THE ARCHITECTS' JOURNAL



standard

contents

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

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Vol. 134 No. 3
THE ARCHITECTURAL PRESS
9, 11 and 13, Queen Anne's Gate, Westminster,
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Registered as a Newspaper

★ A glossary of abbreviations of Government departments and societies and committees of all kinds, together with their addresses and telephone numbers. The glossary is published in two parts—A to Ii one week, Il to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

the word I	LONDON IS Implicit in the address.	
AA AAI	Architectural Association, 34/6, Bedford Square, wc1 Association of Art Institutions. Secy.: J. H. Holden,	Museum 0974
ABS ABT	College of Art, Cavendish Street, Architects' Benevolent Society. 66, Portland Place, w1 Association of Building Technicians. 156, Waterloo Road, se1	Manchester 15 Langham 5533 Vaterloo 5427/8
ACGB	Arts Council of Great Britain. 4, St. James's Square, sw1	Whitehall 9737
ADA	Aluminium Development Association, 33, Grosvenor Street, w1	Mayfair 7501/8
ARCUK	Aluminium Development Association. 33, Grosvenor Street, w1 Architects' Registration Council. 68, Portland Place, w1	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, w1	Langham 5721
BASA	British Architectural Students Association. Building Centre, 26 St	
BC	Building Centre, 26, Store Street, Tottenham Court Road, wcl	Museum 5400
BCC	British Colour Council. 13, Portland Square, w1	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, w5	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham	Redditch 716
BDA	British Door Association. 10, The Boltons, sw10	Fremantle 8494
BE	Building Exhibition. 11, Manchester Square, w1	Hunter 1951
BEDA		emple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, c2	
DID	Glasgo	w Central 2891
BID	Building Industries Distributors. 52, High Holborn, wc1 Building Industries National Council. 11, Weymouth Street, w1	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, Wi	Langham 2785
	Board of Trade. Whitehall Gardens, Horseguards Avenue, sw1	Trafalgar 8855
BRS BSA	Building Research Station. Bucknalls Lane, Watford	Garston 4040
BSI	Building Societies Association. 14, Park Street, w1	Mayfair 0515
CABAS	British Standards Institution. British Standards House, 2, Park St., w	i Mayrair 9000
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, ARIBA, B. Architect and Director of Housing, Town Hall, High Holborn, wo	orougn
	Architect and Director of Housing, Town Hall, High Holborn, we	Holborn 3411
CAS	County Architects' Society. C/o J. Hurst, ARIBA, County Hall, Dore	
CCA	Cement and Concrete Association 52 Grosvenor Gardens sw1	Belgravia 6661
CDA	Cement and Concrete Association. 52, Grosvenor Gardens, sw1 Copper Development Association. 55, South Audley Street, w1	Grosvenor 8811
COID	Council of Industrial Design. 28, Haymarket, sw1	Trafalgar 8000
CPRE	Council for the Preservation of Rural England, 4, Hobart Place, sw1	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, sw1	Sloane 9116
DIA	Design and Industries Association. 13, Suffolk Street, sw1	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackvil	
	40, Piccadilly, w	
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge	
FAS	Faculty of Architects and Surveyors, 68, Gloucester Place, w1	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors.	
	14, Bryanston Street, w1	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor)	
FIRE	Stafford House, Norfolk Street, wc2 Cove	
FBI	Federation of British Industries. 21, Tothill Street, sw1	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, w1	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Street, sw Flush Door Manufacturers Association Ltd. Trowell, Nottingham	
FDMA FLD	Friends of the Lake District Pennington House on Ulyantan Lang	Ilkeston 623
FMB	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs	7592 (6 lines)
FPC	Federation of Master Builders. 33, John Street, wc1 Chancel Federation of Painting Contractors. St. Stephen's House, sw1	ry 7583 (6 lines) Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Stree	willichan 3702
LICILID	redefault of Registered House Bunders. 62, 14cm Cavendish Street	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger L.	ane ec?
OI DIE	Sypoun I materiolate Development Pasociation. 11, Hollmonger L	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, sw1	Belgravia 4321
GG	Georgian Group. 2, Chester Street, sw1	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, sw1	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors.	TT THE THE TOTAL
	29, Belgrave Square, sw1	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, w1	Grosvenor 6186
ICE		Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankm	
	Cove	nt Garden 1871
IES	Illuminating Engineering Society. 32, Victoria Street, sw1	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, sw1	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Squ	
HDDID	S	loane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers.	-
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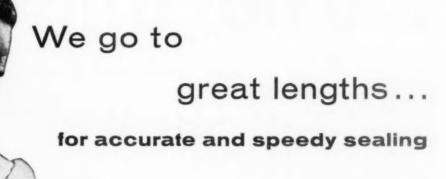


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THE ARCHITECTS' JOURNAL (Supplement) July 19, 1961

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Borough Architect for the County Borough of West Ham.

Contractor: Tersons Ltd., London, N.3.

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Extract from a report prepared by:
Mr. G. C. Wilson for R. H. Harry Stanger, Testing Consultants, The
Laboratories, Summerfield House, Barnet Lane, Elstree, Herts.
5th October 1960
Report of permeability test carried out with Febproof Integral Liquid
Waterproofing Compound in a Mortar Mix.

Vaterproofing Composition

Mix:—

Sand, Parts by Volume
Sound Cement by Volume
Portland Cement by Volume
1 1 1

Febproof, "Pints per cwt. Cement
Water/Cement Ratio 1½"

Siump Inches

Control

Treated
1 3

3

1 1

0.47

1½"

0.47

1½"

0.47

1½"

0.47

1½"

0.47

1½"

0.47

1½"

Water Pressure		Water Pressure	Amount of Water Percolation
Feet Head	Lbs. per sq. in.	1	NIL
46 69 92 115 172 230 287 345	20 30 40 50 75 100 125	1 .	NIL NIL NIL NIL NIL NIL

The thickness of the 1-3 cement, sand mortar slabs, was 2", and age at date of test 28 days. Water percolated through all untreated control specimens. No water percolated through Febproof treated specimens, SEE TEST RESULT ABOVE. Signed by G. C. Wilson for R. H. Harry Stanger.

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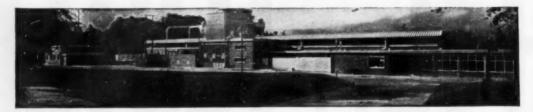
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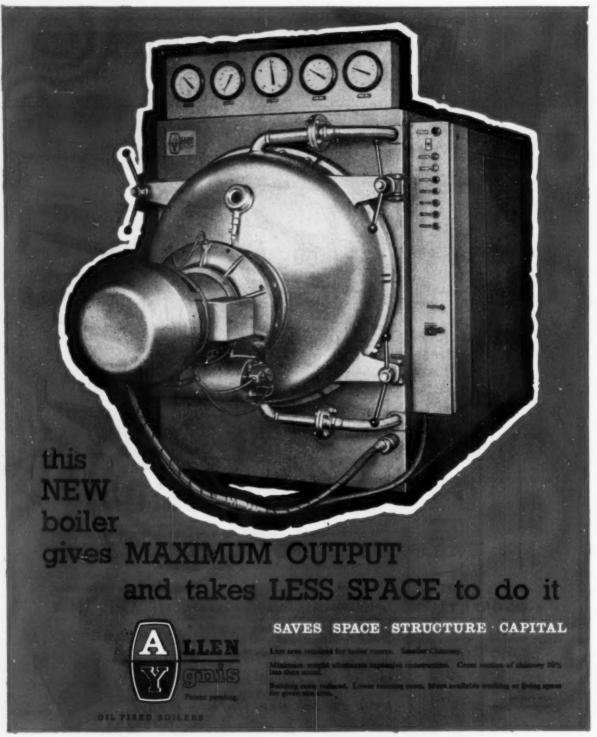
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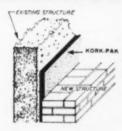
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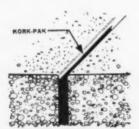
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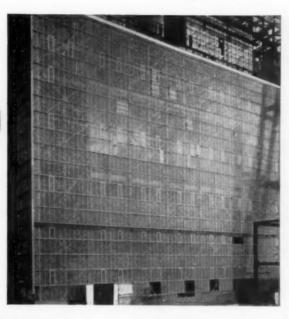
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Williams and Williams Aluminex Patent Glazing will provide daylight for the working areas in the turbine house-the longest in Europe-and the pumphouse (foreground).

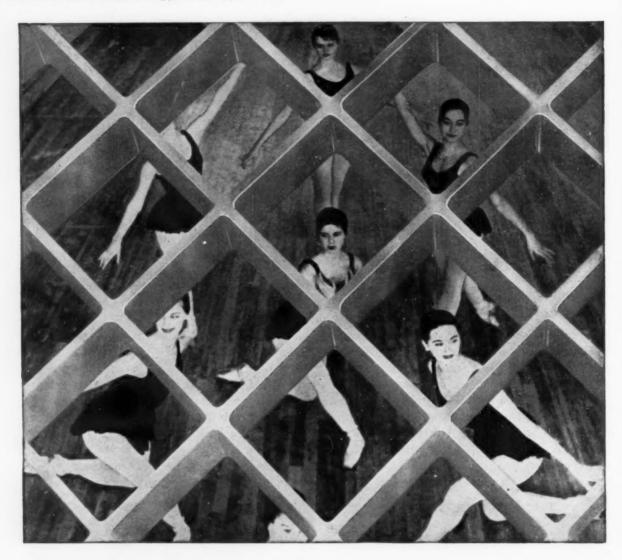


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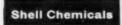
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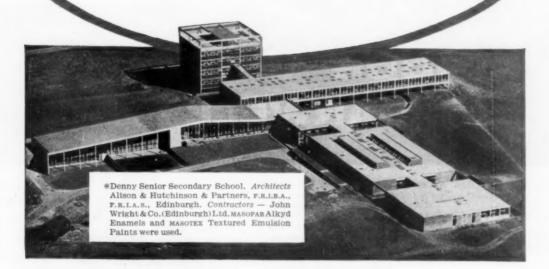
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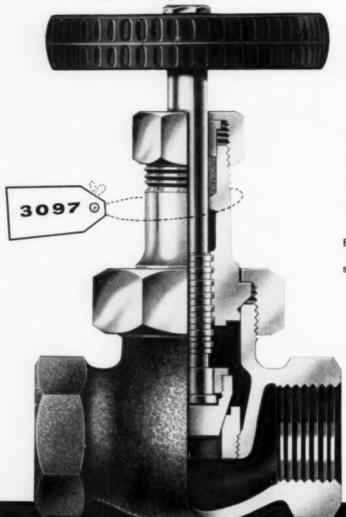
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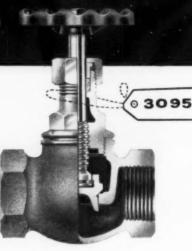
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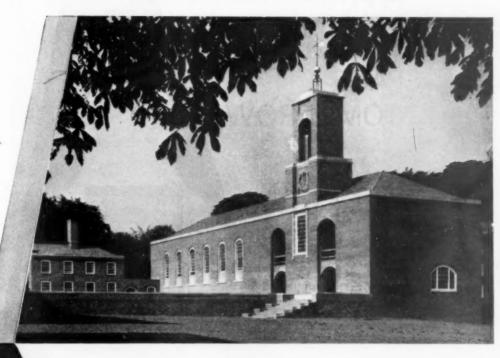
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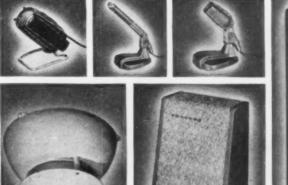
THE ARCHITECTS' JOURNAL (Supplement) July 19, 1961

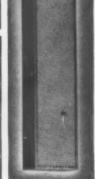


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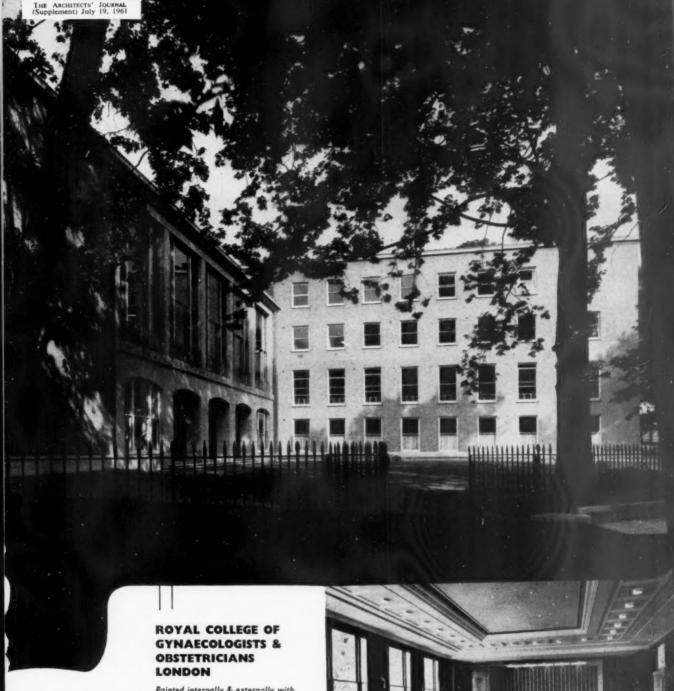
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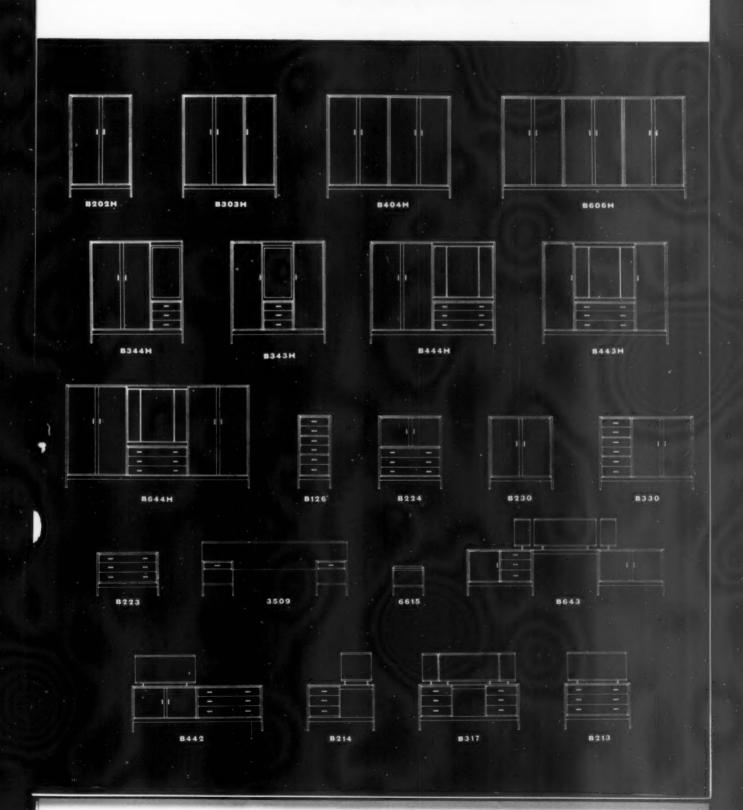
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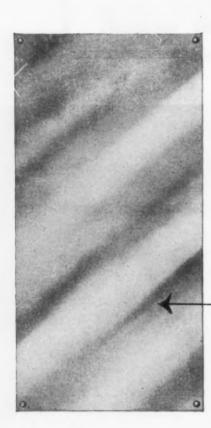
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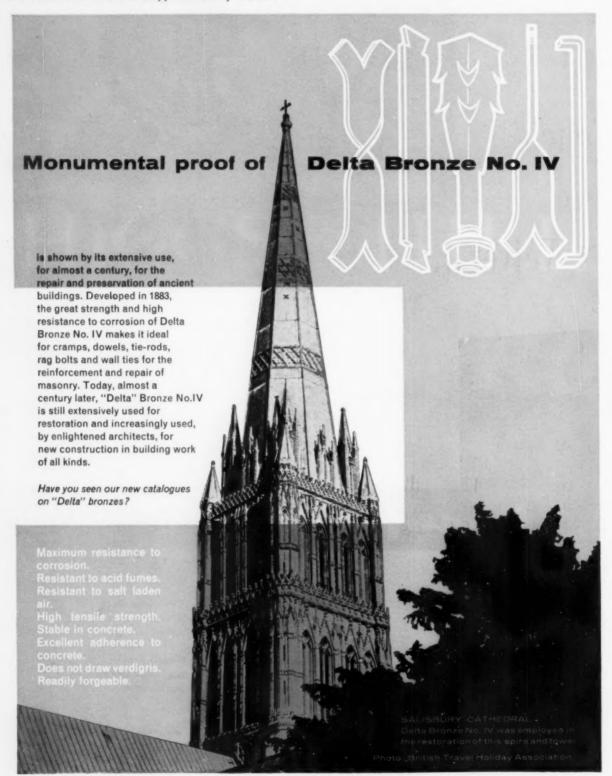
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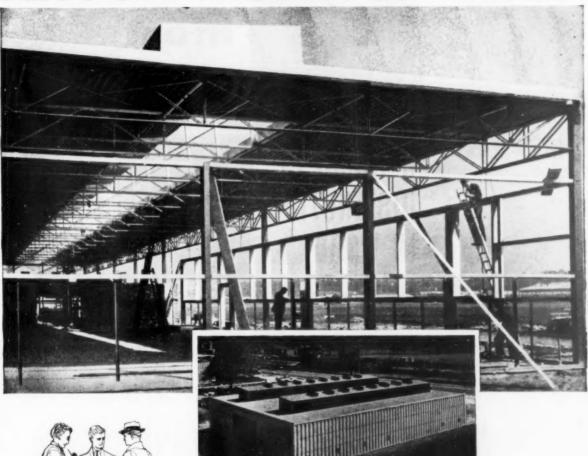
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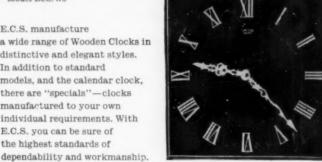
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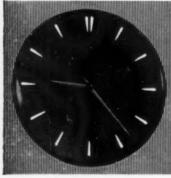
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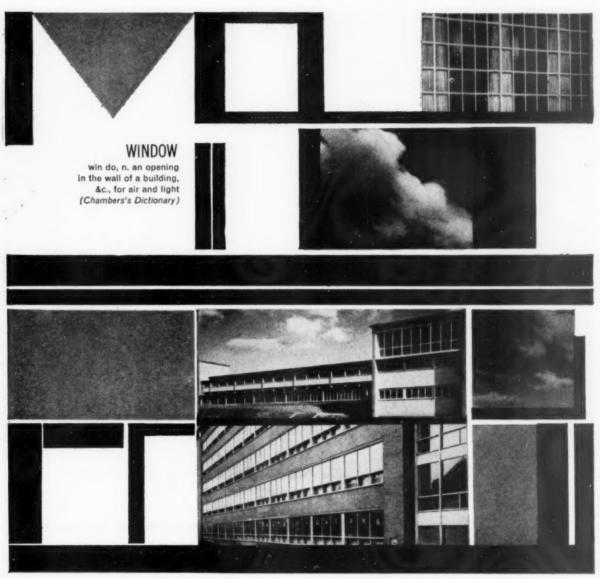
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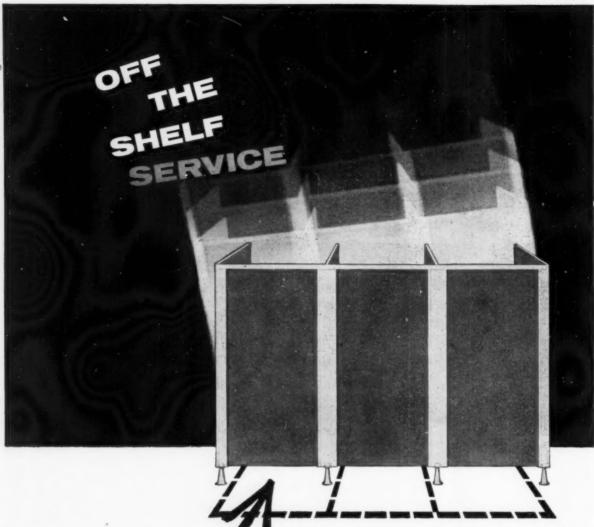
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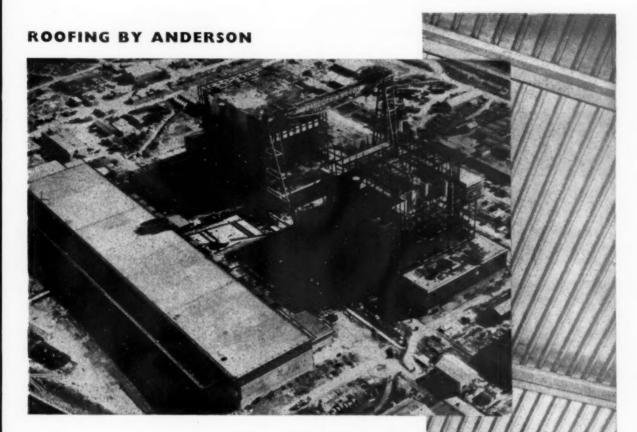
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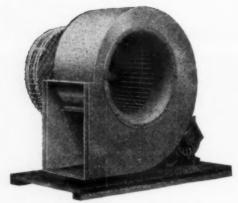
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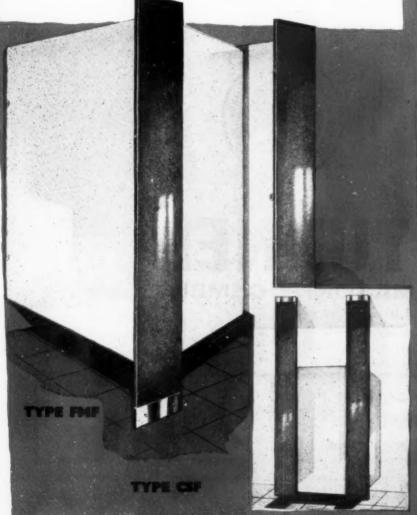
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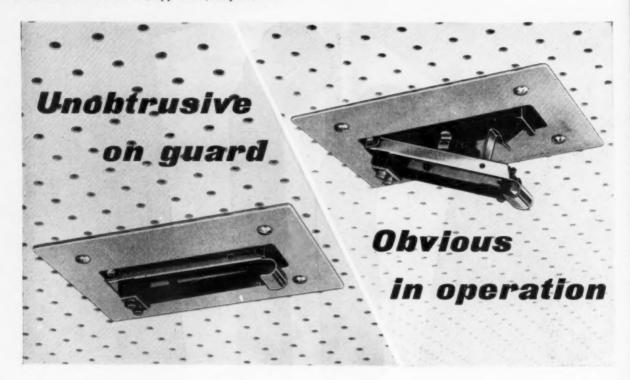


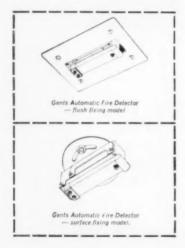
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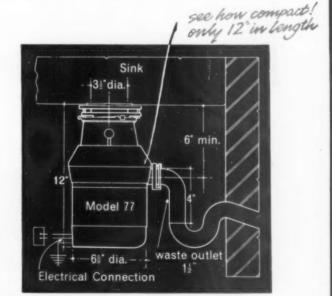
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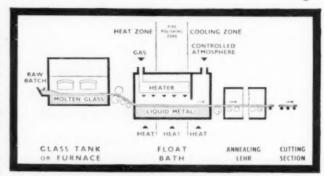
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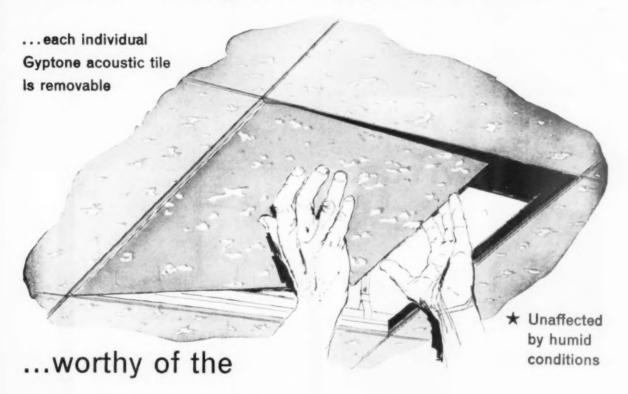
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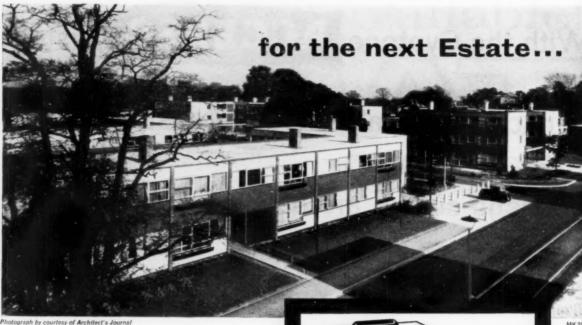
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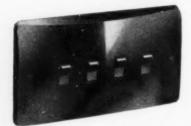
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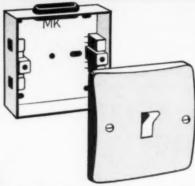
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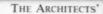
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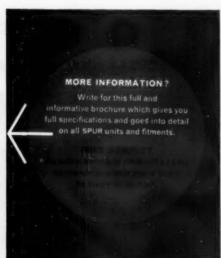
How SPUR shelving works

