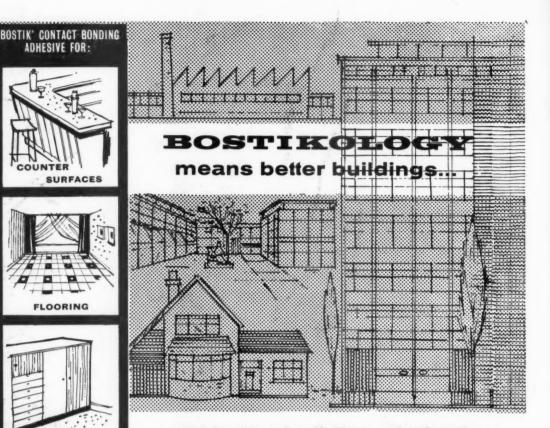


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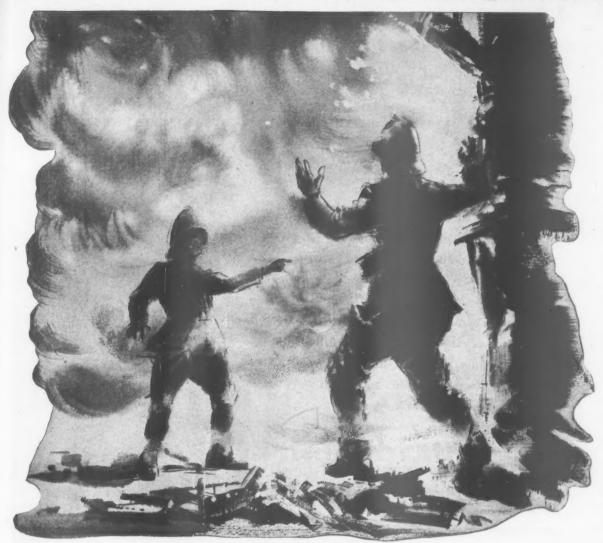
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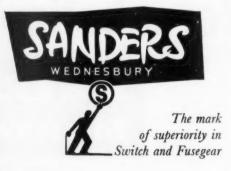


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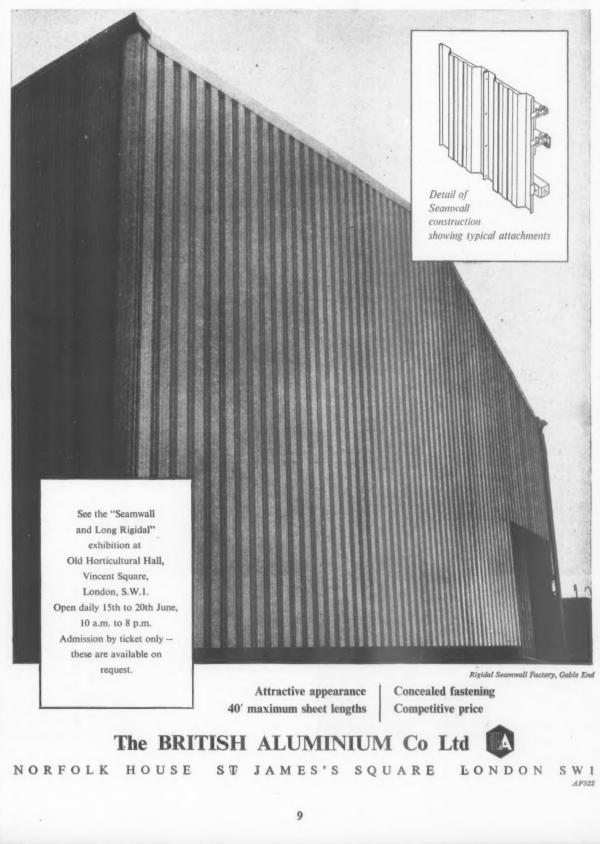


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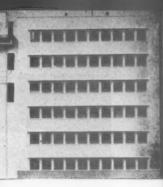


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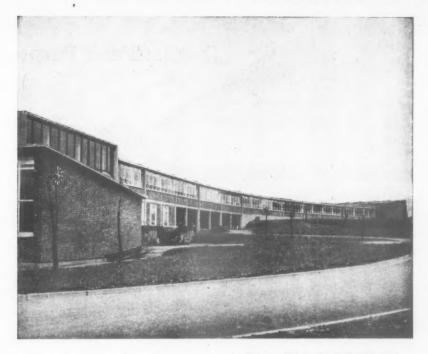
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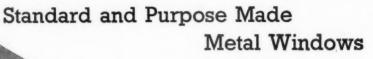
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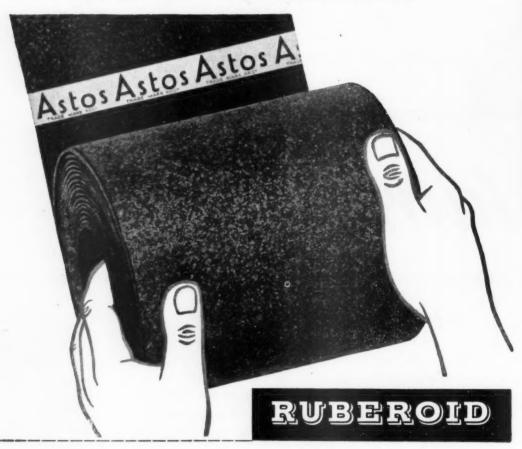
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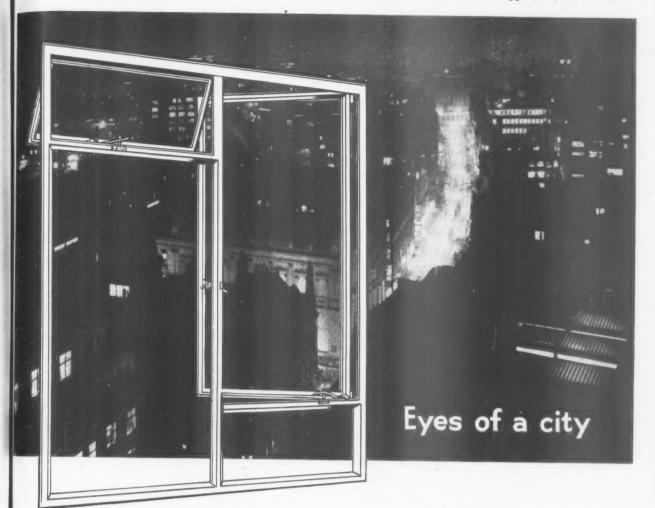
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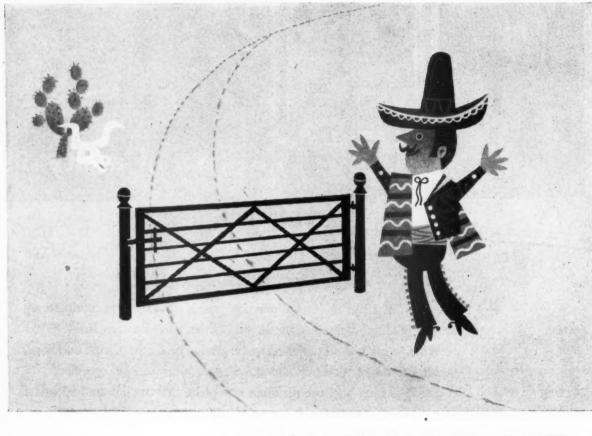


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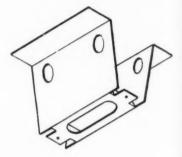
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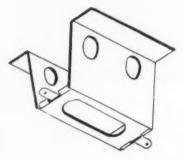
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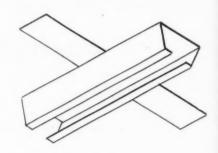


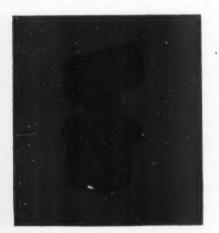
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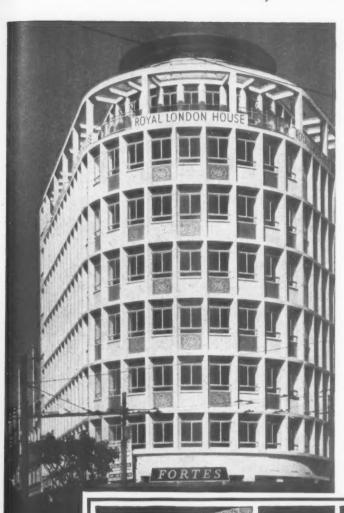
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Water will not penetrate silicone treated masonry but moisture from the inside, in the form of water vapour, can still pass through the pores.





Water bounces right off the silicone treated window sill on the right. The untreated sill on the left is thoroughly soaked as soon as water hits the masonry surface.

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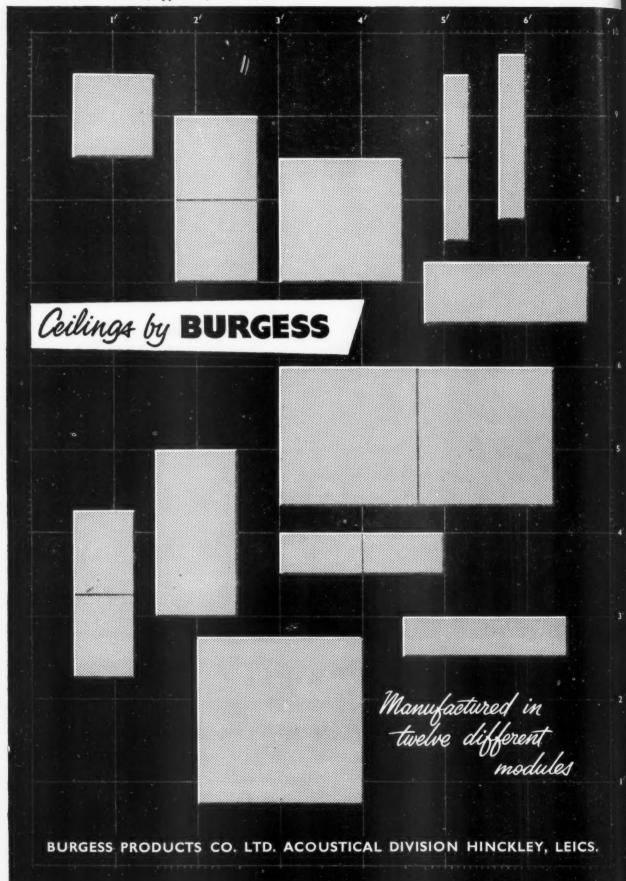
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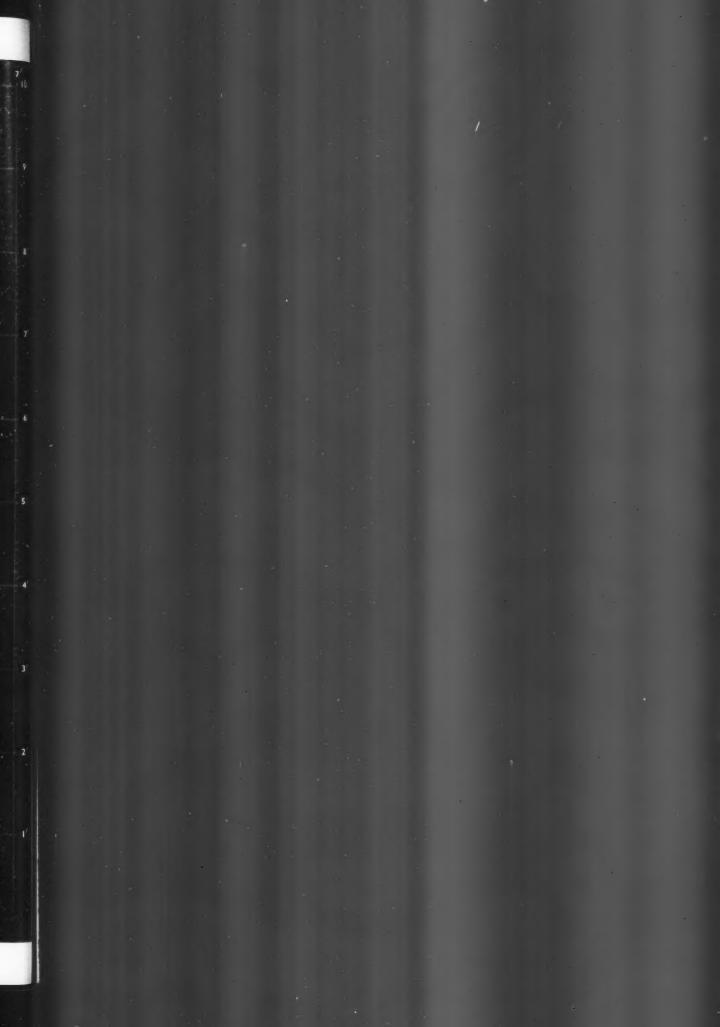
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of the track section.

3/16" diam. fixing holes run the full length

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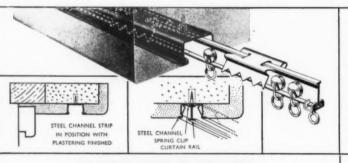
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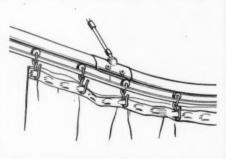
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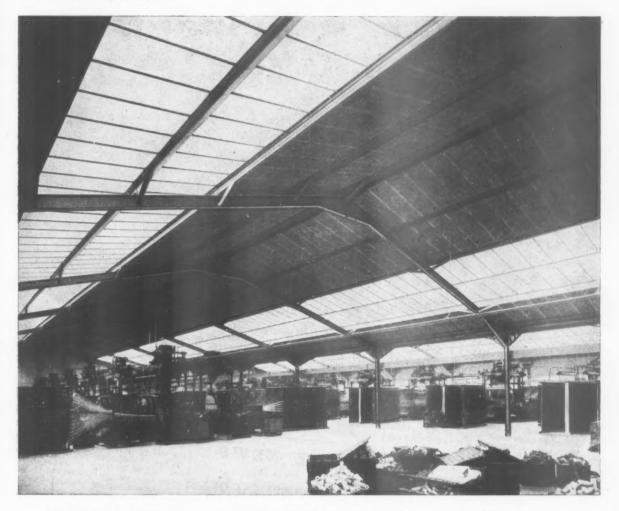
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NG THE PILE

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water accidentally hammer jams in the

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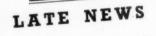
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is normal practice to finish off the sile about a foot above the required

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These methods are the deal road road test, is which the weight is provided by successi-increments (f' entledge bearing directly c the pile cap, and two types of jack test. the first of these types the weight of a fin test load of kentledge is gradually trar ferred on to the pile by means of the jack in the second, the jack operates not agai kentledge but against the uplift obtain from adjacent piles.

