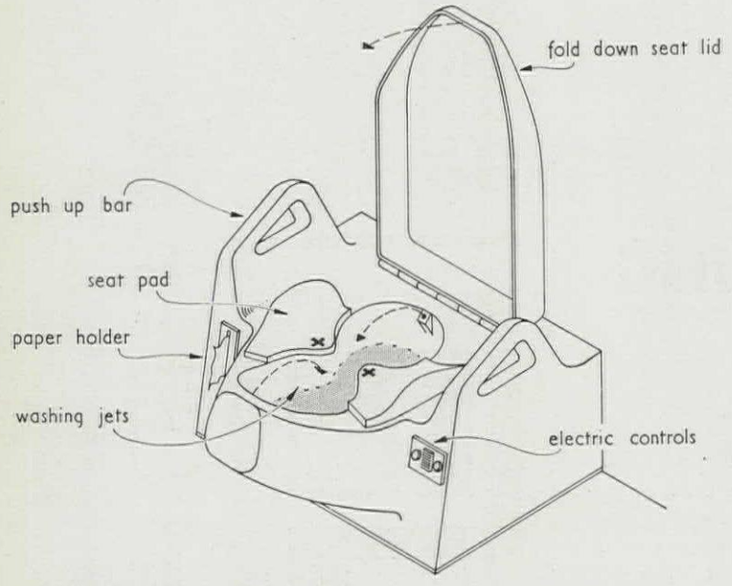


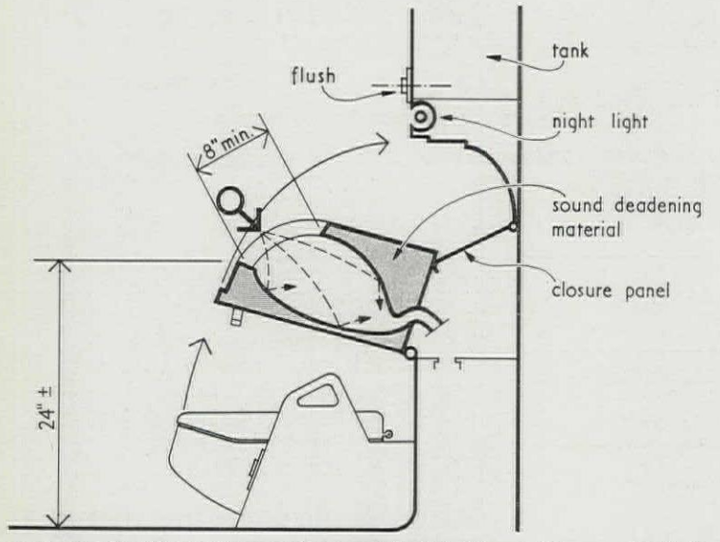
6, experimental showering facility incorporating suggested criteria.



7, plan view of sitting position showing necessary dimensions and shape.



8, experimental squat water closet incorporating suggested criteria.



9, experimental domestic urinal incorporating suggested criteria. (One possible approach to the home urinal might be in the form of a pull-down funnel-like fixture set over to w.c.)

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will provide us with some of the exercise we need and keep the problems from assuming such major proportions in our later years. In short, the more apathetic we are about making the necessary effort, the more difficult it will become.'

The w.c. facility which Kira proposes as a result of careful analysis of physiological and functional criteria is based on the notion of a totally new semi-squat fixture which enables a person to assume a proper squatting posture and still have support. Using this semi-squat posture point support only is possible. This support is at the ischial tuberosities, the bottom-most protruberances of the pelvic structure. (The points of support are marked 'X' on the diagram illustrating the experimental facility). The comfortable height for a supported squat is between 9 in. and 11 in., compared with the conventional w.c. seat between 14 in. and 18 in. 'One of the interesting difficulties involved in determining a suitable height is the fact that the lowest possible height for a person is most desirable, not only from the standpoint of function but also comfort. If a person, for example, can assume a 9-inch high squat then an 11-inch one proves very uncomfortable and tiring because the muscles are working rather than being relaxed. Ultimately, obviously, extensive testing will be necessary before a generally acceptable height can be determined specifically.'

The opening both in front of and behind the point of support is enlarged. There are three reasons for this. The first is psychological—to remove the fear of soiling the seat. The second is more practical—to provide room for cleansing by hand. The third is hygienic—to prevent the penis from touching the fixture. 'In this respect, most present toilets are woefully undersized. This is particularly true of the standard round or egg shaped bowls in which the front to back dimension is usually so small as to necessitate a delicate balance in finding the proper location on the seat—to avoid soiling the back of the seat on the one hand, and to avoid touching the front lip of the bowl with the penis on the other.'

The experimental w.c. facility incorporates electronic controls and a built-in toilet paper holder, all easily accessible to the individual seated on the fixture. An incidental but not inconsiderable advantage of the proposed facility is that it would be conveniently usable by young children.

Urination

Discussing design considerations for urination, the author points out that it is physiologically possible for females to urinate in a standing position, but practical hygiene requirements normally demand the use of a sitting or squatting posture over a suitable receptacle, e.g. a w.c. Men are not subject to the same practical difficulties, and for them the most convenient position is a standing one. To provide for male urination in the home there are four possible approaches. The first is to provide a standard wall-hung urinal. This apparently would not go down well with the women in the household: 'It is likely that the association of the elimination functions with sexual functions is responsible, in part at least, for the tendency on the part of many women to disapprove strongly of having a urinal in the home. Such a fixture is, in a sense, all too obviously a one sex, one organ, one function fixture, and serves as a constant reminder of sexual differentiation and, possibly, of the male's tendency to a certain indifference when urinating.'

The second approach is to try to modify the water closet. The problem here is irreconcilable criteria: 'As is so often the case, in trying to accomplish several functions, each is compromised. The more the fixture is modified to accommodate urination the poorer it becomes for its primary function of defecation.' There is another factor: '. . . most men will try to avoid urinating into the standing pan water—the easiest and most natural target—in order to avoid the embarrassment of being heard, since the noise, particularly with a full bladder, can be quite considerable and easily identified. Once this decision is made, the choice of target areas is limited to the sides and front and back walls of the bowl. In the majority of water closets the bowl configurations are such that these areas are quite small and difficult to hit with any degree of accuracy.' As Kira says, 'That there are serious soiling problems associated with the use of current home facilities may be attested to by any housewife or cleaning woman.'

The third possibility is to design a facility so that the male would be obliged to undress and sit on it. This would be unacceptable for reasons of convenience, and also for psychological reasons: 'It would, in effect, deny the male the free use of his greatest glory and would condemn him to assume the position of a woman.'

Kira concludes that the fourth and most logical possibility is to evolve a totally new fixture to satisfy all the relevant criteria. The facility which he suggests is in the form of a pull-down funnel-like fixture set over the w.c. It has the advantages that it would be discreet, quiet and functional.

Kira emphasises that in this field significant progress can only be made if the bathroom is conceived of, and produced, as an entity. This implies prefabrication in order that the necessary control and co-ordination can be achieved. 'Judged on the basis of these criteria, the average bathroom is hopelessly antiquated and inadequate. In many respects, the bathroom is in about the same stage of development as the kitchen was thirty or forty years ago.' That the English kitchen is in about the same stage of development as the American kitchen was thirty or forty years ago does not entitle us to be complacent about our bathrooms, which are only marginally inferior to the American ones about which Kira is so damning.

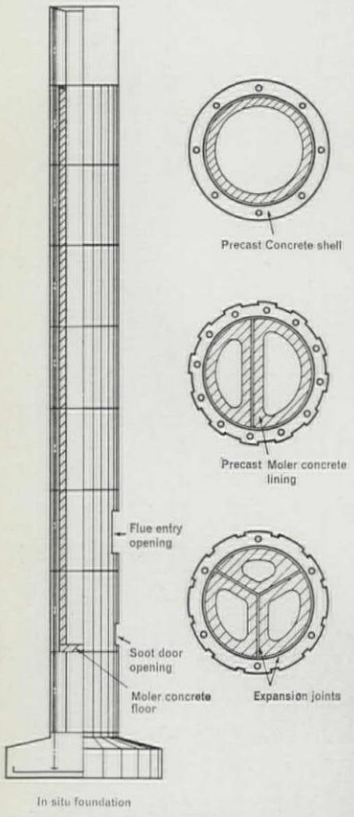
Kira concludes his report by saying 'Perhaps more amazing than the fact that the bathroom is as inadequate as it is, is that the study of personal hygiene and its facilities has, to date, eluded all of the researchers who have otherwise delved into almost every facet of human activity. It is hoped, however, now that a start has been made, and some of the veil of embarrassment lifted, that this most basic human activity can be examined without fear and that the facilities to accommodate it can assume their proper place of importance in the home.' This study is so brilliant that it is no less than the author deserves that his hopes should be fulfilled.