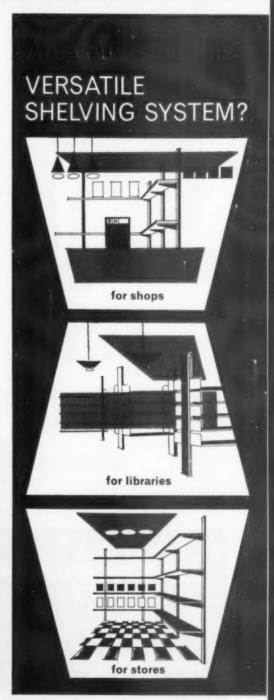
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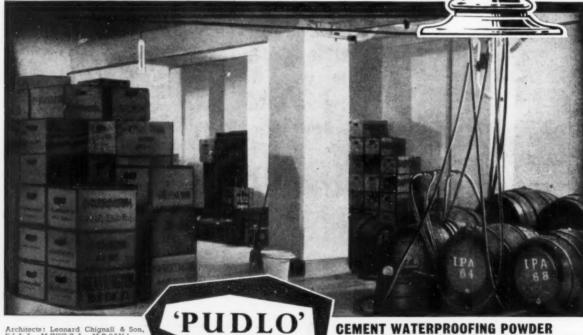
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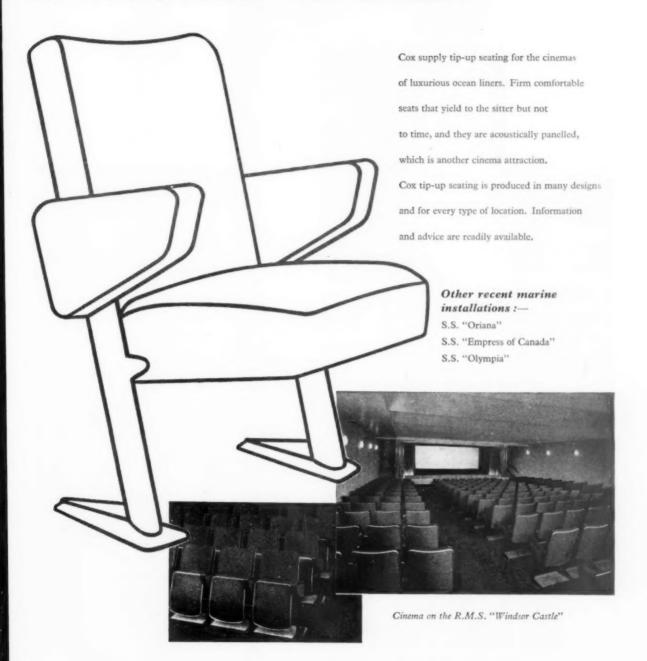
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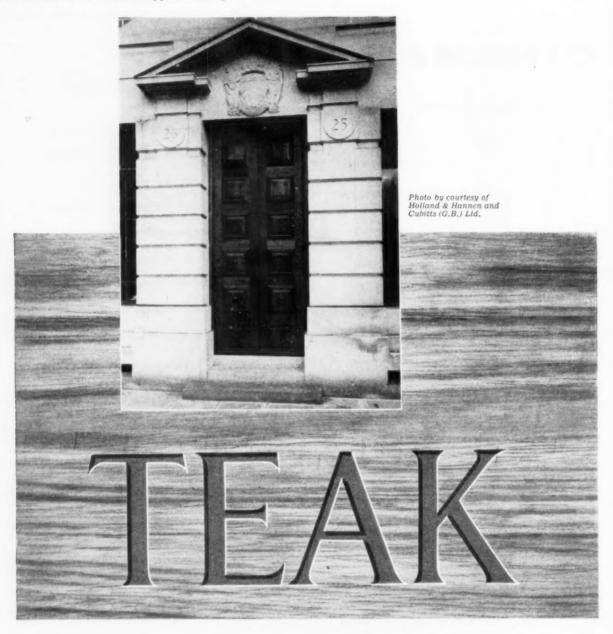
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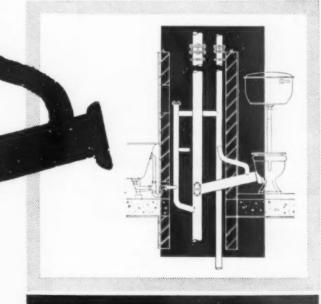
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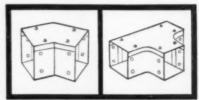
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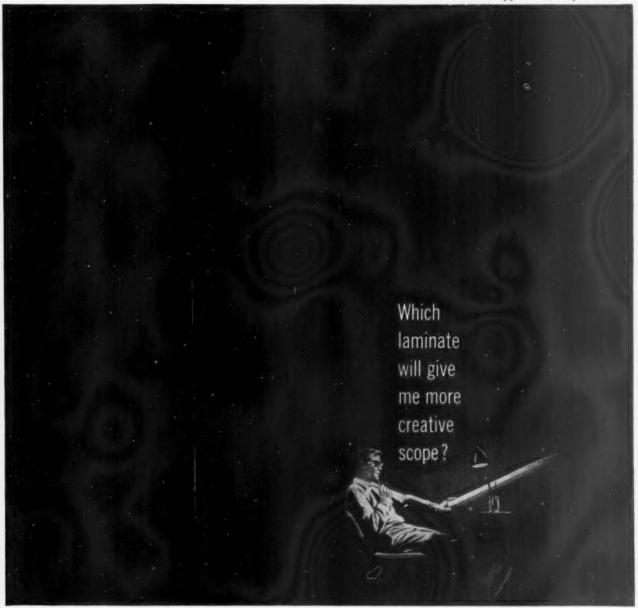
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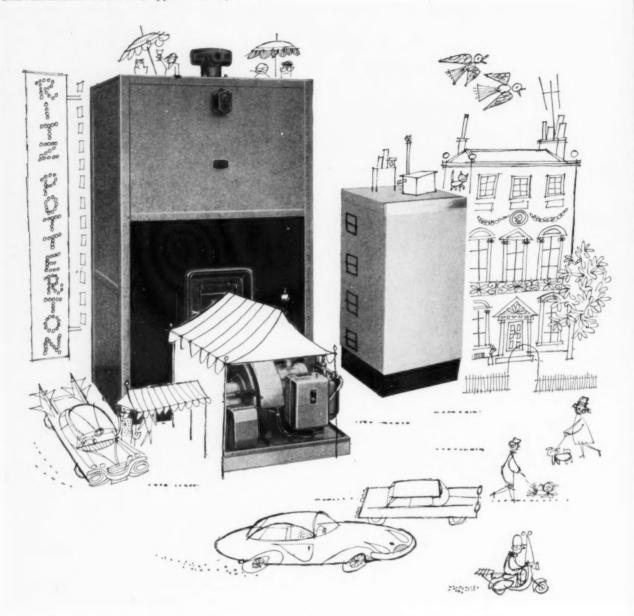
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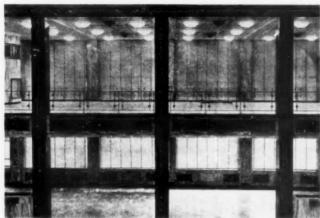
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◆ The directors' office in the Ionian Bank.

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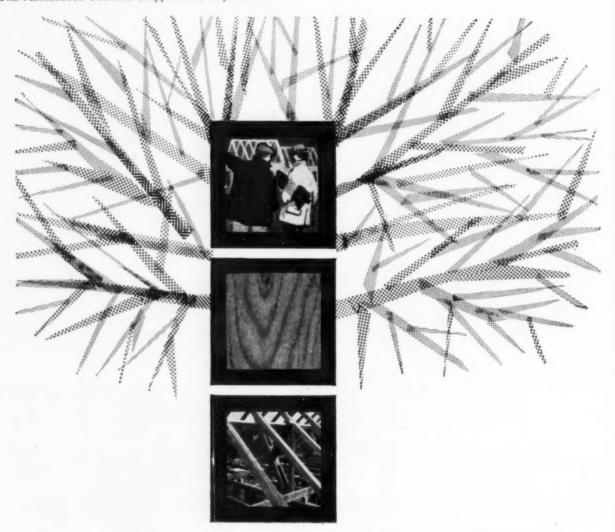


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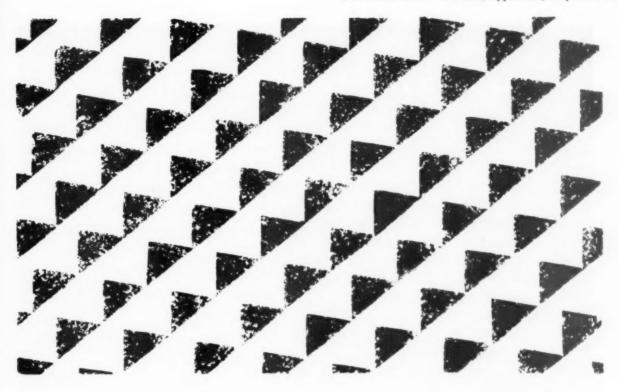
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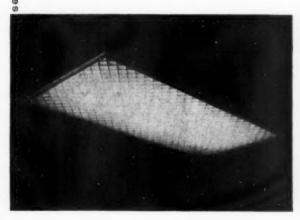


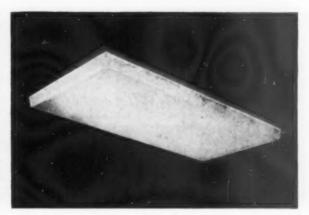
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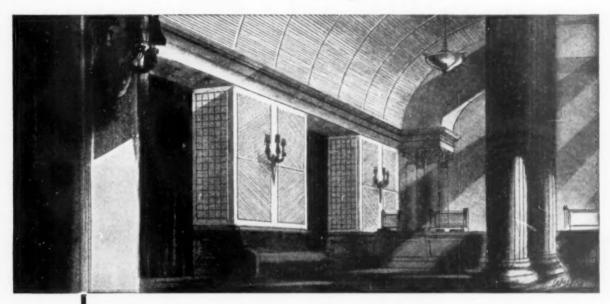


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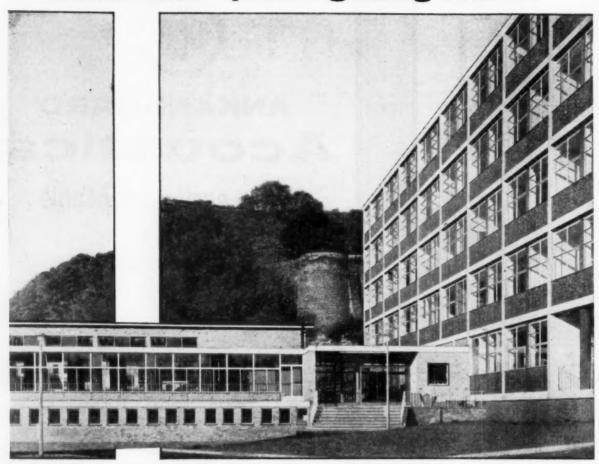
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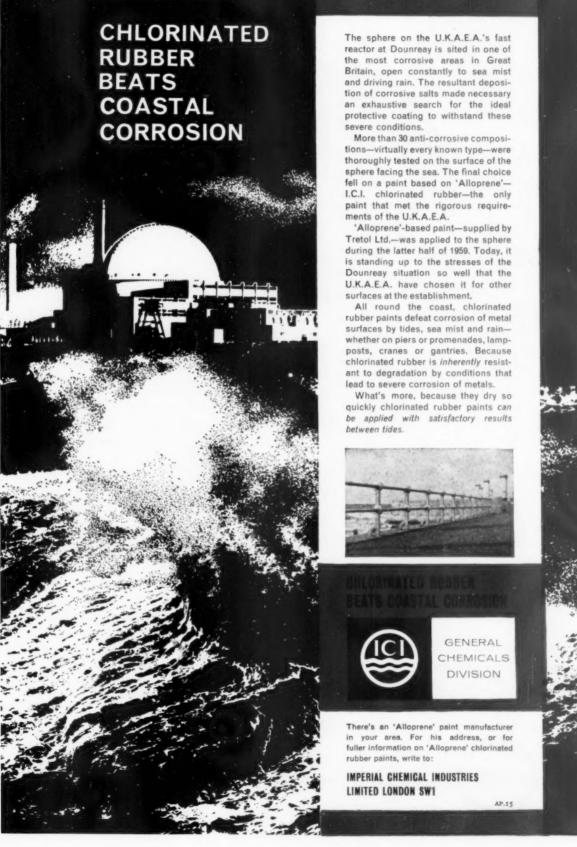
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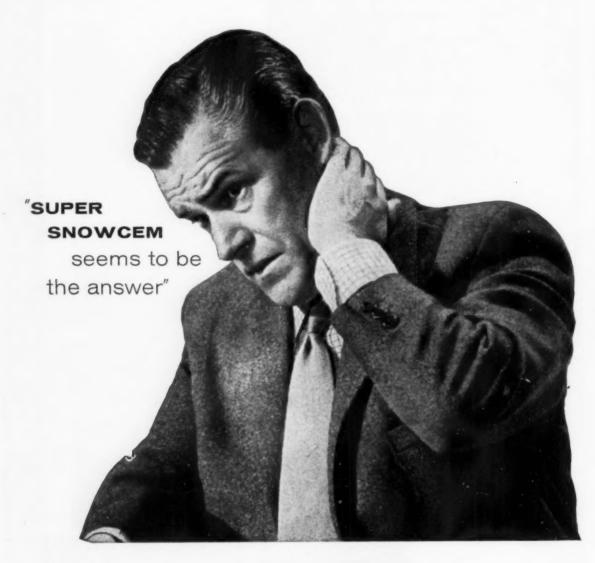
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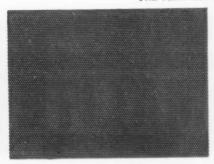
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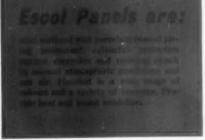
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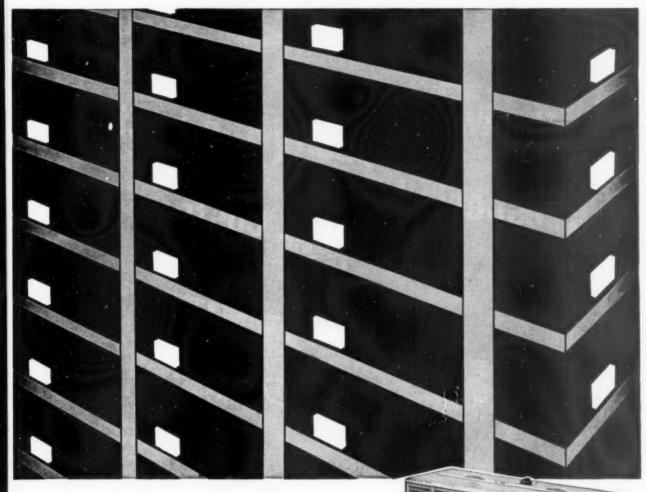
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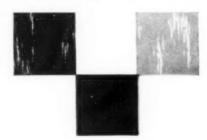
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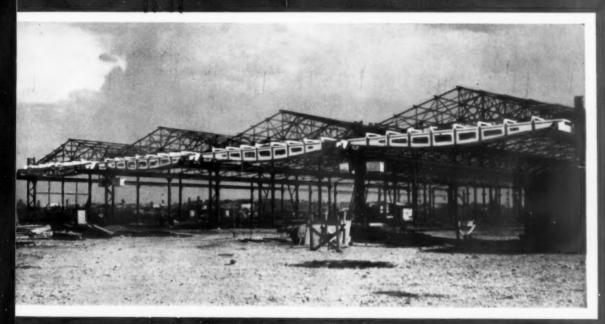
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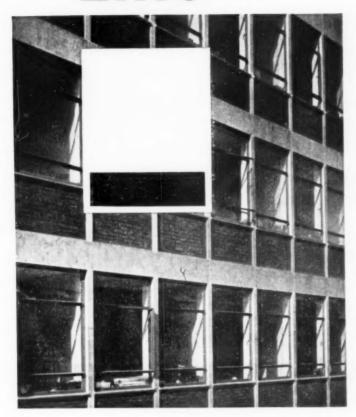
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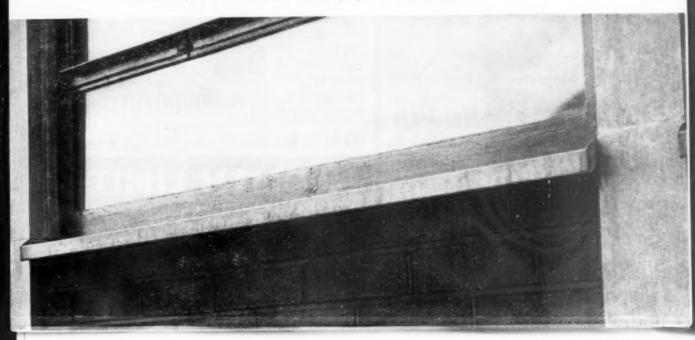
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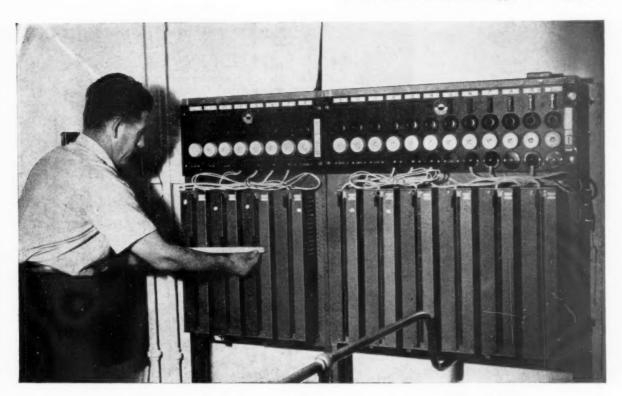
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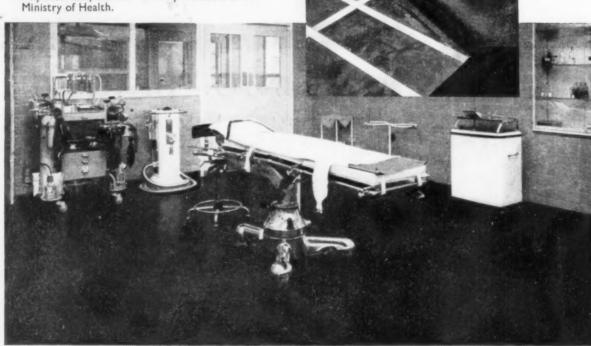
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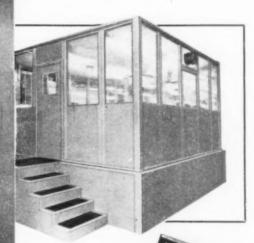
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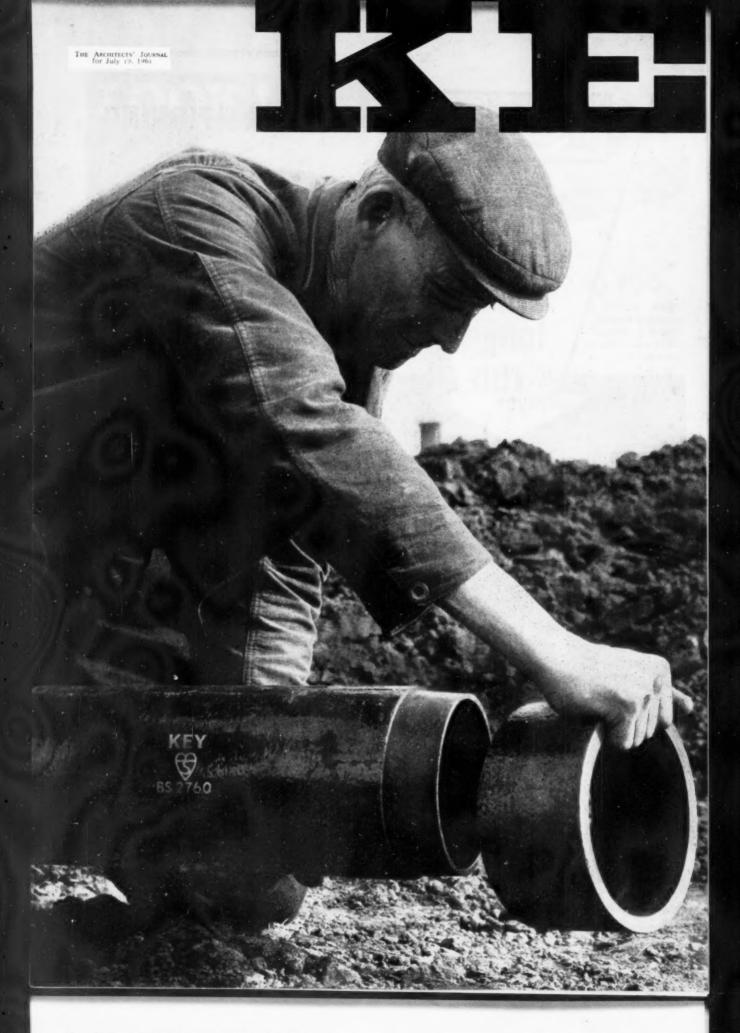


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THE ARCHITECTS' JOURNAL for July 19, 1961



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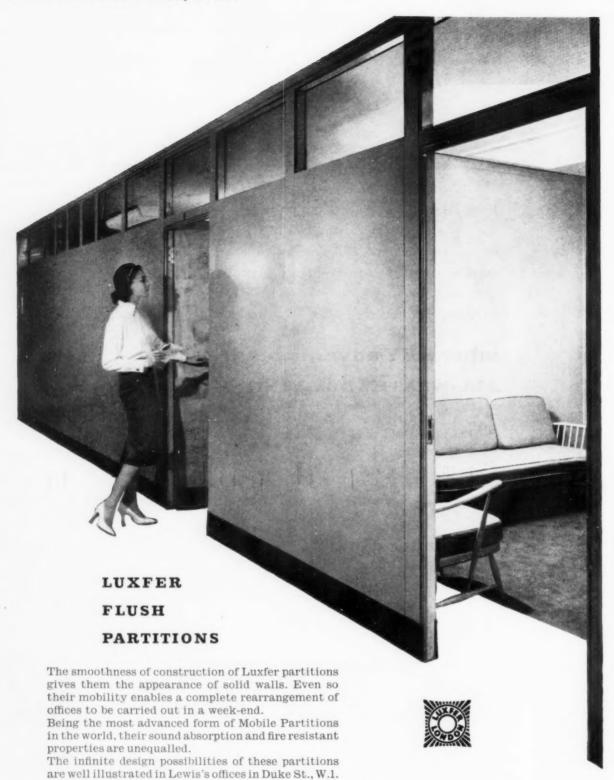


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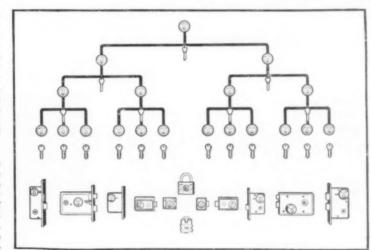


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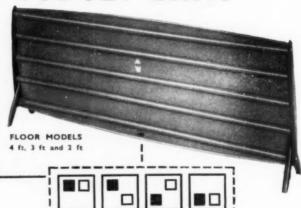
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Barbour Index Competition on Technical Literature

COMPETITION RESULT

ASSESSORS' REPORT

The Competition was judged by:-

Mr. D. E. Gibson, C.B.E., D.C.L., F.R.I.B.A., Director General of Works, War Office. Mr. Howard V. Lobb, C.B.E., F.R.I.B.A., A.M.I.Struct.E.

Mr. Dargan Bullivant, A.R.I.B.A., Architects' Journal Research Fellow on Information.

Mr. P. Talbot-Smith, Director, The U.A.M. Group of Companies.

Mr. R. N. Smith, Director, William Newman & Sons Ltd.

There has been widespread criticism of the inadequacy and inefficiency of manufacturers technical information. Understandably this has come mainly from Architects, who bear the responsibility of keeping up-to-date on a large and ever-widening range of materials and systems.

Manufacturers have failed in many cases even to standardise their paper sizes in accordance with the recommendations of the British Standards Institution, After this essential first step, there are many further steps which can be taken to simplify the use and handling of technical information in Architects' offices.

There is still some doubt and argument about all the factors which a manufacturer must consider in producing satisfactory technical information There is even more doubt about the order in which these factors should be considered.

A bold and imaginative step was taken by Barbour Index, who organised a well-ordered competition in technical information for the benefit of the architectural profession, offering substantial prizes as an encouragement. It took place at a time when the RIBA was already pursuing studies in management, amidst grow-ing interest in the efficiency of the profession. It was therefore surprising that, three months later, only twenty entries had been received. One of these had to be rejected because it failed in several respects to fulfil the competition rules. The quality of the entries was equally disappointing. The Assessors noted with particular regret that the presentation of the entries was often slipshed and input was often slipshod and inept.

Against this disappointment with many of the entries, the Jury found that seven were thoughtfully and carefully presented, disclosing a fundamental understanding of the subject. It is not perhaps surprising that, in view of the specialised knowledge that the subject as a specialised knowledge that the subject as a whole requires, no one entry fulfilled all the desiderata against which the Assessors judged them. Hence they recommended that the whole of the prize fund should not be distributed, and that the value of the first three prizes should be less than the maximum announced as available for distribution.

Both the Assessors and Barbour Index realise that the standards set were high and they appreciate the efforts made by the entrants. It is the intention of Barbour Index to study the various good points which were made by competitors, in the hope that it will thus be possible to suggest improvements in manufacturers presentation of technical information

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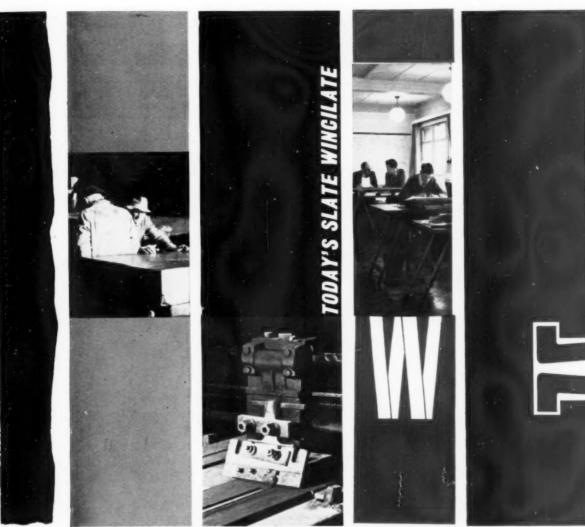
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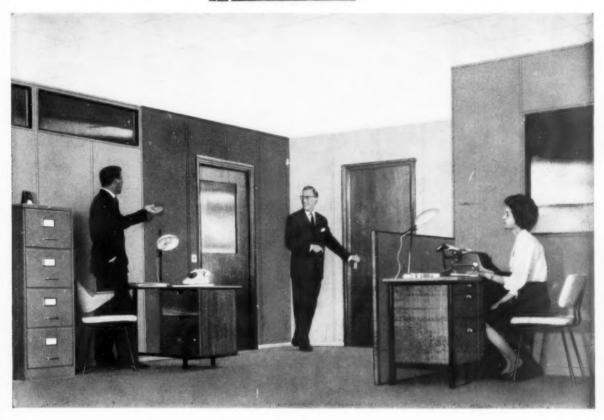
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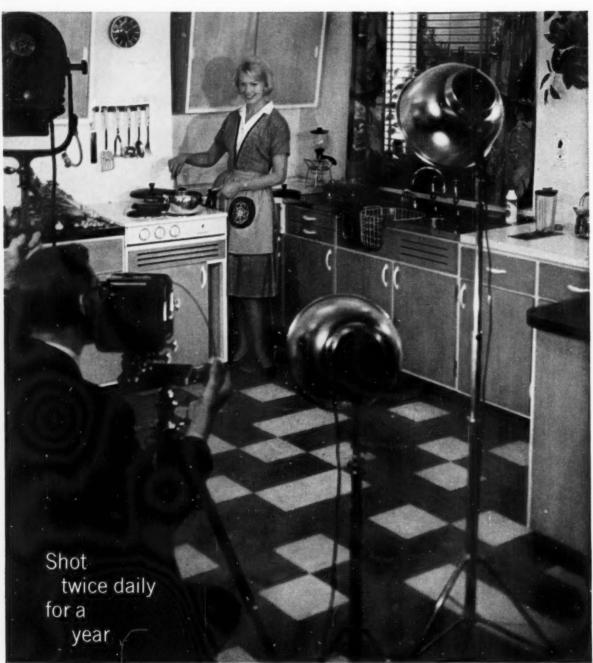
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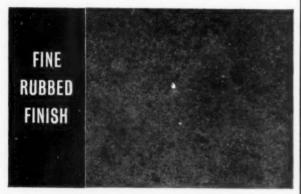
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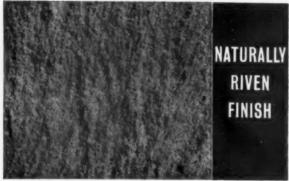
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The Architects' Journal

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NOT QUITE ARCHITECTURE

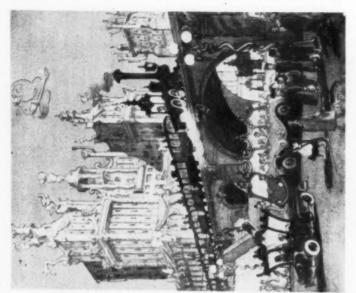
By appointment only

The front door is locked, so you press the anodised aluminium bell-push and a budgerigar hidden behind a Swiss-styled grill at ear level speaks with sizzling sibilants, and you're so taken aback you have to be asked twice, and surprise surprise it isn't a budgerigar at all it's the receptionist on a rather lo-fi amplifier from her office upstairs, and you have to talk to yourself, in the street, which is killing for morale and one-up to the architect to start with, if you hope to sell him something.