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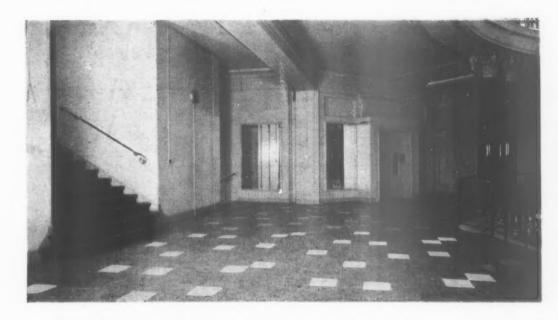
After the recording of any settle which may have occurred during this p which may have occurred during this p the load is gradually reduced again, ings being taken at each stage in the way as when the load on the pile was.

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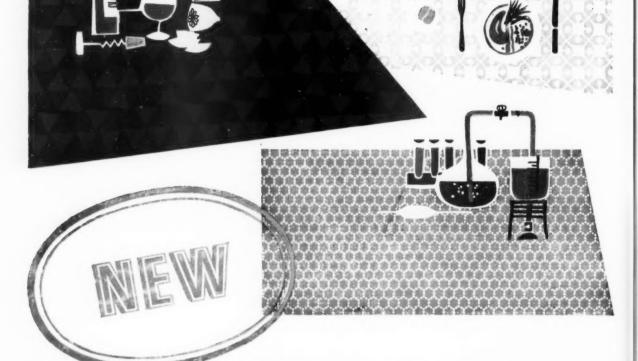
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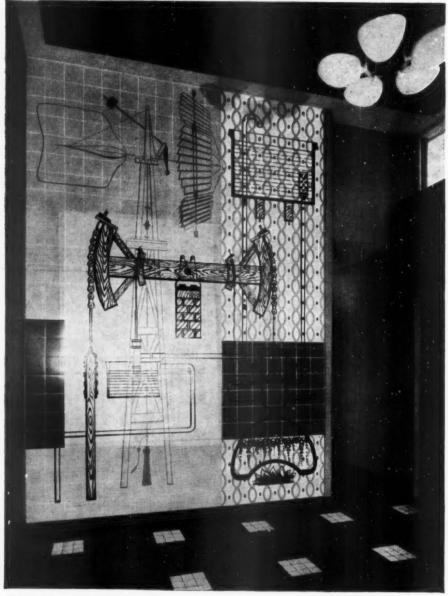
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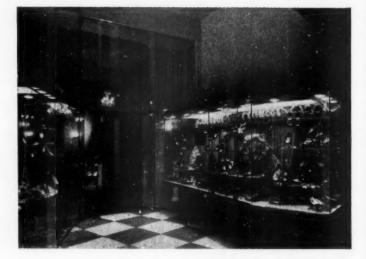
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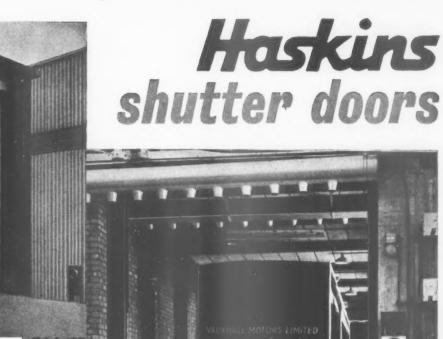
SCORESBY HOUSE, GLASSHILL STREET, BLACKFRIARS, LONDON, S.E.I Telephone: WATerloo 8010 (20 lines)

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Fashion Shoe Shop for T. Elliott & Son Ltd., Caltex House, Brompton Road. Designed and installed by W. T. Booth Ltd., Kingston-on-Thames. 8

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Electrically operated shutter doors fitted to a weather lock at the Vauxhall Motors Factory, Luton. These shutter doors are operated by photo electric cell equipment in conjunction with electric traffic signals.

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The system allows only one set of doors to operate at a given time thus preventing heat loss from the main buildings.

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Haskins Shutter Doors are fire-resisting and capable of resisting great wind pressure when installed in exposed positions. Equally suitable for large or small openings, the well-designed mechanism ensures trouble-free operation. For full information of Haskins Manually, Electrically, Pneumatically operated Shutter Doors

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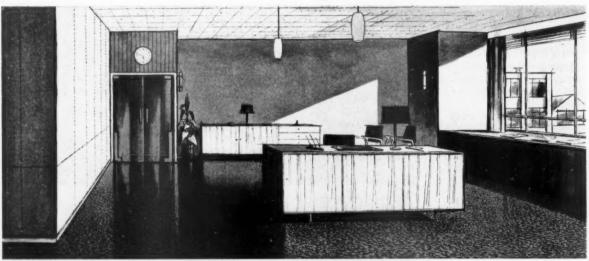


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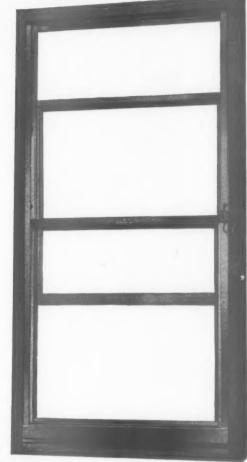




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SIZES — Supplied in standard units as under 2 ft 0 in. x 4 ft 0 in. high, 2 ft 6 in. x 5 ft 0 in. high, and 3 ft 0 in. x 6 ft 0 in. high or in sizes to suit special requirements.



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A foolproof device ensures suspension in required position. Balance weights are incorporated in units over 2 ft 6 in. x 5 ft 0 in. high.

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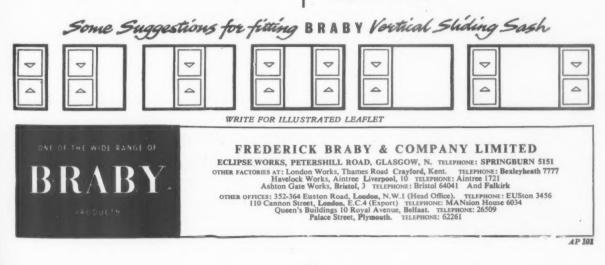
Glass inserted from the inside and easily replaced. Units supplied glazed if required.

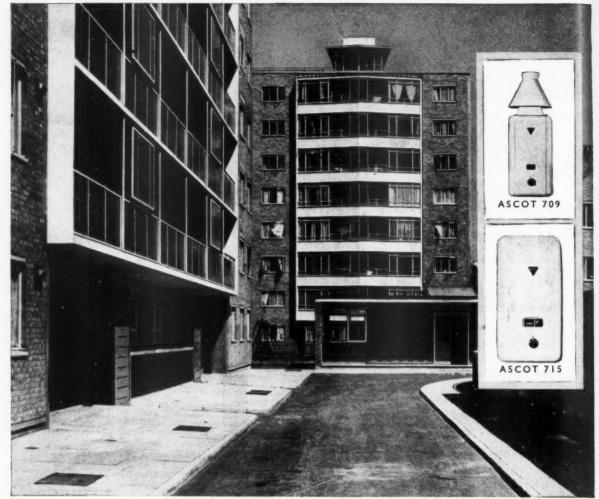
Security

A device locks sliding sashes when in closed position.

Transom Ventilator

Ventilation at transom is obtained by speciallyarranged sliding ventilator.

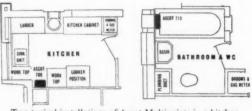




Caroline Estate extension, Hammersmith

ASCOT IN NEW HOUSING (9)

Ascot instantaneous Gas Water heaters have been extensively used for providing hot water in dwellings comprising the London County Council's new Caroline Estate extension at Hammersmith, photographed above. In the eight-storey block, Joanna House, Ascot multipoints have been installed in the 30 three-room and two two-room flats. In the tenstorey block, Henrietta House, Ascot 715 'balanced flue'



Two typical installations of Ascot Multipoints in a kitchen and a bathroom in flats on the Estate.

WHG/A375

multipoints are provided in 20 three-room and 18 two-room flats. For technical reasons, an alternative water heating system was necessary in two two-room flats on the ground floor of this block.

In all other maisonettes and flats on the Estate, back boilers have been provided for hot water, except in six maisonettes. Here, Ascot 715 multipoints are installed to obviate difficulties which would have otherwise resulted from having flues for solid fuel fires situated near the ten-storey block.

RESPONSIBLE AUTHORITY London County Council Architects: Edward Armstrong & Frederick MacManus, F.R.I.B.A.,

Chartered Architects, 28, Gloucester Place, London, W.1



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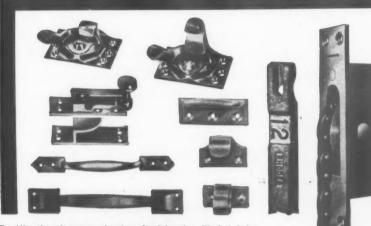
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For sashes up to 70 lb. specify No. 44 chain with the 2 in. pulley. For sashes up to 112 lb. specify No. 33b chain with the 21 in. pulley. requirements.

GLEAN, STRAIGHT, CAST IRON SASH WEIGHTS Standard pattern square weights suitable for cord or chain supplied in the following measurements:--

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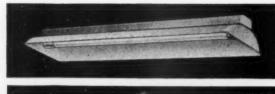
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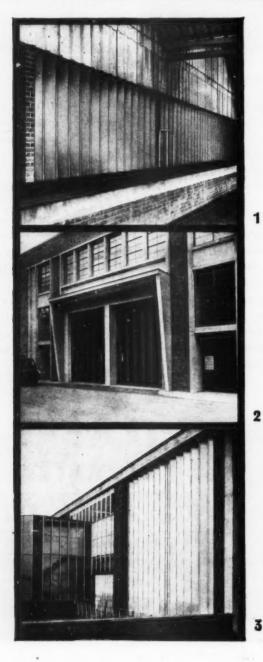
COLLAPSIBLE SHUTTER DOORS

Recent Bolton Patent Shutter Door installations in Cardiff include : Wonder Bakery Ltd., Maindy ; Elliots Wire Rope Works, Collington Rd. ; J. Lyons & Co., Ltd., Newp

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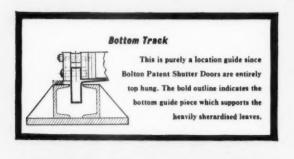


The illustrations show how versatile the Bolton Patent Shutter Door really is and installations everywhere are giving lasting trouble-free service. The doors are craftsman built from tested materials to a design which has never been bettered and hand or power operation may be had for any situation. Some of the details of the design and reasons for the popularity of Bolton Patent Shutter Doors will be seen from the diagrams.

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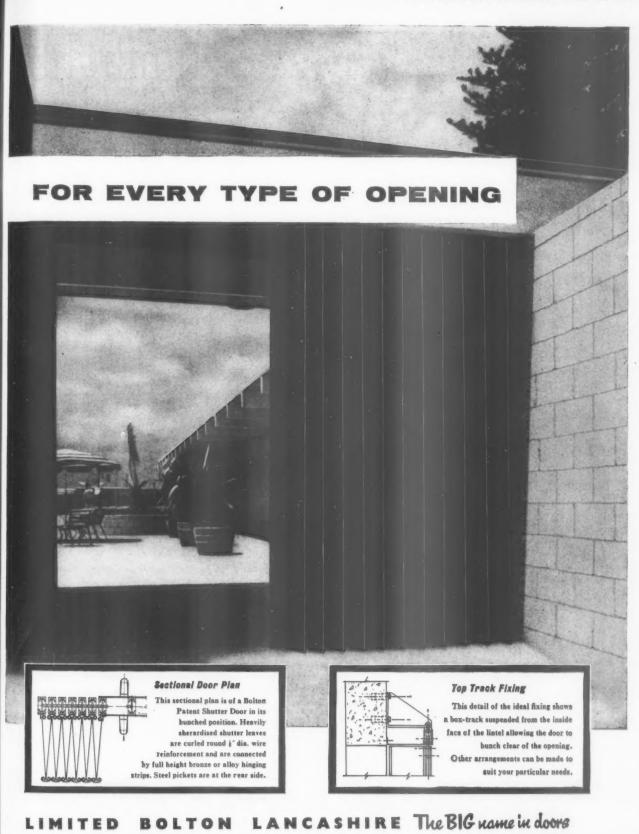
The illustration right shows a partly bunched Bolton Patent Shutter Door at Onehunga War Memorial Swimming Pool, New Zealand.