The Industry

Precast concrete chimneys

A new idea in tall chimney construction has been evolved by Kinnear Moodie (Concrete) Ltd. and Refractulation Ltd. The chimneys are formed of factory made precast concrete units consisting of an outer shell of structural concrete and a lining of moler concrete. The units are complete rings requiring only bed joints between sections. Weatherproofing of these joints is an integral part of the construction.

In the absence of a British Standard Specification for reinforced concrete chimneys, the design for wind, weight and temperature is generally in accordance with the American Concrete Institute Standard AC1 505-54 with wind pressures, shape and chimney factors taken from CP3 Chapter V (Amendment No. 1—1958).



Typical sections of the precast concrete chimneys by Kinnear Moodie (Concrete) Ltd.

The outer shells are of a high density structural concrete with main reinforcement and secondary steel added to resist temperature stresses. The inner shells are manufactured from high alumina cement with an aggregate of proprietary diatomaceous earth from Refractulation Ltd. These lining units can be divided internally by diaphragm walls to provide multiple flues in a variety of shapes as required. Suitable expansion joints are formed between individual flues and between the linings and the outer shells. Special combined shell and lining units are provided for chimney tops with acid resisting properties and these are steeply weathered into the flue to minimise staining and acid attack on the outer surface.

Standard units are 4 ft. high nominal, allowance being made for a bed joint of $\frac{1}{8}$ in. finished thickness. The normal cross section is circular but square, rectangular and elliptical sections can be manufactured to meet individual needs. Similarly a standard plain ex-mould finish is provided but this too can be varied to give profiling, colouring or exposed aggregate as required.

Kinnear Moodie (Concrete) Ltd., Feltham Road, Ashford, Middx.

Instant paths

This is how 'Temple Pavex' has been described. It is of course really a misnomer. 'Pavex' is a sheet bitumen product to which has been applied coloured stone chippings.

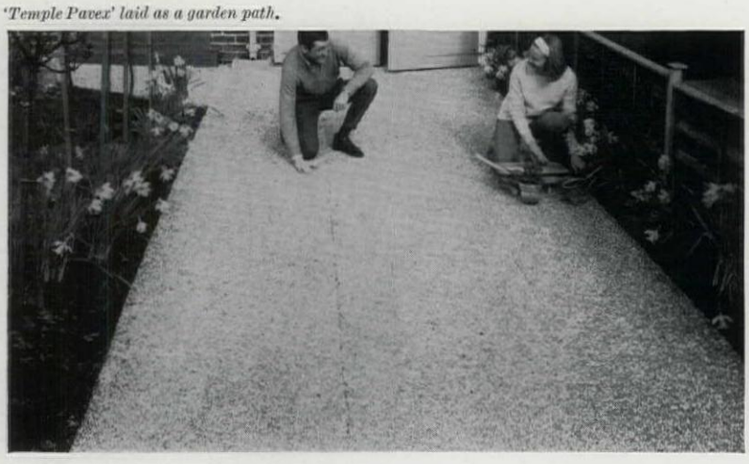
The material is supplied in yard wide rolls of 30 ft. length with a protective paper backing. What it provides is a fast economical method of surfacing any firm, even base. The adhesive under surface is protected by the backing which is pulled off in the action of unrolling the sheet. It is claimed that not only will the adhesive give a lasting bond to the base but that this bond improves with exposure to sunshine. It is suitable for application to existing worn paths or driveways of concrete, paving, tarmac or even compacted gravel. Butt joints between rolls quickly fuse together and an even waterproof decorative surfacing is obtained.

Chippings available are Blackstone, Leicester Redstone Speckle, Shropshire Greenstone Speckle, and Black and White Speckles. To special order is a new cork chip finish for which quite surprising wear characteristics are claimed.

Costs vary from 10s. to 12s. per sq. yd., depending on finish.

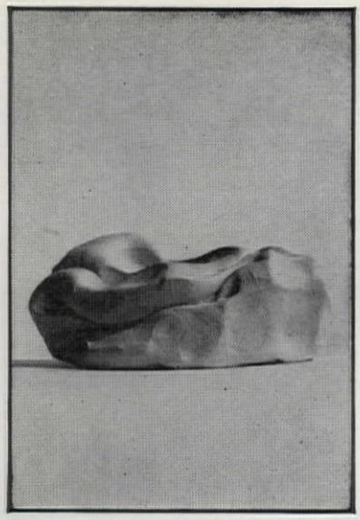
Temple Pavex, Temple Mill, Passfield, Nr. Liphook, Hants.

'Temple Pavex' laid as a garden path.



Contractors etc

Nurses' Training School, Aldershot. *Architects:* Building Design Partnership, in association with the Ministry of Public Building and Works. *General contractor:* Gee, Walker & Slater Ltd. *Sub-contractors: Fibreglass moulds:* W. G. Mitchell Ltd. *Lift installation:* Marryatt & Scott Ltd. *Electrical installation:* F. H. Wheeler (Southern) Ltd. *Plumbing services (including sanitary fittings):* J. S. Wright & Co. *Kitchen equipment:* A. Smith & Sons (Woking) Ltd. *Electrode boiler installation:* Bastian & Allen Ltd. *Cork tile paving, lay only linoleum and wood block flooring:* Flawless Flooring Co. *Mild steel balustrading, cat ladders and mild steel handrail:* Metal Engineering Services Ltd. *Glazier:* Faulkner Greene & Co. *Painter:* Traynor Mills & Co. *Heating and ventilating:* Rosser & Russell Ltd. *Felt roofer:* F. J. Prater Asphalte Co. *External works:* Bridgwater Bros. (Public Works Contractors) Ltd. *Gymnasium equipment:* Spencers Joinery Ltd. *Chalkboards:* Westland Engineers Ltd.; Wilson & Gardner Ltd.



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BARBOUR INDEX 386

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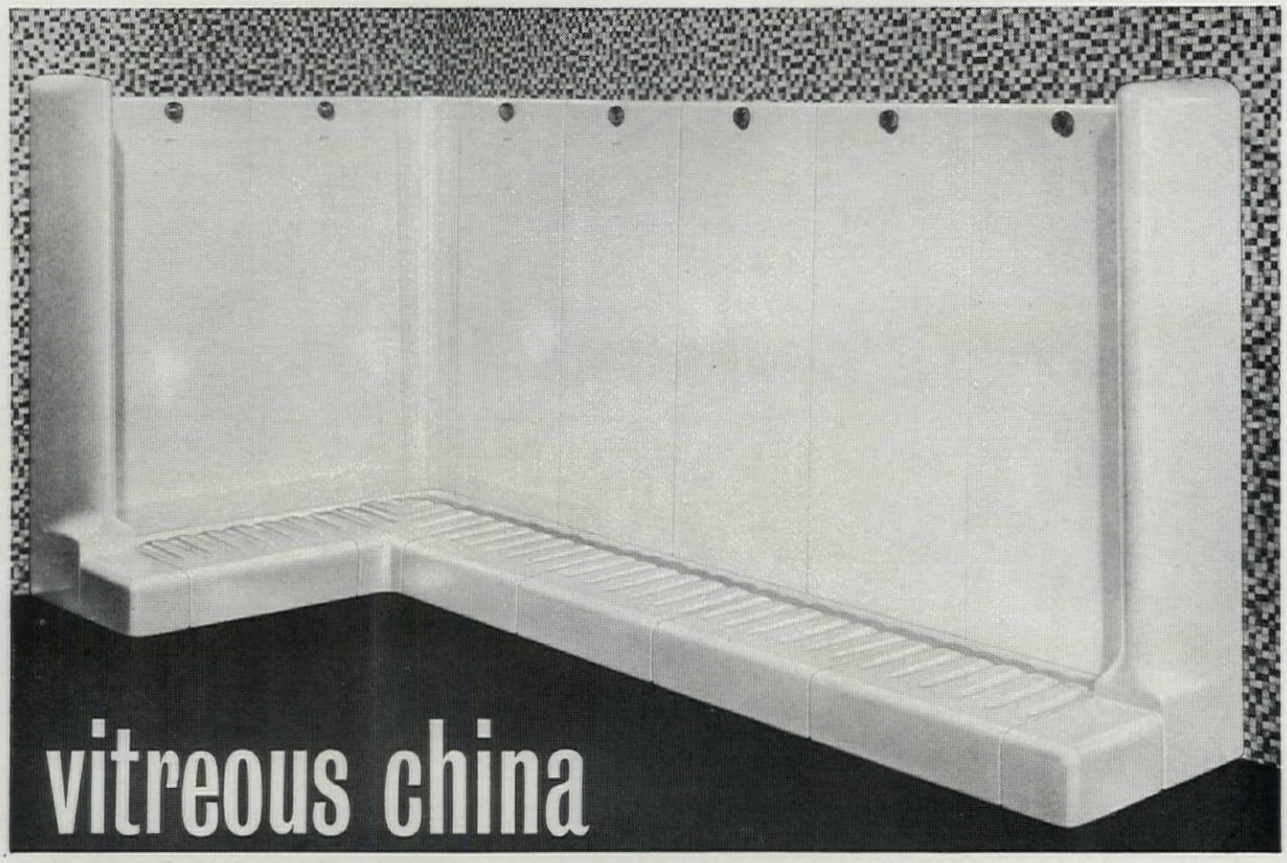

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Ian Nairn

STOP PRESS

A monthly anthology from all over Britain of townscape problems, outrages and opportunities, compiled by Ian Nairn with drawings by G.J.Nason.