Not many practices have disembodied budgerigars to silence the ready-tongued representative. They go with dodgy remotecontrolled door latches and close-carpeted staircases. Offices like these are panelled with iroko or sapele or mobutu and decorated with pencil-slim secretaries. Drawing-boards, like good plumbing, are entirely concealed. Work is discreetly set apart from the reception area and the partners' offices.

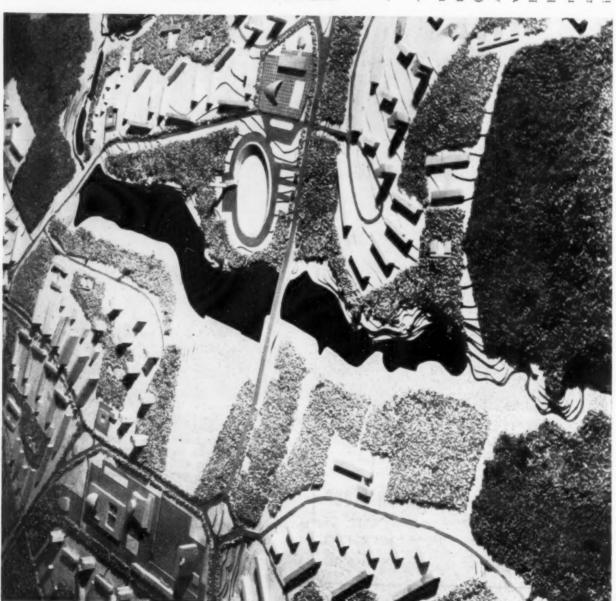
Here, you feel, in this cinematic atmosphere great chunks of property are being parcelled, assigned, developed and transformed. This is architecture on a strategic scale. These, surely, are the generals of the profession. You wait, bowler-hat on pin-stripe knee, with evaporating enthusiasm, feeling like a miscreant caterer summoned to Div. HQ.

But for the truly professional aura Mayfair has nothing on London, wc1, or Edinburgh New Town. Four puffing flights of welltrodden stairs. (Linoleum or stone, though stone is more in.) Half-way up you meet your competitor, looking smug, on the





The Soviet Trade Fair at Earls Court makes clear the revolution there has been in town planning and architecture in Russia since *Krokodil* lampooned it in 1955 (we reproduce that cartoon above as a reminder). A series of town planning schemes is on view, along with a demonstration of how large-scale prefabrication has been developed—to the point where building flats has become cheaper than building houses. (See news note, p. 80.) On left, town plan for a Moscow suburb: above, *Krokodil* imagines what transport would be like if it kept in step with Soviet architecture, 1955 style.



way down. Bad start. When you get there it's like a Brunskill and Loveday set for a play about a solicitor who nearly went wrong.

Books, obviously; and drawings. Sash windows an absolute must. After that certain deviations are permissible, but not design. Architects like these never design their own offices, which are often cosy, only offices for other people, and once they start doodling storey-high precast units and curtain walling, it's curtains for B. and L. and the first step to new quarters.

It's expensive—once an office starts being modish—to keep up the pace, and practices that are strictly fashionable in the face they present to clients rarely seem to manage all the latest interior trends. Maybe Japanese customs have little to do with tee-squares, and anyway who's ever heard of a long, low architect?

For my money the office which is worth any excuse to visit is that of the dving-out professional-amateur (in the literal sense) who works and lives in one place, be it an elegant town house in some precious precinct, or an impossibly secluded country retreat where you just couldn't practice without the supreme distinction that brings the world to your door. Here visitors are welcomed with sherry from a fine decanter. contractors as well as clients, and everything proceeds with leisure and charm to be concluded in decent time. The architecture that emerges has something subtly in common with the sparkle, elegance and craftsmanship of the decanter. Well, could you do your best work with a Gainsborough looking over your shoulder and only a Queen Anne desk to lean the drawing-board on?

The Kalendar is not kept on the walnut bookshelf, incidentally, because, colour apart, it just doesn't fit. But it does fit in the modular office. Everything fits in the modular office. And where the fittings can't be tailored to size they are adjustable. Current copies of the AJ are kept, not in empty baked bean cartons, but on shelves designed for current copies of the AJ. Light fittings are where they should be, and look good too. Door handles are straight out of Design Index, and desk dimensions are ever so ergonomical. Thames-mud pinup boards display neat schedules as neatly maintained. There is nothing, but nothing to hide from the client who strays into the drawing-office by mistake. The reception areas are just as sane, no more flamboyant. Nothing is so fashionable that it dates. The antique Italian oil is there just because it's beautiful, and isn't it funny how well it goes with that Danish lightfitting? Even the assistants look slightly modular, being apparently hand-picked for research on Man in relation to his Environment. The surprising thing about this office is not that it works so well, but that so far I've only come across two like it. Perhaps one is yours.

The Editors

PUT UP YOUR CARAVAN JUST FOR ONE DAY

Is the caravan, permanently installed on a site, simply sub-standard housing? This point has been hotly argued by those for and against caravans. At last some facts are beginning to emerge which suggest that the cheaper caravans, at least, are injurious to health.

Sixty thousand English households exist in caravans. Qualified observers now say that their health is below average and conclude their surroundings are to blame. Last year an article in the British Medical Journal described a survey in which caravan dwellers were compared with brick and mortar householders. It revealed that skin, respiratory and stomach diseases were all commoner among the caravan dwellers.

Mental sickness is also serious. In 1959 a survey of 1,092 caravans was made by Social Survey of the COI. Twenty-seven per cent of the households examined thought the nerves of one or more of their members were adversely affected. "It is an astonishingly high figure, one that makes nonsense of any suggestion that caravans are not detrimental to health." Such is the opinion of the Medical Officer of Health for South Oxfordshire expressed in one of three papers on "The Health of Permanent Caravan Dwellers" presented this month to

the Royal Society of Health.

Clearly, caravan life, as it is, militates against good health. Lack of room is its basic deficiency. The size of trailer caravans is limited by the Road Traffic Act to 22 ft. × 7 ft. 6 in. overall. Larger, sectional ones do exist but as poverty is often the force that drives people to caravans such expensive vehicles are rare. Social Survey revealed that, on average, 2½ people occupy each caravan. The result is that "virtually all vans in the country are overcrowded by housing standards." Such congestion, it has been found, causes nervousness and depression; it hinders privacy and prevents isolation of the sick. As a result, an air of desperation hangs over many caravans, whose occupants have taken to them not for choice but for lack of an alternative and stay for the same reason.

The future outlook is not much brighter despite the 1960 Caravan Sites and Control of Development Act. Suppose it succeeds in making good all the deficiencies the fact remains that most people live in caravans because they cannot find or afford anything else. This suggests they will generally buy the cheaper and smaller caravans. They and their children (in 1959 there were 20,000 caravan children under five, "double what one would expect in the population at large") will eat, sleep and do everything in a space 22 ft. × 7½ ft. or less. This is sub-standard housing. Money that might be spent on adding encouraging frills to sites for such prisons would be better spent on permanent houses.



THE NEW BOODLEISM

The truer blue clubmen of Boodles and White's Club have been unnecessarily gloomy about the new building, designed by Economist Alison and Peter Smithson, as you can see from the newly-released pictures on this page. It will neither wreck nor greatly change St. James's Street. With considerable tact, reinforced by the advice of the LCC and the RFAC. the architects have set their 17-storey tower block at the back of the site, and only its modest, four-storey reflection for Martins Bank will be visible if you are looking up or down the street.

Both are straight forward, in spite of their chamfered corners, with reinforced concrete frame partly clad in Portland stone (a placatory gesture to the clubmen?), designed on a 10 ft. 6 in. module, which conveniently expresses "the basic two-man room" required for the majority of offices. Martins will have an "escalator bank," and the banking-hall will occupy the whole of the first floor, undivided.

The Smithsons have also designed the extension behind Boodles, including a Ladie's Annexe and a large bay window on the south, and a residential block behind, which (seven storeys high on a 5 ft. 3 in. module) looks like the *Economist* building's little sister, even to wearing its hat on one side instead of dead centre.

AA AND POLY

It's a far cry from the South Bank to Bedford Square these days. At the South Bank exhibition the selection of students' work was orthodox, and only small mannerisms were permitted to allow designers to assert their subdued individualities; at the AA students' exhibition, the visitor could see the confusion that has overtaken the modern movement. It is nice, of course, to see a little experiment, unless you are left asking what all the experimenting is for? At the AA new shapes, forms and contortions ranging from thatched roof romanticism and brick arches with red rubbers to anything short of condensed air. And in planning many designers showed themselves to be true supporters of the nightpan. Why else

arrange bathrooms as far as possible away from the unfortunate sleeper? There were, however, superb measured drawings of simple things, like a mill, a waterwheel and a bridge. In contrast, the students work of the Regent's Street Polytechnic seemed more dull, steady and tidy. Generally speaking, the efforts of those who teach and those who are taught were more readily discernible.

The suddenly emerged courtyard house is as enthusiastically maltreated as anywhere, and the various stages of British Burtalism are dutifully recorded. But I found the student's application to working drawings and model-making as competent as ever.

Altogether it is astonishing how much can be absorbed and produced in the first 12 months of the course, but how painfully slow development seems thereafter. It would be nice to know why there seem to be so many stumbling blocks—and where they are.

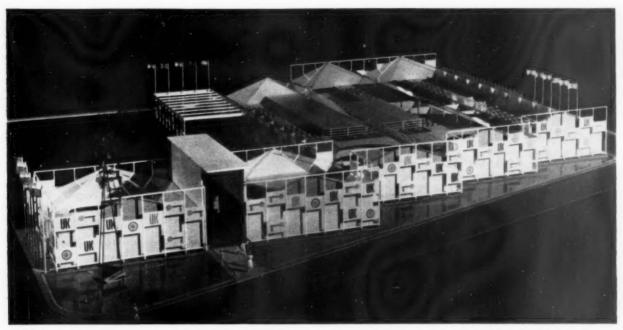
DO-IT-ITSELF

Examiners, driven nearly to distraction by the continuing illiteracy and mental disorder revealed by architectural students, may well look hopefully at the new teaching aid known as the AutoTutor. It is not a subliminal or sleep-teacher; nor does it aim to do anything but take the purely mechanical drudgery out of teaching, and it does require active co-operation by the student. It treats him as a faulty component in a self-correcting computer circuit, displays to him part one of the lesson on a TV screen, asks him to





The " Economist" building, designed by the Smithsons. See "The New Boodleism."



The Indian Industries Fair, an international trade exhibition to be held at Delhi from November 14 to January 1, will include this U.K. pavilion (40,000 sq. ft.) designed by Charles Munroe, for the C.o.I, and built under the supervision of local architects Sharma and Puri—with the Indian "Tayspan" system (portal frame design developed from the "Arcon" range and marketed through the Indian sub-continent by Taylor-Woodrow [Building Exports] Ltd. of Calcutta). The contractors have had the good fortune to get a really good publicity story out of a monsoon which caused a certain amount of dilly-dally on the Delhi road and might have caused a "complete breakdown" but for a "truly magnificent effort" and "a tremendous will to win." Astragal congratulates the contractors on their reported success and their Kiplingesque spirit.

pick the answer to a set question, and displays part two if he punches the right button; if he doesn't it displays an explanation of the error and asks him to try again. It teaches only logical subjects like algebra, trig, electronics—but I see "Contract Bridge" listed among its teaching capabilities, so it may well have some application to the training of architects.

THIS WEEK'S GOOD GIGGLE

In the basement of the Qantas offices in Piccadilly you will find, until the end of the month, an exhibition neatly contrived to win the heart of all grown-up children who can still remember seeing Felix the Cat on a hand-driven home projector. Century of Moving Pictures, as it is called, covers the history of the art from the Thaumatrope, by way of the Phenakistiscope, the Zoetrope, the Tachyscope, the Kinora and the Mutascope (or What the Butler Saw) to the Image Orthicon (or TV camera in plain language). Practically everything works in its jerky fashionbirds in cages, swimming girls, bucking broncos, acrobats, a fire, and sundry nudes and near-nudes from Eadweard Muybridge's Animal Locomotion.

Apart from its amusement-value, the exhibition has a worthwhile purpose: to raise funds and gain publicity for the proposed Motion Picture Museum, and its sponsoring body, the MPMA. Recommended, both as a good cause and for the giggle, as they say.

LIGHT READING?

When a book weighs over 7 lb. the last thing you expect it to be, somehow, is a history of Ashton-under-Lyne. But Winifred M. Bowman has written such a book, which has been subsidised by the local Corporation and published for them by John Sherratt & Son at fifty bob. If you come across it don't be put off by the huge size and weight-just a ploy, no doubt, to make Salford jealous. It is, in fact, a splendidly illustrated history in miniature of industrial England, featuring not only the Enclosures, the Industrial Revolution and the struggles of Chartists and factory inspectors but more cheerful matters such as local dancing habits, popular rhymes and saws, and patterns of the waistcoat velvets manufactured in the town in the 18th century.

There's plenty here for planners of new towns or rebuilders of old ones a lesson in the need for richness and variety as well as comfort and hygiene. If you're a town planner get hold of a good second-hand lectern and wallow.

LANDMARK OF MEANNESS

News that the Government has decided to demolish the Euston arch provoked an immediate, sharp reaction from the Society of Architectural Historians last week. Their president, John Gloag, commented to ASTRAGAL: "So the Doric portico at Euston has been condemned and is to be destroyed with full Government approval. A few bureaucratic regrets, like wreaths of brittle artificial flowers, are offered.

Poor comfort for London's loss of a superb monument of early railway architecture, designed when the classic idiom was a living and inspiring tradition.

For such a landmark of architectural history to be demolished on economic, or indeed on any grounds, without at least some attempt to find money for its preservation or re-erection is an example of artistically insensitive meanness that would be inconceivable in any other European country."

ASTRAGAL

LETTERS

James Nisbet, ARICS Gordon Ricketts Alan and Sylvia Blanc, AARIBA John Crowther, BArch, ARIBA

Hospital costs

SIR: Your editorial of June 8 leaves one in little doubt that you regard the Ministry of Health's recently announced cost limits with some disapproval.

This comes as a surprise-if not a shockin view of your advocacy of cost analysis and cost planning and your unqualified support for the Ministry of Education methods which the Ministry of Health are adapting to their requirements.

Your criticisms appear to be based on three beliefs:-

(i) "That the figures on which these costs are based are insufficient."

(ii) "That a form of costing which does not take running costs into account is unsuitable for hospitals."

(iii) "That not enough is known about hospital requirements."

Regrettably you produce little evidence to

support your assertions and you do not suggest any practical alternatives to the Ministry's ideas. Surely you would not wish the Ministry to embark upon a £500 million programme without a system of cost limits and cost control?

Whether the Ministry's cost limits are entirely adequate for the kind of hospitals they expect to get will be proved or disproved by experience. In the meantime, comparison with Musgrave Park (in spite of its unfortunate history) does provide some rough indication of their validity. So that readers may judge for themselves whether the Ministry of Health's limits would enable it to be built with "a little margin," I attach a comparison of areas and costs extracted from your issue of April 9, 1959, with the Ministry's proposals. (Table 1.)

Most people would agree that running costs

Comparison of MOH Allowances with Cost Analysis of Musgrave Park Hospital Extension (AJ, April 4, 1959)

Ministry of Health Allowa	nces as MOH Bui	lding Note No.	2	Musgrave Park Cost Analysis		
	cos	T	,	COST		
Wards	£ 118,500	£	£	Bills of Quantities	December	1953
Operating theatre	38,500			Tender	June 1954	
Diagnostic X-ray	21,000			Work started	March 195	55
tesso	36,000	214,000		Work completed	September	1958
Access and communication	ıs				£	£
4,062 fs at 80s	16,248			Final cost (excluding external works and		
Lifts	8,025			ancillary buildings)	188,235	
Plant and motor room in				§Assessment to bring final cost up to		
basement				date-	24,457	
1,267 fs at 80s	5,068	29,341				212,692‡
			243,341		1000	College Corbon
				sOld Board of Trade figures (RICS Journal, F	ebruary 1961) upit	ried by a further
				7 points since the end of 1960. From June 19 included for fluctuations in the final account		£33,449 less amou
Areas (calc	ulated from MOH l	Building Notes)	**	Areas (Ac	riual)	
Departments				Departments		
Wards	21,	200		Wards 15	,810	
X-ray	3,	760			,305	
CSSD		500*			,522	
On thursday	4	300		Op. theatres 5	.071	
Op. theatres			32,760 sq. ft.			25,708 sq. ft.

^{*} Building Bulletin No. 1, 1958, plus 10 per cent.

It should be noted that within the figure of £212,692, there is included the cost of an open basement (13,618 f.s. at 6 ft. 7 in. high). To obtain a true comparison of the costs, say £30,000 should be deducted from the final account. Basements are not included in the cost allowances. They are regarded as additional accommodation where their provision is shown to be necessary. The cost of the extension should then be revised to:-

Final cost	£212,692
Basement	£30,000
Corrected account	£182,692
MOR allowance	£243,341
Difference	£60 649

Wards 15,810 21,200 5,390 at 102s. ± 27,489 X-ray 2,305 3,760 1,455 at 96s. ± 6,984 CSD 2,522 3,500 ll • 978 at 104s. = 5,086	Department	Actual area f.s.	Areas calculated from B.Ns.	Variation area	Variation in terms	of cost
X-ray 2,305 3,760 1,455 at 96s. + 6,984					£	
2/100	Wards	15,810	21,200	5,390 at 102s.	+ 27,489	
CSSD 2.522 3,500 978 at 104s. 5.086	X-ray	2,305	3,760	1,455 at 96s.	+ 6,984	
	CSSD	2,522	3,500	9 978 at 104s.	5,086	
Operating theatres 5,071 4,300 771 at 120s. + 4,626	Operating theatres	5,071	4,300	771 at 120s.	4,626	
					£34,933	

This leaves £25,716, or about 12 per cent, available for improvements in finishes, etc., and to bring the scheme into line with current developments in design and layout. The cost comments on the job in THE ARCHITECTS' JOURNAL for April 9, 1959, were as follows:

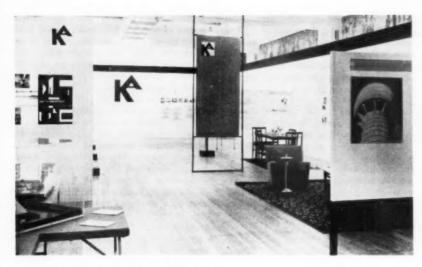
'The contract started badly and rambled on. Tender date June 1954, work began March 1955, work finished September 1958, resulting in almost a year's increased costs, before the first spit was turned and 4½ years before the contract was completed. The abnormal length of contract was apparently due to the bankruptcy of the first contractor. In any event, it cost the client £10,992 in increased costs.

It is also noted that the original contract sum was £155,675 which, allowing for the increase of £10,992, means that during the work there was an extra of £21,568 on the original contract sum.

[†] Likely cost limit for central sterilising department obtained from MOH.

^{||} Area calculated from draft Building Note circulated to hospital boards.

¶ This additional area may be partly accounted for by the provision of a conference room in the suite.



All on £120 (see letter from Alan and Sylvia Blanc)

should be taken into account when calculating the capital cost of a project; but we also know that we are only now beginning to fumble our way forward on this important but difficult subject. Your strictures are therefore somewhat premature and unnecessarily harsh.

That not enough is known about hospital requirements is no doubt true. But surely after the work of the "Investigation into the Functions and Design of Hospitals" Group, and the Ministry itself, there is sufficient information to provide a tolerable and workable framework of cost limits at the present time. At least the Ministry might be given the credit for analysing the complexity of a hospital into its component parts and reflecting their differing functions and values in the respective cost limits, a point which you appear to have overlooked when suggesting in your last sentence that the Ministry's cost control system had taken account of size only.

The Ministry's cost limits are no doubt imperfect but the unnecessarily critical tenor of your editorial is distinctly unhelpful and out of character. Your strictures would have been more useful if they had been accompanied by constructive proposals to improve the present limits.

JAMES NISBET

Cobham, Surrey

Trumpet for Goulden

SIR: May I sound a trumpet in praise of Gontran Goulden? If you wanted imagination, precision and control in the right proportions, it might be hard to write a better specification than "an architect-administrator who is also an exarmy staff officer"; and it might be still harder to fill the job with anyone as good as Gontran Goulden.

For the first year or so of preparation, the decisions of the Congress Organising Committee could be carried out by a small

section of RIBA staff seconded for the purpose, ably guided part-time by Miss R. Cridland, a professional congress organiser. This worked pretty well, but it was never in doubt that for the final six months we should need relentless progress-chasing and strong co-ordination, virtually full-time and at a high level. The problem was who should provide this, for those within the RIBA who might have been suitable were already fully engaged. It was then that we turned to Goulden.

I am not seeking here to review the successes and snags of the Congress, or to dwell on the generosity of the Building Centre in lending him, or even to offer the praise and thanks that are abundantly due to a host of people who did fine work (especially, on the staff side, Miss Cridland, David Taylor, Mrs. Mead and Mrs. Craig)—I want simply to record how much I personally owe to Gontran Goulden, for I have never been less worried about the outcome of any enterprise.

From the start, he took the job in both hands and ran it, with the minimum of fuss and the maximum of cheerfulness and initiative. The staff who worked with and for him at once drew confidence, I am certain, from his blend of imagination, incisiveness and unflappable approach to moments of near-crisis (of which we had a fair share). Most of all, perhaps, they enjoyed working with him because he so obviously enjoyed the work himself.

GORDON RICKETTS

66 Portland Place, w1

IUA—and Kingston

SIR: One can only hope that the outburst of criticism regarding the IUA Exhibition will produce some well-reasoned replies from the organisers. Having paid 5s. for the catalogue it is particularly annoying to find no reference to costs, or information regarding the date and time of con-

struction, or descriptions other than in schoolboy English for the methods of building employed. The total lack of plans makes the exhibition largely a photographic exercise and any connection with technology seems very remote.

Our remarks have been sharpened by the successful experience with three other architects in organising an exhibition covering 72 buildings for the modest budget of £120 for the Kingston-upon-Thames District Chapter of the South Eastern Society of Architects, shown at Bentalls, Kingston, last January, with printed catalogue (given away free).

ALAN AND SYLVIA BLANC

Kingston, Surrey

Size of drawings

SIR: May I congratulate you on your present series of articles on practice. With reference to the latest article 7 in connection with the sizes of drawings, I have recently standardised our pre-printed and pre-cut tracing paper negative sizes to the DIN sizes AI and A2 for normal use and A3 for specialised use, such as those used for legal work.

We have found that the Al and A2 sizes are ideal for most purposes and in the event of a larger size negative being needed then the A0 size or non-standard sheet may be used.

The A1 and A2 sizes have been chosen for the following reasons:—

(a) The existing roll paper sizes are not related to pre-cut negative print paper sizes to special order.

(b) Printing costs related to Bs sizes are unimportant as we use our own machine and print on pre-cut DIN size positive paper.

(c) Filing and posting is considerably simplified as the prints fold to A4 or A5 sizes to match exactly the standard A4 and A5 stationery sizes which are used for all our standard office stationery, forms and check lists and are related to the A7 size compliment slips. When folded the pre-printed title to A7 width is posted face up.

(d) Only three envelope sizes are now required to the B and C DIN sizes.

(e) Additional working space is available around the negative when pinned to a double elephant size board.

(f) Two No. A2 size sheets may be printed side by side to cover the same area as one A1 sheet to reduce, by half, the number of smaller size drawings issued to the site.

The adoption of DIN size sheets and stationery throughout the profession would considerably simplify and improve the efficiency of each office.

The British paper manufacturers should be forced to conform to these sizes—otherwise supplies would have to be obtained from the Continent where these sizes are standard.

JOHN CROWTHER

Truro, Cornwall

NEWS

IUA

Congress conclusions

The following conclusions were put to the final session of the IUA Congress at the Royal Festival Hall by J. M. Richards on behalf of the Congress Co-ordinating Committee, and were accepted on a show of hands:

1. That industrialisation and new technical developments have a major part to play in the future of architecture, especially in solving the housing problems of the world's growing population and in improving standards of living, and that architects must be prepared to adapt their methods of work to this fact.

2. That although new techniques and materials can do much to open up new possibilities for architecture, research is needed to ensure that their use is related to the needs of different countries and climates, and specially takes note of the differences between countries highly developed industrially and those less developed.

3. However fully architecture accepts new techniques and materials it must be in order that architectural ends shall be served. Man must remain master of the machine. The exploitation of industrialised building processes must begin by studying the social and human needs that buildings have to serve.

4. That industrialisation is not an isolated technical process, and that acceptance of a trend towards more industrialisation means that the architect must work in

closer co-operation with builders, industrialists, town-planners and others. He is, however, the one member of the building team with a view of the whole problem and he must select and synthesise the activities of others so that the ultimate end is kept always in view.

J. M. Richards also told the Congress that the Committee had agreed "that the following basic issues, brought up during the Congress, need to be followed up and will be put before the permanent working commissions of the IUA:

1. The difficulty of international communication, owing to the inexact definition of terms;

2. The need for architectural education to be looked at afresh in relation to the industrialisation of building;

3. The need to study means of closer cooperation between architects, the building industry, and related professions;

4. The need to investigate the results of existing technical developments, especially from the users' point of view."

The proposal of the Committee that the next Congress should discuss "Building in the Under-Developed Countries," and should be held in Havana was also accepted without discussion, but with some abstentions.