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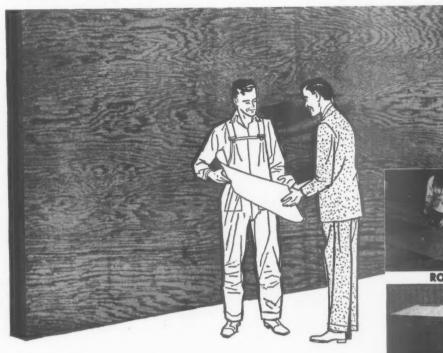
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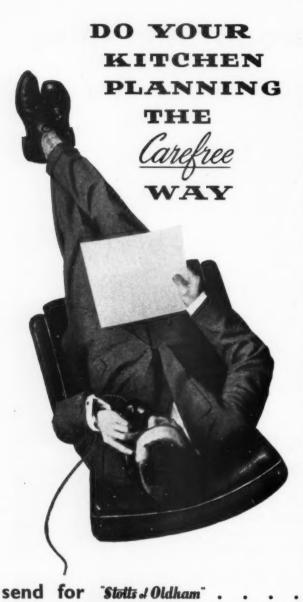
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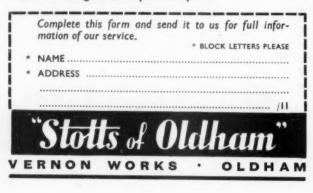
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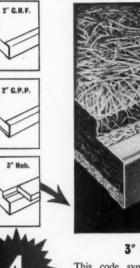
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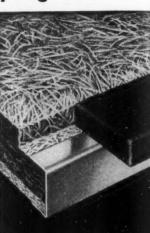
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THE ARCHITECTS' JOURNAL for June 11, 1959





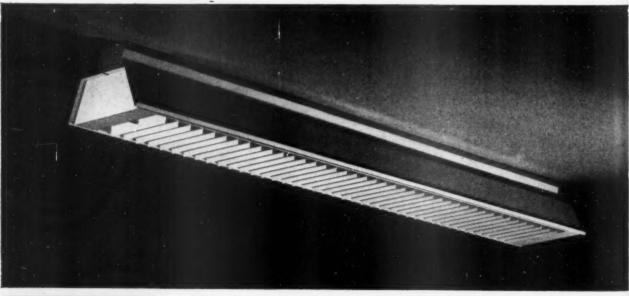
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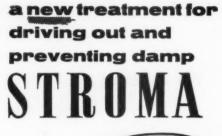
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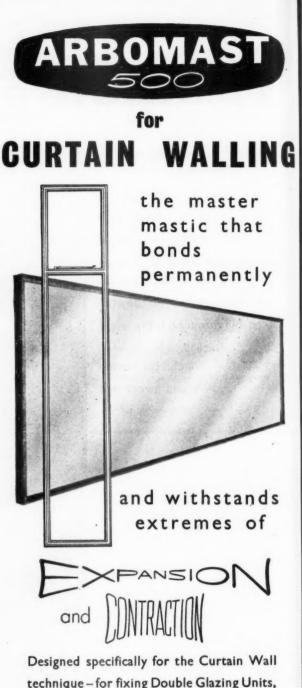
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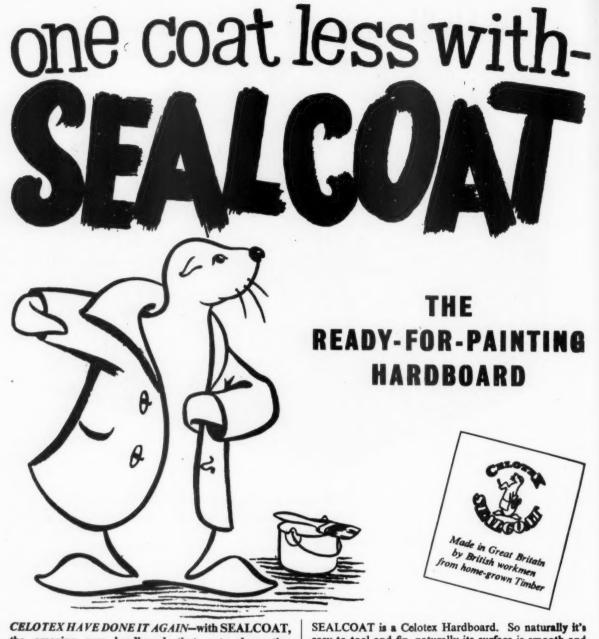
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THE ARCHITECTS' JOURNAL for June 11, 1959

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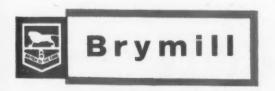


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THE ARCHITECTS' JOURNAL for June 11, 1959

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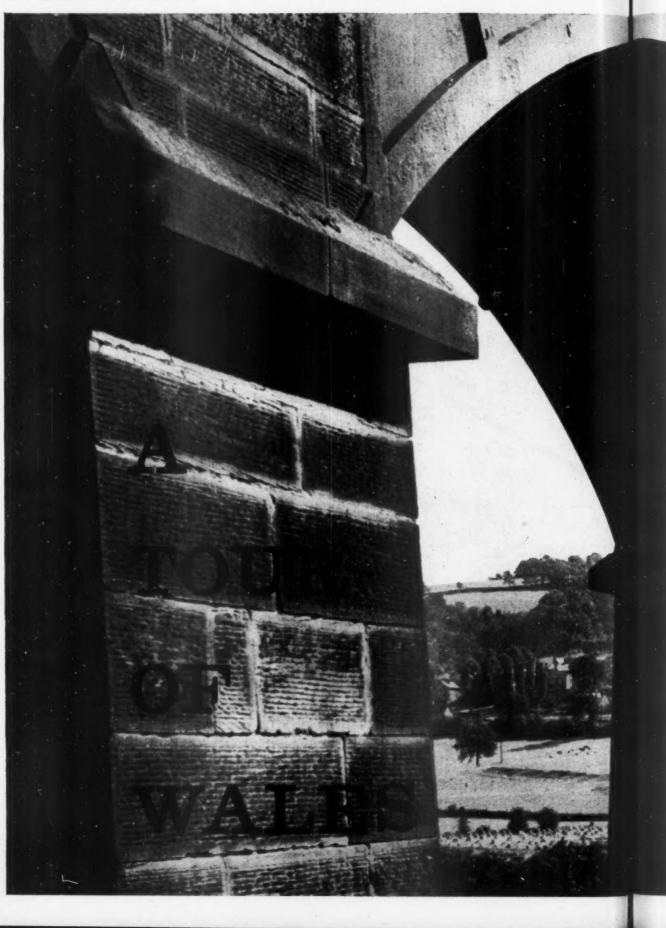
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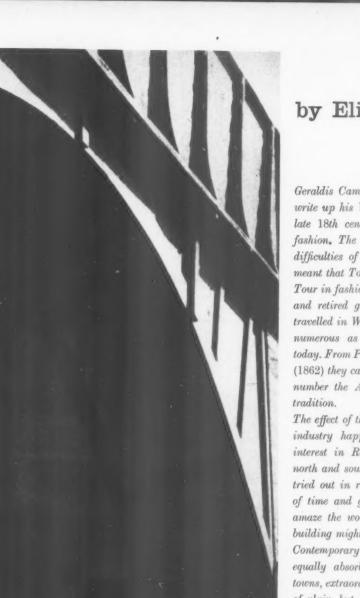
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BRITISH ARCHITECTS' CONFERENCE, CARDIFF

The title of the RIBA Conference, which starts this week, is " Efficiency and the Architect," a subject to which the JOURNAL through its authors W. Sinclair Gauldie and Arthur F. S. Wright, has already contributed, their articles on Architectural Management being included amongst the Conference Papers. In contrast and relief to this earnestness, this week's JOURNAL is largely devoted to a series of tours of Wales: tours for Conference members to follow on their way to and from Cardiff, and tours for others to study who wish to be reminded of the early and startling effect of the industrial revolution on Wales. The tours have been planned and described by Elisabeth Beazley, ARIBA. This article is followed by illustrations of some recent buildings in Wales.

We regret that as a consequence of the current dispute in the printing industry, this special number of the JOURNAL has had to be reduced in size, and we have been unable to include the advertisement enquiry form. It is also probable that many readers will receive their JOURNAL late. We apologise for this, but it is a matter beyond our control.





by Elisabeth Beazley

Geraldis Cambrensis (1188) was probably the first to write up his Welsh journeys, but it was not until the late 18th century that Wales became the height of fashion. The Romantic Movement coupled with the difficulties of continental travel caused by Napoleon meant that Tours of Wales were to replace the Grand Tour in fashionable society: Poets, painters, scientists, and retired generals, and anyone who was anyone, travelled in Wales. Accounts of their journeys were as numerous as those of Himalayan expeditions are today. From Pennant's Tour (1778) to Borrow's classic (1862) they came thick and fast. So in this Conference number the AJ is simply following an established tradition.

The effect of the Industrial Revolution on the building industry happens of course to coincide with this interest in Romantic Wales. The Iron Masters of north and south produced a material which was to be tried out in revolutionary designs. Wales, by chance of time and geography, saw structures that were to amaze the world. A history of industrial revolution building might be written using Welsh examples only. Contemporary with this epic tale is the quieter but equally absorbing story of early 19th century new towns, extraordinary mid-century fortification schemes, of plain but dramatic chapels going Gothic as the century wore on, of orderly housing and orderly slums developing into 20th century sprawl.

In this brief tour (NB a tour is not a guide, to the advantage of both reader and writer) I have tried to draw attention to building projects (in the widest sense) from the late 18th century onwards because this is not only particularly fascinating in Wales, but one which has generally been neglected.

The background to these 19th century schemes is remarkably similar to that of today. The designer often dealt with a committee instead of a single enlightened patron; he had all the difficulties of persuading the faint hearted. His schemes were frequently abandoned or held up for want of money. Contractors were at times first class; at others they went bankrupt during a contract, or were not up to the niceties of construction required by new methods or new materials. Local opposition to new plans was as common then as now. Architects and engineers raced about the country supervising schemes, coach or horseback taking the

place of car or aeroplane.

On the other hand, the country itself was wonderfully wild and undeveloped. Surveying for A5 in 1810 must have felt like opening up Nepal today.

The chief difference was in the attitude of the public. First as patrons; when things went wrong or collapsed, instead of cries of "Sack the designer" or "Hold an enquiry" the main idea seemed to be to get things put right immediately by the same designer. More spectacular still was the attitude of the crowd. Throughout the century, great moments in the building as well as the formal opening of the great bridges, etc., were an occasion for public holiday. Everyone turned out to cheer; it was like a cup final but more so. Military bands, cannon, and splendid feasts were laid on, and the scenes were then perpetuated by the artists and occasionally the poets.

There was of course another side to the coin. When looking at Pont Cysyllte or any of the early iron bridges, it is appalling to realize that it was quite possible that small children worked at the rock face to pick out the ore. Seven-year-olds in a mine or ten-year-olds in a foundry may sound medieval practice. In fact, Shaftesbury's Mines and Collieries Act was not passed until 1842 and the Factories Acts from 1867. That conditions were similar in other industries is not consoling.

The last major difference was in the amount of accumulated knowledge available to the designers. Great care went into calculations and tests, but when in unexplored territory there is a limit to the amount of previously acquired experience that can be used. The early engineers and architects working in iron were formulating the laws rather than working within an established pattern. This, though calling for the highest degree of inventiveness and skill in design and courage in execution, may also have had certain advantages.

In this brief tour I have tried to find out something of the climate in which the buildings were constructed; what the designers were striving to achieve, how the public felt about it, or in a few cases how things were actually erected. A finished building can be such a complete statement in itself one is apt to forget what immense energy was needed to achieve the result. As surely as the grass grows over the raw embankments and the scaffolding is struck from the brand new buildings, the struggles, frustrations and anxieties that went into them, are forgotten. This is as it should be. But for those who are daily involved in the construction of buildings it may be of interest to read about the process as well as the achievement. Wales, 1790 onwards, has been the subject of this tour but there are many deviations.



Map showing four routes followed in the tour



Route 1

Chirk A_5 N. Wales Coast Road to South West Wales Cardiff



Castiron used in boatbuilding dock near Pont Cysyllte.



Accomplished iron work, above, and accomplished stonework, below, in multi-level traffic routes near Llangollen



Enter Wales on A5, south of Chirk.

Thomas Telford makes this part of tour momentous. For brief period (1795-1830), N. Wales was site of engineering feats unsurpassed in whole world. Reason: combination of inspired designer and enlightened (or persuadable) patrons; with untried material in production conveniently close at hand. Telford's two great schemes were

1. The Ellesmere canal. Part of his initial brief was to reduce locks to a minimum, hence the aqueducts.

2. The Holyhead Road and its bridges (built as a result of agitation from Irish

(built as a result of agitation from Irish M.F.'s). M.F.'s). Read: Wild Wales, by George Borrow; Thomas Telford, by L. T. C. Rolt; Lives of the Engineers, by S. Smiles; Bridges of Britain, by E. de Maré; Cast Iron in Architecture, by Gloag and Bridgwater. 1887. Telford appointed Surveyor of Public Works to the County of Salop Incoholde indiment parcon of interact to

(probable indirect reason of interest to architects: a William Poultney had con-sulted Telford about improvements to a sulted Telford about improvements to a house in Eskdale, Telford's village in the border country; these were undertaken to the satisfaction of all. This same Wm. Poultney inherited property in Shrews-bury, became local M.P., and again needed an architect. Obvious morals abound) abound).

To west of A5 immediately before Chirk. see

Chirk Aqueduct; Th. Telford, 1796-1801. Carries canal over R. Ceiriog. For close view: travelling n., cross river, turn l. on B4500, see cart road on l. Leave car and walk down. See thread of aqueduct through trees below you. Curious sensation of being at ground level till you look over edge and see Ceiriog far down in valley bottom.

Aqueduct: 10 stone arches each of 40 ft. span, 70 ft. above river. Bottom of channel formed of iron plates bolted together. Until now engineers had fol-lowed Brindley's method of aqueduct building—heavy puddled clay channel on low masonry arches. Chirk therefore new departure.

Excellent picnic place by boat pool and tunnel (also Telford). Has all withdrawn remoteness of a canal plus engineering excitement.

Railway Viaduct adjacent in 1858. Continue n.on A5, in Fron (3m.) turn r. for

Pont Cysyllte; Th. Telford, 1794-1805.

DO NOT MISS. Details: length 1,000 ft., 19 arches then massive embankment; width 11 ft. 10 in. (towpath is cantilevered over water); height 127 ft. above Dee. (Illus. on page 860).

Stone piers (of hollow construction above lower 70 ft.) support 4 cast-iron arches (2 open web and 2 solid) which carry the cast-iron trough. Unprecedented design executed with

daring economy of new material. 1794. Plans laid before committee (note

Telford rarely had a private individual patron) who gradually became more horrified as implications of design regis-tered. Combination of jealous opposition and genuine fright slowed progress, but Telford able to demonstrate proposals on smaller aqueduct, London, 1795. Con-fidence grew. Foundation stone laid. Trouble with masonry contract but by 1797 Telford able to write that the aqueduct was "already reckoned one of the wonders of Wales for your old acquaintance (Davidson, the resident engineer) now thinks nothing of having three Carriages at his Door at a time. Ironwork not tendered for until 1802. Contract went to Hazeldines foundry, recently opened to n. of aqueduct (on site of present chemical works) so transport costs nil.

Route 1: Llangollen – Menai Suspension Bridge



Plants on the Llangollen feeder canal.



An early standard iron window in mill on Llangollen canal.



Telford's feeder canal, Llangollen.



Blanket mill on feeder canal.



Litter displayed on A 5. Below, Llyn Ogwen near Capel Curig.



1805. Ceremonial opening. Fine Nov. afternoon. Aqueduct crossed by pro-cession of 6 boats (the third carrying band of Shropshire Volunteers playing heartily) Vale re-echoes with thundering cannon, and cheers of thousands.

1959. Aqueduct stands as built, and still carries traffic. See also boat-building docks on n. side

of aqueduct. Timber roof is supported on of aqueduct. Timber root is supported on pairs of c.i. channels, bolted together, possibly contemporary with aqueduct. Follow A5 to **Llangollen**. Famed for: picturesque scenery, the Eisteddfod, Plas Newydd where the Ladies enter-tained Everyone who was anyone between 1780 and 1831 (open to public), Valle Crucis Abbay Valle Crucis Abbey. Not famed for but do not miss:

Mr. Jones's Corn Mill (on r.h. bank up-stream from bridge). Recognize by Plaque in wall "1786 Trevor Lloyd." Not exciting outside but very within. Main wheel (c. 20 ft. dia.) with c.i. rim and wood paddles and spokes driven by Dee, drives iron pit wheel; crown wheel (see immense vertical timber axle) engages smaller cogged wheels of elm and beech thrown into gear as needed. Thunder of water wheel and immense sense of power as other whir into action contrasts oddly with quiet dusty light of mill. Note wood floors, polished by nearly two centuries of flour. Mr. Jones's Corn Mill (on r.h. bank up.

two centuries of flour.