SOS

NEWCASTLE EMLYN, CARMARTHENSHIRE
A nice building in one of the nicest of Welsh towns: the small bargeboarded extension which sticks out at right-angles to the street and closes the view, 1 and 2. It is now empty and could so easily be removed by someone anxious to straighten the streetline.


1


2


3

STILTON, HUNTINGDON
The former Bell Inn, 3, Elizabethan, and slowly decaying. It closed as a pub two years ago and has since been used as a store. Apart from the architectural value it has for once a genuine historical association: this is where the cheese from the Vale of Belvoir in Leicestershire was sold and hence got the name of Stilton.

CREDIT

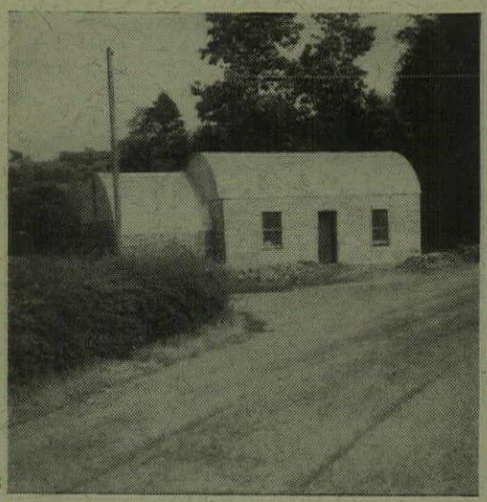
ONGAR, ESSEX
All credit to the Cock Tavern, 4, and its local brewers, for having the guts to resist all the august pressures for fashionable redecoration to remain a simple, honest, country pub.

CLAREGALWAY, CO. GALWAY
. . . and hundreds of other sites, for the way in which Irish Ancient Monuments are treated by the Government. No little

4

huts or mown lawns; just an unobtrusive plaque summarising the history and the atmosphere of past-in-the-present fully maintained, 5.

NEAR LLANDILO, S. WALES
An old stone cottage converted to a store with new corrugated iron, 6. Simple unprofessional stuff, but real architecture all the same.



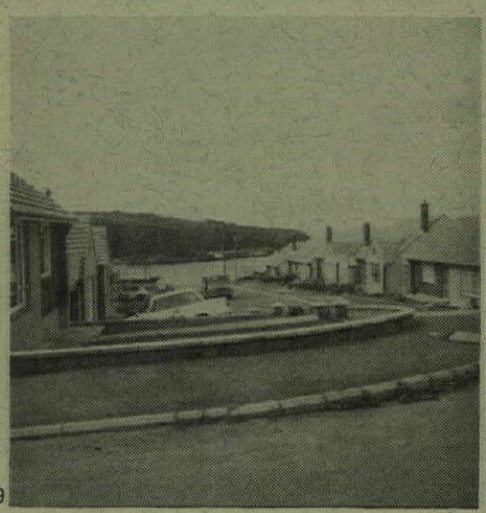
6

HEREFORD
History in a plastic bag, 7: the timber framing of No. 3 High Street, *circa* 1600, which was moved out into the Market Place whilst Littlewoods build a new store and will be moved back again next month. Meanwhile it makes quite a jolly object in its own right.

OUTRAGE

FISHGUARD, PEMBROKESHIRE
A new housing estate on the cliffs opposite the boat-tram station, 8-10. What a wasted opportunity on a wonderful site.

8



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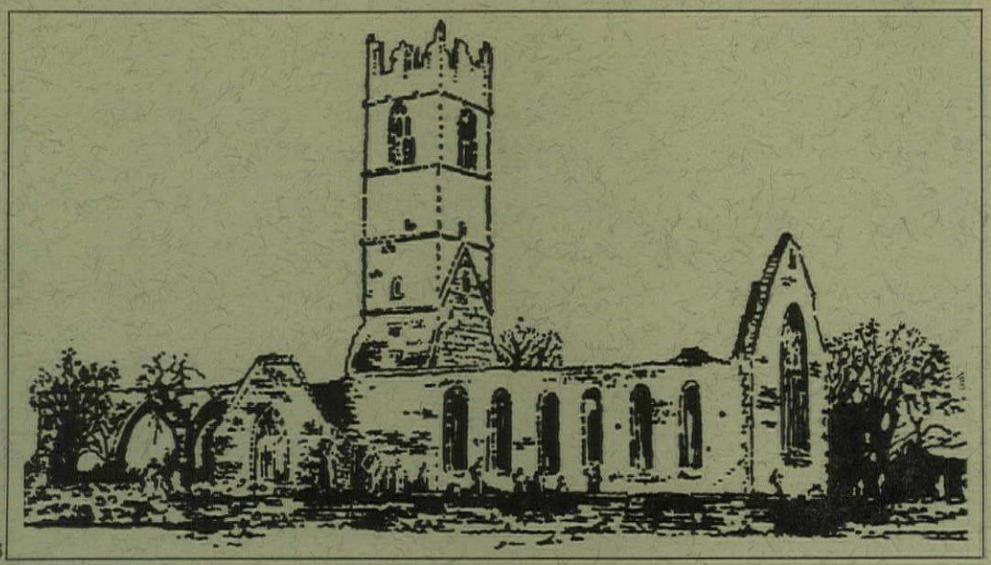

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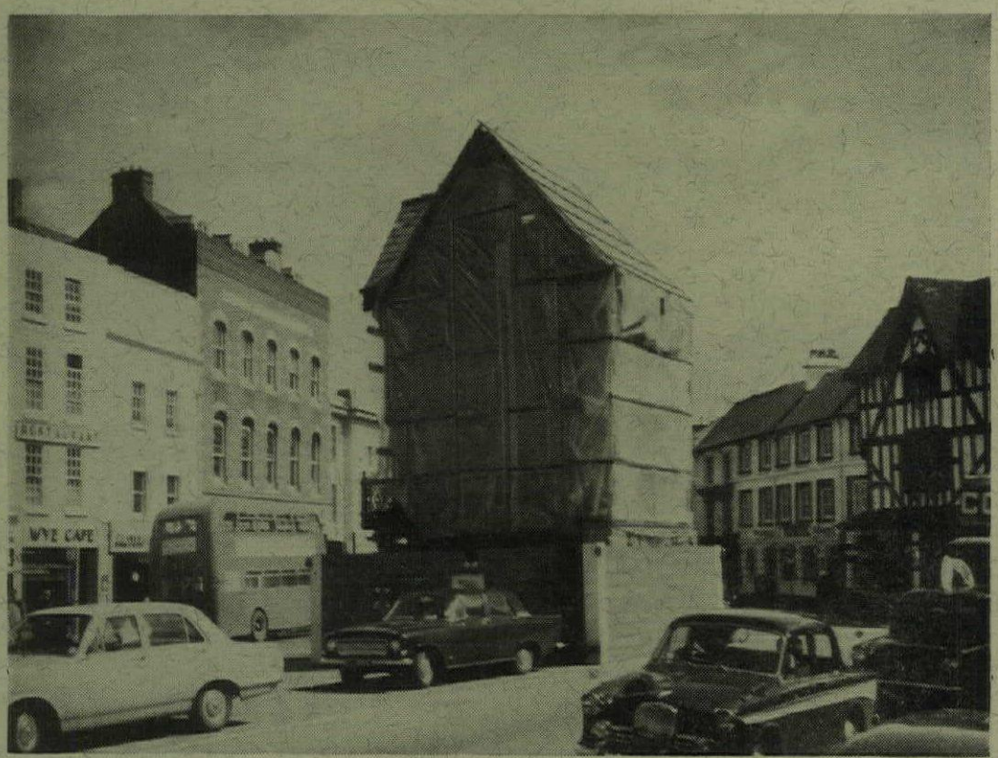