RUSSIAN TRADE FAIR

Large-scale prefabrication methods

Factory prefabrication of large-scale components for housing has reputedly been developed in Russian cities to a point where flats are cheaper to build than houses. The housing and construction section of the Russian Trade Fair at Earls Court shows how. It contains models of the machinery used for prefabrication, the housing it produces and some photographs as well. There are also two inexhaustible architect/engineers and a town planner to explain them.

Two prefabrication techniques are on show. The first, which has been in use for four to five years, involves the pressure-moulding of U- or I-shaped load-bearing reinforced concrete panels in steel casettes. Load-bearing construction using these panels is common up to five floors (the maximum considered reasonable without lifts) but has been used up to eight floors. The flats have one, two or three rooms plus kitchen and bathroom.

The second prefabrication technique has been in use for only a year. It involves precasting panels on a continuous moving belt. The panels are used to build whole rooms, measuring up to $10^{\circ} \times 2^{\circ} 8$ metres (presumably the maximum it is possible to transport by standard trucks). Partitions are used to subdivide them and the complete units are built up like children's bricks to form blocks of flats.

The Russians claim fast building times using these techniques. In the development of Sector 17 of Moscow, 51 standard blocks of flats each five storeys high are to be built. Each block contains 75 flats and is scheduled for construction and completion in 75 days. The AJ hopes to devote a technical article to these interesting developments shortly.

URBAN REDEVELOPMENT

Civic Trust Committee

The Civic Trust has set up a committee, with Lord Mancroft as chairman, to study the problem of the redevelopment of urban areas and to suggest what action would ensure that such redevelopment is facilitated, properly planned, and carried out with due regard to the public interest.

UNESCO

Tenders called for

Nervi. Breuer and Zehrfuss have designed a fourth building for the UNESCO headquarters in Paris and UNESCO is calling for tenders on a contractual basis, in separate lots, for the construction of this building. The design consists of a 10-storey office block with a total floor area of 9,500 square metres and an underground garage for 350 cars of 9,000 square metres. The cost is estimated at £11 million. All British contractors and subcontractors interested are asked to obtain forms and information from UNESCO, Place de Fontenoy, Paris VIIe by July 31, 1961. Forms must be returned by October 1, 1961, and building will begin in April 1962 and will end in September



Russian prefab: a lorry transports half a flat from the factory to the site. See Russian Trade Fair above

AJ awards £4,000 for two Fellowships





Michael Rostron

The two Fellowships announced in the AJ on April 13, for two architects devoting a year to preparing and editing our Information for the Architect project, have been awarded to Michael Rostron and Geoffrey Hutton, who have already started work on the production of a weekly sfB Functional Elements Supplement to begin appearing in October.

Describing their task this week, Michael Rostron said: "The architect's problem is not too tittle information, but far too much, which in small offices never gets properly sorted and filed and consequently is never at hand when it's wanted.

"Our aim is simply to produce a weekly supplement devoted to one element, to include a check list of design procedure, a selective bibliography of relevant publications on the subject, a special article on one aspect of the week's subject, with related information sheets, and really informative advertisements, all presented together ready for filing-and for filing by a non-architect, any intelligent junior in fact

"The supplements will appear in logical order, and present the information they contain in a logical order also. Each will be checked by independent architects, and will then be checked by actual use in selected offices which have agreed to co-operate in the scheme, before they are published.

"The scheme is aimed at and really intended to help the small office, where there is no library or librarian, but unquestionably it can be immensely time-saving for

Michael Rostron trained at the Liverpool School of Architecture, and gained his B Arch, the Charles Reilly medal and the RIBA silver medal. From 1957 to 1959 he was a Leverhulme Research Fellow investigating light cladding, work which brought him his Master's degree, and was the subject of articles in the AJ and in the Architectural Review. Since then he has worked in a small provincial office and in the Schools Division of the LCC. Married with three children, his spare time occupations are refurbishing a rambling Victorian house in Surrey, maths, music and its reproduction.

Geoffrey Hutton went to Hull School of Architecture, where he obtained the Diploma with Distinction. He was awarded a William Hoffman Wood Travel Scholarship, which enabled him to study in France and in the United States. Since then he has completed a tour of service with the Federal Government of Nigeria. He is married, with two children, and his interests, outside architecture, are travel (he has motored across the Sahara), agriculture, and sailing.

ISE

Pathology of Construction

This was the title of the paper presented at a joint meeting of the British Section of the Société des Ingénieurs Civils de France and the Institution of Structural Engineers last month and perhaps there was more than a little nervousness behind the laughter that greeted many of the slides.

It was presented by Mr. Albert Brenier. assisted by M. Jean Despeyroux, both of the French Bureau de Securitas which was established in 1929 to draw up building regulations principally for the calculation of structures and to supervise construction with a view to preventing failures. This latter function is now carried out by a subsidiary organisation, SOCOTEC.

The French Civil Code places heavy responsibilities upon architects, engineers and contractors, requiring them to guarantee their structures against "the ruin of part or whole of the structure" for a period of 10 years, and the work of SOCOTEC in the prevention of failures has enabled insurance

companies in turn to guarantee them against the consequences of these responsibilities.

Over a number of years the Bureau has built up a Manual of Pathology, detailing failures and analysing the reasons, and it was from this Manual that M. Despeyroux described, often humorously an "accumulation of ruin and blunder" which included: -extensive damage caused to a sports stadium due to differential settlement between the main structure on piles and secondary structures on shallow footings. a retaining wall that collapsed after the local mayor ordered the weep holes to be

stopped up.

-insufficient wind bracing in single-storey industria! buildings.

-high tensile reinforcement which snapped because bent around too small a radius.

-a slender concrete column which successfully withstood its loading until the plumber knocked a hole in it.

M. Despeyroux finished with a rapid pictorial survey of the earthquake damage at Agadir in 1960. Although the native section of the town was almost completely destroyed, the European section had only limited collapse of buildings; it showed that normally built structures provided with proper wind bracing resisted the effects of the earth tremor and of 31 buildings in the town, the construction of which was supervised by SOCOTEC, 29 remained standing.

Postponed. The exhibition and symposium planned by Barbour Index Ltd. to open at the RIBA on July 20 has been postponed until further notice.

Art and Architecture: the integration of the arts: ICA discussion of the IUA buildings, on the spot, South Bank.

ппу 20 Architecture Today at the Arts Council Gallery, 10 a.m. to 6 p.m., admission UNTIL JULY 29 1s. 6d.

The Architecture of Technology: IUA Exhibition at the IUA Building, South Bank, 10 a.m. to 6 p.m. UNTIL JULY 29

Russian Trade Fair, Earls Court.

UNTIL JULY 29



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THE INDUSTRY

This week Brian Grant describes an automatically timed gas cooker, a quality specification for light fittings, plasterboard finishes, extract fans, immersion heaters, a sealing strip, electric radiators, plastic laminate prints, a booklet on fibreboard, and a fan heater

Automatic gas cooker

The illustration on the right shows the new Flavel Envoy automatic gas cooker. All the burners light as soon as the taps are turned on, and the oven is also controlled by the Gazoset, a mechanical device by which the oven can be set to light up with a delay of anything up to 14 hours. Price is £57 6s. (Sidney Flavel & Co. Ltd., Eagle Foundry, Leamington Spa.)

Standards for light fittings

The Electric Light Fittings Association has just published a quality specification for industrial fluorescent fittings. It is concerned mainly with materials and the standards for stove and vitreous enamelled finishes, and the temperatures of auxiliary gear. It is also hoped to introduce full photometric standards at a later date. Copies of the specification are available at a cost of 1s. 6d. from the Association at Regent House, Kingsway, London, wc2.

Finishes for plasterboard

Paramount plasterboard and dry partitioning is now being made with both high impact and vinyl plastic facings, thus pro-





Left: Flavel automatic gas cooker

viding a finish which can be kept clean with warm soapy water. The partitioning is covered on either one or both faces and a number of patterns and colours are available in the vinyl finish, the high impact facing having an eggshell surface in a number of BS colours. The vinyl coating is suitable for most purposes, but should not be used behind radiators, or in schools, canteens and other buildings where rough usage is likely. For purposes such as these the high impact covering is preferable. Jointing between panels can be with a hardwood strip tapped into a groove in the joint batten, or with a plastic tee section in the gap between the panels.

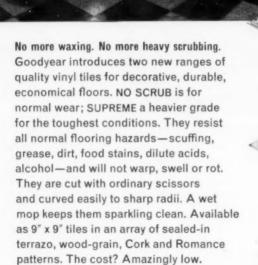
With the single sheets of plasterboard the facing is applied to one side, with the usual insulating foil on the other, the same arguments applying to the normal or high impact plastic. Fixing is by nailing down both sides, the plastic facing allowing the nails to be closer to the edge than with plain board. A gap-filling glue is used on the centre stud or batten. Before fixing the boards are given a slight bow by stacking

them overnight with two battens along their edges. The boards are then nailed for the full depth of one side, forced down into the glue on the centre batten and then nailed along the other side. Joints between boards are made in the same way as with the partition units. (British Plasterboard (Manufacturing) Ltd., Ferguson House, 15, Marylebone Road, London, NW1.)

Extract fans

For a number of years Robertson Thain have been supplying natural ventilators for use with their roofs, and they have now followed this with the Fervent, a fan-driven extract unit designed for inconspicuous fitting into the slope of a roof, or on any type of flat roof. The fan housing is of galvanised steel and the external weathering components aluminium or glass fibre laminate in a range of colours. Three fan diameters are standardised with an exhaust capacity from 1,220 to 5,100 cu. ft. min.







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Name Company and the fan motors can be reached for maintenance by lifting the hinged weathering hood (see photograph). Shutters can be provided to prevent back draught when the fan is not working, though they reduce the extract capacity to a small extent, and safety guards can be fitted to the underside of the fan housing. (Robertson Thain Ltd., Ellesmere Port, Wirral, Cheshire.)

Immersion heaters

There is now a new Hotpoint twin immersion heater with a 10-in.-long 2-kW. element to heat the upper part of the hot water cylinder and provide supplies for kitchen sink or washbasin and a second 27-in. 3-kW. element for use when baths are needed. Both elements are controlled by a single thermostat, the changeover from one element to the other being made by a switch in the head of the heater. There is also an alternative version with a 36-in. element which can be bent on site to a shorter length. It is known as the Twimerser Model EM and costs £7. (AEI-Hotpoint Ltd., 33. Grosvenor Place, London, sw1.)

Sealing strip

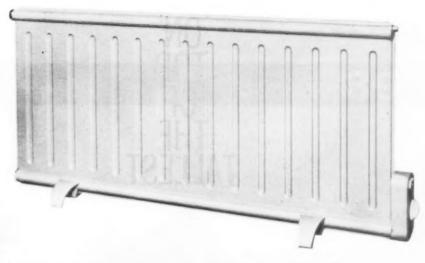
The standard Sylglas sealing strip is a textile fabric impregnated with the sealing compound, but a recent development uses glass fibre instead of the textile and a backing of aluminium foil. It is best used for long straight runs where a good decorative finish is needed, and the aluminium can also be painted if necessary. Price is the same per roll as for the standard tape, but the length of the roll has been reduced from 30 to 25 ft. (The Sylglas Co., 81, Knight's Hill, West Norwood, London, SE27.)

Electric radiators

Valor, a name usually associated with oil heating, now has a range of fluid filled electrically heated radiators which are made freestanding, with castors, or for fixing on the wall. They are thermostatically controlled and also have a safety device to prevent accidental overheating. The heating element and fluid are permanently sealed so that no topping up is necessary. Electrical ratings vary from 600 to 1.150 watts and prices start at £12 8s. including purchase tax. (The Valor Co. Ltd., Erdington, Birmingham.)

Prints for plastic laminates

For some time Harrison's, the printers of this journal, have been producing decorative prints for incorporation in laminated plastic panels. They have just added another dozen patterns, all of which are produced in quite a large range of colours. There are also half a dozen wood grains. It is, of course, possible to be puritanical about them and argue that this sort of thing should never be applied to a plastics panel, but the fact







Top: Valor oil filled radiator

Left: Hotpoint immersion heater

Above : Berry fan heater

remains that there is a considerable demand for them, and that if they are to be done at all they may as well be accurate. Harrison's have developed a new sevencolour process and the results are astonishingly good imitations. (Harrison & Sons Ltd., 44. St. Martin's Lane, London, wc2.)

New fibreboard booklet

Boards for the Shopfitter is the title of a new Fidor publication. It reviews the shopfitting uses of the full range of plain and decorative hardboards, insulating boards and fibre acoustic tiles, and lists the sheet sizes and thicknesses most commonly held by stockists. Other sections deal with fire safety and economy and there is a practical section on the handling and fixing of boards of all types

The booklet, which is to A4 size, contains no brand names, but groups the boards under headings. Insulating fibre boards covers wallboard and acoustic tiles and boards, as well as insulating board itself, while hardboards include standard, tempered, medium, perforated, enamelled, plastic faced, veneered and moulded. Copies are free. (Fibre Building Board Development Organisation Ltd., Stafford House, Norfolk Street, Strand, London, WC2.)

Electric heating

The illustration above right shows the new Berry type TF2 tangential flow fan heater, which has a loading of 2 kW. and measures only 121 by 51 by 7 inches. The fan gives a 15 ft. stream of hot, warm or cold air, and a safety cut-out switches off the heating element should the heater be accidentally covered. The casing of the heater is well insulated and so remains cool, but in nurseries it can if necessary be fixed to the wall. Price is £11 19s. 6d. including purchase tax. (Berry's Electric Ltd., Touchbutton House, Newman Street, London, W1.)

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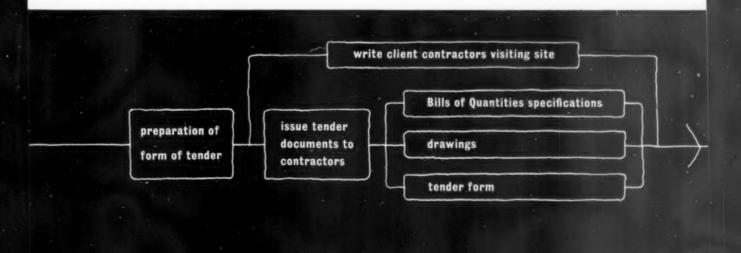
be sent to each of the selected con- is better policy to issue drawings with tractors must be fully informative and, the bills. The documents issued should on works where no bills of quantities also include the form of tender which is are used, they should include all to be returned to the architect or, in client that contractors will visit the site drawings and a comprehensive speci- some cases, direct to the client. combined bills and specifications are tender is written and the documents

The documents forming the set to but where it is not a mammoth task it. Overleaf is the form of tender recom-

prepared the drawings should in any sent by the architect where there are no case be available for inspection by the quantities, but usually by the quantity contractors in either the architect's surveyor in the case where bills of architect. office or the quantity surveyor's office, quantities have been prepared.

mended in the Code of Procedure for Selective Tendering.

You will have written to inform the during tendering and that neither they fication. Where bills of quantities or The form or letter of invitation to nor their staff should answer any questions which may reveal the names of any of the other contractors. All such queries should be addressed to the



Contract administration

form of tender

sample

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To (building owner)	
SIR(s),	
the drawings referred to therein for the sum of	of contract and bills of quantities delivered to me/us and having examined do hereby offer to execute and complete the whole of the works described \ldots (£ :) and within the period stated in the bills of quantities of your acceptance to execute with you a form of contract embodying all the this offer.
this offer in the priced bills of que the recommendations contained in	errors in pricing or errors in arithmetic be discovered before acceptance of lantities submitted by me/us that these errors be adjusted in accordance with an paragraph 14 of the Code of Tendering Procedure currently published by of Architects, Quantity Surveyors and Builders. (A list of basic prices of materials and goods on which this tender is based is attached to the bills of quantities and this list shall be used for
To be deleted if not applicable	the purpose of calculating the costs of fluctuations in accordance with Clause 25(A) of the Conditions of the Contract. The date on which the said basic prices were operative was
I/We further agree that this tende	er remain open for consideration for weeks.
Dated this	day of 19
Name	
Address	
INSTRUCTIONS TO TEND	ERERS (to be completed by the architect)
Tenders are to be sealed in the	ne endorsed envelopes provided and delivered to or sent by post to reach
	onthe

Contract administration

B SIR No. UDC No. 651-69

pre-tender statement

by either you or the quantity surveyor, and the client has from time to time throughout the preparation of the drawings been given the opportunity of considering detailed costs for supply or sub-contract items relative to the maintenance costs. Although he will be aware of any financial changes which on this statement as a result of his decisions on these points, these decisions will probably to set these down in a clear statement which should be sent to your client at the time of calling tenders. It gives all

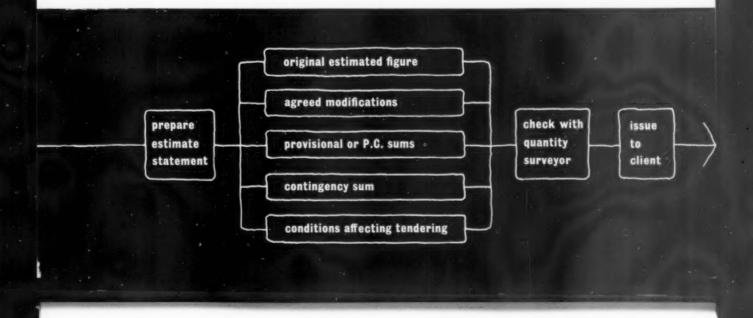
Estimates for the building have been concerned with assessing the tenders given to the client in your original report and with settling the terms on which the contract will be placed the opportunity of seeing immediately the relationship between measured and other work. This relationship is otherwise not necessarily evident until the tenders are reported upon after examinoriginal estimates and balanced against ation by the quantity surveyor. The contingency sum should also be shown

have been made to the overall estimates This statement is especially important where, from your own knowledge of your client, there is every indication have been made over a long period of that he will need to be reminded of time and often piecemeal. It is as well these changes or where tenders are to be opened in committee. The statement should give information where necessary on any conditions

which may affect the general results of tendering at the time as may be evident from tendering on other jobs in the

These may include forthcoming changes in materials or labour costs which are anticipated within the contract period and which contractors have been asked to assess in their tenders. Regional "slackness" or heavy demands may also affect tenders.

It should be understood that, while it is possible to give a client a sensible estimate related to current building costs-the foregoing things-tight competition or a reluctance to tender can drastically change the results.



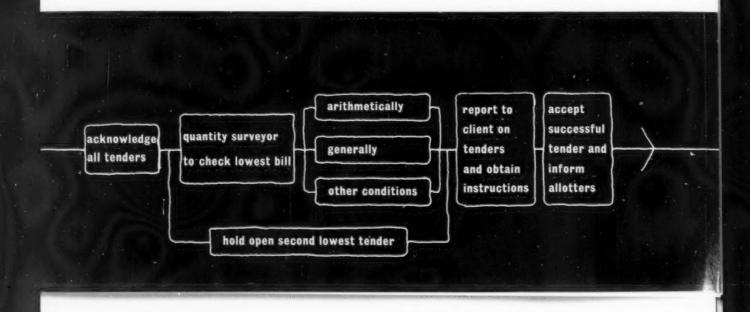
receipt of tenders

As well as yourself and your client, the quantity surveyor and contractors are entitled to be present when competitive tenders are opened. They must be opened at the time noted in the tender form and those arriving late must be excluded. It is rarely possible to make an immediate decision, however, and it is often of little value to invite contractors as it is a meeting at which details can only be discussed subject to the client's approval of the quantity surveyor's report after examining the lowest tender. Where contractors do not witness the opening of tenders the receipt of all tenders should be acknowledged immediately. The contractor who has submitted the lowest tender should be asked to send in his priced bills of quantities to the quantity surveyor for examination. The contractor submitting the second lowest tender should be asked to hold his tender open until the lowest has been verified. As soon as the lowest bill has been received the quantity surveyor

should prepare a report on the tenders which covers an arithmetical check of the lowest and an analysis of any conditions of tender which may have been inserted by contractors. This report should be forwarded to the client with your own recommendations and advice on which tender to accept. You should, at the same time, ask for the client's instructions to make the nomination on his behalf and prepare the contract documents in accordance with the tender submitted. Where an error in pricing is discovered in the lowest tender the contractor should be informed. He has the option of withdrawing his tender or standing by the price submitted. It is not good policy either for him to stand by a serious error due to the possible repercussions throughout the contract, or for you to recommend its acceptance to the client; but where the contractor wishes to stand by an error of no great significance the contract price must remain as submitted. Corrections must, how-

ever, be made to the documents by the quantity surveyor as necessary, solely for use in pricing variations to the contract.

When, on instruction from the client, you have nominated the contractor, the other contractors should immediately be informed and given a list of the prices received so that they are able to see how their price compares with those of the other contractors. The names of the contractors should not be given against the listed prices received where, regionally, the selection of contractors is limited and, therefore, means the repeated use of certain firms. The declaration of the names of the contractors is of academic interest only to the losers and gives away the names of the people against whom they will inevitably be competing on future occasions. The withholding of contractors' names is contrary to the recommendations in the Code of Procedure for Selective Tendering, but in this case is fully justified.







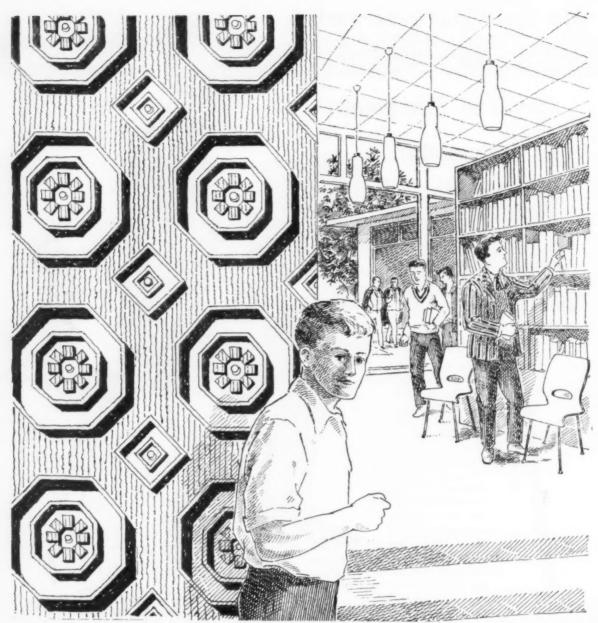


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Preparatory School

at BROMSGROVE

CASSIDY FARRINGTON & designed by

DENNYS

assistants M. MINJOODT

E. PELLING

quantity surveyors DAVIS BELFIELD &

EVEREST

consultants:

structural NIELS LISBORG

heating S. WARREN

The construction of a new junior house (or prep school), for one of our leading public schools is a rare event, and the particular interest of this building lies in the fact that it is one of the first of its kind in the country, certainly the first we have illustrated

The headmaster's house (left) forms a pleasing foil to the main building. This is the view seen from the entrance approach road



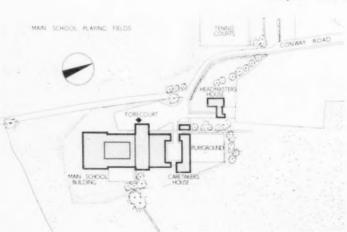
building study-2nd series





View looking north, showing the main entrance. The headmaster's house is on the left

The kitchen and service yard



Site plan [Scale: ,62" = 1' 0"

APPRAISAL

Bromsgrove is a small town situated half-way between Birmingham and Worcester. Its school, founded in 1553 red gothicky and dilute Gilbert Scottery, stands on a high round bluff behind the town.

Faced with the task of providing a new building to accommodate the Junior House of 130 boys aged between 8 and 13½, 70 of them boarders, with a 12-strong teaching staff, the governors took the bold step of appointing architects who they knew would design the job in an idiom considerably removed from that of their own traditional public school building. It is doubtful if Mr. Chips would find himself at home in the Junior House that Cassidy, Farrington and Dennys have here provided.

On a reasonably level site some distance from the main school, the new building, flanked by the headmaster's house (which was included in the contract) forms an independent and self-contained unit overlooking its own playing fields on the south and west sides. There are two major components to the building, a low single-storey section which contains the school, across which spans the two-floor dormitory block. The latter projects over the low block at each end and is supported on columns, forming on the north-east side a convenient porte-cochère to the main entrance. Great pains have been taken in the detailing in an attempt to articulate crisply the two block forms but the result is not altogether satisfactory. Nor was it perhaps a sound idea to paint the concrete columns and edges of the floor slabs a dark colour, for this tends to make the structure unnecessarily heavy, in addition to which the paintwork is not weathering well.

Internally, the planning and detailing are sound and sometimes ingenious; the relationship between the larger spaces, the hall, dining and rumpus rooms, for example, being particularly successful. The library, top-lit only, with a low boarded ceiling, and surrounded on three sides by lockered corridor, cunningly utilises space that might otherwise have been used for storage purposes only. The classrooms appear well lit; they are considerably smaller than current local authority practice, but are designed for classes to a maximum size of 20 boys.

The dormitories have been planned so that the beds can be grouped in a reasonably informal fashion. A steel cat-ladder provides the secondary means of escape from the upper floor; and the fact that this arrangement is accepted by the local authority has saved the cost of providing a second staircase. The bathrooms and ancillary staff accommodation have been most carefully planned. Condensation troubles that have occurred in the dormitory block will no doubt be eliminated when the radiator system is extended to the dormitories.

As will be seen from the cost analysis, the building was remarkably cheap, for which reason one must not be too critical of the materials and finishes used; these in places leave something to be desired. Had the funds been available no doubt the finishes would have been better. As it is, the architects are to be congratulated on providing a good and inexpensive building that fulfils its function admirably.

CLIENT'S REQUIREMENTS

A private preparatory school with accommodation for 80 boarders and 60 day boys, resident staff and a private detached house for the headmaster and his family. The total cost of the work including all furniture, furnishings and consultants' fees, etc., was not to exceed £110,000.

SITE

The site chosen adjoins the existing public school grounds but is separated from them by a public right of way. The school is so situated that it visually becomes part of a group of existing buildings on the "campus," the most important of which is the Chapel, although access to it is by a private drive which is an extension of an existing cul-de-sac.

PLANNING AIMS

The client's requirements demanded maximum usable space at minimum cost. To meet them the plan was organised so that a simple constructional method could be used, circulation space has been kept to a minimum, and many of the communal areas have several uses. The plan is also arranged so that areas of different use are clearly and naturally defined, and quiet and noisy rooms are well insulated from each other.

At the heart of the school is the assembly hall, which is normally divided from the dining and play rooms by sliding doors and curtains. On occasions, such as school concerts or parents association meetings, these can be pushed back, and it is then possible to seat 300 people with a reasonable view of the stage.

The dormitories with their auxiliary rooms are in the twostorey block. There are three dormitories, each containing 27 beds. It was found uneconomical to have smaller rooms, and to avoid an institutional feeling, each is subdivided by walls and screens into smaller areas of three or four beds. Since the screens do not reach the ceiling, cross-ventilation is maintained.