Telford's Navigable Feeder Canal. Raison d'etre of Llangollen canal is as feeder to the Ellesmere. If cramped from car and tired of traffic take canoe (ls. 6d. per tured of trame take cance (18. od. per person per hour). Go west for horseshoe falls but do not expect immense cataract. They are a finely curved weir, about 18 in. high, designed to divert Dee into Telford's feeder. We did this on brilliant evening following black downpour. Rock cuttings of miniature grandeur; jungly plants; unaware birds creeping among plants; unaware birds creeping among young larch; enormous sparkling rain-drops; curious peace peculiar to canals; even when people or houses appear on towpath they are separate. One can easily see the point of the Picturesque. If very energetic paddle to Pont Cyslite (c. 4m.).

Blanket Mills. On l.h. bank downstream from bridge. Water wheel no longer used but interesting facade of standard iron factory windows. Am told that blankets made here were used for washers between

Warning about hotels: even out of season these may be full. "It's the Commercials." Travellers certainly find the best towns immediately outside industrial areas. Twice got into Tan-y-Wern (just off A5 on e. of town). Reasonable, comfortable, friendly. One snag: dinner at 7 but one can eat out.

Leaving Llangollen on A5, travel w. up the Vale.

From Shrewsbury, A5 is Telford's Holyhead Road, surveyed and built 1815-29. A fine engineering feat, which fact the ease of gradients, skilled rock cutting, etc.

case of gradients, same for cutching, etc. is apt to obscure. On both sides of Denbigh/Merioneth border a footpath with kerbs is under construction (see p. 881 for observations on kerbs on A48). If path is necessary could it not be flush with road but of different surfacing material and separated from it by setts at 3 ft. 0 in. intervals, just proud of surface? Also, litter-bins most sensibly provided by Denbighshire CC—are of wire mesh and therefore look extremely murky by comparison with oil-drums used elsewhere. Oil-drums possibly cheaper too?

On l.h.s. at entrance to **Corwen** is a work-house (for sale) 1838. Interesting social distinction in window types: sliding sash for officers, standard iron for inmates.



Above, detail of Telford's bridge near Bettwys-y-Coed erected in 1815; as cast-iron legend states: "This arch was constructed in same year the battle of Waterloo was fought." Contemporary print, of Wa below.



Road now crosses open stoned walled country (Pentre Foelas) before dropping down to upper waters of Conway. From here, wooded and picturesque; waterfalls and tea-shops. Just before Bettwys-y-Coed road crosses strange Waterloo Bridge. Th. Telford 1815. Cast by Wm. Hazeldine. Though a technical feat of casting, this seems a remarkably early warning of seems a remarkably early warning of what was to come later in 19th century

Menia Suspension Bridge (Telford). Elevation showing the state of the works in 1825.

when casting really ran riot. Here still when casting really ran riot. Here still under control but patriotic use of rose, leak, etc. in spandrels unexpected after Pont Cysyllte and before Menai (chrono-logically as well as geographically). Now painted dark green, dark red (flowers) and silver (lettering). Shudder making. Please paint whole light grey to contract with dark wooded value. contrast with dark wooded valley. At Bettwys see also Church by Paley.

Road soon leaves idyllic wooded gorges and large midcentury hotels (following

and large middentury notes (honowing wake of railway). After Capel Curig the Glyders tower on I. and Llyn Ogwen (like a pool of lead on the brightest day) lies on r. Essential to have wild winter evening and not tripper strewn August afternoon for this part. Bleak slatey mountains, thin grass (no heather), sheep. Also climbers.

Go down Nant-y-Francon (one of Telford's best bits), pass black glittering slate dumps via Bangor to Menai.

Menai Suspension Bridge. (Thomas

Telford) 1819-26. Read: An Historical and Descriptive Account of the Suspension Bridge, by Alexander Provis, Resident Engineer. Thomas Telford, by L. T. C. Rolt.

Note: Until 1938 when the iron chains were replaced by steel (Engineer: Sir Alexander Gibb, descendant of Telford's Engineer for Aberdeen Harbour), the

original bridge still carried A5's traffic. See list of tolls on Telford's Llanfair PG Toll-house, and contrast with 20th century loading.

To see: no stopping on the bridge so for close view leave car in side road to Menai Bridge Station, immediately before bridge on 1. on Caernarvon shore.

The history behind this bridge is so very like and yet so utterly different to the story of any great building project today, it is worth recording in some detail: This is the first sizeable iron suspension

1785: Parliamentary Petition presented for a bridge across the Menai Straits. 1801: Rennie asked to prepare design

(note time lag). He produced 4 designs—all of cast iron

arches.

Much opposition from locals who feared loss of trade, also from those who felt

loss of trade, also from those who felt it would interfere with shipping. Time slid by. Real snag: lack of money caused by war. 1810: Telford (working on the Road Survey) produced 2 designs for c.i. arched bridges. They were to be con-structed on suspended shuttering to avoid interference with navigation. Admiralty not astisfied. not satisfied.

Another lull.

1814: Telford designed Runcorn Suspension Bridge (1,000-ft. central span).



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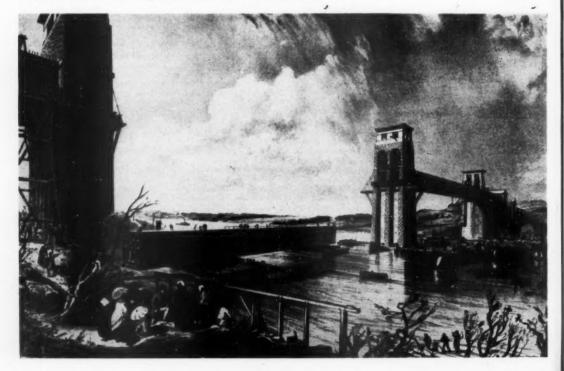
Route 1: Menai Suspension Bridge – Britannia Bridge



Robert Stephenson's Britannia Bridge.

Lion by John Thomas, Chelford 1843 on abutment of Britannia Bridge.

Britannia Bridge, 1848. The cellular top and bottom members of the tube are just discernible.



Many experiments made with wrot iron "to show what relative force would tear it asunder." Large model (50-ft. central span) made; public interest created but lack of funds finish scheme. N.B. Rolt tells us that this was just as well as it was likely to prove unstable.

1818: Commissioners, having seen Runcorn designs, approached Telford about the possibility of a *suspension* bridge over Menai.

Opposition continued. More meetings; fortunately "explanations satisfied the noble marquess" but a Mr. Asheton Smith "would listen to no compromise whatever." Much activity to find suitable stone and to attract masons to build the gigantic suspension towers. "The shore was perambulated from Beaumaris round Penmon to Red Wharf." Good limestone found at Penmon; quays built; 2 ships purchased; local opposition and tempestuous seas are little help.

pestuous seas are note help. Telford meets a Captain Brown who had been experimenting with chains of long flat iron links and pins. This type eventually used for Menai.

1819: Parliament authorises bridge. Work begins on piers.

1820: Masonry contractors throw up contract. John Wilson recalled from Gotha Canal to supervise masonry.

1823: Piers up to road level. Tunnels (6 ft. dia.) blasted in rock for suspension chains. These open into single chamber where actual anchorage—enormous c.i. frame is buried.

Meanwhile links are manufactured in Shropshire, shipped via Telford's canal to Chester. Each tested in tension to take 33 T. (calculated to break at 87[‡] T.). Plunged in linseed oil and stove dried to prevent corrosion (disappointing to those who remember L. Carroll's specification*) No space to describe the immensely thorough checking and testing that took place. Telford left nothing foreseeable to chance. But no suspension bridge on this scale had been attempted; probably it was the unforeseeable that gave him weeks of sleepless nights.

April, 1825. Suspension towers ready; chains ready; Parlt. authorized the closing of Straits to shipping; Telford waiting in Bangor to supervise hoisting of first chain.

April 26. Fine day; still air; sea calm; high water 3.30 p.m. Straits thronged with boat-loads of spectators; shores thick with sightseers.

The first chain lay on raft (450 ft. \times 6 ft.) moored to Caernaryon shore. 2.30 p.m. Raft cast off and towed out into strait. Dead silence in crowd. The landward end of Caernarvon chain hung down face of pier, to 1 ft. above h.w. mark. Anglesey land chain ended on top of Pig Island suspension tower. Therefore chain on raft had to be hoisted and linked to this. Hoisting tackle fixed over this tower and connected to capstan manned by 150 men in gangs. To a fife band they moved into action. "As the cables tautened the shout went up ' Heave away! Now she comes! " (Read Rolt.) The raft floated out on the tide, the chain rose in a low arc over the water and an immense cheer went up from the waiting crowd. To Telford, with from the waiting crowd. To Tenord, with Provis and two others high up on the top of Pig Island tower it may have seemed eternity; in fact, Telford drove home the pin fixing the link only 2 hr. 20 min, after the raft had first cast off. The engineers raised their hats as a signal. The straits resounded with an even mightier cheer, the capstan crews were rewarded liberally with quarts of Cwe da; three of them celebrated by actually running across the curving 9-in. chain to the Caernarvon shore.

to the Caernarvon shore. Jan., 1826. Bridge opened to traffic. A wild wet night; the Holyhead coach • The White Knight: "Theard him then for I had just completed my design To keep the Menai Bridge from rust by boiling it in wine."

picked up Wm. Provis and as many others as could cram in or cling on; they crossed at 1.35 a.m. Next day there was almost a traffic jam of coaches, carriages, gigs and traps. This was six years only since construction began, but 41 since the petition to Parliament.

Feb. 7, 1826. Telford's troubles not over. Bridge struck broadside by tremendous gale. It moved so violently that coachman refused to cross. "The bridge certainly laboured very hard" Thomas Rhodes reported to Telford, "and the night being dark and the wind whistling thro' the railings and chains made it appear rather terrific." Twenty-four roadway bars and six suspension rods were broken. More trouble followed. Measures taken successfully to strengthen suspension rods and their fixing; bracing chains to check main chains were introduced.

Britannia Bridge 1845-50; Robert Stephenson.

enson. Read: Britannia and Conway Tubular Bridges by Edwin Clark, Resident Engineer, 1850. Parry's Railway Companion from Chester to Holyhead, 1848. British Railways (Euston) provided interesting papers.

British Railways (Electric) provided interesting papers. To see: For a close view, take A4087 (Menai Br.-Caernarvon Rd.), 1 m. from M.B. turn r. Keep going until you arrive. British Railways thoughtfully provide details of bridge on enamelled notice. This is now chipped and rusting. Could it be replaced by slate (no maintenance and long life).

Spans: land spans 230 ft.; central spans 460 ft.

Made up of 2 continuous rectangular tubes laid side by side, each 1,511 ft. long. The longer spans were assembled on land and floated out on barges. The tube was then raised by hydraulic presses in short stages, Stephenson insisting that a proper bed was made at each lift. The sides of the tubes are single plate thickness, but the top and bottom are cellular. Every five years cells have to be inspected: it takes 1 hr. for a man to propel himself through the 1,511 ft. long by 1 ft. 9 in. square cell on a special trolley. A more claustrophobie job it is hard to imagine. Before the tubular design was accepted, cast iron arches, and even a suspension bridge had been considered. It therefore seems quite exceptionally fortunate that 2 such different bridges span Menai; one could hardly provide a better foil for the other.

No space for detailed description of erection (very dramatic) but Clark's book gives fascinating drawings and even tide tables while the title page of Parry's guide includes this description after a general introduction of what may be seen on this—

"BEAUTIFULLY PICTURESQUE LINE: together with some account of the STUPENDOUS RAILWAY WORKS, including tunnels, embankments, viaducts, THE MONSTEE TUBULAR BRIDGES across the River Conway and the Menai Straits..." One gets some idea of the public's reaction from Borrow. That admirer of the picturesque, generally so suspicious of industrial innovations, actually took Henrietta for a walk through the tube. Fortunately they did not meet a train.

1809: South Stack Lighthouse, 1809, and suspension bridge 1828. On w. tip of Holy Island.

Open (at your own risk) weekdays 1 p.m.-1 hr. before sunset except during fog.

No room here for committee minutes reporting progress of construction. They have distinctly Honeywood flavour. Generating equipment: that rather splen-

Generating equipment: that rather splendid early 19th century looking machinery is 1938.

Note: lighthouse keepers keep place like new pin; wet footprints and dripping coats not appreciated.



South Stack lighthouse and suspension bridge.



Toll house. Llanfairpull.

The Marquess of Anglesey's column, Llanfair pull.



Route 1: Anglesey – Blaenau Ffestiniog



Aberglaslyn Pass



Trema loc Hall, sketch by Moses Griffith, 1812.



Above, Town House, Tremadoc. Below, The Venus steps, Port Meirion.



Note to Elder Brethren: when next painting bridge, please make it white, not red. Ironwork by the sea (except some buoys) is almost always better white or black.

Anglesey Detour.

Having travelled so far with Telford, follow A5 to the end.

For a fine general view of both bridges with the Snowdon range behind, continue about 1m. into Anglesey. Just when there seems no possibility of safe parking, see layby on l. Surprisingly enough this commemorates inauguration of N. Wales Gas Grid by Prince Philip, Earl of Merioneth, etc. All this, a poem, and details of gas output, are finely inscribed on slate built into wall of layby (Engraver: Jonas Jones). I understand that layby was constructed as a result of G.B.'s initiative. What better way to

Commemorate a gas grid? On r.h.s. see **The Anglesey Column:** Thomas Harrison of Chester, 1816.

Parking ground on r. just beyond column. Read: excellent guide, 1s. Panoramic views again bottom as well

as top. Climb of 115 steps useful energy con-

sumer for restless children.

(See also Plas Newydd, r., Potter, 1800-1910. Not open. Seat of Marquess of Anglesey. Famed for Whistler murals). Auguescy, rained for whister murals). Built to commemorate part played by first Marquess as second in Command at Waterloo. Harrison (the architect) thought by some to be "almost, if not quite, the first architectural genius of the kingdom." Guide also tells how the Marquess's right leg was smashed by a cannon ball while leaving the field Looking down at his shattered limb he exclaimed, ' By God, Sir, I've lost my leg!' To which the Duke, momentarily taking the telescope from his eye, replied, By God, Sir, so you have!' at once resuming his scrutiny of the retreating French.