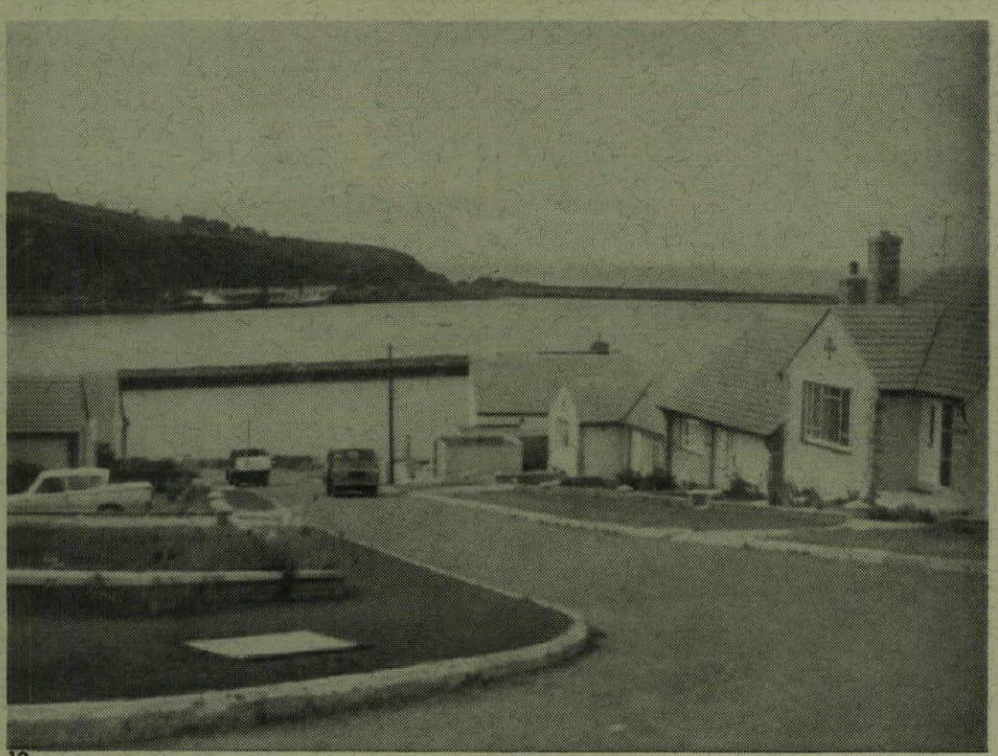

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NEW!

High speed welding technique used in big flooring project

New welding technique used in large hospital flooring project in Liverpool. No problem in fusing coving to flooring.

A new technique combined with the use of extremely flexible **PEGULAN ELASTIC SUPER** pvc flooring eliminates the need for mitres at internal and external angles, and the provision of a ground or radius at the upstand, when fitting flooring up the cove. Open ends at architraves are eliminated.

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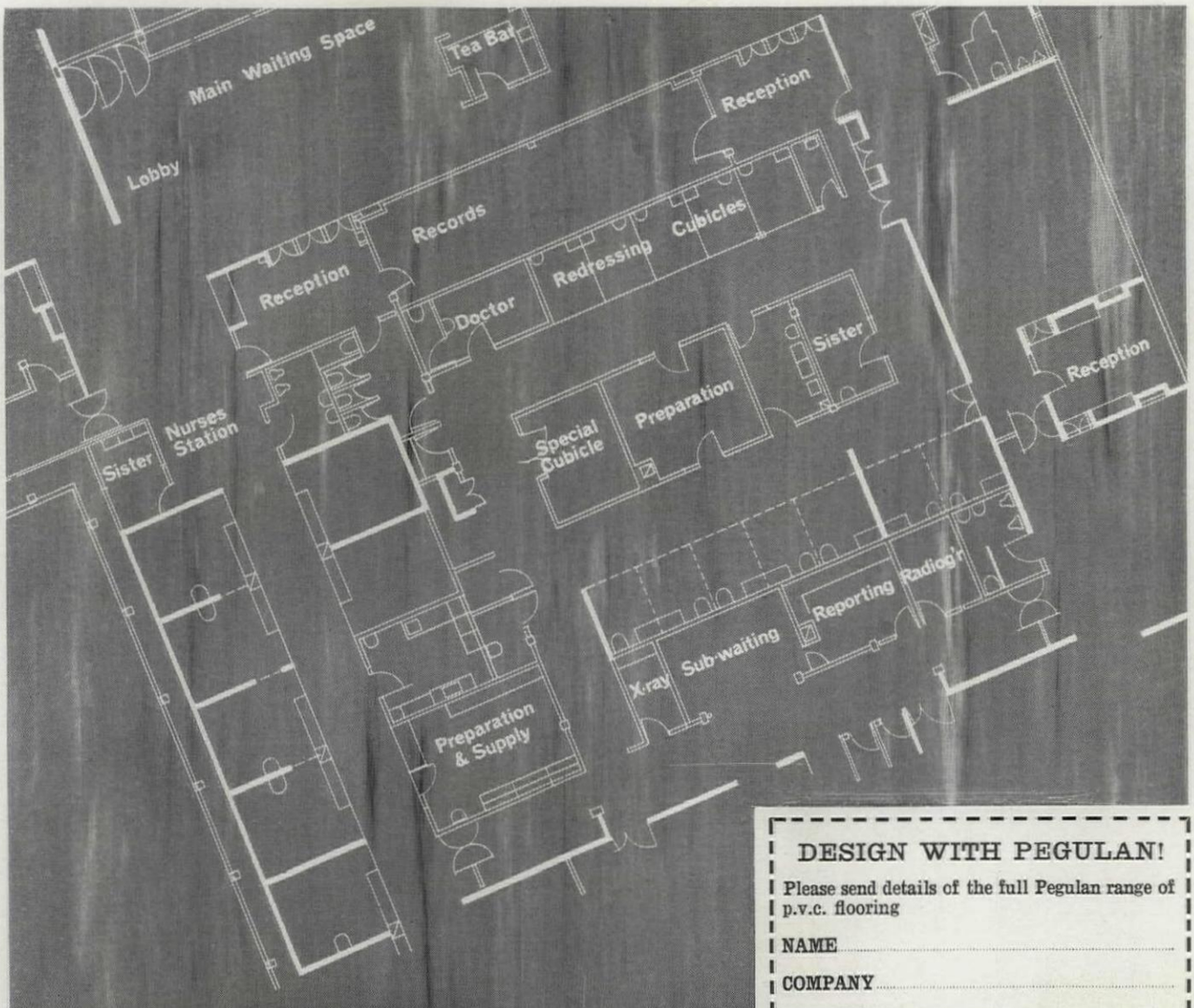

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John Turner & Sons (Preston)

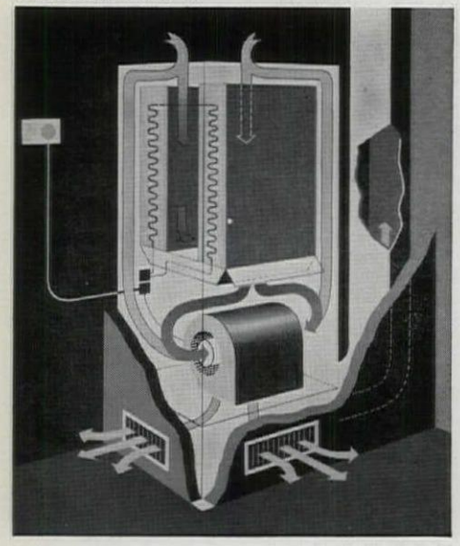
ELECTRICAIRE

the warm-air central heating that gives you complete freedom in planning

It fits your existing plans! It's easy to install! It runs on half-price electricity! These are just a few of the many reasons why Electricaire is today setting a new trend in central heating.

Electricaire—the electric warm-air central heating system—consists of a main thermal storage unit in each dwelling. This unit heats up on half-price electricity and incorporates a fan which discharges warm air as and when required. The fan can be manually or thermostatically controlled and a boost provides for a rapid warm up. Units vary in size according to the output required but a normal unit will fit into a space a little over 2 feet square.

A typical Electricaire unit



A thermostat in one of the main rooms controls the air temperature at the level desired by the occupier. Warm air is directed into individual rooms through outlet registers. These are unobtrusively sited near the skirting or in the floor.

Whether you're building houses, bungalows or blocks of flats, Electricaire gives you the most efficient and economical central heating in existence today.

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2. 100% efficiency. Electricaire, designed to Parker Morris Standards will give full value for every unit of current used.

3. Electricaire runs on half-price, off-peak electricity. It's the most economical of all central heating systems to run.

4. It's the cleanest, healthiest heating, too. No fumes, dust, ashes and the re-circulated air is filtered.

5. No stoking, no fuel storage. In flats, no boiler attendant is needed and storage space is saved. Each tenant controls the heating in his flat.

6. Electricaire minimises condensation.

Outlet register neatly sited near the skirting

The constant background warmth from the central unit, coupled with the absence of combustion minimises the risk of condensation.

7. Electricaire is silent. The fan runs quietly and there is no sound of burners lighting and shutting off.

ELECTRICAIRE

Warm-air central heating on half-price electricity

Like to know more? For advice and technical information about Electricaire, just ring your Electricity Board; or write direct to: The Electricity Council, EDA Division, Trafalgar Buildings, 1 Charing Cross, London, SW1.

Issued by the Electricity Council, England and Wales

Electricaire chosen by Preston Corporation after highly successful trial at Ingol

Electricaire warm-air central heating was first tried by the Preston Corporation, in a block of six houses at Ingol. This was between January, 1964 and January, 1965. The results proved so satisfactory that it was decided to install Electricaire in Kendal House. This 19-storey block of 117 flats was then under construction at Avenham.

Two conditions were laid down by the Preston Corporation. First, the Electricaire units had to fit into the existing structural arrangements. Second, all installations had to be completed in six months against a severe financial penalty. The Electricity Board accepted and work was, in fact, completed ahead of schedule.