Although the headmaster's house is detached from the main building, it has a view of the entrance and driveway. Additional buildings consist of a workshop, caretaker's cottage and staff garages.

SUMMARY

Ground floor area: 18,500 sq. ft. Total floor area: 25,540 sq. ft. Type of contract: RIBA.

Tender date; April 1958. Work began: May 1958.

Work finished: September 1959.

Tender price of foundation, superstructure, installation and finishes, including drainage to collecting manhole: £72,927. Tender price of external works and ancillary buildings, including drainage beyond collecting manhole: £14,244. Total: £87,171.

building study-2nd series

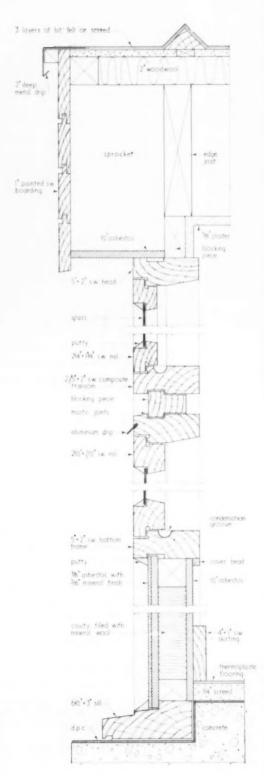


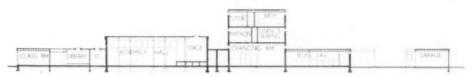


Section through outside wall of dormitory block and changing room [Scale: 4" = 1' 0"]

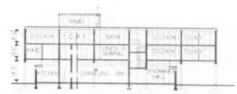
The dormitory block projects over the low school building to form a convenient porte-cochère to the main entrance

Section showing typical eaves and window details [Scale: 2" = 1' 0"]





Longitudinal section through school



[Scale: //" = 1' 0"]

Section through dormitory block

Second floor plan



First floor plan



Ground floor plan

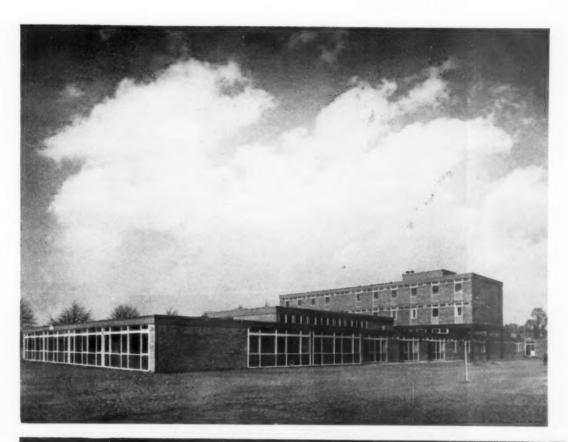
building study-2nd series

COST ANALYSIS								8	d
Based on tender. (AJ revised elemental breakdow in use from November 10, 1960.)			8	d	Windows Softwood casements (floor to ce 26 oz. and 32 oz. clear sheet gla	iss.		2	5
			4	6	Classrooms, dining-room, playr lower half of window filled in w				
Preliminaries and insurance			1	ь	enamelled steel-faced asbestos is				
2.246 per cent of remain	ier of contra	ct.			panels with fibreboard panels in		Coura		
Contingencies			9	13	TT 0 1 10 C		d in with		
Juntingencies			4	12	preservative-impregnated softwo				
Work below lowest floor fir	nish		3	91	covered with asbestos insulation	board			
Reinforced concrete colur		ground		-2	and rendering with natural colo				
beams and concrete strip	foundations	to walls.			chippings, and internally with n				
5-in. reinforced concrete	ground floor	slab on			insulating quilt and asbestos ins		oard.		
hardcore bed.					5,112 sq. ft., 12s. 14d. per sq. f	L.			
STRUCTURAL ELEMENT	8				External doors				11
Frame			4	71	13-in. softwood glazed panelled				
	one on I al-	a haame t-	1	1	double (frames to 3 included in				
Reinforced concrete colur second-floor level of three					I included in External Walls):	120 sq. fi	.,		
Softwood columns impres	2 4				14s. 8d. per sq. ft. 13-in. softwood flush, 1 single,	t pair de	uble		
o assembly hall, library a					(frame to 1 included in Window				
					11s. 11d. per sq. ft.	33 30	4. 44.13		
Jpper floors			2	2	21-in. softwood framed, ledged	and brac	ed,		
3-in. reinforced concrete	suspended fl	oor slabs:			5 single (frames included in Par	rtitions):	91 sq. ft.,		
759 sq. yds., 72s. 11d. pe	r sq. yd.				8s. 11d. per sq. ft.				
Roof			6	5	Internal structural walls				8
Preservative-impregnated	softwood flo	t roof joiets	0	3	9-in. flettons: 447 sq. yds., 398	. 4d. per	sq. vd.		
partly supported on light					***************************************				
covered with 2-in, woodw	-				Partitions			3	1
and 3 layers felt; aluminis					Type of partition		Cost per		
ast iron down pipes: 2,1	61 sq. yds.,	75s. 9d. per				sq. yds.	sq. yd.		
q. yd.					3-in. vibrated cellular blocks	14	20s. 8d.		
					41-in. ditto	421	31s. 5d.		
Rooflights				91		692	23s, 3d.		
l-in. wired cast glass, alu					9-in. flettons Half-brick internal facings	266	41s. 3d. 37s. 8d.		
ixed to softwood kerbs. T	otal no. 42	622 sq. yds.,			9-in. flettons with internal	102	3/s. ou.		
298s. 3d. per sq. yd.					facings one side	272	58s. 10d.		
Staircases				101	Aluminium faced plywood		-		
staircases Reinforced concrete in sit.	warith town	270 finish to		101	w.c. partitions including doors	78	68s. 9d.		
reads, risers, strings and					Glazed softwood screen	27	78s. 10d.		
with hardwood handrails.		- Caracata tales			Folding and sliding partitions	37	280s. 3d.		
No of stains	Width	Total rise			internal doors				93
No. of staircases					1 %-in. softwood flush doors, sor	-			
	3 ft. 1 in.	14 ft. 3 in.			fanlights and sidelights, 74 sing	le, 7 pair	s double-		
	4 ft. 2 in.	23 ft. 9 in.			1,920 sq. ft.				
			_	-	1 i-in. softwood glazed panelled	, 5 single	, 3 pairs		
External walls			2	8	double: 388 sq. ft. Cupboard doors included in Fi	ttings			
Type of wall	Area in	Cost per			Sapoonia acoto invianta in 11	- Bar			
Half brick in external	sq. yds.	sq. yd.			Ironmongery			1	2
facings	91	43s. od.			Anodised aluminium generally.				
9-in. flettons with facings		430, 00.			Price includes ironmongery to		ndows,		
one side	74	66s. 6d.			fittings, curtain tracks, fittings	in assemb	ly hall.		
11-in. vibrated cellular						- 4014			
blocks, 2-in. cavity and					Total of structural elements: 22	s 10 d			
half-brick facings	702	78s. 7d.							
Softwood studding									
covered one side with									
I-in. mineral wool insulating quilt and I-in.									
ongued and grooved					Upper: school from the playing f	ield side.	Although the		
boarding	52	47s. 4d.			junction between the two blocks				
Softwood framing	,-	4/ 4			detailed the result is not altoget			-	

Lower: the main entrance hall. The staircase leads to the dormitories

I-in, hardwood tongued and grooved boarding: 15 sq. yds. 98s. od. per sq. yd.







building study-2nd series







Upper: the hall, showing the dining room beyond on the right

Lower left: the stage is used as a games room and a meeting place for the Scout troop

Lower right: one of the classrooms

opposite page

Lower: dining room

Upper: a close-up of the sliding doors between dining room and hall

FINISHES AND FITTINGS

Type of finish	Area in sq. yds.	Cost per sq. yd.	
2-coat gypsum plaster with metal beads to vertical angles	3,300	ios, od.	
Plaster board and skim coat on softwood bearers	54	12s. 8d.	
³ -in. oil-proof cement and san rendering	d 25	16s. 7d.	
6 in. × 6 in. glazed wall tiles on screed	272	50s. od.	
½-in, pine tongued and groove boarding on bearers	d 7	31s. 9d.	
24 in. × 24 in. × ½ in. acoust: tiles on softwood bearers with I-in. mineral quilt between bearers	ic 60	44s. Id.	

Floor finishes

Type of finish	Area in sq. yds.	Cost per
1-in. oil-proof cement and sand	13	8s. 8d.
Thermoplastic tiles	1,055	16s. 8d.
Ditto on 11-in. screed	697	24s. 5d.
I-in. preservative-impregnated softwood boarding	50	18s. 6d.
1-in. pine tongued and grooved boarding	118	19s. 9d.
?-in. chipboard	41	37s. 5d.
Hardwood block	79	41s. 11d.



Hardwood strip	161	55s. 5d.
Quarry tiles	267	40s. 9d.
Includes softwood, hardwood, quarry tile and		
thermoplastic skirtings		

		Ceiling finishes			1	01
		Type of finish	Area in sq. yds.	Cost per		
		-in. Douglas fir plywood on softwood bearers	291	16s. 9d.		
		Plasterboard and skim coat	959	10s. 8d.		
		24 in. \times 12 in. \times $\frac{1}{2}$ in. acoustic tiles on softwood bearers	243	30s. od.		
		½-in. asbestos insulation board	99	29s. 2d.		
		Ditto, building paper and 1-in. mineral quilt \(\frac{1}{2}\)-in. pine tongued and grooved	40	34s. Id.		
3	3	boarding on bearers	51	38s. 7d.		

Decorations	1	10
Two coats emulsion paint on walls and ceilings generally.		
Two coats oil paint on woodwork and metalwork		
internally, three coats externally.		
Two coats protective sealer on fine flooring,		
softwood ceiling lining and selected hardwood		
surfaces.		

Fittings		2	5
**	75 1 1 10 0 1		

Notice boards	Bookshelf fitting
Blackboards	Library fittings
Drying racks	Blinds and blind boxes
Games equipment racking	Ladders and stage steps
Kitchen servery	Combined seat and
Shelf units	tuck box rack
Sundry benches	Pigeon hole unit
Built-in cupboards	Dirty linen unit
Wardrobes	Work tops and sink tops

Total of finishes and fittings: 10s 10 d



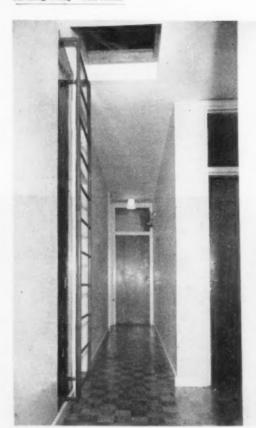
SERVICES			
Sanitary fittings		1	d 4½
Type of fitting	No. of each type		
Belfast sinks	3		
White glazed fireclay lavatory	55		
basins			
Ditto drinking fountains	2		
Ditto w.c. suites with plastic water waste preventers	19		
White porcelain enamelled baths enclosed in enamelled hardboard	10		
White glazed fireclay bowl	2		
urinals with flushing cistern			
Ditto slab urinals with	4		
automatic flushing cistern			
Chromium-plated shower system	I		
Clear sheet glass mirrors	19		
Chromium-plated w.c. fittings	20		
Towel rollers	15		
Waste, soil and overflow pipes			61
Galvanised steel overflow pipes.			
Lead and coated cast iron soil, wa	iste and		
ventilating pipes.			
Cold water services		1	31
Rising main and copper distributi	on services		
from water storage cistern on roof of storage, 800 gallons.			
110 draw-off points.			
Includes builder's work, ½d.			
Hot water services			11
Low-pressure system with acceler	ated circulation		
with copper indirect cylinders hea			
(included in Heating).			
Copper distribution services.			
72 draw-off points.			
Includes builder's work ½d.			
Heating		4	21
Low-pressure hot water system w	ith accelerated		-2
circulation heated by two oil-fired			
supplying radiators and indirect c			
water service.	,		
Copper distribution services.			
Price includes oil storage, pumps	and electric		
wiring to boiler house controls.			
Pump duty: 600,000 B.t.u. per he	our.		
Includes builder's work, 3d.			

Successfully utilising an improbable space, the library, top-lit and with a low boarded ceiling, forms one of the most pleasing surprises in the school





building study-2nd series

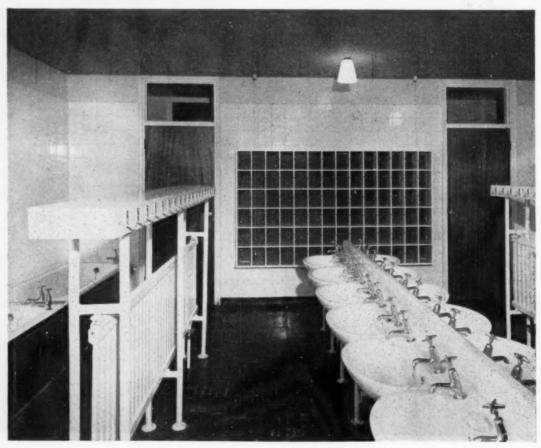


Left: a cat ladder forms the secondary means of escape from the upper floor of the dormitory block

Below: the dormitories, if a little stark, allow for a pleasantly informal bed layout

Bottom: one of the bathrooms in the dormitory block







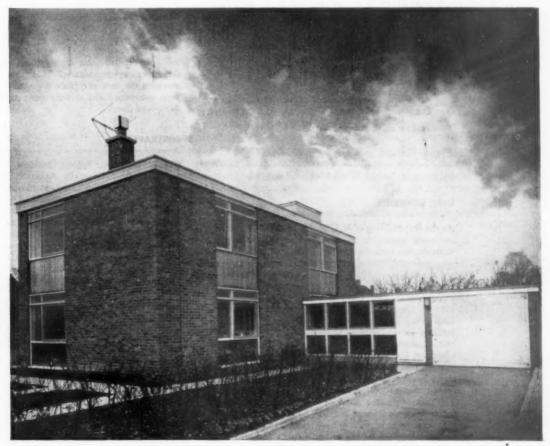
Ground floor plan (above) and first floor plan (above right) of keadmaster's house $\{Scale: \frac{1}{10}n'' = 1' \ 0''\}$





Below: the headmaster's house was included in the contract. Inside there is a feeling of spaciousness

Right: the living room



Ventilation 3 extraction fans. Includes builder's work.

Gas services

Installation from meter to kitchen equipment. (Meter included in External Works) 5 outlets. Includes builder's work.

Electrical services

Meter and switch gear
Lighting installation
Power installation
Lighting fittings and clocks
No. of points: 604.
Total load: 150 kW.
Includes builder's work

Special services

first floor: £648, including builder's work £7. Kitchen equipment: £1,758.

Laundry equipment comprising 1 truck, 1 hydro extractor, 1 washing machine.

10 fire extinguishers.

Incinerator (940 watt) with flue pipe.

Lightning conductor: £63 including builder's

Electric powered service lift serving ground to

Drainage

Separate system in salt glazed ware Surface water taken to soakaways.

Total of services: 15s 112d

External works

Roads and paths, playground, railings and gates. Connections to service mains.

Drains from last collecting manhole.

Cycle store: £500.

Caretaker's cottage: £1,978.

Headmaster's house: £5,719. Total cost per sq. ft. of floor area:

£72,927 (net cost, excluding external works)

25,540 sq. ft. (measured inside external walls)

COST COMMENTS

As the first building of its kind that we have illustrated it is obviously impossible to draw comparisons with previous schemes. But from the figures quoted it will be seen that this is a remarkably inexpensive building. For providing teaching and residential accommodation in a building of this size at a net cost of 57s. 1½d. per sq. ft. compares most favourably with normal school building. It is true that the space standards for teaching are different from the typical local authority school, but it must be remembered that this is a private building for which there was no tie-up with MOE. When one considers that the Hertfordshire Junior School at Cheshunt (AJ, 27th April 1961) cost 63s 6½d, and this was conventional construction like Bromsgrove, although single storey, the achievement of the architects in this case is even more surprising.

The cost of finishes generally was low, as was the roof, but in both these cases it might have been wiser from the long term point of view to have spent a little more money. Unfortunately the figures do not enable a comparison to be



Staircase and halt of headmaster's house

made between the cost of the school only and that of the dormitory accommodation. Had this information been available the cost per place for each boarder could have been ascertained and usefully compared with that of each day school place.

CONTRACTORS

11 12

General contractors: Spicers (Builders) Ltd. Sub-contractors and suppliers-Roofing: D. Anderson & Son Ltd. Landscaping: Edward Webb & Sons (Stourbridge) Ltd. Hoist: Hoisting Appliance Co. Ltd. Sliding folding doors: Esavian Ltd. Hall curtains: John Lewis & Co. Ltd. Infill panels: Cape Building Products Ltd. and Mineralite Ltd. Kitchen and boiler ceiling and internal exposed brickwork: Cape Building Products Ltd. Aluminium faced infill panels: Ernest Stevens Ltd. Laundry equipment: Electrolux Ltd. Rooflights: Quicktho' Engineering Ltd. Assembly hall beams: Benfix Steel Co. Ltd. Sanitary fittings: Broads Manufacturing Co. Ltd. Venetian blinds: London Blinds Ltd. Flooring: Viger Bros. Ltd. Electrical: Midlands Electricity Board. Hot water and heating: Hopes Heating & Engineering Ltd. Baths: Bilston Foundries Ltd. Terrazzo: Anglo Italian Flooring Co. Ltd. Wirelocks: A. J. Binns Ltd. Lightning conductor: R. C. Cutting & Co. Ltd. Ironmongery: A. W. Roberts Ltd. Desks and chairs: Educational Supply Association. Light fittings: Frederick Thomas & Co. Ltd.



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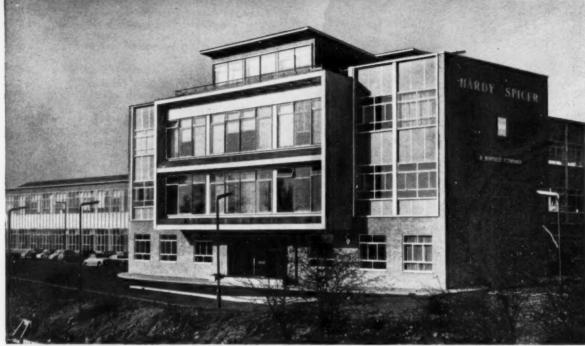
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architectural education

The Architects' Journal for July 19, 1961

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teaching and learning

the aristocratic approach

It is generally supposed that the older our pupils are the easier it is to teach them: anybody can teach a bright sixth form, but it takes a real knowledge of techniques to teach seven-year-olds. This seemingly obvious fact fades a little when it is examined. It ignores, for one thing, the difference in numbers: small groups are easier than large: seven-year-olds are frequently taught in groups of over forty, sixth-formers in groups of ten. It ignores the difference in docility: schoolchildren obtrude their boredom on the teacher's notice; students allow him to keep his illusions. It is the control of a student class which is easier, not necessarily the teaching.

This view ignores, above all, the difference between teaching and learning: learning is the absolute concept, teaching the relative one. Teaching is good only in so far as it promotes learning. We cannot meaningfully decide whether or not our teaching is good without knowing how fully and how accurately our pupils learn.

Academic education generally, and all education above the age of eighteen, is conceived in terms of teaching: " I will teach as well as I can; it's up to them whether they learn or not. They can take it or leave it." This may be called the aristocratic approach. It assumes either that the pupil is dutifully acquiescent or that he may fairly be left to choose the gentlemanly independence which ignorance will ensure for him. This approach assumes also that any cultured person possesses, as a byproduct of his culture, skill in presenting his knowledge and judgment, and that any reasonably willing pupil can acquire this knowledge and judgment. Such an approach has the virtues, and the defects, of amateurism. But teaching even relatively mature students is not easy. Although small numbers, and the absence of gross physical interruption, make it easy for us to talk, the maturity of our students makes it more, and not

less, difficult for us to know what they are learning. The aristocratic approach, in its horror of pedantry and pedestrianism, pretends that teaching is, in both senses, a simple process. It is not. Teaching is both complex and difficult, because learning is complex and difficult. This must be the excuse for an outsider venturing to remind architects of a few matters which are sometimes overlooked.

attitude

The attitude of his pupils is inescapably relevant to the teacher's situation. He may not allow it to affect his teaching but it will powerfully affect their learning. This is particularly important in any kind of teaching involving aesthetic and social judgments, which are presumably central in the education of an architect. Moreover, it is important not only that the teacher, who is training the judgment, should be aware of the attitude of his students, but that the students' own awareness should be heightened and matured. As professional practitioners, they will have clients, associates, employees and public responsibilities. If the students have received a disciplined training which is at the same time flexible and responsive to attitudes, they will have gained, through self-knowledge, an entirely realistic professional qualification: insight. But such training in awareness can be given only by those who are themselves aware both of the students' and their own attitudes. The attitude of students towards themselves has changed during the last ten years. They see themselves increasingly as a group with its own culture, its own disgruntlements, its own pattern of fashion and language: a group for which "student" is the only term. They are older than they seem. They are not, to themselves, "young people"; they are adult but dependent; they belong to an

by IAN MICHAEL, M.A.

lecturer in education, University of Bristol

élite, but they are under authority. Their attitude to authority is ambivalent. Sometimes they endow us with more authority than we wish: call us " Sir " (do we like it?) and are surprised, like schoolboys, if we show signs of humanity and weakness and ordinary passions. But they are much less prepared to accept what we say, just on our authority (do we mind?). They accept the authority of the subject, so far as they understand it, but not of the teacher as a teacher. Our response to this attitude, which is here oversimplified, directly affects our teaching methods. Age and experience give us an authority we cannot escape. Do we want more? Do we need more? What kind of relationship with our pupils will best help them to learn?

The student's attitude towards his education closely affects any course of professional training. To the outsider the education of an architectural student. for all its natural richness, seems rather fiercely vocational. The outsider hears little (however much is done) about training in the use of language, about the study of contemporary literature and sociology. The 1946 Report said some harsh things about the inability of students to express themselves, so presumably the extension of such subjects is a live question. The point here is that any change in a predominantly vocational curriculum can be made smoothly and appropriately only if students' attitudes are taken into account. If often happens that it is the weakest students who most strongly resent the less obviously vocational parts of a curriculum. Will the raising of the academic standard of entry affect the attitude of students towards their own education and make possible, and perhaps desirable, developments in the curriculum which now cause hesitation? Students' attitudes affect far wider issues than teaching methods. These issues are not relevant here, but it is perhaps useful for the outsider to ask, in passing, how far the total life of the architectural schools exemplifies and reinforces the social and human values implicit in the professional course. An architect cannot design a building without understanding the kind of life to be lived in it. This life will be the expression of certain social values. Active awareness of such values cannot be acquired only from lectures: it must grow out of experience and involvement. A five-year course of training would seem to allow time for the quality of the life students lead in the school to develop such an active awareness of social values. This means being prepared to change students' attitudes, which can be done only if these attitudes are sympathetically understood.

learning

No factor in learning is more important than the attitude of the learner: if a student is interested he will learn. This is a platitude, but often disregarded. The way in which a teacher orders his material is influential, but negatively. Badly ordered material hinders learning, but well-ordered material does not ensure it. The teacher needs to be constantly aware of the student's attitude: to notice when a group has gone beyond the point at which interest is sharpest; to notice plain boredom; to notice that slight hazing when individuals in the group are beginning to lose the thread. Even if the teacher prides himself on his technique and asks the students if they have followed and understood they may say "yes" when they have not followed. Part of the teacher's skill lies in distinguishing one kind of "yes" from another. He needs to be aware that learning is not taking place. The same ordered presentation may be given to two similar groups. with quite different results. The teacher needs to be continually aware of the two aspects of his teaching: his giving and the pupils' receiving. There is always a difference, usually a great difference, between what the teacher thinks he is giving and what his pupils are in fact receiving. The aristocratic approach ignores this plain fact of experience.

interest

The teacher needs to use ingenuity to make the work as interesting as possible. This is not pandering to the softness of modern youth: it is the most fundamental part of the teacher's work, judged by the practical criterion of successful learning. Not all work can be interesting. With children, the teacher cannot answer convincingly the question, "Why do we have to learn so-and-so?" but to students, if they are to learn effectively, an answer not only can, but must, be offered. If the student has discussed, and understands, what

makes some dreary part of his training necessary, he will learn it more easily, whether or not he accepts that it is necessary. This again is a platitude, but it has considerable implications for the whole life of the school. Acceptance of this platitude entails a mutuality in the relations between staff and students which cannot be confined to the studio. It follows also that the teacher is necessarily more of a salesman than he is perhaps ready to admit. "Salesman" may seem a crude word, but selling need not be vulgar or dishonest. Once the emphasis is moved from teaching to learning, salesmanship (by whatever euphemism it is called) becomes a natural part of the job and ingenuity one of the teacher's most moral attributes.

abstraction

Suppose ABCD to be a sequence of facts or processes which the teacher wishes his pupils to learn. In order to know precisely what is most important in the sequence the teacher needs to isolate A, to strip it of all its secondary associations, to separate it from the contingent facts of everyday life. A similar analytical process reveals the essential relation between A and B. And so on. The teacher has mastered his material only when he sees its structure clearly; in order to do this he abstracts from the flux of the everyday the essential nature of ABCD and the relations between them. The resulting structure is what he wants his students to learn. It is natural, but mistaken, for him to suppose that his students can carry on from the point which he alone has reached. He prides himself on the care with which he has prepared his material; he lays down his scalpel with a smile of satisfaction and addresses his class. He presents them with the polished economical structure which he has laid bare, beginning with A and dealing fully with it; advancing to B, relating it to A, dealing fully with it. And so on. Is not this the art of teaching? Apparently not, for he is frequently disappointed. He has assumed that the process which enabled him to master his material has brought his students to the point at which they can learn it. But the students are unaware of that process. Only half the teacher's work has been done. If his students are to learn ABCD they need at least three kinds of help.

First, they need a map: they need to see the whole range of material before they study the constituents in detail. They can place, and use, their detailed knowledge of B only if they know that C and D lie ahead. Facts, in short, cannot be learned in isolation. They must be learned in a context: not the whole tangled context from which the teacher first extracted them, but in a selected, simplified and representative

context.

Secondly, the students need to meet the facts in a sequence; but this sequence may not be the same as that which the teacher needed for his analysis. He needed a logical sequence; the students often need one in terms of significance. If D is the culmination of the sequence; if ABC are significant only because they lead to D, learning may best begin with D, not with A.