Over door at top of column is copper plate engraved with details of erection of statue (1860). V. nautical drawing shows masts, hoisting tackle, etc. This operation took 1 hr. 20 min. and was cheered by thousands of hearty voices. Much feasting followed. What a life they led by Menai in the mid 19th century. Celebrations caused by Stephenson's Bridge can hardly have died down.

Llanfair P.G.

See Telford's toll-house on l. Well restored.

Inscription gives insight into contem-porary traffic: "Wheels with Tires porary traffic: "Wheels with Tires fastened with Nails projecting and not countersunk to pay double toll "follows list of tolls due: "For every Drove of Oxen, Cows, or other neat Cattle, the sum of 10d." Seems expensive.

Anglesey is an island best explored in minute detail; rocky coast and secret bays alternating with unexpectedly wild dunes; small reedy lakes; but in other parts beware of an extension of Liverpool's suburbs.

A5 tears across centre which can look flat and forlorn. Edges of A5 are in places being haunched. (Presumably road s spreading unduly.) Good to see that haunching is almost flush with road (other counties kindly copy). Could colour of concrete be improved by different sand? Sand in mix might be greyer? Effect now slightly like cream toothpaste squeezed neatly along each verge. This abrupt line divorces road from its surroundings.

Road crosses Stanley Sands Embankment: Th. Telford, 1822, to reach Holy Island. Now carries rlwy. too, otherwise much as he left it.

Holyhead Harbour, described by Parry as "one of the most splendid refuge harbours and packet stations in the

universe," is rather disappointing to an architect approaching from land. Perhaps Parry approached from sea in a tempest; this would account for enthusiasm. John Rennie recc. that harbour should be constructed 1801.

Memorial Arch is 1824-Th. Harrison, Commemorates landing of George IV. Do not miss yard where buoys are stored for maintenance. Wonderful shapes made all the better for rich coats of fresh oil paint, black or white or red.

Council Housing Welsh council housing (like much English) generally very depressing; sited on windswept outskirts with no sense of enclosure in itself or of belonging to village. Materials drab. Brunswick green apparently favourite colour for paintwork. If not actively depressing, frankly boring. Anglesey has some brave excep-tions; Colwyn Foulkes well-known Beaumaris scheme one; Pencraig, Llangefni (Alwyn Lloyd & Gordon) another. But even this all open front scheme with its excellent method of enclosing screen walls contrasting with views to open country, shows real need there is for some hard surfacing and contrast. Acres of well kept open front make one crave for places like Tramadoc. Local Councils would do well to look at their 19th c. new towns.

Most cheering still to find the rare instances when councils let architects actually infil in existing villages (e.g. Aberfraw).

Beaumaris

Pleasant town at n. end of strait. Popular resort early 19th century. Nice painted houses and pubs.

See Edward I's castle. Sinister gaol now a clinic, court room, Victoria Buildings,

Return to mainland. Explore Snowdonia or take A499 along straits to Caernarvon (another Edward I castle), A487 to Beddgelert, A498 down Aberglaslyn Pass to

Tremadoc. Mr. W. A. Madocks-early in 19th century.

Built as a result of successful land reclamation schemes culminating in construction of the great embankment (1811)—cost £100,000. Shelley is said to have headed Mr. Madocks' subscription list with £100, which, however, never materialised.

Tremadoc is the core of a new town which grew no further because Port Madoc replaced it in importance. Excellent example of urban feeling which can be given to a relatively small village; market square of plain stone houses dominated by arcade. Town House (to let). Has elegant first floor room with balcony. Sheridan played in *The Rivals* here. Much to be hoped that a use can be found which will allow for unblocking of GF arches:

Mr. Madocks also built a "handsome small church in the style of English architecture," but more interesting to the English will be:

Peniel Chapel (c. 1810).

On r.h.s. of road to Portmadoc. Rather grand portico with unique



Peniel Chapel, Portmadoc.



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Blaenau Ffestiniog dam-model. Slate heaps and slate fences on road to Machynlleth.





abacus detail, which make one like it all the more.

Key with caretaker in cottage behind.

Very theatrical interior; varnished pine box pews rake in plan and section box pews rake in plan and section towards pulpit giving dramatic sense of urgency. Gallery supported by fluted c.i. columns and clumsy brackets. Ceiling well restored in 1901. Pulpit and deacon's seat are 1891. There is a fine collecting box on window sill in gallery—copper pan on long wooden handle. Join A497 in Portmadoc. Cross the em-bankment (see delightful list on toll house giving every imaginable type of

bankment (see delightful list on toll house giving every imaginable type of horse-drawn vehicle). By Toll House are main workshop and loco sheds of reprieved Ffestiniog Railway (opened 1832). Summer service only. Sounds a dramatic trip. Apply booking office Portmadoc for times of trains. 1 mile on turn r. for

Port Meirion: Clough Williams-Ellis. Read *Port Meirion*, AJ June 20, 1928. On reflection do not read anything.

The 2s. 6d. entry toll is to deter crowds. Whether or not architectural style is your particular vintage, no architect should miss. This includes Brutalists. Even if not addicted to follies still see for extraordinary sense of site, countless successful tricks of scale, precise placing of buildings for maximum dramatic effect, sure planting (everything grows madly) and felling, almost urban sense of enclosure in centre contrasting with wildness without. All apparently effort-

Inspired by Porifino in '20s. Still grows. Several buildings now under construction, others on drawing board. Also home for unwanted architecture—18th century Bristol colonnade latest addition.

Bristol colonnade latest addition. A sort of 20th century Hafod: ports, philosophers and scientists apparently abound. Like Hafod, romantic; unlike Hafod, not melancholy in the least. Down to earth note to departing Planner: design and construction (or apparent lack of both) of car park. Loose stone surface, no hard edges treas left in hard parking no hard edges, trees left in hard parking area so cars are lost in wood. Convenient parking economically achieved with lack of fuss. Very unobtrusive. A496 Detour for:

Blaenau Ffestiniog: slate mines Unfortunately no time for these.

Among biggest mines in the world. So enormous that firework parties have been held inside. Even rockets were fired off.

Blaenau Ffestiniog pumped storage scheme.

Landscape Consultant: Colwyn Foulkes, F.R.I.B.A.

To see: contact CEGB, Resident Engi-neer, Site Offices, Tan-y-Grisiau, Blaenau Ffestiniog.

Do not miss (also for very good idea of

Do not miss (also for very good idea of slate mining village). The idea: Briefly: During the night Manchester manufactures more electrcity than it can sell. This electricity is to be exported to B.F. where it will be used

exported to B.F. where it will be used to pump water from a lower reservoir to an upper during the night. During the day it will fall from the upper to the lower producing hydro electricity which will be imported by Manchester. When completed this will probably be largest in the world. Grid pylons: The designs for these have

not been seen.

Since the scheme was launched the Transfynydd Atomic Power Station has been designed. This is only a few miles to the south, so it is to be hoped that grid lines can be shared by both schemes. Their design will make or mar this scheme and much country besides. Otherwise the

Route 1: Mid Wales



Marine Parade. Aberystwyth.



Laura Place, Aberystwyth.



Old Assembly Rooms.



Corn warehouse, Cardigan Prescelly Hills.



scheme has the iceberg quality of being largely submerged.

co-operation between landscape Close consultant and CEGB, whether in matters of detail (culverts, fencing, etc., are absolutely in character with open hill) or dams, and fine new road up mountain.

Reservoirs will of course only be seen from above so the fact that water levels are always changing will be of interest to naturalists but fortunately have little scenic effect.

But motor cars will get further into the mountains than ever before. A fact I deplore but many applaud. There are already too few places on these over-crowded islands free of them.

crowded islands free of them. See 700-ft. deep tunnels connecting reservoirs; where these emerge they are to be connected by buried pipes to the power station (not yet built). Perhaps a pity the power equipment has to be housed in a building but this has some technical advantages.

A487 passes Transfynydd lake and con-(Cader Idris looms ahead). Through wooded glens via Corris to Machynlleth. There are fascinating re-

mote valleys off this road. Some splendidly bleak with glittering heaps of slate waste; slate miners cottages up in mountains, slate fences.

Others where Forestry Commission are planting with light with young larch and birch, and dark with spruce. Some young beech.

So long as this is not overdone so that contrast of open hill remains, it is a landscape asset. Something very stimulating about the sharp straight lines of the plantations as they stride the hills.

Machynlieth (unexplored). Trust house good. Possibilities.

A487 along Dovey valley to

Aberystwyth

At first sight most disappointing, but explored.

Spent time here in excellent Print Room of National Library (immense edifice on hill above town).

The Marine Parade: dull individual houses make bold and rather imposing nouses make bold and rather imposing sweep round bay. A few imaginatively painted but generally a prevalence of apple-green with the cream. This terrace is very good argument for keeping intact things intact.

Behind the main University building on front (Seddon-built as an hotel) see Laura Place-very pleasant 1840ish houses and Assembly Rooms now Students Union, with deep eaves. The New Street Meeting House (not

interesting architecturally within) originally a Quaker Meeting House, now Unitarian Church, has been well painted in black and white outside (sounds simple enough but is strangely rare). Restored by D. Lewis.

The narrow gauge railway (1 ft. 11 1 in.) to Devil's Bridge should be a good trip (about 1 hour each way-unfortunately not long enough there to see Hafod). Weekdays until July 11 inclusive: leave Aberystwyth (main station) 2.0 arrive D.B. 3.0; leave Devil's Bridge 4.0 arrive A. 5.0. After this timetable changes more trains.

A487 (coast road south). Open country with Cardigan Bay sweep-ing on your right.

Gorse and banked fields.

Interesting variations on vernacular as one goes through villages.

Aberayron

Another new town. The Rev. Alban Gwynne inherited Mynachty estate and decided to build a new town. Coastal trade would be its life-blood.

1807 harbour act passed. 1811 harbour was completed.

The street names give some clue to dates Wellington, Waterloo, Princess, Queen, Albert, Vulcan Place was industrial quarter.

Although there are no individual buildings of outstanding merit, this remains one of the most urban, attractive and orderly towns in Wales.

main squares (one round harbour). Plain Georgian houses, excellent use of colour (particularly liked shocking pink house with white, by bridge). Use of squares in planning (instead of street grid only as MH).

Unexpected citizens were planning con-

scious. A cheerful lounger with three days' stubble on chin (not an intellectual tramp) introduced himself by explaining how town was planned in "eighteen o nine which is before Waterloo" and kind old lady in council house regretted that "they didn't understand how to plan a town now like once they did—no shelter up here." For a time Aberayron boomed -shipbuilding, grain trading, bacon curing, edge tool manufacturing. Then steamships and ailways finished

coastal trade, so became quiet backwater. But like Tremadoc, the bones of the plan and the plain houses make it an individual place with character of its own.

Strange that new council schemes, which have basically same function and in-gredients, should be of such different character.

Cardigan

Unexplored except by Teifi to s. of town. Churchyard (r.h. bank upstream from bridge)

A wealth of epitaphs finely cut on slatetombs.

See corn warehouses on l.h. bank as you cross bridge.

A487

Then B4329 across Prescelly (bluestones of Stonehenge are said to come from these hills). Open grassy hill-curlew, etc.

Haverfordwest

Another "English " town. Good view from castle (mediaeval, ruined, Good view from castle (inclusiva), funct, became 19th century gaol, now police-station). The Gleddaus navigable to this point. Pub names like Bristol Trader suggest past. Now market town. A4076 to:

Milford Haven

The third of these turn-of-century new towns.

Read: The Story of Milford, by Sir-Frederick Rees. 1790, Sir William Hamilton (who married)

Emma) secured an Act of Parliament to enable him to " make and provide quays, docks, piers and other erections." Quaker families, notably the Starbucks, immigrated from USA (the first to come in this reverse direction?).



New Street Meeting House, Aberystwyth.

Early 1



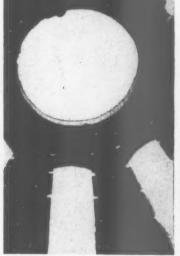
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Early 19th century new town, Aberayron.







Left and above, the remains of Hakin Observatory, Milford Haven.

Haverfordwest.

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Route 1: Milford Haven - Popton Point





Above, another 19c new town: Milford Haren.



Left, the Esso installation at Milford Haven. Above, the road to the Esso installation.

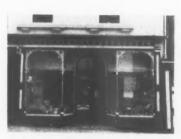




Left, BP at Popton Point. Above, Popton Fort, used by BP.



New St. David's Head.



Cast iron work at Pembroke.



Blackpool Mill near Cleddau



Railway Station, Whitland.

1801: W.H. inspected progress and found £10,000 needed.

1802: W.H., Emma, Nelson arrived for anniversary of Battle of Nile. Greville, W.H.'s agent and heir, had arranged a fair, cattle show and regatta. Nelson made his famous speech at the Lord Nelson hotel. What more popular figure has spoken in the cause of a new town?

But publicity is not all. 1803: Greville wrote, "I am satisfied with the progress of my town. I am building a Church on the East End and the Barracks will be at the West End by which an extended line of a mile gives to an Infant colony the appearance of a town. . .

This is perhaps not the soundest principle of town planning.

The result-M.H. though a cheerful, breezy enough place today, has none of the form or character of Tremadoc village or Aberayron (contemporary new towns). Though its early dull grid has extended to make it much larger than either, it does not feel a fraction as urban. nor would anyone want to look at M.H. from that angle. Greville himself died in 1809, with only

one quay completed. Navy Board offered to buy but were refused site so transferred to Pembroke, M.H. continued as minor port and shipbuilding town but having lost the Navy it was doomed never to boom.

Of the buildings remaining see: St. Katherines Church, 1808, restored 1905

Terminates main street nicely.

Austere, gothic and unornamented, rendered through. Groined cross vault.

See urn presented by Emma (read Rees for consternation caused by this) and ode in memory of Nelson in porch and Nelson's Bible and Prayer book.

A most moving collection of wooden crosses in s. chapel (origin unknown to me).

Friends Meeting House, 1809. Built by first settlers from N. America. (Key in house on left.)

Plain two rooms within. No very inter-

esting furniture. Wished it could be whitewashed with black woodwork but no money.

Hakin Observatory, 1811.

"I hope to found a college limited to classes of Mathematics and their Application to Mechanicks, Military and Naval and Civil Engineering, Construc-tion of Ships, Navigation and Survey and Drawing," wrote Greville in 1803.

All that remains of these enlightened aspirations is the ruined observatory on Hakin Point (beyond the council houses) to the west of town.

A curious structure of stone and brick, 19 ft. dia., 30 ft. high. Permission to see from farm next door.