Revo 10kW units were installed at an average cost of £145 per flat. This included all wiring and ducting; also the provision of a 3kW immersion heater for water heating.

A novel feature was the provision of a special cupboard in each flat for drying the washing. This is supplied with warm air, when required, from the Electricaire unit and has an extraction fan.

During two winter quarters, since installation, running costs — per week — per flat, have averaged out as follows

30 Bed-Sitters 13/1d. 60 Two-bedroom flats 19/1d.
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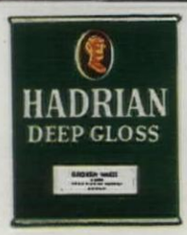
Allowing for a heating season of 32 weeks in each year, this works out at an average heating cost of £30 a year for the 2 and 3-bedroom flats.



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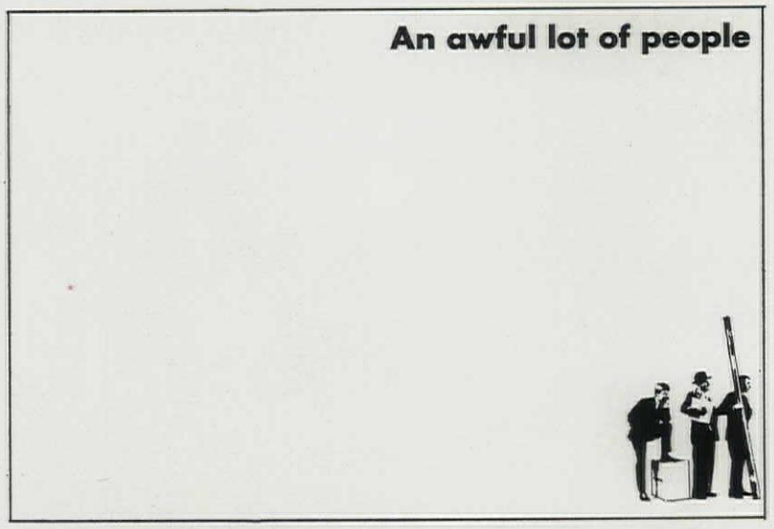
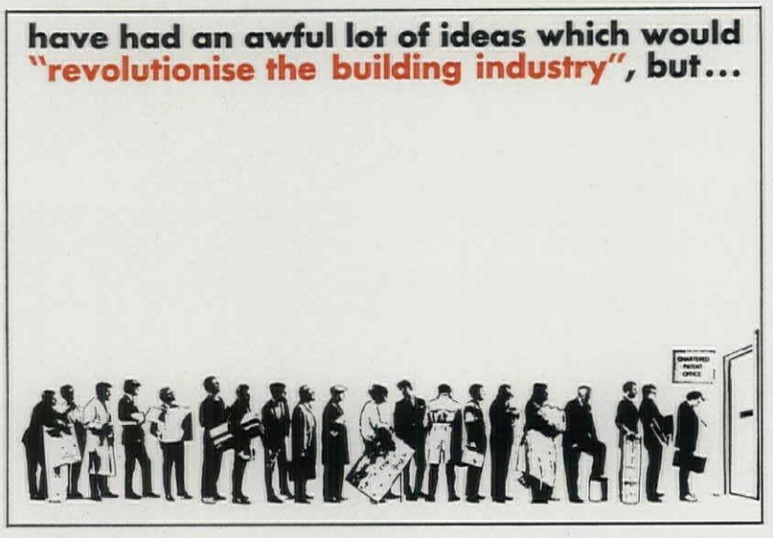
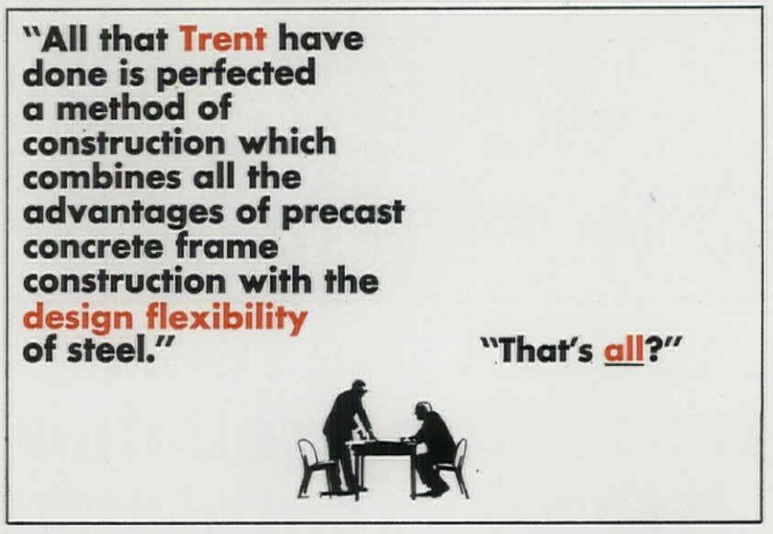

An awful lot of people


have had an awful lot of ideas which would
"revolutionise the building industry", but...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construction which
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construction with the
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"That's all?"

How?

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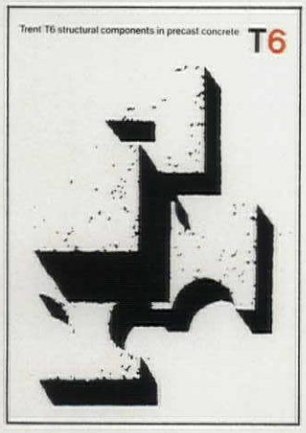