Thirdly, the students need richness amongst which to choose. If they are given only the bare, essential structure they are exposed to an impossible strain: there is nothing which they dare forget. As they cannot learn without forgetting, the essential structure of ABCD must be accompanied by a richness of association out of which the students can shape their own pattern, selecting from what fits their individual experience and interests material in which they can, as it were, bed down the structure of ABCD. This may seem as though the teacher has wasted his work. Is he to abstract ABCD from the tangle of real life only to present the sequence to his pupils freshly tangled and obscured? Far from it. The teacher orders his material by a process of abstraction. He can handle it properly only if he knows exactly what it is, but this knowledge is dependent, more than he sometimes realises, on his being acquainted also with the richness out of which the abstraction was made. His pupils, in order to learn what he has abstracted, need richness too; but not the same richness. Part of the teacher's skill lies in creating a minimal, artificial richness, carefully selected, relevant, supporting, but expendable. What he needs for himself is not enough for his pupils, just as the concept of teaching is inadequate without the concept of learning.

analysis

Such horse-and-water considerations are closely related to the wood-and-trees aspect of learning: how much analysis, and when? Perception of the whole is endangered by analysis, but the whole cannot be understood except through analysis. We are required to use a tool which may be lethal. The teacher's skill appears in his choice of models and problems. He chooses a problem which will, he hopes, raise the questions he wants in the order in which he wants them: this he ascertains through his own analysis. He presents the problem, as a whole, to his pupils, and stands by, building on the responses which they give him. If he has chosen well the empirical approach of his pupils will give him his material in the order in which he wants it. All the time he is feeding into his pupils' responses the fine judgments that come from his own analysis. Ideally he is at no time involving his pupils in analysis beyond the stage which they have reached through their own responses. Too often the teacher makes his own analysis; takes his pupils by the hand and hauls them through it, regardless of the sequence of their responses. There are two sequences: the teacher's and the pupil's. A good model is one which allows the two sequences to run parallel. The degree of analysis will vary from model to model, but one thing is certain: what the pupil first encounters must be a meaningful whole, and what he is left with at the end, however rigorous the intervening analysis, must still be a whole, and, one hopes, more meaningful.

specific illustration

One aspect of learning must be mentioned here if only because a discussion in such broad terms as this grossly ignores it: the power of the specific. The specific illustration helps one to learn not just because it is vivid, but because it can be the co-ordinating, summarising agent for a whole argument. The argument is encapsulated in an image. How much importance, for example, do we attach to an empirical approach to learning? In what conditions is time spent in trial and error justified by sounder learning and subtler judgment? An image holds the question: the image of a father watching his small son clumsily using a screwdriver. The father curbs his impatience, his desire to take the tool out of the boy's hand with, "It will be quicker if I do it." Instead, he watches, and carefully decides whether, and when, to help. That image summarises one point of view about teaching: a point of view still valid in the studio.

The teacher has to reckon with human self-centredness: to moderate his own and to exploit his pupils'. Learning is making something one's own. This is the pupil's self-centredness. The teacher has to provide the conditions in which the pupil can make the thing his own. Own and make are significant words: the thing must be the pupil's own, and the pupil must do the making. The teacher's job is to promote this activity. If the teacher is something of a salesman he is also, and perhaps more often, a promoter.

teaching methods

The aristocratic approach dismisses all consideration of teaching methods as earnest, banal and boring, but it is itself a method: its distinctive feature is merely that it is unreflective. Discussion of teaching methods, as of any topic, may be heavy-handed and dull, but teaching is so varied and so difficult that to say even the obvious things about the commonest practices may be helpful in some circumstances. Teachers and students may find themselves in any of at least five teaching situations, besides those involving practical work: tutorial seminar discussion group

Each situation has its distinctive features and is appropriate to certain kinds of teaching.

lecture

The tutorial should be the most arduous of all. One teacher (for, whatever he calls himself, if he is not a teacher he is nothing) meets one or two students at the very apex of our educational system. The time they spend together is expensive, and should be used for a purpose which no other method will achieve. This purpose is to involve the student in the concentrated and intense pursuit of ideas. The student brings ideas; the teacher questions him; the pursuit starts. The student is required not only to examine the ideas-that was done before he came-but to pursue them, to control them in rapid motion. The teacher's function is to keep the ideas moving, to deflect them unexpectedly, to roll boulders (of rock or papier mâché) in their path, to enlarge them, to fling them into unfamiliar settings. The pursuit is concentrated because, however hot the pace, every step is examined. It is intense because the student is on his own; every move is his to make or follow; he must be fully alert during every second. The tutorial is the most highly personal of all teaching situations. It follows, therefore, that for its fullest use the ideas which the student brings should have been made his own. However commonplace they may be, their present setting is personal and unique. The contact of teacher and pupil in a tutorial situation is more than the contact of mind with mind: it is the contact of person with person. At its best is can be an experience potent and memorable for a lifetime.

The distinctive feature of the class is not that the teacher has knowledge to impart: that is what marks the lecture. The distinctive feature of the class is that the teacher is giving his students the material out of which each can shape for himself the next stage-not of his knowledge, but of his understanding. In many respects the class is a mass tutorial. Its members may all have the same knowledge, but they will have reached many different stages of understanding. Members of the class are using the same material (whether provided by the teacher or by themselves) but all in slightly different ways. What characterises the class is diversity of movement: backwards and forwards between students and teacher. The distinctive kind of movement is the

question. It is through his questions that the teacher meets the varied needs of his class. The pattern of questioning elcits a pattern of answers. Gradually the teacher fits these answers into his own, representative, structure of ideas: his conception of the topic under consideration. His structure is the control against which the students check their own structures. Because each student is learning in a different way, each structure will, quite properly, vary slightly from the control. It is up to the teacher to see that these variations do not affect the stability of the structures: different topics will have different tolerances. The class is not isolated, as a lecture may be. It is one of a series. It is appropriate to work which is cumulative, relatively cut and dried, but at the same time permitting some variation in the use which students may make of it. The work of the class is initiated by the teacher, but its final form, at best, is shaped also by the

seminar

This active participation by the students in their own education is formalised in the seminar. The term seminar is often used loosely. Like lecture it is a term of high status; it flatters and attracts by its suggestion that the topic is lofty and the participants scholars. The seminar, however, is only the adult equivalent of the school project. It has two distinctive features: a teacher with ideas which are seminal, and participants who systematically contribute, up to the very limit of their capacity, their individual knowledge and interests. It is not necessary that the teacher's ideas should be original, but they should be growing; they should be ideas on the frontiers of experience: those out of which future change will come. The teacher does not just tell his students what his ideas are: that is to lecture. The students, through the papers they contribute, show individually and collectively how far they can go on their own-with guidance, of course. The teacher holds back his own ideas until he sees what the students can contribute. Then he takes them forward, up to and beyond the frontier. The importance of this method of teaching lies in its combination of student-centred and teacher-centred work. The students are to be stretched; they are to meet new and difficult material, with which the teacher himself is perhaps still wrestling. Here, if nowhere else, they leave pupilage behind them. They cannot see the significance of the new ideas if they meet them passively in the concentrated form of a lecture. In order to see as fully as they can the significance of new ideas the students must not only be reasonably familiar with the old but they must themselves prospect, however tentatively, the country to which the new ideas belong. The principles governing this kind of work are the same as those governing the class. The method differs in that the participation of the students is more extended and more systematic. Numbers therefore must be small. This is perhaps the only convincing reason for the comparative rarity of seminar methods.

discussion

There is nothing worse than had discussion, and discussion is frequently bad. It is bad usually because its purpose has not been clearly defined, with the consequence that its procedure and leadership are vague. Discussion is worst when it is conceived merely as a democratic gesture: people ought to be allowed to say something if they want to. This anarchical form of self-expression occurs mostly on public occasions, is not really discussion and can be ignored here. Discussion refers to some material. In most teaching situations the material has already been presented. It is, however, worth noting the value of anticipatory discussion. If a visiting lecturer (the director of a provincial art gallery, safely retired) is to speak on "Public Judgments about Art" his audience may be better able to profit from his lecture if they have already discussed what the topic means to them. The purpose of such discussion is to ensure that the audience come with those relevant issues about which they already know something partially organised and freshly brought to the front of their minds. The lecturer need not fear that his thunder will have been stolen (unless he is a very superficial lecturer) and he may be pleasantly surprised by the quality of the questions put to him. Discussion of past material should come soon, but not immediately, after the material has been presented: it is common experience that immediate discussion may flag until just the time when it is due to end. The interval between the presentation of material and the following discussion should not be less than half an hour, and not more, perhaps, than 24 hours. Two important purposes of discussion should be distinguished and, if possible, separated. One purpose is to clarify the material, the other to consolidate it. In so far as the primary purpose is to clarify the material, initiative should come from individuals in the group: they raise points they do not understand, or wish to question; the collective exercise of the group and its leader is to clarify the points raised. Points will be raised in any order; minor ones may receive much attention, major, but clear, ones may receive none. The texture of the discussion is loose and open. In so far as the purpose of discussion is to consolidate the material quite a different procedure is appropriate. Here the initiative comes from the teacher. It is his responsibility to see that what is

important receives emphasis, that the structure of the material is reflected in the progress of the discussion. He does not necessarily accept the pace or the direction which the group is inclined to take; he may hold up the move from one topic to another because the implications of the first topic have not been fully worked out. He leads the group through a systematic workingover of the material. The texture of such discussion is tight and close. If, as often happens, it is necessary both to clarify and to consolidate material during the same session it is usually best firmly to separate the two modes: to begin with clarification, in an open discussion, and then to change, explicitly, to the controlled mode of consolidation. If the group understands what the leader is doing, and why, it will be more ready to respond. There are, however, many complications. The most obvious is that the work of consolidation may fail because a group does not respond to its leader. The relation between a group and its leader is too complex to discuss briefly. In any case there is a prior question which all teachers at the student level need to consider: "For what purposes, and in what circumstances, does a group need a leader outside its own membership?" All that can be said here is that a group is unlikely to profit from a consolidating discussion unless it has understood and accepted the need for control.

The size of a group is related to its purpose. If it is important that each member of a group should be able to play a significant part in its work the best size is between eight and twelve; twenty is too many. If it is important only that issues should be raised by someone, and it does not matter if many take no part, the group can be bigger. It is astonishing how many discussions are attempted among people facing the same way, in straight lines. The advantages of the circle or semi-circle are obvious enough, but are seldom taken seriously.

lecture

The lecture is, superficially, the easiest method for the teacher, and in many cases the least useful for the pupil. The lecturer is actively engaged in handling congenial and familiar material of his own choosing and at his own pace. The pupil is passive and must work at someone else's pace; more fundamentally, his learning is entirely dependent on the lecturer's skill. The student cannot rehear what has been said; he cannot stop and think; he cannot select; if he is taking notes he cannot even listen. This is a sadly inefficient method of learning, however attractive a method it may be of teaching. The customary comment still needs to be made: printing has now been invented for five hundred years. Lecturing is appropriate to certain conditions, of which the most decisive is that numbers are too large to permit any exchange between the lecturer and his students. And that the material is either inaccessible or is drawn from too large a field for the students to tackle on their own. The one kind of lecture for which there can be no substitute is the inspirational: the material of the lecture is not only, nor perhaps primarily, the script, but the personality of the lecturer. Such lectures are, we must admit, usually given by visitors It is not easy to lecture well. It is not necessarily easy even to make oneself heard, and most of us would profit from the advice of a candid friend sitting in the back row, to one side. Certain general recommendations may be given. briefly and (therefore) dogmatically. The density of one's material needs care. It is a common failing for a lecturer to crowd in too much material; to develop an argument as tightly and economically as he would in print. Too great density makes spoken material difficult to grasp. There is no analogy with reading; the ear cannot go back; repetition and recapitulation must be frequent. The value of an anecdote or a digression, even in a formal lecture, is not that it makes the audience laugh, but that it eases the strain of concentration.

If the lecturer wishes his students to make notes during his lecture he must plan and deliver it with this in mind. The more notes he wishes them to make the less justification there is for his presenting his material in lecture form. The lecturer has a passionate relationship with his script. He hates it, but is dependent on it; it gives him freedom, and restricts him. If he talks without notes he is free to make close contact with his audience, but he must rely on his memory; if he trusts to improvisation his material may be too thin. If he talks from notes he must have a good sense of time and resist the unplanned digression. If he reads from a full script the unexpected can be eliminated, but he must read as if the words were coming not straight from the page to his lips, but fresh from his mind. Sometimes a lecturer likes to have in his hand a full script, but to talk without referring to it. This is to wear a belt with one's braces.

Learning and teaching meet at a tantalisingly inaccessible spot: the point of contact of mind with mind. It is not enough for the teacher to examine his methods in terms of order, coherence, sequence and clarity. He needs a sympathetic understanding of how his pupils learn. The contact of mind with mind is not automatic. As teachers, we must start with the question, "How well do we know our students?"

The next panel will meet at 6 p.m., July 28, in the North Committee Room, RIBA.

working detail

VENTILATION SYSTEM: BARRACKS IN HELSINKI

Viljo Rewell, architect (material supplied by H. S. Sami)

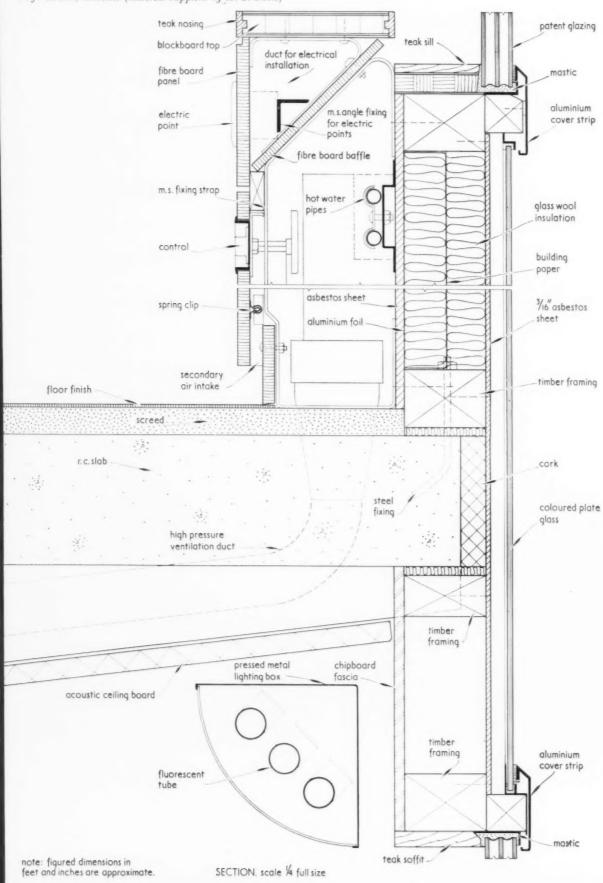


This detail shows the use of an under-sill inlet in a highly insulated air-conditioned building.

working detail

VENTILATION SYSTEM: BARRACKS IN HELSINKI

Viljo Rewell, architect (material supplied by H. S. Sami)



FURNITURE AND FITTINGS: 113

working detail

SINK UNIT: SCHOOL AT WARE, HERTFORDSHIRE

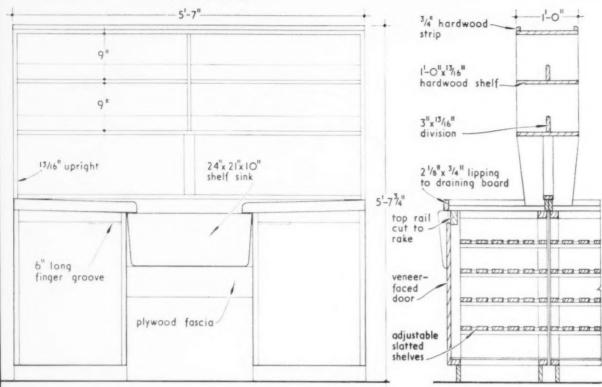


This standard peninsular unit has been developed for housecraft rooms. It is used for the creation of small separate bays and it provides two sinks back to back. The eye level shelves are partly open to assist supervision.

working detail

SINK UNIT: SCHOOL AT WARE, HERTFORDSHIRE

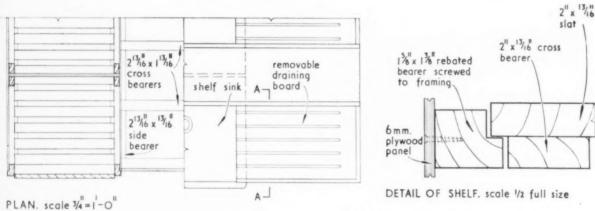
G. C. Fardell, Architect to the Hertfordshire County Council



ELEVATION, scale 3/4"=1'-0"

SECTION A-A. scale 1/2 full size

CROSS SECTION. scale 3/4 = 1 -01



2 1/8 x 3/4 lipping

1 1/6 grooved draining board

1 1/6 grooved draining duarter round cover mould

1 1/6 top rail



Reproduced by permission of the Institut de Paleoniologie Humaine, Paris

A large Bison covering a small brown horse and a Reindeer. An engraved mammoth can also be seen. The drawings are in polychrome and are believed to be between 20,000 and 40,000



re believed to be between 20,000 and 40,000 years old. They are to be found in the cave at Font-de-Gaume, Dordogne, France, but have been damaged by visitors of the 20th century. Fortunately, however, very fine copies of the drawings were made by the Abbe Breuil before too much of the damage had been done.

The Bison is represented in cave art more than any other animal and must have been of special significance to prehistoric man as, indeed it was to the founders of Concrete Limited when they chose a Bison as a trade mark to represent the "speed" and "strength" of precast concrete. Concrete Limited today are the largest structural precast concrete specialists in the world. London Whitehall 5504 Birmingham Midland 0331 Leeds Leeds 73211 Glasgow City 3292

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Announcements

PROFESSIONAL

N. Jones, ARIBA, is now in charge of Page-Johnson's architectural department at 609, Walsall Road, Great Barr, Birmingham,

On July 14 the architect and surveyor's department of the office of the Receiver for the Metropolitan Police District moved from existing offices at New Scotland Yard. sw1, to new accommodation at Tintagel House, Albert Embankment, SE1.

Porter and Martin are changing their address as from November 28 to the 7th floor of Woodward House, 99, The Terrace, Wellington, c1, New Zealand; telephone 42-445 is unchanged. New PO box number is 5029.

The Architectural Association's library and slide-collection will be closed from August 4 to September 17 inclusive for redecorations

D. Degerdon, FRICS, AIArb, chartered quantity surveyor, has been joined in partnership by M. Nye, ARICS, and H. Jones, ARICS, and the style and address of the firm will be known as Messrs. Degerdon and Partners, 12/13, Goodwin's Court, St. Martin's Lane, London, wc2. On July 17

the partnership opens a branch office at 12, Southgate Street, Winchester, Hampshire, under the resident partner, H. Jones. ARICS.

Coulson Backhouse is practising at North End, Hutton Rudby, Yarm-on-Tees (telephone Hutton Rudby 319), and has closed his office at 8, Broughton Rise, Malton, but retains his branch office c/o Russells Brewery, Castlegate, Malton.

S. Griffith & Partners, quantity surveyors, have opened a new branch office at 81. Osmaston Road, Derby (telephone Derby 40849), which will be under the direction of D. Cearns, who has been with the firm for many years and to whom trade literature should be addressed.

V. Salisbury, FRIBA, has taken S. Chandler. ARIBA, ARICS, into an associate partnership. The firm will practise from Coombe House, Coombe Street, Exeter, under the style of Salisbury and Chandler.

TRADE

Sir Noel Hall, MA, and L. Cole, Bcom. have been elected directors of the Babcock & Wilcox, Co. Ltd. Sir Noel is principal of Brasenose College, Oxford, after being principal of the Administrative Staff College, Henley. He is also a director of Fisons Ltd. Mr. Cole became secretary of the company in 1952 and in 1958 was made responsible for financial control within the group. Mr. Cole will remain secretary until December 31, 1961.

Armitage Ware Ltd. have vacated their London offices and showrooms in Grand Buildings, Trafalgar Square and moved to Northumberland House, 303/6, High Holborn (telephone Holborn 5466).

The London offices of Rhodes, Brydon and Youatt Ltd., are now at 45/51 Leman Street, El (telephone Royal 1212).

PERSONAL

Mrs. Margaret Gray wishes to thank all those who contributed to the memorial fund on behalf of her husband.

ACKNOWLEDGMENTS

In the series Contract Administration on June 22 we published a check list for the quantity surveyor's brief. The Editors wish to acknowledge that the specification headings contained on pages 37-44 of Pre-Contract Practice for Architects and Quantity Surveyors, published by Crosby Lockwood and Son Ltd. (12s. 6d.) and its accompanying publication Specification Notes (3s. 9d.) were used as a basis for this



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check list, and they extend their apologies to Crosby Lockwood and Son Ltd. for omitting to acknowledge the source at the time.

CORRECTIONS

The title of the firm announced as the Anthony Clark Partnership, in the June 22 issue, should have been The Anthony Clark Partnership.

IUA Tours by Ian Nairn. AJ 29.6.61, p. 965. Waterloo bridge was designed in 1934 by Sir Giles Gilbert Scott and Randall, Palmer and Tritton, not by Sir Owen Williams, as stated.

The telephone number of J. Smith, ARIBA, is Valentine 9177, not as stated in AJ July 5.

IUA Quiz. AJ 5.7.61. Owing to a change in layout, four quiz answers were wrongly numbered: 6 was flats in Paris by Jean Ginsberg: 7 was a house by Peter Stead; 8 was Shell refinery at Stanslow by Grenfell Baines and Partners; 11 was flats in Sweden by Prof. Sune Lindstrom, Alf Byden and Ake Arell.

AJ 12.7.61. Please note this date is wrongly printed on the spine and should be corrected on file copy.

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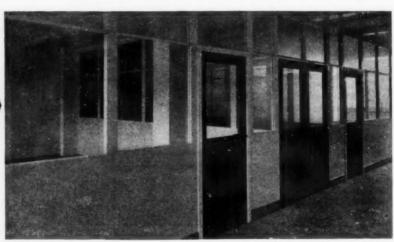


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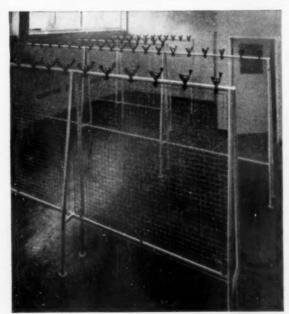
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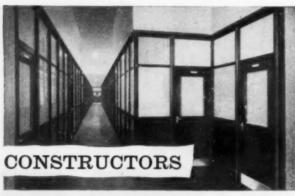
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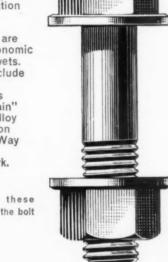
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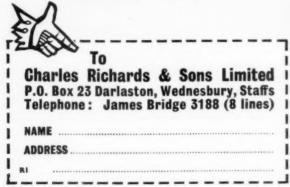
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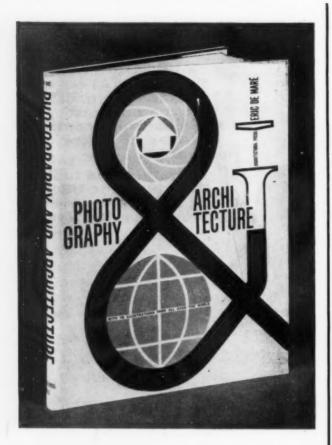
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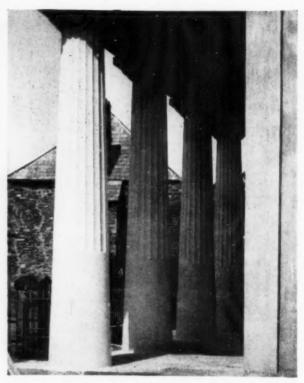
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—£1,310 plus London weighting).
Applicants must have had good experience in
architectural design and building work under construction, and, other things being equal, preference will be given to applicants who have passed
the examination for Associate R.I.B.A. or hold a
University Degree or Diploma in architecture
accepted by that Institute.
The Council is unable to assist the successful
candidate with housing accommodation.
Applications are to be submitted by 31st July,
1961. on forms to be obtained from and returned
to the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow.

D. MATHIESON,
Traven Clerk

D. MATHIESON, Town Clerk.

Town Hall. Hounglow, Middlesex

CITY OF CARDIFF

CITY ARCHITECT'S DEPARTMENT

APPOINTMENT OF ASSISTANT ARCHITECT

A.P.T. GRADE III 1/17, 2960-21,310

Applications are invited for the appointment of an Assistant Architect, A.P.T. Grade III 1/17, 2960

-21,310 per annum, the point of entry in the grades subject to qualifications and experience. General Conditions of Appointment may be obtained from the undersigned.

Applications stating age, qualifications, details of experience and the names of two persons to whom reference can be made should be delivered to me not later than the 31st July, 1961.

S. TAPPER JONES,

Town Clerk.

S. TAPPER JONES,
Town Clerk.
Cardiff.
July, 1951.

CITY OF PORTSMOUTH EDUCATION
COMMITTEE
COLLEGE OF ART
Hyde Park Road
PORTSMOUTH
Principal: W. J. L. GAYDON, A.R.C.A.
The Governors invite applications for a post of
SENIOR LECTURER in the School of Architecture. Duties to commence, if possible, before
January 1962.
The person appointed will be responsible mainly
for thesis research, design and construction in
the Fifth Year of the Diploma Course. Considerable ability in design is required for this post.
Candidates must be professionally well qualified
and possess appropriate experience in architectural
practice and teaching.
Salary: £1,550 × £50—£1,750 per annum.
Further particulars and forms of application
are obtainable fron the Registrar. S8428
COUNTY BOROUGH OF BARNSLEY

COUNTY BOROUGH OF BARNSLEY
BOROUGH ENGINEER AND SURVEYOR AND
PLANNING OFFICER'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL STAFF
Applications are invited for the following

Applications are invited for the following vacancies:

(a) CHIEF ARCHITECT — SCALE "B" — (£1,500 – £1,670),

(b) ASSISTANT ARCHITECT — A.P.T. V (£1,310 – £1,480)

(b) ASSISTANT ARCHITECTURAL ASSISTANTS (£1,310-£1,480) (c) JUNIOR ARCHITECTURAL ASSISTANTS (THREE)—A.P.T. I (£645-£415). Candidates for appointment (a) are asked to apply for further details of the post to the Borough Engineer. Applicants for appointment (b) must hold a recognised Diploma in Architecture and or be A.R.I.B.A. For appointments (c) candidates should have had some architectural training and experience. Further study facilities can be greated.

granted.

The appointments are superannuable and subject to N.J.C. Conditions of Service, passing of medical examination and one month's notice on either side.

examination and one month's notice on either side.

Housing accommodation can be provided if necessary and 50 per cent, of removal transport expenses will be paid in approved cases.

A five day week is in operation and staff dining facilities are available.

Applications, naming vacancy applied for and

facilities are available.

Applications, naming vacancy applied for and stating age, qualifications, present and previous appointments and experience, together with the names of two nersons for reference, should be sent to the Borough Engineer. Town Hall, Barnsley, by Tuesday, 15th August, 1961.

Canvassing will disqualify.

A. E. GILFILLAN,

Town Clerk.