Milford Haven

See AJ, September 15, 1957. In general, the projects discussed here (with the exception of the docks) are under construction. some on a reduced scale.

It is pointless to argue the pros and cons again of a project which is fast becoming a fact. The County Planning Authority are working on a development plan for the area.

Esso, the largest and most controversial project will obviously change the entire character of the district for a considerable distance. An oil refinery cannot do otherwise. Their actual equipment seems to have been sited as unobtrusively as possible—but it will of course be visible for many miles. The road pattern appears quite unsympathetic to contour apparently sympathetic to oil production. It is hard to believe it could not have been sympathetic to both. One would think it was planned for a plain-its scale is of course utterly foreign to its setting; that may be incurable. Esso's hope is that planting will blur the issue. Planting itself will of course be foreign in character to the bare windswept haven.

Refinery equipment (if one must have refinery at all could be very fine and if the circulation pattern had been con-sidered as the basis of the scheme in relation to landscape with a road pattern which was well designed in itself, camouflage would be unnecessary. It is the ancillary buildings that are likely to clutter up the landscape in a scheme of this sort.

The fort buildings are not being used, which seems a great pity. They are at the "wrong end " of the site.

One had the suspicion that the responsible members of Esso regarded landscape consultants as gardeners who camouflaged rather than men who considered the function of a scheme in its setting, perhaps the name is misleading. B4325 takes you to Neyland for ferry to

Pembroke Dock.

Traces of Brunel in Nevland in street names, e.g. Great Eastern Terrace

The whole haven, and the Cleddau estuaries are eminently explorable, par-ticularly for those addicted to the unexpected in buildings and birds, to mud and pottering in boats. In places the channels are narrow at low tide and, tides strong, so an outboard helps. Whether oil gives way to sail when two supertankers are manoeuvring for position, and you appear in your 14-footer remains to be seen.

Pembroke

Explorable.

See castle (t. w. of town on main street, or better approach from sea up Pembroke Hill). Keep early 13th century. Open 9.0 to dusk weekdays; 11.0 to dusk

Sundays.

Continue west on B4320 for

BP Popton Point.

To find: No flashy notices to guide you. Look out for small green and yellow painted striped board which is BP's mark. Industrialists, please note. For permission: write to the BP Office,

Street, Pembroke. High

Well worth seeing whether for close view of one of the extraordinary mid 19th century forts which defend the Haven, or how to put modern industry into Beau Geste setting to advantage of both. Also for sympathetic and straightforward landscape treatment. Whereas Esso's mediocrity depresses, BP is case of opportunity seen and grasped. problem much simpler, but so BP's but solution could have been equally dull.

Problem: Landing from supertanker and storage of crude oil to be exported by underground pipeline to Swansea for refinement.

Solution: from jetty below fort oil is to be piped in buried pipeline along edge of Angle Bay to tanks (60 ft. high by 140 ft. dia.) at Kilpaison.

Admin. offices, garages, staff rooms, etc., all housed in Popton Fort. A Beau Geste building with dramatic entrance to main courtyard which is now being admirably converted to modern needs. Therefore no lutter of ancillary buildings.

Within the fort are four smaller tanks, one for water and three for oil for ships' bunkers. To ensure that they should not break skyline and mass of fort 85,000 cu. yds. of rock have been blasted out.

Pumps will be housed in the gun battery. No partitions will obstruct long gallery. road following contours along shore of Angle Bay is no larger than it need be. Will be open to public as will all foreshore except the fort itself.

New sea wall rough textured to attract weed.

Oil storage tanks lying low on the 50-ft.

Route 1: West Wales – Margam



John Nash's Picton Monument.

contour will be inconspicuous but their simple lines and the rectangular turfed "buns" in which they sit have something of the pattern and scale of a prehistoric hill fort.

This scheme strikes one as straight-forward, economic without frills, but exploiting the possibilities of its setting to the full.

One last pat on the back to BP (it is such a change to be nice I cannot stop)—they have cleared the squalor of derelict building from Angle Airfield.

Angle

A pleasant village at the head of the peninsular shortly to disappear (visually, anyway) under the Steel Co. of Wales iron ore dump; work not yet started. Visit now before it is too late.

Tenby

Not included in the tour. Delightful Regency resort. Guide books abound.

Back by A4075 to join A40 at Canaston Bridge. If picnic time turn 1. 1m. before junction. After 1m. turn r. for

Blackpool Mill at tidal limit head of navigable waters of E. Cleddau. Must be typical of hundreds early 19th century corn mills. Plain unaffected. Only archi-tectural concern being fanlight over door. Three lower floors are supported by iron

columns and the top by timber posta. Fine woodland setting with stone-arched bridge. Anemones and primroses scattered bridge. Anemones and primroses scattered on ground make open sea seem miles away. Back to din, smell and traffic of A40, Question: will powers that be really prevent subsidiary industries springing up round oil refinery, or are they secretly planning new route to Midlands? If so, why in secret?

Rich agricultural country.

Whitland

Surprisingly enough here is grand new railway station. Unfussy clean

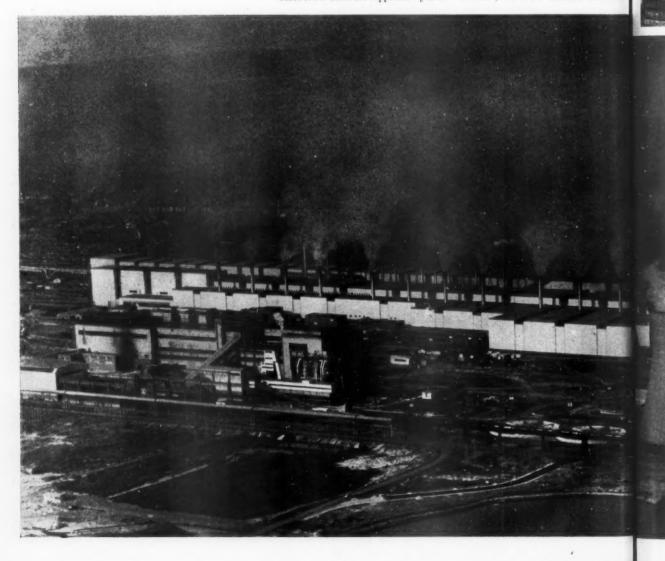
contemporary design (British Railways Western Region). They have remembered that the roof is particularly conspicuous from footbridge. Good texture. Uncluttered.

Carmarthen

Read: John Nash, by Sir J. Summerson. Sadly enough little of Nash's has survived in Wales in a really recognizable form. An exception:

Picton Monument—J. Nash Imposingly punctuates entry from w. Why must its feet be so cluttered with railings and bedding. Surely there is nothing to steal and it should spring from plain turf not flower beds.

Carmarthen War Memorials work chrono. logically from west with Picton to the gentleman of that name who fell at Waterloo, the RWF Crimean Memorial



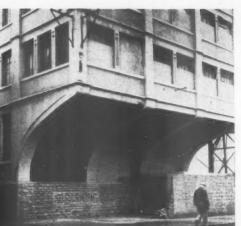
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Above, tower near Jersey Marine.

The Architects' Journal for June 11, 1959 [875

timid in design after Picton but heart-rending words to those " who died in the trenches before Sebastopol and of disease

during war" Then in front of the rather imposing Guildhall we have the Boer War, and further west still the 20th century memorial.

Carmarthen Market, 1846-E. H. Fowler. Bear left at first traffic lights for famous cattle market.

Architecturally not much left of Mr. Fowler's designs on which he reported roweners designs on which he reported "no convenience has been spared to Architectural effect." He also described the trapped drains "which will effec-tively prevent the escape of offensive effluvia."

His c.i. columns are of course still supporting the stalls. Piers of entrance gates and central clock architectural, but ga tes and central clock architectural, but go on Wednesday and Saturday for cockles. Splendid display of agricultural machinery (very Kodachrome worthy) and general market excitement.

Swansea

I hardly know; centre astonishes, see

p. 892. A disappointing town which should be so good between fine sweep of bay and hill. Divorced from sea by rlwy, which is bad start.

See Royal Institution, 1841, Frederick Long.

Weavers Flour Mill, 1897. Engineers: Hennebique & Le Brun. Architect: H. C. Portsmouth.

Read: Paper by J. Allan Hughes This interesting but hardly beautiful structure is the first multi-storey r.c. building in the UK. Reinforcement, sand and cement came from France since engineers would only use materials to which they were accustomed.

Note 14-ft. cantilevered end bay (carrying 670 tons). Instead of bars being hooked and lapped at all splices, they are simply hooked together at ends.

If you have bypassed Swansea and con-tinued on A48 from Carmarthen:

Shortly before junction of A48 and new dual carriageway there is a strange grotesque group of buildings on hill on r.h.s. consisting of

Octagonal brick battlements tower (observatory).

Morbid hotel submerged in ilex oak, Ruined racquets court, 1864. Stone and brick, Racquets are worked into flanks in coarse brickwork. End wall has inscrip-tion (Welsh) and a heart and crown in stone stone.

By whom and why?

After grand sweeping scale of road over Neath viaduct, traffic clamps down again at Aberavon. Emerge at Margam to see SCOW stretching for three miles on s. of road and attractive model estate village with ostagonal chapel 1838 to north (This shows what can be done with semi-d's in certain sites.)

Semi-u's in certain sites.) Orangery: Margam Abbey, 1887. For permission to see, ask Sir David Evans Bevan, Cadaxton House, Neath. A ship carrying orange trees for Queen Mary W. of William III ran aground on Margam sands; cargo was claimed by owner of Abbey

Orangery built by Thos. Mansel Talbot (1747-1813).

See also Four Seasons Facade to Ivy Cottage, and Chapter House. Parish Church

In ruins of Cistercian Abbey. Restored 1807 when Italian campaniles were added. See Mansell tombs (late 16th century), Wm. Morris window (e.) and Lawrence (w.).

Left, the Orangery, Margam. Below, the Abbey Steelworks, Margan



Route 2 Aberystwyth

Mid Wales Merthyr Tydfil Cardiff

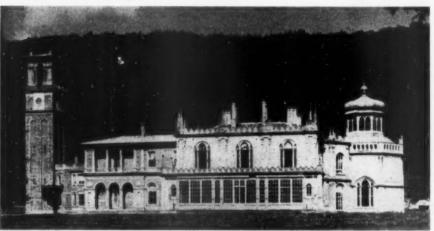


Briefly: Th. Johnes, M.P., Landowner, French Scholar, Patron of the Arts, Romantic, found he had inherited Hafod among his other richer English properties -Hafod means the summer dwelling. Moved there. 1783-started building; architect Baldwin of Bath. 1793-John Nash probably added octagon library and built suspension bridge. Much blasting of gorge to achieve the perfect picturesque. 1796-1801—2 million and sixty-five thousand trees planted in the valley. 1807—a winter fire (water frozen). All Nash's work goes. Baldwin rebuilds. For lives lived there, travellers who thought colossal journey worth while, and tragedies that dogged the place, read *Peacocks in Paradise*.

For splendid remnant of former glory go in May. Then rhododendrons (not my favourites on well mown lawns) abound in wild Himalayan grandeur. They surge down gorge, breaking over outcrops grey rock, gain stronger hold on the valley bottom and flood like a tide.

But at any time this valley has close withdrawn remoteness that separates it from surrounding hills; also un-20th century timelessness. Alternatively:

Stick to A44. Pass the Pont Erwyd Hydro Electric Scheme. New road for HE scheme (now "for essential traffic ") takes you into the heart of hills; only almost to the top of Plynlimon it seems.



Hafod.

Instead of following route 1 down the coast, cut inland into mid-Wales.

Either on A44, the main road east, or if you want to see Hafod in its ruins, on A4120 to Devil's Bridge. Picturesque and famous Falls and nice looking stone hotel with deep eaves and shallow pitched slate roof; this seems to have been a style widely adopted by gentry in picturesque early Victorian Wales. early

At Devil's Bridge: turn s. just before bridge to pass under lonely arch (Gothicerected by Thomas Johnes to commemor-ate George III's jubilee) on the summit of pass over to Hafod.

Hafod

Halog Read: A Tour of Hafod, by J. E. Smith, President of the Linnean Soc., 1810; Peacocks in Paradise, by E. Inglis Johnes; Buildings and Prospects, by J. Piper. Present owners: Forestry Commission.

Present state: house a heap of stones (blown up last year having gradually decayed since roof stripped of lead at end of war. Valley almost completely clear felled but new FC trees coming up (some hard word). hard wood).

Why go? Having once been, one has to go back. Even if you do not know how Thomas Johnes attempted to create a paradise at the back of the Welsh hills towards the end of the 18th century, you will feel the same.

Continue on A44, or on class C road from Continue on A44, or on class C road from Yspytty Ystwyth, Devil's Bridge Road, for Rhaydar. Country to the south of A44 must be most desolate in Great Britain, rivalling parts of NW Scotland-for lack of habitation. Once, I saw it after a long spring drought; sky was light blue and cloudless and the hills stretched on mile upon mile of light yellow brown. The tops are flat so it looks like a great plateau: Central Asia. A44 is a birdy xalley road, with birch and A44 is a high valley road; with birch and larch by river. The oil drum litter-bins wisely provided by the CC (could they be painted army drab instead of piercing Brunswick green next time, please) make one realise with a jar that this is route along which Birmingham streams to the sea. Beware August.

For an unexpected glimpse of early 18th century border life continue via Cross-gates to 1st turn 1. after Penybont and Rep.

Pales Meeting House, 1717.

Remote site on edge of open hill pro-tected by a few sycamores overlooking Llandegley Rocks and Radnor Forest. This plain stone and thatch building with its school and meeting room has been very well restored. Plain white walls with light mushroom for wood work inside. Extremely simple. Nice "elders" pew. A book: Yardley Warner by A. S. Warner

on shelf in meeting room gives some of the history, but the site and the building seem to sum up the Quaker attitude, and their early isolation and struggles with the Establishment.

Or: Find your way south via Llandrinded Wells (an unexpected memorial to our grandparents' addiction to spa life).

Builth Wells: Here, if appetite for Meeting Houses is whetted, take the Hay road and follow the Wye to Three Cocks.

The country gets richer and fatter and English in the valley (red earth and red cattle) made lusher by contrast to Black Mountains to s. and Radnor forest to the n.

Took this road on a dark wet evening. Disconsolate fishermen were returning salmonless, soaked, to their fishing pubs. The Wye ran like Heinz tomato soup,

Maes-yr-Onen Unitarian Chapel, 1685. Cross Wye at Glasbury, follow road round Maesllwch Castle, turn r. towards top of hill to what looks like a group of cottages, R.h. cott. is the Meeting House. Another wild isolated site; this time overlooking Black Mts.