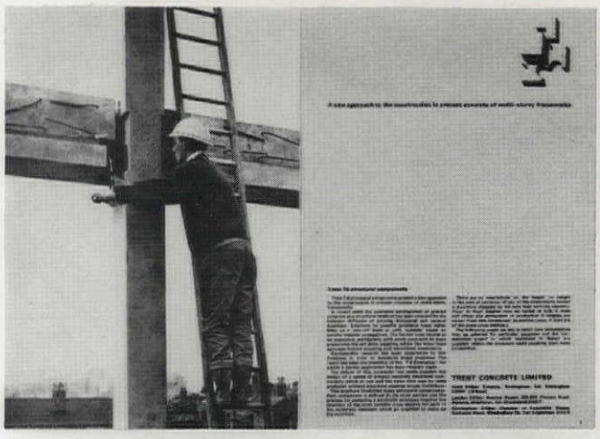

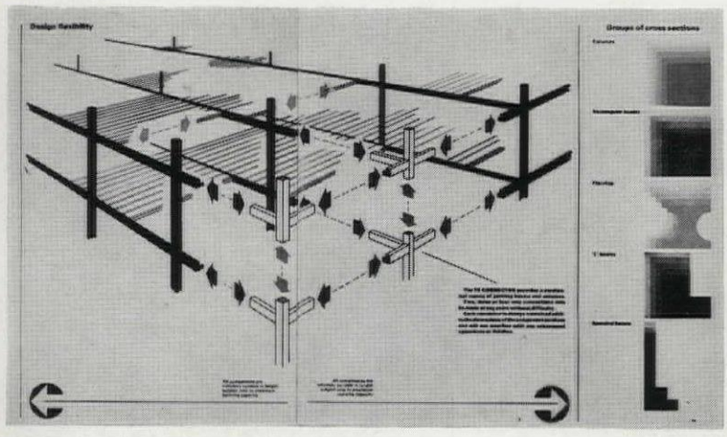

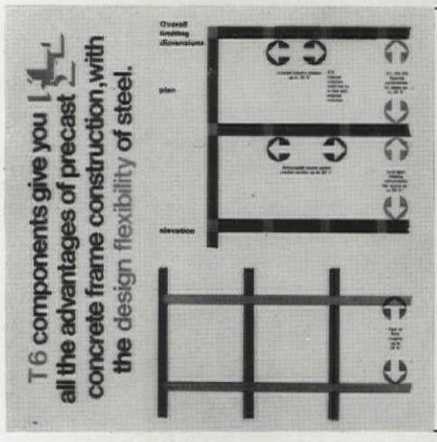

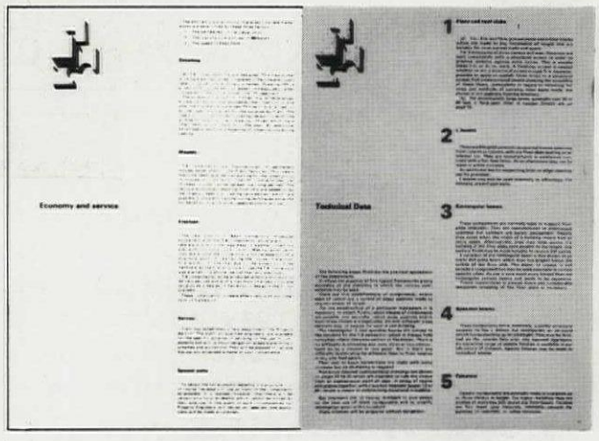

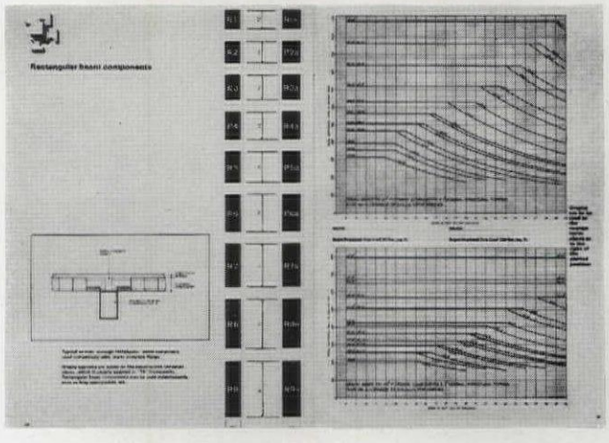

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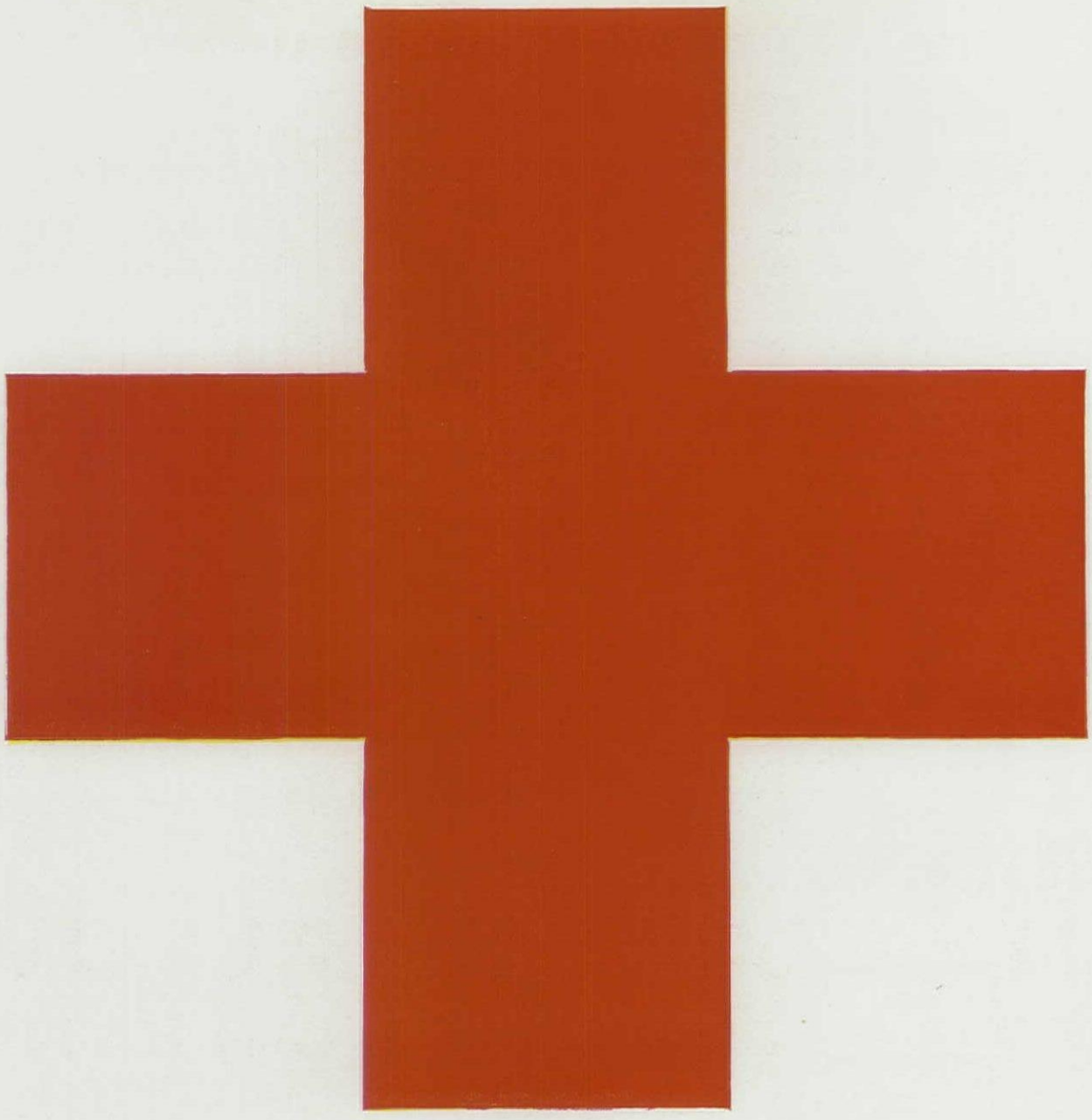

Barnet General Hospital operates on Crestaline

Crestaline: a smooth, hygienic vinyl flooring from Nairn-Williamson. Compact surface doesn't harbour germs or dust. Can be welded to provide large areas of seam-free flooring. Silent, warm, resilient underfoot. Excellent recovery from indentation. Flexible, very durable. Easy and economic to maintain. Crestaline is a 2.0 mm. gauge, 72" (183 cm.) wide sheet vinyl and is available in 28 colours, 24 of which are related to B.S. 2660.

Barnet General Hospital prescribed 35,000 square feet of Crestaline for upgrading fourteen of their wards.

Crestaline is just one of Nairn-Williamson's smooth floorings: vinyl or linoleum, sheet or tile, for all contract and domestic installations.

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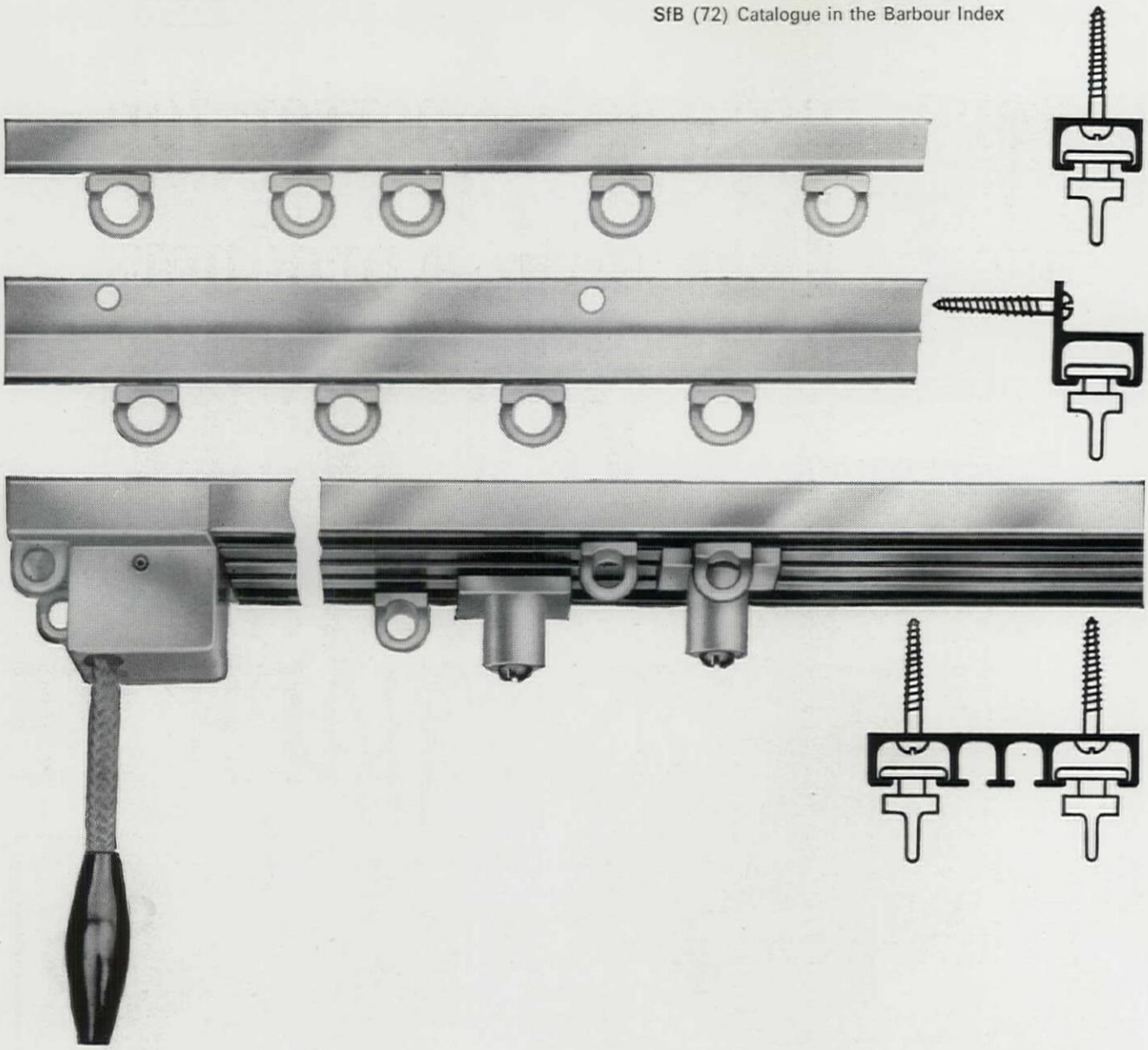