July, 1961

TECHNICAL ASSISTANT (ESTATE) required for Birmingham Office managing a large number of scattered properties of all types but mainly industrial. Applicants must have a professional qualification, sound knowledge of property law, leases, dilapidations, valuations for purchase and rent, rating and be able to act with limited supervision. Salary within the range £1,120-£1,340, according to qualifications and experience. Applications giving age. experience, and qualifications to Divisional Manager (SV, 145), British Road Services United, 39 Harborne Road, Edgbaston Birmingham 15.

S589

NATIONAL COAL BOARD

NORTH EASTERN DIVISION

Require in Architects Branch at Conisbrough, ir, Doncaster.—

(a) Architects to act as LEADING ASSISTANTS to Section Architects. The work covers wide and varied fields and all stages of projects. Qualification—A.R.I.B.A. Salary £900 × £35—£1.250. (Quote AA.A.J. 647.)

(b) ARCHITECTURAL ASSISTANT. The work is varied and interesting, covering sketch plan, working drawing and construction stages. Salary £785 × £30—£1,100. (Quote AA.A.J. 648.)

(c) ARCHITECTURAL ASSISTANT TRAINEE. Preferably with previous experience. Anplicants must have five subjects (including English and Mathematics, and preferably Art) at G.C.E. "O" level, and be prepared to study for the examinations of the R.I.B.A. Salary 95s. 6d. at 16 years, rising to 228s. 6d. (Quote AA.A.J. 649.)

All posts are superannuable, and carry concessionary coal entitlements. Five-day week, anteen.

cessionary coal entitlements. Five-day week, canteen.
Write for application forms, quoting references shown above, to Staff Department, 16, South Parade, Doncaster, by 28th July.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BUILDING PROGRAMME APPOINTMENTS OF SURVEYING STAFF 1. ASSISTANT QUANTITY SURVEYOR (Ref. 551). To be experienced in taking off, abstracting and billing of quantities, measurement of work in progress and settlement of final accounts.

2. QUANTITY SURVEYING ASSISTANT (Ref. 562). For working up bills of quantities and final accounts, measuring on site and taking off for small works.

Applicants for post 1 must be corporate members of the R.I.C.S. (Quantities Sub-Division). Applicants for post 2 should have passed the Intermediate Examination of the R.I.C.S. in the appropriate sub-division.

Sairy Scales:
Assistant Quantity Surveyor: £945-£1,360. Surveying Assistant: £645-£940. Commencing salary above minimum in Assistant Surveyor and Surveying Assistant grades, subject to certain conditions.

Posts are permanent and superanouable. Fiveday week. There is a scheme of financial assistance to students preparing for professional examinations.

Apply, stating age, qualifications (with dates) and experience, with mames of two referees, to the Secretary, North West Metropolitan Regional Hospital Board, 40, Easthourne Terrace, W.2, quoting appropriate reference number by Jist July.

GLASGOW SCHOOL OF ART
DEPARTMENT OF ARCHITECTURE
Applications are invited for the post of
ASSISTANT, GRADE I. Applicants should be
registered architects and have both practical
and teaching experience particularly in the field
of Building Construction and Structural Engineering. Salary £1,025 × £50-£1,575 with placing
according to qualifications. Further particulars
may be obtained from the Secretary, Glasgow
School of Art, 167, Renfrew Street, Glasgow, C.3.

BOROUGH OF JARROW

Applications are invited for the appointment of CHIEF ASSISTANT ARCHITECT in the Borough Engineer's Department. The salary to be within Grade A.P.T. IV/V (£1,40-£1,480 per annum) according to experience. Applicants to be A.R.I.B.A. or equivalent.

Further details and application forms obtainable from the Borough Engineer, Town Hall, Jarrow, Co. Durham.

Applications must reach the undersigned by Wednesday, 9th August, 1961.

M. L. ROTHFIELD, Town Clerk.

HARLOW URBAN DISTRICT COUNCIL

HARLOW URBAN DISTRICT COUNCIL require an ARCHITECTURAL ASSISTANT Salary within A.P.T. III/IV (1960-£1,310) according to qualifications and experience. Appointment subject to medical examination. Five day week.

The appointment is within an Architect's Section supervised by a Chief Assistant Architect, Mr. T. Hiachliffe, Dip. Arch. A.R.I.B.A. Harlow is a new town with a population rising rapidly to 80,000 and the post offers an interesting and varied design programme.

Housing accommodation will be made available and removal expenses paid.

Full details from A. W. R. Webb, A.M.I.C.E., Engineer and Surveyor, Town Hall, Harlow, 1888, 1984.

CITY OF LEICESTER
CITY ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments:—

ARCHITECTS: GROUP LEADERS, SCALE "A," £1,340-£1,565. SENIOR ASSISTANTS, A.P.T. IV/V, £1,140—

£1,480. ASSISTANTS, A.P.T. III/IV. £960—£1,310. ARCHITECTURAL ASSISTANTS, A.P.T. II. £815—£960.

QUANTITY SURVEYORS (A.R.I.C.S.); SENIOR ASSISTANT QUANTITY S VEYORS, A.P.T. IV/V, £1,140-£1,480.

Housing accommodation provided in appropriate cases. Five-day week in operation. Modern

priate cases. Five-day week in open pass to offices.

The Department, organised on a group basis to encourage team-work, is being expanded to deal with an increased building programme of interesting and varied work.

Application forms from the undersigned to be returned not later than 31st July, 1961.

J. H. LLOYD OWEN.

City Architect.

Halford House, Charles Street, Leicester.

8563

BERKSHIRE COUNTY COUNCIL Applications invited for the following appoint-

BERKSHIRE COUNTY COUNCIL
Applications invited for the following appointments:—

1. SENIOR ASSISTANT PLANNING OFFICER
(Architectural). Salary on A.P.T. Grade V (£1,310—£1,480 p.a.) Applicants should have passed the
final examination of the Royal Institute of British
Architects and of the Town Planning Institute
or equivalent and be experienced in all duties
connected with architectural control of development and schemes for urban renewal.

2. PLANNING ASSISTANT.
Applicants with intermediate examination of
Town Planning Institute—A.P.T. Grade I (£645—£815 p.a.) or A.P.T. Grade II (£815—£960 p.a.)
according to experience.
University graduates (first appointment)—
A.P.T. Grade I.
Applicants with five or more G.C.E. "O" level
passes (including English Language and Mathematics)—General Division, commencing at between
£290 and £390 (according to age and qualifications) to £530, with progression on passing the
Intermediate examination of the Town Planning
Institute to A.P.T. Grade I or A.P.T. Grade II
according to ability.
Application forms obtainable on receipt of
stamped-addressed envelope from County Planning
Officer, 7. Abbot's Walk, Reading, Closing date
5th August, 1961.

E. R. DAVIES,
Clerk of the County Council.

E. R. DAVIES, Clerk of the County Council

ARCHITECTS AND MAINTENANCE SUR-VEYORS. Pensionable posts for men and women at least 25 and under 35 on 1.1.61 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Architect or Maintenance Surveyor). Cardidates must be registered Architects or, alternatively, for Maintenance Surveyor posts, have achieved Corporate Membership of R.I.C.S. (Building Section), or have passed examinations necessary for attaining Corporate Membership. National salary 4536–42,258 according to age, rising to £1,439. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.I., for application form quoting \$66-51. quoting

LANCASHIRE COUNTY COUNCIL
PLANNING DEPARTMENT
PLANNING ASSISTANTS required at WIGAN
and MANCHESTER, A.P.T. I to A.P.T. IV
(2646-21,310), commencing and maximum salary
according to qualifications and experience. Candidates should have an appropriate University
degree and/or be studying for or possess a
recognised qualification in town planning, architecture, surveying or engineering.
Disturbance allowances and removal expenses
to a maximum of £125 may be granted in
approved cases.
Applications, giving age, qualifications, present

approved cases.
Applications, giving age, qualifications, present appointment, experience, etc., and two referees to the County Planniag Officer (S), East Cliff County Offices, Preston, by the 1st August, 1961.

COUNTY BOROUGH OF DEWSBURY
BOROUGH ARCHITECT AND BUILDINGS
SURVEYOR'S DEPARTMENT
Applications are invited for the following
appointments within the scope of the grades
stated:—

stated:—
(a) ASSISTANT ARCHITECT (Education Section)—A.P.T. Grade IV (£1,140—£1,310 p.a.). Applicants should be A.R.I.B.A. (b) QUANTITY SURVEYING ASSISTANT—A.P.T. Grade I (£645—£315 p.a.). The provision of housing accommodation will be considered if required.

The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts.

Acts.

Applications, stating age, education, qualifications, full particulars of training and experience,
together with copies of two recent testimonials,
should be sent to the undersigned not later than
Wednesday, 2nd August, 1951, in envelopes
endorsed Appointment of
A. NORMAN JAMES,
Town Clerk.

Town Hall, Dewsbury, 8th July, 1961.

BOROUGH OF MACCLESFIELD

APPOINTMENT OF BOROUGH ARCHITECT

AND PLANNING OFFICER

Applications are invited for the above appointment from persons who are members of both the Royal Institute of British Architects and the Town Planning Institute.

The appointment is subject to the Joint Negotiating Committee's conditions of service for Chief Officers, salary in the population range 30,000 to 45,000 (£1,550 × £75 (4)—£1,930).

The post is superannuable, subject to medical examination. Five-day week and indressing programme of work to be undertaken including housing, slum clearance, development for oversuill and redevelopment of the town centre, including new administrative offices.

General conditions of appointment may be obtained from Walter Isaac. Town Clerk, Town Hall, Macclesfield, to whom all applications should be sent in envelopes suitably endorsed, giving age, qualifications and experience and the names and addresses of two referees, not later than noon on Tuesday, the 8th August, 1961. 8597

QUANTITY SURVEYING ASSISTANTS

QUANTITY SURVEYING ASSISTANTS required by NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.

We have two vacancies for young Quantity Surveying Assistants. Preference will be given to those studying for the R.I.C.S. examination and with experience in abstracting and billing. Good opportunities exist for promotion and gaining experience in taking off, preparation of accounts and site measuring.

Salaries will be according to experience within a scale of £655 × £25—£785 or £785 × £30—£935. Applications, giving details of age, qualifications and experience, to:

Divisional Chief Staff Officer.

National Coal Board, East Midlands Division, Sherwood Lodge, Arnold.

Arnold, Nr. Nottingham, quoting S.V. 1132.

quoting S.v. 1132.

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECTS: DEPARTMENT
VACANCIES

ASSISTANT ARCHITECTS: £1,310-£1,480;
£1,140-£1,310.

ASSISTANT QUANTITY SURVEYORS:
£1,140-£1,310.

ASSISTANT STRUCTURAL ENGINEER:
£1,140-£1,310.

The Architect's Department is a busy and expanding office, dealing with a wide variety of projects, including Fire Stations, Colleges, Schools, Police Stations, Offices, Ambulance Stations, Clinics, Libraries, etc.
Good working conditions, assistance with removal expenses, etc. There is a scheme for loans to employees wishing to purchase their own by the control of t

removal expenses, loans to employees wishing to pusses, own houses.
F.R.I.B.A. County Architect, Green Hall, Lichfield Road, Stafford, July, 1961.
Closing date—31st July, 1961.
Clerk of the County Council, 8574

SURREY COUNTY COUNCIL,
COUNTY PLANNING DEPARTMENT
Applications are invited for the followers

Applications are invited for the following posts:

AT HADQUARTERS, KINGSTON-UPON-THAMES:
SENIOR DRAUGHTSMAN (A.P.T. IV. £1,140—£1,310 + London Allowance). To take charge of the Department's Drawing Office. Candidates must have extensive experience in all aspects of work in a Planning Department Drawing Office.

PLANNING ASSISTANT (A.P.T. II. £315—£960 + London Allowance). Candidates must have an interest in design work. The successful candidate will work as a member of a team on Town Centre redevelopment.

TWO PLANNING ASSISTANTS (from 2nd October, 1961) (A.P.T. I/II. £645—£960 + London Allowance) to be engaged on the siting of new Council schools and other projects. Graduates in Geography wishing to take up planning as a career will be considered. Applications, endorsed "Confidential—Vacancies," stating age qualifications and experience, with details of present post and salary and the names of two referees, should be sent to the County Planning Officer. "Elmburst," Penrhyn Road, Kingston-upon-Thames, by 29th July, 1967.

Road, Kingston-upon-Thames, by 29th July, 19618876

Applications invited for appointment to established post of SENIOR PLANNING ASSISTANT
in Borough Engineer's Department. Salary
within Grade A.P.T. III of National Joint
Council's Scheme, viz. 2960-21.140 per annem,
plus London weighting. Housing accommodation
will be made available to successful applicant
and the appointment carries an "Essential
Tuser" Car Allowance for vehicle not exceeding
10 h.p. or 1,199 c.c.
N.J.C. Conditions of Service. Five-day week.
Staff Canteen available.
Apply by letter with details of age, experience
and names, etc., of two referees, to reach the
Borough Engineer, Town Hall, Leyton, E.io, not
later than 28th July, 1961.

Town Hall. Leyton, E 10.

Levtem E 10.

ASSISTANT BUILDING SURVEYOR required for work in connection with expanding hospital building programme. The work includes the survey of existing hospital sites for future development, the preparation of working drawings and specifications for alteration works and minor industrial type buildings, and the preparation of enquiries in respect of specialist work connected with major building contracts.

Applicants must be cornorate members of the RICS. (Building Sub-division). Salary scale 1945—61.560 per annum. Commencing salary shove the minimum subject to certain conditions. Post is permanent and superannuable. Five-day week. Apply stating age, qualifications (with dates) and experience, with names of two referees, to Secretary North West Metropolitan Regional Hospital Board. 40, Eastbourne Terrace. W.2. by 1st August, quoting reference 949. 8559

AIR MINISTRY require SENIOR WORKERS UP in Quantities Division in London. Salary, which is dependent on age, qual, and exp., ranges from £1.045 to £1.38 (max.) on annual incremental basis. Five-day week with three weeks three days paid leave a year initially. Some promotion and pension prospects. Quals.: Applicants, who must be natural born British subjects, should hold O.N.C. or C. & G. Quantities) or equiv. and be fully competent to work up entire bills of quantities. Financial assistance and time off allowed for recognised courses of study leading to higher quals. Forms from Manager (PE 519), Ministry of Labour, Professional & Executive Register, Atlantic House, Farringdon Street, London, E.C.4. Candidates selected will normally be interviewed in London and certain expenses reimbursed, Only applicants selected for interview will be advised. 88144

selected will normally be interviewed in London and certain expenses reimbursed. Only applicants selected for interview will be advised.

QUANTITY SURVEYORS—OVERSEAS
AIR MINISTRY require chartered Quantity Surveyors for Service initially in overseas areas on tours of 2 or 3 years' duration according to location.

Basic salary according to age and experience ranging from £961 at 25 to £1,298 at 34 or over to £1,470 max. An increase of £95 p.a. (within max. of scale) after 2 years' satisfactory service subject to corporate membership of R.LCS. being held. In addition Tax Free foreign service allowance varying according to location, marital status, etc., e.g. total emoluments at Cyprus vary at age 25 from £1,286 to £1,736 (single man) and £1,646—£2,361 for married man. Alt (£1,646—£2,361 for married man.) and £1,646—£2,361 for married man. Alt (£1,646—£2,361 for married man.) and £1,646—£2,361 for married man. Chieffer and family when accommodation arranged. Free medical and education arrangements. Five-day week, paid annual leave initially four weeks and two days.

Completion of tour to be followed by duties in U.K. with opportunities for further tours overseas. Appointments are non-pensionable but there are good promotion and pension prospects. Application forms and full particulars from Miastry of Labour Technical and Scientific Register (K), 26, King Street, London, SW1. SV914 ACCHITECTURAL ASSISTANT

Register (K), 26, King Street, London, S.W.1, quoting J 79 lb. 8

BOROUGH OF YEOVIL

ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of an Architectural Assistant in the Borough Surveyor's Denartment at a salary within Grade A.P.T. II (£815-£960 p.a.).

The Scheme of Conditions of Service laid down by the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services will apply.

Applications giving full personal details, present and previous appointments, qualifications and experience, and the names of two persons to whom reference can be made, should be sent to the undersigned not later than Tuesday, 8th August, 1961. Preference will be given to applicants who have passed Intermediate R.I.B.A. Housing accommodation will be available if required.

required.

A. HEAL, M.I.Mun.E., Borough Surveyor

Municipal Offices, Yeovil

Municipal Offices.

Yeovil.

CARDIGANSHIRE COUNTY COUNCIL

Applications are invited for the under-mentioned vacancies in the County Architect's Department,
County Hall. Aberayron.

(a) ARCHITECTURAL ASSISTANTS—A.P.T.

Grade II (2815—2960). (Salary payable abivision (2220—6530). (Salary payable according to age.)

The appointments are superannuable and subject to medical examination,
Applicants for (a) should have passed the Intermediate Examination for Associateship of the Royal Institute of British Architects and applicants for (b) should have had experience in an Architect's Office.

Forms of application and further details obtainable from the County Architect, County Hall, Aberayron, Cardiganshire.

Applications are to be returned to the undersigned by not later than Friday, 11th August, 1961.

J. E. R. CARSON,

Clerk of the Cardigenshire County Council,
Aberystyth,
Cardiganshire,
12th July, 1961.

BOROUGH OF CHESTERFIELD
Applications are invited for a SENIOR
ARCHITECT within Grade A.P.T. IV.V (£1.40—
£1.480) in the Borough Engineer's Department
(C. Bond, F.R.I.B.A., Chief Architect). The commencing salary will depend on qualifications and
experience.

mencing salary will depend on quantications and experience.

A car allowance is payable and housing accommodation will be provided if required. A fiveday week is in operation.

A substantial programme of capital works is envisaged which includes a swimming bath, highways depot. library and multi-storey flats.

Chesterfield, which has a population of about 70 000 is situated bordering the Peak District National Park.

Applications, stating age, qualifications, training and experience, naming two referees, to the Borough Engineer. Town Hall, Chesterfield, not later than Monday, 51st July, 1961.

RICHARD CLEGG.

Town Cierk

LEYTON CORPORATION
(Municipal Borough in Essex. Population approximately 100,000)
Applications invited for appointment of:
ASSISTANT ARCHITECTS, salary within Grade A.P.T. III, £960-£1,40 per annum plus London weighting.
Housing accommodation will be provided. Fivelay week, National Joint Council Conditions of service.

Service.

A large and varied programme of architectural and building works in hand, and projected, offers good opportunities of gaining experience. Applications to Borough Engineer, Town Hall.

Leyton, E.10, not later than 5th August, 1961.

D. J. OSBORN.

Town Hall

Town Hall, Leyton, E.10.

SURVEYOR
THE UNIVERSITY OF SHEFFIELD
Applications are invited for the post of SURVEYOR to the University.
Candidates must have a recognised professional qualification and may be architects, surveyors or engineers. They should possess wide experience of maintenance of buildings, plant and grounds, running of service installations, and carrying out minor works.
Commencing salary not less than £1.850 per annum, with F.S.C. benefits and child allowances.
Further particulars and forms of application can be obtained from the Bursar, Room D.25. The University, Sheffield, 10, to whom applications should be sent by 31st August, 1961. S8678

BOROUGH OF WEMBLEY
APPOINTMENT OF CHIEF TOWN
PLANNING ASSISTANT
(J.N.C. SCALE "A"—£1,510—£1,565)
Applications are invited from persons possessing sound experience in Town Planning and Development Control who have passed an appropriate professional examination.
The Council are about to commence the preparation of a major redevelopment scheme for the central area of the town.
Housing accommodation cannot be provided.
Application forms may be obtained from the Borough Engineer and Surveyor, Town Hall, Wembley. Closing date for applications, 8th August, 1961.

N. CUMPSTY. Town Clerk.

Town Hall, Wembley, Middx. 12th July, 1961.

GLOUCESTERSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the following
pointments:—

(a) ASSISTANT ARCHITECT — "CAREER
CLASS, commencing in A.P.T. IV (£1,130£1,310 p.a.) progressing to A.P.T. IV (£1,130£1,310 p.a.) subject to satisfactory report on
reaching appropriate incremental point in
Grade. Applicants must be Registered
Architects and Associate Members of the
B.I.B.A.

Grade. Applicants must be larger and carchitects and Associate Members of the R.I.B.A.

(b) A R C H I T E C T U R A L ASSISTANTS—"QUALIFYING CLASS"—Vacancies exist in the following Grades:—
A.P.T. II: Salary £645—£815 p.a.
A.P.T. III: Salary £645—£815 p.a.
A.P.T. III: Salary £640—£1,310 p.a.
A.P.T. IV: Salary £1,140—£1,310 p.a.
A.P.T. IV: Salary £1,140 p

BOROUGH OF ILFORD
BOROUGH ENGINEER'S DEPARTMENT
APPOINTMENT OF SENIOR ASSISTANT
ARCHITECT
GRADE A.P.T. V
Candidates must be Associate Members of the
R.I.B.A., and have suitable experience in the
development of Council housing and multi-storey
flats.

development of Council housing and multi-storey flats.

The commencing salary will be fixed within the scale £1,310-£1,480, according to qualifications and experience. London weighting payable in addition. Five-day week.

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

The Council is prepared to consider, if necessary, the provision of housing accommodation.

Application forms, obtainable from the Borough Engineer, P.O. Box 7, Town Hail, Ilford, should be returned not later than Tuesday, 8th August.

ROBERT GORDON'S TECHNICAL COLLEGE
ABERDEEN
SCOTT SUTHERLAND SCHOOL OF
ARCHITECTURE
Head: E. F. Davies, Barch (Lyfl.), F.R.L.B.A.,
E.R.L.A.S.
Applications are invited for the following

Applications are invited for the following appointments:—
(a) LECTURER AND STUDIO INSTRUCTOR (Grade I) in Constructional Subjects. Salary £1,025 p.a. × £50-£1,575 p.a. + special responsibility payment of £75 p.a. (b) LECTURER AND STUDIO INSTRUCTOR (Grade II) in Architectural Design and Constructional Subjects. Salary £300 p.a. × £40-£1,000 p.a. × £45-£1,270 p.a. A x £40-£1,000 p.a. × £45-£1,270 p.a. x £40-£1,270 p.a. x £40

A. C. WEST, Director.

ARCHITECTS (one position up to £1,500; others up to £1,250 with progression to £1,500 for keen and qualified men or women) for design and construction of buildings for new and existing parks and open spaces. Opportunity for interesting association with landscape architects.

interesting association with landscape architects.
Positions also available for qualified BUILDING SURVEYORS at up to £1,250 with possibilities of progression to £1,500.
Apply Chief Officer, L.C.C. Parks Dept., County Hall, S.E.I ('phone WATerloo' 5000 ext. 8076), ref. PK/A.I/KD. 8545

METROPOLITAN BOROUGH OF CAMBERWELL ACHITECTS the Borough Architect's Department within a salary range of £855 and £1,525 (Grades A.P.T. II to V of the National Scales). Grade and commencing salary according to qualifications and experience. The work of the department includes design and construction of public buildings, housing estates, including multi-storey construction. Application form from Town Clerk, Town Hall, S.E.5. TC7928

BASINGSTOKE, HAMPSHIRE

47 miles W.S.W. of London 18 miles N. of Winchester

35 miles N.E. of the New Forest 35 miles from the coast

TOWN EXPANSION

You are invited to apply for an appointment in the newly formed technical group who are to draft and carry out a scheme for the expansion of Basingstoke from its present population of 25,000 to 75,000 by 1975.

The Group will be organised on a team basis to deal with a wide variety of tasks, ranging from the preparation of basic development plans to the comprehensive redevelopment of the Central Area, and all tasks will be arranged within strict time schedules.

Candidates for the following posts, who should hold either architectural or planning qualifications, will be judged on their design ability, experience and general architectural outlook. Gradings and commencing salares within the ranges indicated, according to qualifications and experience. Those who are successful will be appointed to the staff of the Hampshire County Council and will work under the direction of the Chief Architect/Planning Officer for Basingstoke, Alan G. McCulloch, A.R.I.B.A., A.M.T.P.I.

General Planning

Senior Architect/Planning Officer—Scale D-F (£1,710—£2,345) Assistant Architect/Planning Officers—Scale A-C (£1,480-£1,825)

Central Area

Senior Architect/Planning Officer—Scale D-F Assistant Architect/Planning Officers—Scale A-C

Also for:

Junior Assistants and Draughtsmen-A.P.T. Grades I-IV (£645-£1,310)

The posts are pensionable. Separation allowance and assistance with removal expenses will be paid in approved cases.

Applications, stating full details of age, education, qualifications and experience, including present grade and salary, and accompanied by a copy of one testimonial and the names of two referees, should reach the Clerk of the County Council, The Castle, Winchester by 8th August, 1961.

third edition **Modern Bungalows**

edited by FELIX WALTER F.R.I.B. A.



House at High Sunderland by Peter Womersley: one of the new houses illustrated

ULLUSTRATES and describes fully a selection of examples of the most successful and interesting recently-built single-storey houses, showing the latest developments in small house planning and design. In his introduction and descriptive notes, the editor, a practising architect with considerable experience of small house design, pays special attention to new heating methods and to the latest ideas in planning, kitchen arrangements and so on which these facilitate. This edition has been thoroughly revised and brought up to date, and 15 new houses added. Costs are stated.

Size 10 by 71 ins., 112 pages, over 200 illustrations in halftone and line. Price still 18s. 6d. net, postage 1s. 2d.

THE ARCHITECTURAL PRESS 9 QUEEN ANNE'S GATE S.W.J

CITY OF BATH
CITY PLANNING AND ARCHITECTURAL
DEPARTMENT
Applications are invited for the following
appointments within the grades shown:

(a) PLANNING ASSISTANT (Development
Control)—A.P.T. III/IV (£960—£1,310 per

(b) TWO PLANNING ASSISTANTS-A.P.T. II

(2815-4896) per annum).

(c) DRAUGHTSMAN-Misc. IV (£625-£685).
These vacancies exist in the Development Control and Development Plan Sections of the Department which is about to rudertake aurgent programme of central area re-development involving Comprehensive Development Area procedure.

Department which is about to radertake an urgent programme of central area re-development involving Comprehensive Development Area procedure.

(d) CHIEF ARCHITECTURAL ASSISTANT—A.P.T. (£1,310—£1,480).

(e) ARCHITECTURAL ASSISTANT—A.P.T. IIIIV (£960—£1,310).

(f) ARCHITECTURAL ASSISTANT—A.P.T. IIIIV (£960—£1,310).

(g) TWO JUNIOR ARCHITECTURAL ASSISTANT—A.P.T. IIIV (£960—£1,310).

The programme of building works is extensive and interesting and these appointments afford an opportunity for good experience.

The commencing salary for each appointment will be fixed at a point within the scales commensurate with qualifications and experience.

Applicants for:—post (a) should have passed the Final Examination of the Town Planning Institute; and should be experienced in the preparation of reports on planning applications and applications under the Advertisements Regulations in City Areas. Experience in the preparation of Tree Preservation Orders will be an advantage.