See plain 17th c. scrubbed family pews with tables; also memorial plaque. A building of great historic rather than architectural interest—compared with the typical chapel it lacks form.

This building is comparatively known and mentioned in guide books (rightly); dozens of early 19th c. chapels of great architectural character are now cheerfully being internally torn asunder in name of improvement. Could CPRW (or anyone else) make survey of chapels and prevent this before too late?

After this detour back on the beaten track to Brecon (unexplored but with hopeful possibilities). Note that when a Welsh town has grown up as a market town, instead of as a direct result of the industrial revolution it is immediately dubbed by the English as typically English. It is after all the highest com-pliment we are able to pay. Typically English towns can be found in almost all parts of Wales where the population were rich enough to support a pre-19th c. market-Haverfordwest, Carmarthen, Abergavenny, are few scattered examples. Some Welsh towns are of course rather better architecturally than the typical English can manage (Tenby, Beaumaris, Aberayon, etc.). Question: is Wigan typically Welsh?

On A470 from Brecon over pass through Beacons down to Merthyr Tydfil. You are suddenly off the high tips and in a valley.

Valley. Neglect of valleys in this "Tour" is because they are so fascinating they deserve special treatment, not the reverse. Brief description included here to avoid gap.

Read: Merthyr, Rhondda and the Valleys, by A. T. Edwards (architecture-minded book in "Regional" series). Rape of the Fair Country, by A. Cordell (check). A thundering picture of life under early iron masters. All that title implies. *How Green was my Valley*, by R. Llewellyn. Best seller in 30's.

There is no connection between valleys; they are isolated geographic entities. Once in at the top, one can drift down for 10 or 15 miles without possibility of taking wrong turn as none exist. Best time to see: mild evening after work. People stroll about streets as if Abroad. Otherwise little traffic so one can look about. Dramatic contrast between open hill at each side and crowded valley bottom. Railway, river, road and some-times canal fitted in. Long straight streets. Terrace houses splendidly painted by individual owners; arches to windows and brick jambs often in rich oil paint



urgent (sheep a industria bored in In Merth

Cyfarthfa Lugar. 1 overlook Works () remote mented. Particula and indu Open w 6 p.m. Somethi useful i ahandor See: E workers black-gr etc.). Su Details tive and locomot

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contrasting with grey stone. Some ter-maces have sloping ridges giving very urgent roofline. Everywhere contrasts (sheep suddenly appear in the most industrial of streets). One could never be bored in a Valley.

In Merthyr Tydfil see: Cyfarthfa Castle: 1825 Architect: Robert Lugar. Before entering MT to 1. of A470: overlooks site of original Crawshay Iron Works (no withdrawing of iron-master to remote country seat). Stone and battle-mented. Now used as school and museum. Partimulate mend on 10th emptyme social Particularly good on 19th century social and industrial history. Open weekdays. Also Sundays 2 p.m.-

6 p.m.

Something for all ages and interests so useful for wet day, when hill picnic abandoned.

abandoned. See: Excellent reconstruction of iron-workers kitchen (gun over fireplace, black-green wallpaper with pink flowers, etc.). Suspect many similar still in use. Details of Richard Trevithick's locomo-tive and tram-rails 1804 (the first steam locomotive). Its famous run started at Morther Merthyr.





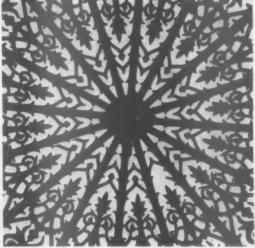
Vale. Below, sheep entering 30 m.p.h. limit at Abergwynfi.



Left and below, cast-iron fountain in Merthyr Tydfil. Below left. prefabricated cast iron bridge in Merthyr Tydfil.



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Route 2: Merthyr Tydfil – Tredegar



Ynysgau Congregational Church in Merthyr Tydfil.



w Bridge, Merthyr Tydfil. built by Wm. Edwards in 1755.









Early picture p.c.'s of Dowlais, and photo of 1898 strike (bowler hatted strikers) make 19th century absolutely alive.

Iron Bridge, 1804 Spans R. Taff nr. College of Further Education to w. of main street. Early use of c.i. in prefabricated units and not imitating stone. Made up of 6 sections-3 to each side. Opposite see:

Ynysgau Congregational Church, 1794, rebuilt 1852.

Key with Mr. James, the Radio Stores. This was the first NC Church to be built in MT; before, they worshipped secretly in farm on mountain. See memorial to the watchers.

the watchers. This church may be typical of many chapels (I hope it is) but to a visiting foreigner is well worth seeing. Plain single celled building with plain box pews and gallery supported by c.

columns with leafy capitals.

Note one-way street as you return to main road.

Iron Fountain

See this notable example of casting on island in rd. as you leave for s. by A470 for Pontypridd.

The New Bridge, 1755: built and designed by Wm. Edwards.

Seen best from r.h. bank upstream; go

Seen down steps in gap between cottages. Span: 140 ft. Height: 35 ft. A most elegant stone bridge. Malkin likened it to the effect of a rainbow "between two rocky but well-wooded crags," and went on to say it " affords an instance scarcely to be paralleled of art happily introduced into the wildest scenes of nature."

Wm. Edwards was a mason whose work was "uncommonly neat and firm." 1746: he built a three-arched bridge on this site and guaranteed it seven years. "It was admired by all who saw it." However, river in spate brought down brushwood, etc., which formed dam against arches. Down it came.

1749: Wm. Edwards built a second bridge of one arch. It survived 2½ years. 1755: Wm. Edwards constructed third bridge which still stands. Has holes in the masonry of haunches "so as to reduce weight over them." At the time believed to be largest arch in world.

Tenacity of both patron and designer is impressive.

Crawshay's Tin-plate Works. 1835 is date

on stone in retaining wall of mill leet. Worth seeing for those interested in early iron work, up-to-the minute gelatine production, or the housing of modern industry in elderly structures. To see: contact Mr. Paul Gash, Glamorgan

Alkali Works, Treforest. To find : in Treforest turn w. across river

Above and is today.

as for Llantirisant, then immediately a downstream until you arrive. Suggestion : two students might measure

up these buildings. These notes are only superficial and dimensions given roughly paced. See Blacksmith's shop with 10 c.i. trusses

making up frame of building. In four square bays: span 24 ft. Side buttresses. Originally there were flying buttresses (also in iron) at each end. Good early example of use of prefabricated units.

Electrolytic plant: well worth seeing, even if you are after old iron, for orderly layout and excellent use of colour. Original stone walls now whitewashed contrast with black bitumen of battery layout and primary colours of metal connectors, etc. Roof mostly restored with steel trusses, but original wrought iron flats used for patching because of post-war material shortage. The wheel was originally in this shop.

Tin-plating shop (see contemporary print).



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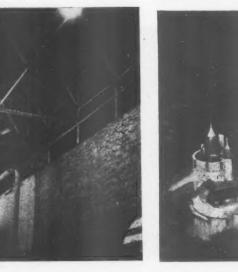
Above, Crawshay's tin-plating shop as it was in 1835.



Above and below. Crawshay's works as it is today.



Above. Stone at Crawshay's mill stream Below, Castell Coch.



Castell Coch, 1875. Architect: Wm.

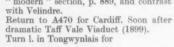
Burges. You will see it above you emerging from You will see it above a Hans Andersen You will see it above you emerging from thick beech woods, **m** Hans Andersen castle in equally appropriate setting. Read: MOW Guide, AR article by W. G. Howell, Jan. '51. This is a high Victorian dream come true. Most enlightened of MOW to take such an unancient monument under its wing.

Following his work at Cardiff Castle, the third Marquess of Bute decided to ask Burges to transform this ruined 13th Burges to transform this ruined 13th century castle into small country retreat. Whether or not Burges' painstaking antiquarian justification of conical roofs instead of turrets holds water, architec-turally they are a stroke of genius, perfectly crowning the romantic character for which he so successfully strove. Be sure to go inside because painted walls, fantastic furniture, etc., of rooms off miniature courtyard are all contemporary and complete. Five minutes here with no tourists to distract and a pantomime Sleeping Princess in the state bedroom or a ballet-type prince and hunting party in the courtyard would seem both natural and probable. and probable. Back on A470 with only 6m, in which to

recover before Cardiff.

Still much as it was originally with

Still much as it was originally with wrought iron roof truss spanning 43 ft. Note spine wall does not support truss but is partition only—an interesting example of early non-loadbearing struc-ture (about 18 in. stone). See also c.i. beams over bays (span 18 ft.). Print manages to convey impression that this was genteel place for young girls to work. Probably quite the reverse; the work consisted of handling heavy packs of raw-edged sharp tin plates. See "modern" section, p. 889, and contrast with Velindre.





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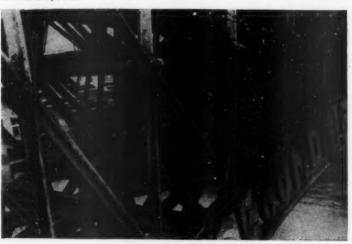
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g, even layout t stone t with it and rs, etc. russes, sed for aterial ally in





Abermule Bridge, 1852.



Route 3 Llangollen Cross Gates

This is for those in no hurry, who want genuine but unspectacular country, and are weary of traffic and tea-shops. It is so meandering that only a few high-lights are mentioned. Take OS Map 117 and

an equable navigator. Leave Llangollen by very minor road in s.w. corner of square (unimposing but on A5). This avoids rather vertical road over hill to s. of town. Make for Llansantffraid *Glynceiriog* (C. 6 m.). Mill in valley here better without than within so continue a over high rolling farmland with rounded thorn hedges. Unexpectedly fertile at thorn hedges. Unexpectedly fertile at over 1,000 ft. Don't worry too much about roads being white on map or "unsuitable for motor vehicles"; the ones we used were remarkably good and usually surfaced.

You will pass Jennings-worthy sign posts ("SWCH-CAS-BHIW") and share road with contented cows, and be tempted to stop and stare at ordinary things like young oak or blackthorn smothered with its flowers, or just to listen to larks. As average speed on this stretch is about 15 m.p.h. it is easy. At *Llanarmon* there is attractive pub.

with iron casements. Great variety of standard iron casements in this very remote area, probably caused by proxi-mity of iron-works in Shropshire. Conmity of iron-works in Shropshire. Con-tinue s. to Llanrhaladr ym Mochnant. Here take 4 m. detour to Pistyll Rhaladr, the waterfall that impressed Borrow so much: "... what shall I liken it to much: "... what shall I liken it to unless to an immense skein of silk agitated and disturbed by tempestuous blasts, or the long tail of a grey courser at furious speed." Rendered villa at head of valley jars this mood, but picturesque chalet with great eaves and deep porch sup-ported by log columns, restores it. How well the early Victorians managed their beauty soots. beauty spots. The falls drop 200 ft. or so in all. The most

impressive part is 100 ft. sheer into a cauldron of rock from which they emerge through round hole to drop again in a white smoke. Dark trees at head of valley white smoke. Dark trees at head of valley make just right setting; one can well see why they were acclaimed by all self-respecting lovers of the picturesque. To see cauldron, climb up path to 1. of fall (i.e. r.h. bank) and peer over; gumboots advisable, it is very spongy. Keep eye on enthusiastic small children; wet and

slippery. Hills behind most tempting. On way back to **Llannaidr** see 1836

On way back to Liannaiad see 1830 chapel on r.h.s.; pews unfortunately are 1936 so don't bother for key. Continue s. for Llanfylin. See early 18th century brick church with fine plain tower. Unfortunately much restoration has gone on, particularly to windows, but pediments to doorways remain. List of benefactors on gallery front makes

good reading. Make for Welshpool and Powis Castle (unexplored owing to deluge). On Newtown/Welshpool road, 3 m. from

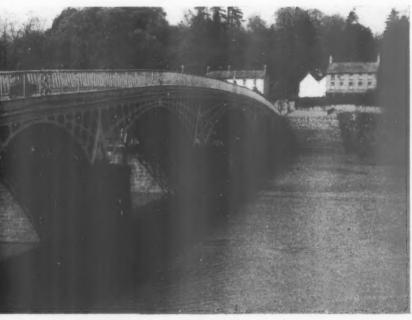
Newtown see **Abermule Bridge**, 1852. Span 109 ft. Carriageway 20 ft. 10 in. The castings for this bridge and adjacent

canal bridge were made by the Brymbo Co. nr. Wrexham. Surprisingly late for a c.i. bridge.

Note: in rain and foul weather one can brew up in comparative comfort on towpath under canal bridge. Join Route 2 at Cross Gates.

Route 4

Chepstow Newport Cardiff



Chepstow Road Bridge, designed by John Rennie 1816.



Above, Chepstow Railway Viaduct, designed by I. K. Brunel 1852.

Right, two views of the Newport Transporter Bridge. Engineers F. Arnodin and R. H. Hayes 1906





The first surprising thing about Wales is that Cardiff is almost in England—only 28 miles across the border. Cardiff-Lon-

28 miles across the border. Cardiff-Lon-don: 154 m. Cardiff-Fishguard: 112 m. Enter Monmouthshire at Chepstow by crossing Wye by very fine cast iron bridge. Chepstow Road Bridge: des. by John Rastrick 1816 (some say by John Rennie). To see: turn sharp I. immediately after crossing. Plenty of snace to park here (the crossing. Plenty of space to park here (the

only place). Details: 5 spans; central 112 ft.; minor spans 70 and 30 ft. Carriageway 14 ft.; footways 3 ft. Most elegant braced cast

footways 3 ft. Most elegant braced cast iron arches rest elegantly on stone piers. In 1889, the central span was stiffened by 3 steel box ribs. Could missing iron lamps be replaced (particularly one of the central ones) or perhaps removed altogether? It is an insult to Mr. Rastrick that the electric cable on the downstream side should be allowed to snake bazily along the structure. cable on the downstream side should be allowed to snake lazily along the structure. Could it not be hitched up to run parallel to arch, and painted with the bridge? It would then be almost invisible. The bridge is cream; much to my surprise this goes well with rocks of gorge. From here you can see Brunel's extra-ordinary railway viaduct. Walk on down-stream for a close view. This stretch of the river makes a good bad weather picnic place as you can park by river in view of

place as you can park by river in view of both bridges, away from thundering traffic.

Chepstow Railway Viaduct: I. K. Brunel 1852

Completed 7 years before the famous Saltash Bridge, this viaduct is similar to

Main span (290 ft.) consists of a 9 ft. dia. iron tube from which the bridge is sus-

The portals one in iron and one in stone, make an interesting comparison in detail. Continue on A48 through Chepstow. Un-explored but eminently explorable (14th century castle).