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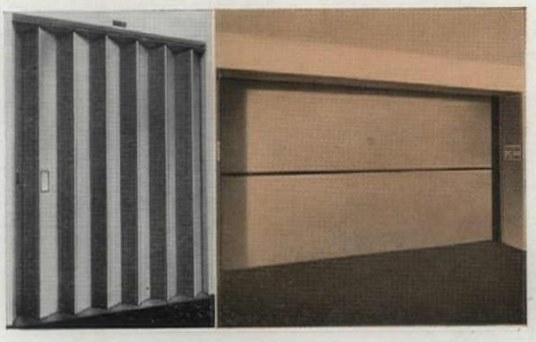

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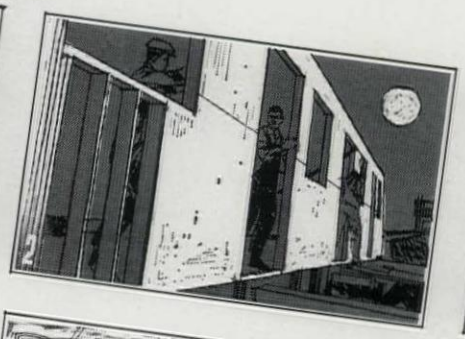
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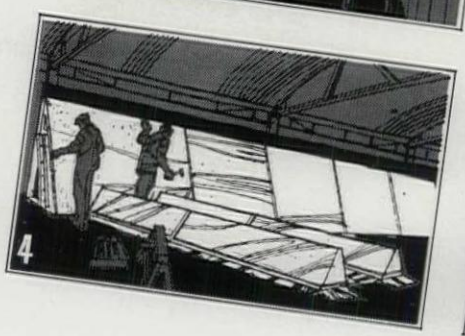
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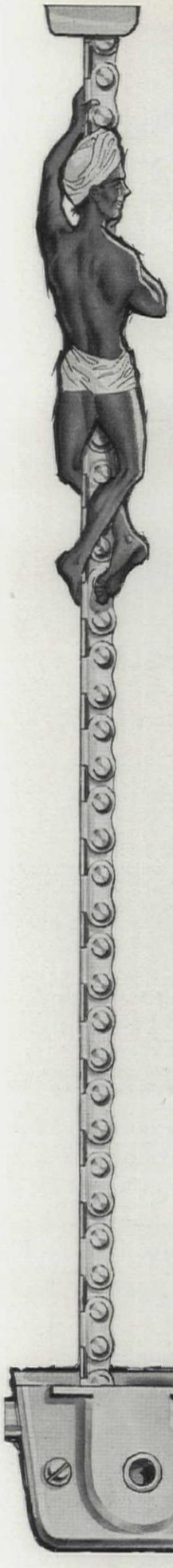

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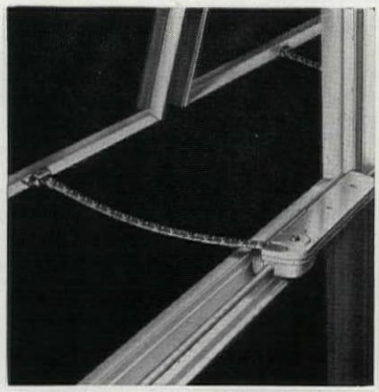

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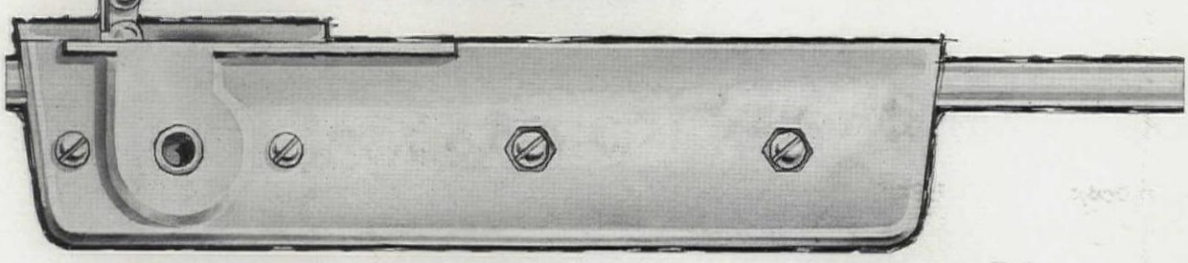

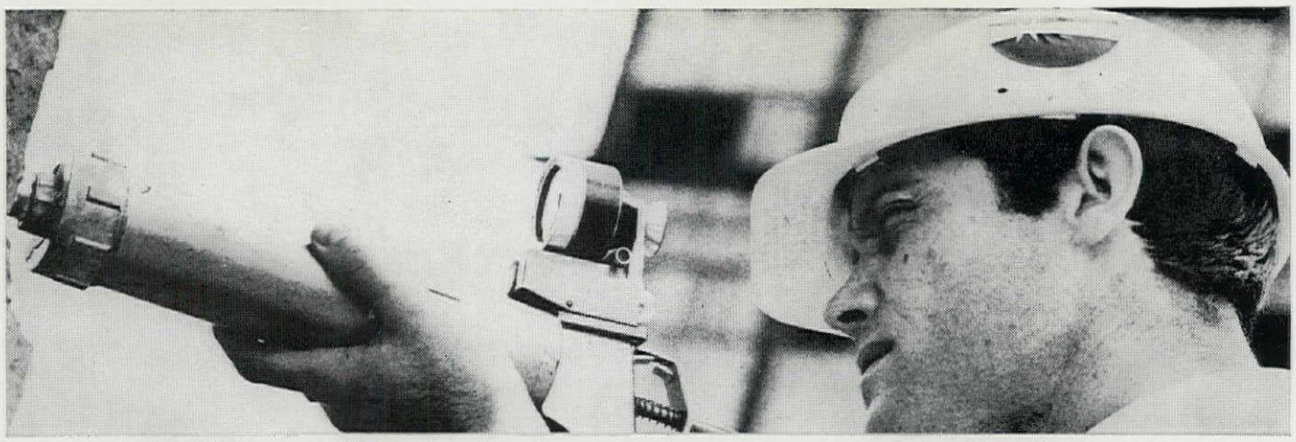

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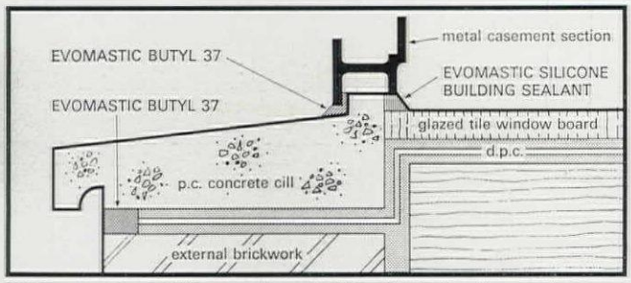

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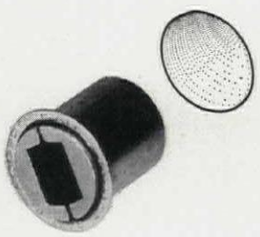
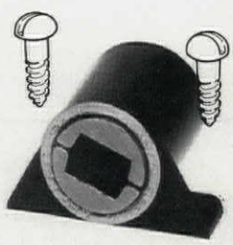


C12-0 fits in a hole, with or without adhesive; needs adjustable and flexible counterplate X