Applicants for:—post (b) should have passed the Intermediate Examination of the Town Planning Institute, and have had previous experience in the Planning Department of a Local Authority.

Applicants for:—post (d) must be Associates of the Royal Institute of British Architects, and must have had good experience in the design and construction of municipal housing and other works, and must be capable of supervising the staff of the Architectural Section.

Applicants for:—post (e) must be members of the Royal Institute of British Architects.

A five-day week is in operation and the Council is prepared to provide housing accommodation if required.

Applications, stating age, experience and qualifications, together with the names and addresses of the referees, should be sent to the City

if required.

Applications, stating age, experience and qualifications, together with the names and addresses of three referees, should be sent to the City Planning Officer and Architect, 7, North Parade Buildings, Bath, by Saturday, 5th August, 1961.

JARED E. DIXON.

Town Clerk.

Guildhall, Bath.

BOROUGH OF LEYTON
(IN THE COUNTY OF ESSEX)
(COMMITTEE FOR EDUCATION
APPOINTMENT OF ARCHITECTURAL
ASSISTANTS
ASSISTANTS
APPOINTMENTS
ASSISTANTS

Applications are invited for the under-mentioned appointments:

ARCHITECTURAL ASSISTANT, Grade A.P.T.

III, £960-£1,140 per annum plus London unsighting are applicated as a superscript of the London weighting.

JUNIOR ARCHITECTURAL ASSISTANT, Grade A.P.T. I, £645-£315 per annum plus London weighting.

The successful applicants will be employed by the Essex County Council and will work in the School Architect's Section of the Borough Engineer & Surveyor's Department, Town Hall, Levton, E.10. Five-day week is operated.

Details and forms of application from the Borough Education Offices, Kirkdale Road, Levtonstone, E.11, to whom they should be returned within 14 days from the appearance of this notification.

Amening Adventisement

AMENDED ADVERTISEMENT

EASINGTON RURAL DISTRICT COUNCIL

ARCHITECTURAL ASSISTANT
Applications are invited for the abovementioned appointment in the Engineer and
Surveyor's Department.
Applicants must be experienced in Municipal
Housing and General Architectural Work, and
have passed the Final Examination of the
R.I.B.A.
Salary A.P.T. IN 182 182

R.I.B.A.
Salary A.P.T. IV (£1,140—£1,310). If required, housing accommodation will be provided.
The appointment will be subject to the provisions of the Local Government Superannuation Acts and to the successful applicant passing a medical examination. Applications on forms, which may be obtained from the undersigned, must be received by 28th July 1961.

Council Offices.

Council Offices.

Council Offices, Easington, Co. Durham,

REDFORDSHIRE COUNTY COUNCIL APPOINTMENT OF AREA PLANNING OFFICER

J.N.C. SCALE A/B
Applications are invited from Chartered Town Planners for the post of Area Planning Officer for the southern area of the County. This post has recently been upgraded to J.N.C. A/B (£1,315—£1,670) to take into account increased responsibilities. Further particulars and application forms from Establishmen Officer, Shire Hall, Bedford, Closing date 10th August.

8634

CORPORATION OF BARKING
DEPARTMENT OF THE BOROUGH
ARCHITECT
APPOINTMENT OF ARCHITECTURAL
SALARY SCALE 2840-21,000 PER ANNUM
Applications are invited for the above appointment (Grade A.P.T. II) and should reach the
undersigned not later than seven days after the
appearance of this advertisement.
The person appointed will have the opportunity
to gain sound experience in comprehensive redevelopment schemes and school building work.
The department has attractive modern offices and
most Saturday mornings are free of duty.
E. R. FARR,
Town Clerk,

Town Hall, Barking, Essex

ESSEX.

ESSEX.

ESSEX.

CENTRAL ELECTRICITY GENERATING
BOARD
SOUTH EASTERN REGION
Applications are invited for the following appointment in the Generation Department (Construction Section) at Divisional Head-quarters, Cockfosters, in North London.

ARCHITECTURAL DRAUGHTSMAN—Salary £940—£1,140 per annum (inclusive of London weighting).

The commencing salary will depend upon the duties and responsibilities.

Applicants should have had experience in the preparation of working drawings, details, and specifications in connection with industrial buildings.

Applicants should have technical qualifications of Intermediate R. I.B.A. standard, and had previous office experience and a good knowledge of building construction.

Applications, quoting reference S.V. No. 1508, stating age, qualifications, experience and present position, should be sent to the Personnel Officer, Central Electricity Generating Board, South Eastern Region, North Thames Division, West Farm Place, Chalk Lane, Cockfosters, Barnet, Herts., to arrive not later than 29th July, 1961.

MEXBOROUGH URBAN DISTRICT COUNCIL
Applications are invited for the following
permanent appointment:

Applications are invited for the following permanent abnointment:

ARCHITECTURAL ASSISTANT, Salary Grade A.P.T. I (£646-£815).

The post is superannuable and subject to the provisions of the National Scheme of Conditions of Service. The commencing salary will be fixed according to experience and qualifications. Applications, giving age, details of training, qualifications and experience, together with the mames and addresses of two referees, to be sent to the undersigned not later than 5th August, 1961.

S. H. E. CRANE, Clerk of the Council.

Council Offices,
Adwick Road,
Mexborough,
Yorks.
10th July, 1961.

BOROUGH OF ALDERSHOT
BOROUGH ENGINEER AND SURVEYOR'S
DEPARTMENT
APPOINTMENT OF ARCHITECTURAL
ADDications are invited for the position of Architectural Assistant on the staff of the Borough Engineer and Surveyor at a salary in accordance with Grade A.P.T. III (1956—C1,140). Applicants should have passed the appropriate examinations of the R.L.B.A., or possess a similar qualification.
The appointment will be subject to one month's notice on either side; to the provisions of the Local Government Superannuation Acts, and to the successful candidate passing a medical examination, Canvassing will disoualify.
Applications, stating age, qualifications and experience, together with the names and addresses of two referees, should be sent to the Borough Engineer and Surveyor, Town Hall. Aldershot.

Housing accommodation will be made available if required.

A five-day week is in operation.

Town Clerk.
Town Clerk.

7th July, 1961

require SENIOR ARCHITECTURAL ASSISTANT, £1,186-£1,356 p.a. Registered Architectural qualifications and experience in design, construction and administration of large building contracts, preferably with a local authority. Forms of application and further particulars from Town Clerk, 227, Commercial Road, E.1.

LAMBETH BOROUGH COUNCIL
HOUSING DEPARTMENT
Vacancies exist for ARCHITECTURAL ASSISTANTS within the salary range £840-£1,525 per
annum. Interesting new work includes multistorey flats, maisonettes, houses, shops, public
library, depots, etc.
Applications in the first instance by letter to
the Town Clerk, Town Hall, Brixton, S.W.2.
Closing date 28th July, 1961.

Tenders Invited

36s. per inch; each additional line 3s.

Jenders Invited

36e. per inch; each additional line 3e.

CITY OF CARDIFF
CORPORATION WATERWORKS
LLANDEGFEDD WATER SCHEME—
SECTION B
CONTRACT NO. B.I.
RIVER INTAKE. USK PUMPHOUSE AND
SOR PUMPHOUSE
FIXED PRICE TENDERS are invited from experienced Civil Engineering contractors for the construction of a River Intake and Pumphouse near Usk, Mommouthshire, and a Pumphouse near the foot of the Dam of the Llandegfedd Reservoir (now under construction) between New Inn and Common Ceed-y-paen, also in Monmouthshire, comprising the following works:—
RIVER INTAKE
Reinforced concrete construction in the bank of the River Usk.
USK PUMPHOUSE
Reinforced concrete and brick building with concrete and barrel vault roof, together with ancillary site works, roads, drains, etc.
Reinforced concrete and brick building with concrete and barrel vault foof, together with ancillary site works, roads, drains, etc.
Tenderers must submit with their Tenders particulars of works, similar in character, which have been carried out by them.
Conditions of Contract, Specification, Drawings, Bills of Quantities and Form of Tender may be obtained from the ENGINEER, at SLUVAD, PANTEG, NEAR PONTYPOOL, MON., to whom application should be made, accompanied by a deposit of £10 lbs. 9d. Cheques should be made payable to Cardiff Corporation and crossed "Not negotiable & Co." The deposit will be refunded upon receipt of a bona fide Tender, or the return of the Contract Documents and Drawings.

Tenders must be submitted on the Form of Tender which will be provided, and enclosed with the Conditions of Tender in a small envelone marked on the outside only with the words "Tender which will be provided, and enclosed with the Conditions of Tender in a small envelone marked on the outside only with the words "Tender for Llandegfedd Water Scheme—Section Pounds and Pounds "A fully priced Bill of Quantities and any documents loaned by the Corporation for the purpose of submitting a Tender and any drawings sub-

Pumphouses."
A fully priced Bill of Quantities and any docu-ments loaned by the Corporation for the purpose of submitting a Tender, and any drawings sub-mitted with the Tender, must be sealed up in a separate large envelope marked on the outside only with the name of the firm submitting the Tender.

only with the name of the firm succession of the separate large envelopes must be enclosed in a frender.

Both these envelopes must be enclosed in a third sealed envelope marked on the outside only with the words "Tender for Llandegfedd Water Scheme-Section E, Contract No. B.1, River Intake, Usk and Sor Pumphouses" addressed to the undersigned at the City Hall and sent by REGISTERED POST or RECORDED DELIVERY so as to be received not later than 23rd August. 1961. This envelope must not bear any name or mark indicating the identity of the Tenderer.

The Corporation does not bind itself to accept the lowest or any Tender received.

S. TAPPER-JONES,

Town Clerk.

City Hall, Cardiff July, 1961.

Architectural Appointments Vacant

per line; minimum 12s. Box Number, including forwarding replies, 2s. extra £850-£1,600. ARCHITECTURAL ASSISTANTS required. Long term prospects. Non-contributory pension and life assurance schemes. Five-day week. Telephone or write: Ronald Ward & Partners. 29, Chesham Place, Belgrave Souare, S.W.1. Belgravia 3361.

A RCHITECTURAL ASSISTANTS of all grades required in a busy provincial practice. Good salaries to right applicants. Pension Scheme, Accommodation. Apply with full Good salaries
Scheme, Accommodation.

details to:

Ruddle & Wilkinson, F/L/A.R.I.B.A.,
Long Causeway Chambers,
Peterborough.

ND JUNIOR ASSISTANTS.

mall office (

Peterborough.

Senior And Junior Assistants. Only those who prefer a small office and an interesting variety of work on both old and new buildings should apply to: L. H. Bond & R. W. Read. 4. Castlegate, Grantham. TC6404

ACHITECTURAL ASSISTANTS of all grades, particularly Intermediate standard, required on varied and interesting projects. High salaries will be paid in accordance with skill or experience of applicant. Lewis Solomon, Kaye & Partners. City 8811.

ARCHITECTURAL ASSISTANTS

Raye & Partners. City 8811.

A RCHITECTURAL ASSISTANTS required in Busy Bloomsbury office with varied practice. Good salary and prospects for suitable applicants. Five-day week. Write giving particulars of age, qualifications, experience, etc., to Box 918, c/o 7. Contic Street, W.C.1.

ENIOR ASSISTANTS required for work of large Hospital programme, excellent opportunities for the right men. salary £1,000-£1,400 Luncheon Vouchers and five-day week. Writ giving full particulars to W. H. Watkins. Graand Partners, 57, Catherine Place, S.W.1. TC563

MIDDLESEX COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Vacancies exist in the following qualified grades:-SENIOR ARCHITECTS APT V. - £1,355 - £1,525 p.a. (6 POSITIONS) ASSISTANT ARCHITECTS APT III.-IV.-£1,005-£1,355 p.a. (18 POSITIONS)

There are excellent opportunities for both newly-qualified and experienced architects to work on a full and varied programme including:—

PRIMARY AND SECONDARY SCHOOLS YOUTH AND COMMUNITY CENTRES TECHNICAL COLLEGES OLD PEOPLE'S HOMES

HEALTH CLINICS FIRE STATIONS



The department is organised on a group basis under the direction of WHITFIELD LEWIS, F.R.I.B.A., and every opportunity is given to architects of ability to take full responsibility for the design, construction and management of projects. The architectural groups are supported by ancillary divisions; Quantity Surveying and Cost Analysis, Heating and Mechanical Engineering and Structural Engineering, and vacancies also exist in these sections.

Full details and application forms can be obtained from

COUNTY ARCHITECT, I. QUEEN ANNE'S GATE BUILDINGS, DARTMOUTH STREET, S.W.I.

ELIE MAYORCAS requires ARCHITECTURAL ASSISTANTS with a minimum of three years' office experience in this country. Write, giving brief particulars of architectural education and experience, and salary required, to: 13. David Mews, Eaker Street, W.1. TC7014

S ENIOR ASSISTANTS required immediately Salary by arrangement. Theo. H. Birks. 38, Portland Place, London, W.1. LAN. 7236. TC1486 MORKE, ROSENBERG AND MARDALL have some vacancies for experienced STAFF. Starting salary according to qualifications and experience, in the range 2950-21,200 Ring AMBassador 4521 for appointment. TC6200

AMBassador 4521 for appointment. TC5200

LANCHESTER & LODGE urgently require
ARCHITECTURAL ASSISTANTS of all
rades. Work includes hospitals, laboratories,
universities, offices, housing, etc. Write full parficulars or ring for interview: 10, Woburn
Square, W.C.L. MUS 6945-6-7.

ASSISTANT ARCHITECT urgently required in
busy City Office. High standard of office
and residential design essential. Salary 41,750
per annum plus Luncheon Vouchers. Increments
and bonuses. Long-term engagement for right
man. Box 8553.

ENIOR and JUNIOR ASSISTANTS urgently required for busy City Office. Excellent modern facilities and long term engagements. Holidays with pay this year. Salary increments and bonness buncheon Vouciers. Qualifications unnecessary but experience and ability imperative. Salaries varying from £1,000 to £1,500 according to ability. Box 87642.

£1.000 /£2,000 p.a. will be paid to experienced competent ARCHI-TECTS by a private practice in the City of London. The work will be primarily on the drawing board on new and interesting projects of magnitude. A high standard of design and detailing ability, is required. Please apply in writing to Box TC3360.

SENIOR ASSISTANT ARCHITECT required in private practice South East Coast town. Must be experienced with ability to handle contracts from sketch jan to conclution. Work consists of industrial, flats schools, shops, etc. Starting salary \$1,200 or according to ability. Housing accommodation a valiable. Apply in own handwriting. Box TC7452.

A RCHITECTS' ASSISTANTS required, Final and Intermediate standard, to work on large and interesting projects. Salary £850 to £1.000. Applicants must be good draughtsmen, with sound knowledge of detailing. Please write giving full particulars of experience, age, etc., to: F. W. Beech & E. Curnow Cooke, F./L.R.I.B.A., 15, Dix's Feld. Exeter. TC6945

EDWARD D. MILLS & PARTNERS require additional qualified STAFF for a variety of new work including housing, schools, industrial and churches. Enthusiasm and initiative important. Five-day week. Write giving full details to 9/11, Richmond Buildings, Dean Street, London. W.1.

A FEW vacancies still left for experienced and confident ARCHITECTS to fill positions of responsibility in a growing and varied practice with industrial and commercial work throughout the southern half of the country. Applicants must have initiative as well as architectural ability to carry through contracts up to £100,000, working directly with Principals but with minimum supervision. Apply in writing to Thomas Mitchell & Partners, 20 Bedford Square, London, W.C.I.

TC7443

A SSISTANTS and ASSISTANT ARCHITECTS required within the salary range £1.100-£1,350 on a variety of projects. Qualifications in landscape architecture an advantage which would affect salary. Large progressive office offering outstanding opportunities for people of ability, both at home and overseas. Excellent working conditiors: five-day week; three weeks leave: lunch vouchers; bonus scheme and generous sick pay provisions. Write or telephone Norman & Dawbarn, Architects and Consulting Engineers, 7. Portland Place, London, W.I. LANgham 8011.

GEORGE. TREW & DUNN

Hospitals, University, Prestige Office, Ships. We need your help.

Please write to us at 50, Eastbourne Terrace. W

SENIOR ARCHITECTURAL ASSISTANTS Large Office has a limited number of vacancies for Senior Architectural Assistants, salary range £900—£1,500, to undertake work of a varied and interesting character. Renly with particulars of experience to Box

JOHN & SYLVIA REID invite applications from young ARCHITECTS of ability and with good general educational backgrounds who are interested in joining a team capable of dealing with all architectural design problems. Applicants should be either recently qualified or have had two to four years' office experience. Applications by letter only to 88, Talbot Road, Highgate, N.S.

TC8149

R OBERT MATTHEW & JOHNSON-don office for ARCHITECTS at all levels of experience for a variety of interesting jobs. Apply to Robert Matthew & Johnson-Marshall. 24. Park Square East, N.W.I.

A RCHITECTURAL ASSISTANT

OF Intermediate or Finals standard WITH flair for planning, required BY leading prefabricated building manu-facturers

develop building systems friendly, congenial surroundings

SALARY RANGE £700-£1,100 p.a.

PLUS ... bonus, superannuation, five-day week, etc. Apply in writing, giving details of experience and salary required, to: Sales Director, Middlesex Pretabricated Buildings Ltd., Green Lane, Hounslow, Middlesex

Hounslow, Middlesex TC7787

RICHARD SHEPPARD, ROBSON & PARTNERS require ASSISTANTS of Intermediate and Final standard; salary according to ability and experience. 5, Southampton Place, W.C.1. OHAncery 4261.

YOUNG ARCHITECT, with minimum five years' office experience, required in London for senior position with good salary. Apply Box TC3605.

BOX TC3054.

PETER EDNIE & PARTNERS, Chartered Architects, of 4, Gray's Inn Square, W.C.1, require ASSISTANTS for permanent staff. Qualifications not essential. Life and Pensions Scheme operating. Salary and bonus according to experience.

A SSISTANT ABCHITECT, with good experience.

A SSISTANT ABCHITECT, with good experience and ready to assume responsibilities, required for well-established medium-size office in London. Good salary. Apply Box TC9055.

MALL, PROGRESSIVE AND CONTEM-PORARY LONDON OFFICE REQUIRES ASSISTANTS, GOOD OPPORTUNITY FOR PEOPLE WISHING TO GAIN EXPERIENCE IN ALL ASPECTS OF A VARIED PRACTICE. ROX 88195.

A RCHITECTURAL ASSISTANTS required in Croydon office for responsible positions. Schools, Hospitals, Public Buildings, etc. Salary up to £1.250 for qualified men and £900 for Students, according to experience. Annual bonus. Write full details to George Lowe & Partner, 79, George Street, Croydon.

INTERMEDIATE R.I.B.A. ASSISTANT required in Jersey office. Write giving particulars of experience and salary required to A. Le Sueur, A.B.I.B.A., 6. York Street Chambers, Jersey, C.I.

SENIOR ASSISTANTS required NOW. Salary according to experience.
Raymond Spraticy & Partners, 9. Hertford Street, Park Lane, W.1. GROsvenor
1552. TC9427

ARCHITECTURAL APPOINTMENT

MINIMUM commencing salary of
£1,500 per annum is offered to a
£1,500 per annum is offered to a
£0.40 per annum
£0.4

ilts. Please telephone: Patrick Barbour, Barbour Index Ltd., London, Gerrard 5436.

GOLLINS MELVIN WARD & PARTNERS 15, Manchester Square, W.1

have vacancies for Architectural Assistants. Telephone WEL 9991. S8495

A RCHITECTS, Baker Street area, require a qualified ARCHITECT, age 30.35, to take charge of an interesting project which calls for a bold and imaginative Designer. Reply Box 88608.

A RCHITECTS in Private Practice in London and the Home Counties will pay £1,000 to £2,000 per annum to competent ARCHITECTURAL ASSISTANTS. Varied and interesting work in hand. Write stating age and experience and salary required to Box S8480.

RCHITECTS require JUNIOR ASSISTANTS.
Commencing salaries 4450—4550 according to experience with every opportunity to advance by annual increments in busy practice, stephenson, Gillis & Partners, 2, Sawille Chambers, North Street, Newcastic on Tyne, 88508

SUTTON, SURREY

(near Station)

EXPERIENCED ARCHITECTURAL ASSISinteresting range of projects. Salary £900—
£1,100. Holiday this year by arrangement. Lady
Assistant considered. Vacancy also in London
Office to which replies should be sent or telephoned. Gerald Shenstone & Partners, 34,
Bloomsbury Way, W.C.1. Tel.: CHAncery 3444.

MOOLEY AND FOSTER require ARCHITECTRUM ASSISTANTS, Intermediate or newly qualified. Varied practice including schools, multi-storey housing, hospitals, offices, industrial and churches. Salary 2850—21,000 according to experience. Five-day week, free life insurance and good working conditions, with advantages of being within easy reach of but not in London, 2-bedrom flat available. Apply in writing to Midland Bank Chambers, Buckhurst Hill, Essex. TOOLEY

£800-£1,600. LIVERPOOL and

require ARCHITECTS and ASSISTANTS with the experience, drive and design ability to handle Church, College, School and Industrial projects from preliminary sketch to final account.

WEIGHTMAN & BULLEN
76, Rodney Street, Liverpool 1
and Acomb House, Front Street, York.

FIVE-DAY WEEK, BONUS & PENSION SCHEME. S8522

SSISTANT ARCHITECT with ability and initiative required to work closely with Staff Architect on a variety of interesting projects. Salary according to achievements. Pension scheme, five-day week. Apply to Michael de St. Croix, A.R.I.B.A., 35/41, Lower Marsh. London, S.E.I. WATErloo 6922.

WANTED: Experienced competent ARCHITECT, good designer and detailer, used to responsibility, for small private practice, North-West Surrey, Salary £1,650, car allowance. Permanent post. Plenty of scope. Box 88519.

INTERMEDIATE standard ASSISTANTS

TNTERMEDIATE standard ASSISTANTS
INTERMEDIATE standard ASSISTANTS
the Boss need apply only. Salary to match
ability. Dalling and Partners, Chartered
tects, 14, Bloomsbury Square, London. W.C.1.
CHAncery 4725.

NEW PRACTICE STARTING in Thames-side town west of London. SENIOR and JUNIOR ASSISTANTS required to work on varied commercial and domestic projects. Salary by arrangement. Interviews can be arranged in London if desired. Write in first instance with details of experience to Box S8510

details of experience to Box S8510.

CHERRER & HICKS

REOUIRE in their London Office:—
Qualified Architects with at least five years'
experience. Salary £1.400/£1.500 p.a., and
Experienced Intermediate Assistants. Salary
£1.000 p.a.
Reolv to 19 Cavendish Square, London, W.1. 8581

A SSISTANTS, Intermediate, Final level, £800 to £1.100. Telephone Waterloo 4562.3. 8569
A RCHITECTS. Established Belfast Practice requires services of a well experienced Principal Assistant Architect to engage in leading projects. Good prospects in developing group practice. Applications giving requisite information, including present salary range (in confidence). Apply Rox 8570.

SENIOR ARCHITECTURAL ASSISTANTS re quired for London and West Country. Five-day week. Private pension scheme. Interesting work. Good salaries. Box S8571.

A SSISTANT needed for small Hampstead office will pay appropriately for a very good man 30x 8580.

Box 8580.

RNO GOLDFINGER requires several qualified ASSISTANTS with at least two years' experience to take part in a growing programme of interesting work which includes large office buildings, central developments. Local authority housing, schools and private houses. Good salaries and scope for men with sound knowledge of construction. Phone HYDE Park 5607.

TCSES

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COMMENCING
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£550 to £850
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GOOD PROSPECTS

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Write, stating age, experience and salary required to:

THE ARCHITECT, WESTMINSTER BANK LTD Post Office Court, 10 Lombard Street, E.C.3



ASSISTANT BUILDING SURVEYOR

Assistant Building Surveyor required by Sheffield Office of Mobil Oil Co. Ltd.

Applicants must be capable draughtsmen, have some experience in supervision of site works and be capable of working under limited supervision. Must hold current driving licence. Luncheon Vouchers, good employee benefits.

Write, giving details of age, experience and salary required, to:

Employment Adviser, MOBIL OIL CO. LTD., Caxton House, London, S.W.I.

quoting ABS. 5280

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD

40 Eastbourne Terrace, London, W.2 W. G. Plant, Dip.Arch. (Liverpool), F.R.I.B.A., Regional Architect

Senior Assistant ARCHITECTS

required for the Board's expanding Architectural Department in London.

The Board is undertaking a considerable programme of Hospita Building offering scope for research, imaginative design and progressive thinking, and excellent opportunities for gaining experience in a wide, varied and interesting field of Architecture. Major schemes on which the Board's staff are at present engaged include:

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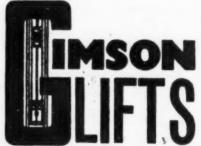
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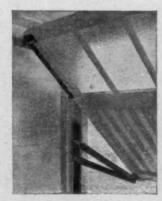
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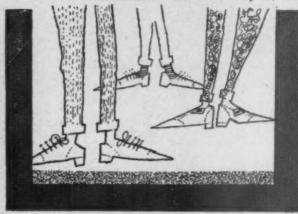
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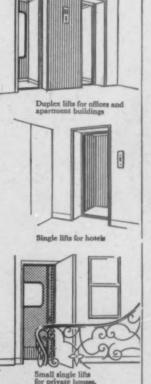
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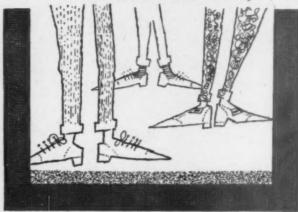
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BRITAIN'S LARGEST HYPERBOLIC PARABOLOID STRUCTURE

Work is in progress on the foundations and basement area of the new Commonwealth Institute on a 3½-acre site, to the south of Holland Park, on Kensington High Street. A feature of the design will be the roof of the exhibition block, consisting of one shell concrete hyperbolic paraboloid and four side warps constructed of pre-stressed concrete beams supporting woodwool slabs, all of which are covered by copper sheet. The walls are to be of *Thermalite* building blocks clad externally with curtain walling of coloured opaque glass.

New wool slabs, all of which are covered by copper slare to be of Thermalite building blocks claded curtain walling of coloured opaque glass. Commonwealth Institute

Architects: Robert Matthew and Johnson-Marshall

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GREAT BRITAIN AND OVERSEAS

The exhibition block, housing permanent exhibitions of Commonwealth countries, will contain three galleries, pierced under the main paraboloid to form a large central well, which will unite the gallery floors and permit long diagonal views of the curving roof planes indirectly lighted by concealed clerestory windows.

A two-storey linking block, containing art gallery, cinema, studios, public assembly rooms and restaurant, will join the galleries to the four-storey administration block. The ancillary buildings will have a reinforced concrete structure, and will be clad with precast concrete panels and brickwork. Large window areas will allow fine views across Holland Park and over the grassed forecourt.