C12-5 is easily fixed with two screws. Available in black or white

C12-6 slides into a base plate and the tab is then bent up to retain it

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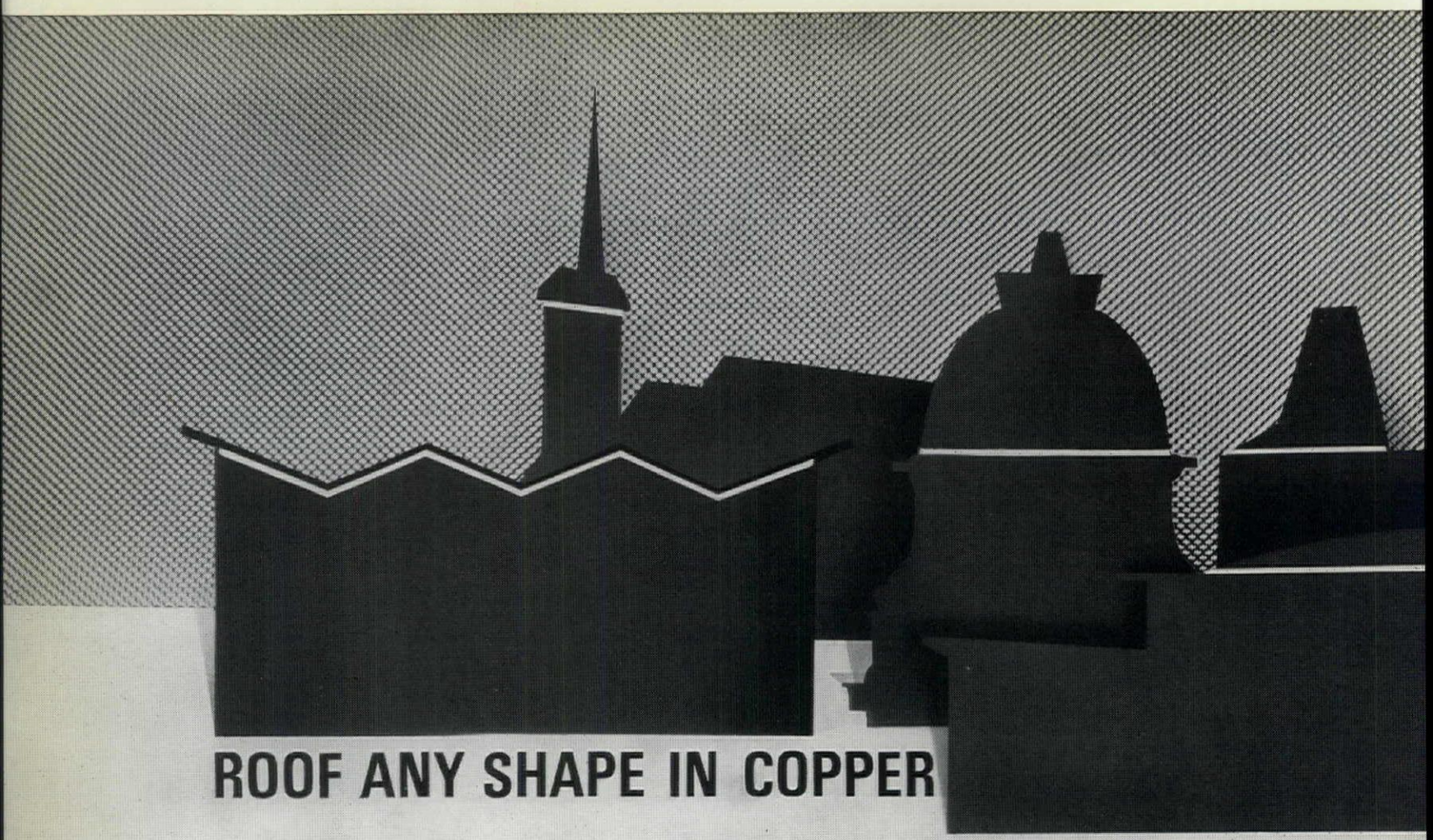

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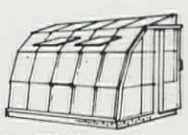

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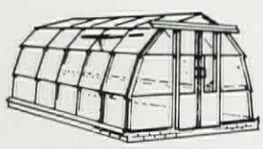
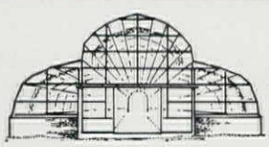


Hartley '10' 10′0″ Wide
7′1″ High



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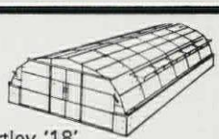

Hartley '18'
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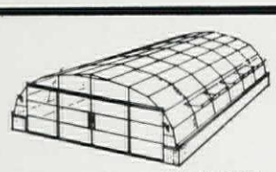

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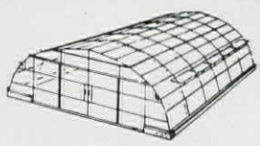
10′0″ High



Hartley '27'
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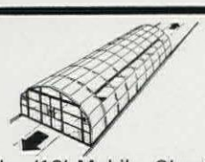

Hartley '18' Mobile Glasshouse
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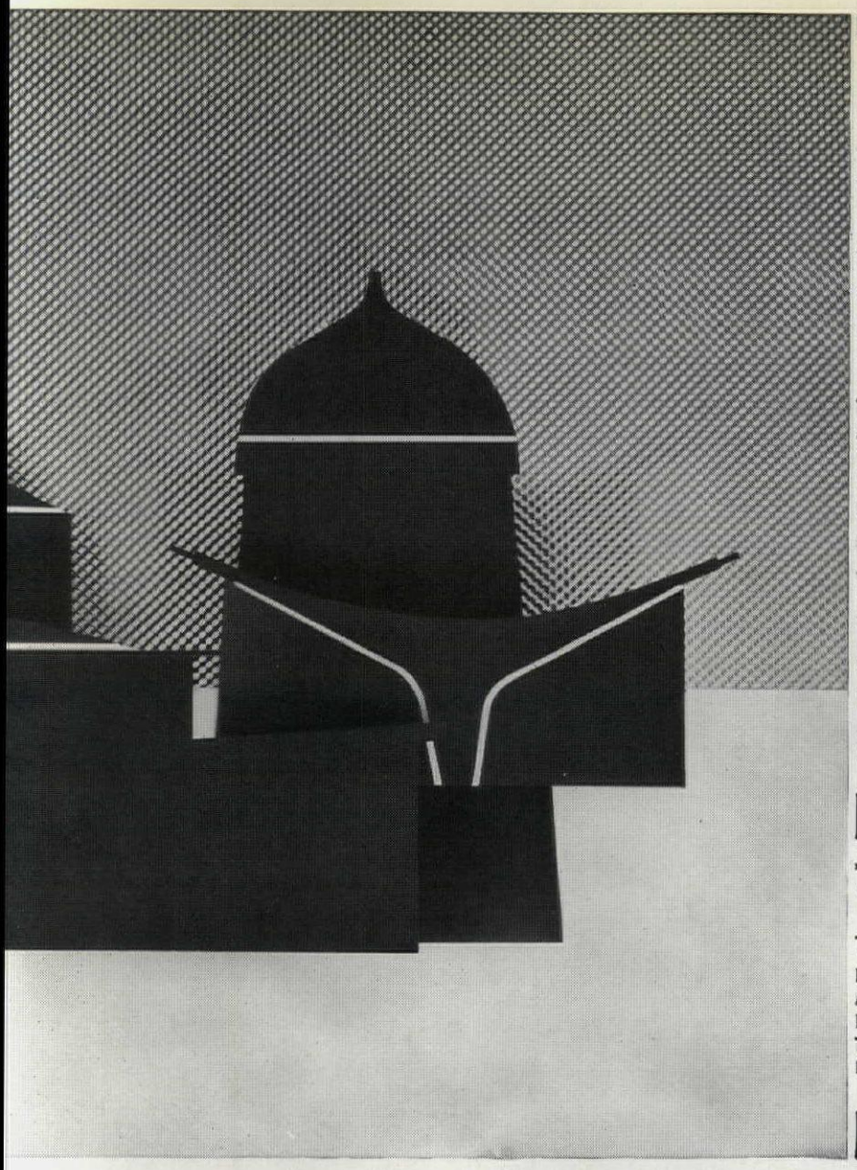
CG7



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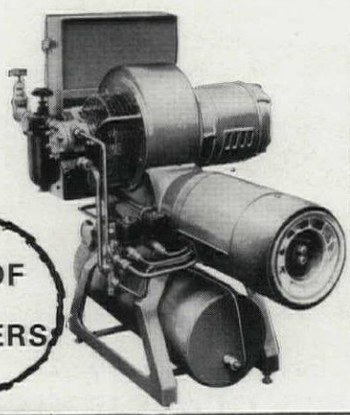

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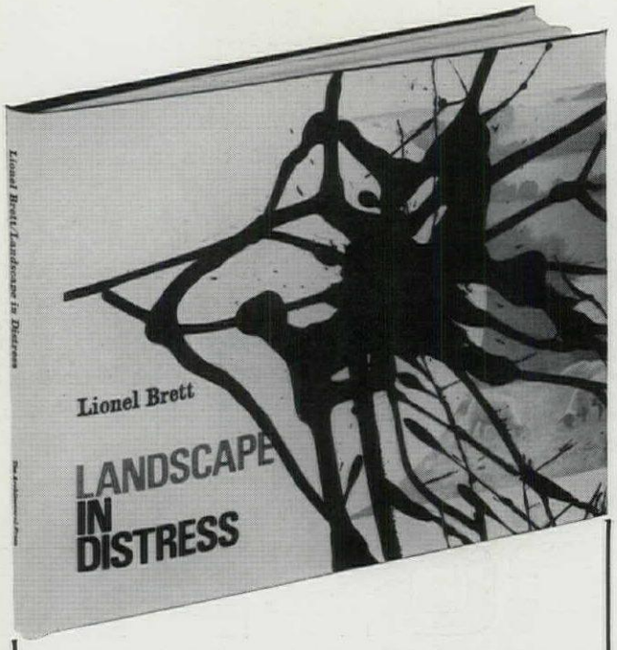

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Because this south-eastern region of Britain presents one of the world's great growth problems. It is also of great beauty and of immense historic and sentimental value, and the question that has to be faced is whether our style of development—the way we live now—can possibly rise to the occasion.

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