Note narrow gate in wall takes all south coast traffic, so if dawdling up main street admiring townscape you see impatient policeman at top*that is why. Single line policeman at top that is why. Single line at gate as on bridge. I suppose there are plans to bypass Chepstow since road further west is to be widened? Note: Tintern Abbey, a most splendid ruin (MOW) is only 5 miles north up Wye

Valley.

Valley. Continue west through road widening schemes to Newport. One wonders why improved stretches of road should be given kerbs. It is generally recognized that kerbs can mean death; that they give a suburban look to the best highways is a minor matter. With the MOT making flush verges the rule on the new motor ways, why cannot County Engineers widening such important roads as A5 and A48 follow this example and give us flush verges? For details see what West Sussex have achieved on A279. have achieved on A279.

Newport.

Newport. Don't miss the **Transporter Bridge**. N.B. Am told that this has moved to Cardiff in the film *Tiger Bay*; it is in fact still in Newport. Read: *Bridges of Britain* by Eric de Maré. To see: impossible to miss. It looms phan-tom like above the roof tops and spans Use to a of town.

tom like above the root tops and spans Usk to s. of town. Details: Built in 1906. Engineers—F. Arnodin and R. H. Hayes. Spans 605 ft. on suspension principle. Towers: 241 ft. high. Girders: 177 ft. above water. Note junction of suspension pylons and

stone piers. Only 3 transporters were built in GB.

The Runcorn Bridge (similar) in 1905. Arnodin also designed Pont Transbordeur (787 ft. span) at Marseilles destroyed in World War 2.

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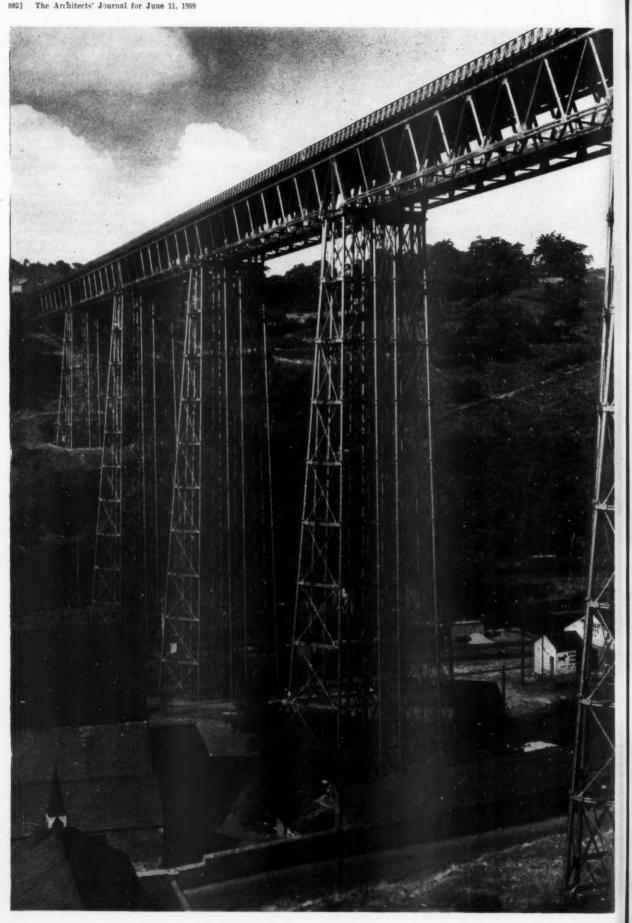
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Rout

St. Fagan

Route 4: Newport - Cardiff





St. Fagan's Folk Museum, Cardiff.



Left, Crumlin from the foot of the viaduct, seen on the opposite page.

Above, Cumbran New Town.

N.B. Inexpensive excitement (understand fare still 1d.) and fresh air here provide for children too long cooped in car. Rush hour traffic and search for new

schools and housing schemes at short exploration of Newport. Am told that Maindee church is by Seddon.

Cwmbran New Town: 5 mls. due n. off Pontypool Rd.

If you just want a casual glance rather than conducted tour see Town Centre North Housing. A real (and successful) attempt here made to introduce urbanity and a slightly higher density. Unfortunately there is nothing taller than 3-storey flats, but the housing itself is a great relief to the typical new town layout to which one is accustomed but not resigned

Steamers run from Weston super Mare in summer (not a bad way for West Country members to reach the Conference).

Crumlin Viaduct. Engineer: T. W. Kennard, 1857.

Probably the finest bridge in S. Wales; worth a considerable detour or a special

trip from Cardiff (18 mls.). Carries the Taff Vale Railway over the valley north of New Bridge, to south of Ebbw Vale.

Length: 1,500 ft. 10 equal spans. Height: 200 ft

Each pier consists of a pylon of 14 ft. 12in. dia. c.i. cols braced together; each took 11 or 12 weeks to erect.

11 or 12 weeks to erect. These are spanned by pinjointed riveted wrot iron warren truss girders. Each girder was raised by a gang of 20 men; the highest took a whole day to hoist and the men were paid 5s. per head. Setting, and when possible, fixing took place the same night. same night.

Testing was by means of 6 heavy locomo-Testing was by means of 6 heavy locomo-tives filled with pig iron. They travelled slowly across the viaduct resting on each span while the deflection was measured (this varied from $\frac{1}{5}$ in. to $1\frac{1}{4}$ in.) but the girder resumed shape when the engines

drove on. Opening: Whit Monday, 1857 (3 yrs. after commencement). The crowd vari-ously estimated at 10 to 20 thousand arrived in Excursion Trains from various parts of Kingdom. Cannon vollied (almost all day), special medals were struck to be

peddled in crowd; Dinners were eaten. Mr. J. H. Clark, local historian and excursionist, wrote "A grand and amaz-ing panorama lay before us. On viewing this wonderful piece of engineering skill we were struck by its airy lightness com-bined with elegance and solidity . . ."

You will be similarly struck. Information: Article (unsigned) in Free Press of Monmouthshire. Dec. 31, '54. British Railways Western Region.

Following the success of Crumlin Viaduct, Mr. Kennard designed others for Spain, Portugal, Italy and India. These were exported from the Crumlin Viaduct Works. One spans the Tiber near Rome.

Cardiff

At the Conference you will be surrounded by native architects so expert advice will be available. Be sure to see:

The Castle: restored by Wm. Burgess for 3rd Marquess of Bute. Same architect and patron as Castell Coch. Another high Victorian dream come true.

Llandaff Cathedral If amazed by r.c. arch carrying Epstein's Christ remember this quiet Norman and Gothic interior was entirely classical (1734-1844) so is accustomed to change. Read: AR article June '54, by N. Pevsner. Glanely House. C. Voysey.

On r.h.s. at edge of Cardiff on way to St. Fagan's. Now a nurses home in Memorial hospital.

St. Fagan's Folk Museum

DO NOT MISS. I nearly did as put off by bo Not Miss. I nearly did as put on by word Folk and thought of museum on first real spring day. Similar to Skansen Stockholm. Welsh farmhouses, chapel, wool mill, etc., re-erected in particularly fine grounds.

University Registrar's Building. 1903: Willis & Anderson. A modest building among the giant's of the Civic Centre. Next to County Hall. Eating in Cardiff

Am not expert on this, but a Frenchman on battlements of Castell Coch. said "There are three places to eat in Cardiff: The Windsor Hotel, the Grill of the Park Hotel, and the Continental Room of the Connaught (upstairs)." Cardiff architects have added The Royal and The Angel.

Acknowledgments:

It would take several pages to name all those who helped me on this Welsh tour so we must generalise thus. If this article is of interest it is largely thanks to the many people who spared time to show me buildings and documents described, and suggest what I should see.

County archivists, museum curators, and the staff of the Print Room at the National Library. The occupants of modern buildings

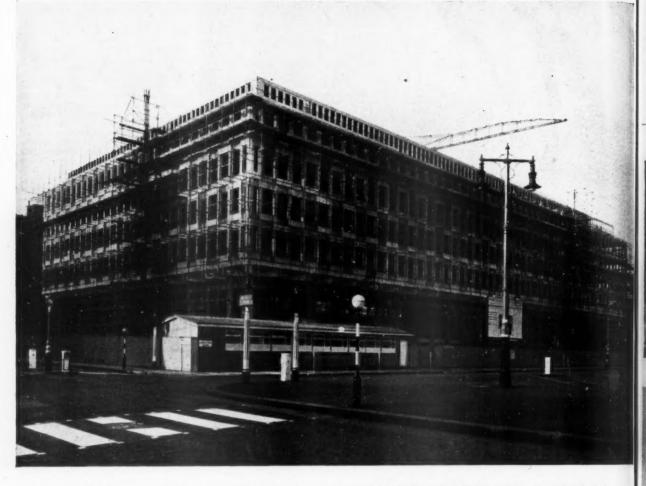
visited.

Countless unknown people who keep the keys of chapels, etc., or who knew who might know who keeps the key. Patient industrialists whose modern equipment is housed in 18th and 19th

century structures.

Architects everywhere and particularly the officers of the SWIA who are respon-sible for the Conference. The idea that this number should concentrate on late 18th and 19th century Wales came from them, as did much of the information.

Another PAULING contract.



New Embassy Office Building for the UNITED STATES OF AMERICAArchitects: Eero Saarinen & Associates.Associated Architects: Yorke, Rosenberg & Mardall.Structural Engineers: Felix J. Samuely & Partners.Quantity Surveyors: Cyril Sweett & Partners.

Our progress is visible....



NEW BUILDINGS IN WALES

SCHOOLS

quantity surveyors G A DOWNIE

College of Further Education at Ystrad Mynach, Glam. designed by T ALWYN LLOYD AND GORDON structural engineer FELIX J SAMUELY AND PARTNERS

Clients requirements: six workshops for building, mining and engineering crafts, teaching block, four storey, for laboratories and classrooms, for teaching crafts, domestic science and needlework. Construction: to withstand mining subsidence, prestressed, hollow box section, foundation beams running centrally on each block, each end resting on mass concrete piers on steel bearing plates, enabling 10 ft. spaced columns to support 61 ft. cantilevered prestressed trusses. Floors and roof, joists and boards. Walls: curtain with snaprib cladding to reduce weight. Finishes: roofs, asphalt and felt; ceilings, asbestos panels; floors, linoleum, hardwood strip.Floor area: 42,975 sq. ft.

quantity surveyors WHITE AND HAYTON structural engineers J G VERYARD

Infants school at Pyle, Glam. designed by H M R BURGESS AND PARTNERS

Clients requirements : 4-class infants' school with dining room and kitchen shared by existing junior school. Site: 1 1 acres sloping to south in centre of housing estate. Construction: patent prefabricated timber system. Floor area: 8,020 sq. ft. Cost: £37,990.

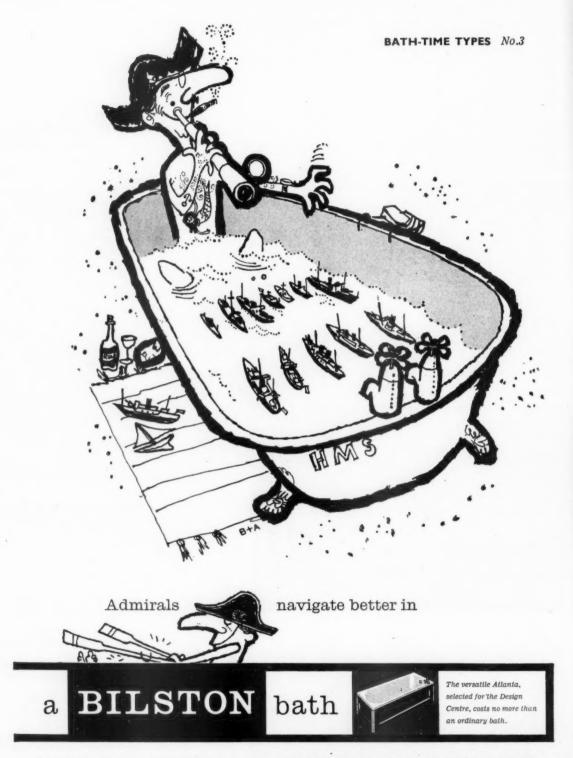
designed by	Secondary school at Pyle, Glam. DENIS CLARKE HALL
	H S SCORER, architect in charge, (stage I)
	D W R DAVIES, architect in charge,
	(stage II)
quantity surveyors	DAVIS, BELFIELD AND EVEREST
structural engineer	the late L S ELLIOTT (stage I)
	D K HAJNAL-KONYI (stage II)

Clients requirements: comprehensive school for 1,440 pupils in 3 schools; lower school, 540; middle, 540; upper, 360 pupils. Site: 28 acres sloping to s.w. with I : 20 fall, water table at 12 in., views except to n.w. Plan: 3 blocks and admin. block round central court open to south, classrooms face east and west. Construction: r.c. ground floor frame on r.c. raft, light steel frame for first floor. Finishes: floors, thermoplastic tiles, woodblock, concrete tiles; ceilings, fibreboard and plaster. Area: 140,000 sq. ft. Cost: £189,000.





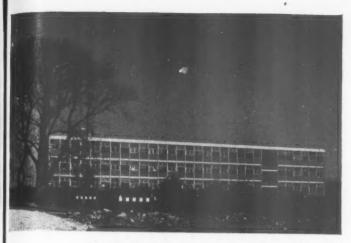
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Illustrated Literature on request from Bilston-the bath SPECIALISTS, BILSTON FOUNDRIES LTD · BILSTON · STAFFS

The Architects' Journal for June 11, 1959 [885

SCHOOLS



Clients requirements : accommodation for 600 pupils, in this four-form entry school to include 16 general teaching rooms, 10 units of practical accommodation, library, gymnasium and halls. Site: 14.5 acres at junction of Pentrebane and Waterhall Road, on the fringe of the Fairwater Suburb of Cardiff. Plan: three main elements; a 4-storey teaching block, a 2-storey gymnasium and hall block and a noisy craft block with kitchen adjacent. The teaching block has a staircase at each end, double period practical accommodation in the centre, through

County secondary mixed school at Cardiff

designed by quantity surveyors

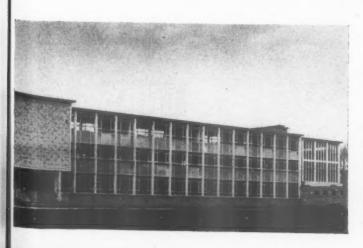
SMITH, WILSON AND COX L C PATTERSON, W T SEATON AND CO.



the width of the block, thus cutting circulation areas to a minimum. Construction: precast concrete frame, with brick, glazed metal, and timber-framed panels; internal partitions, preformed plaster; precast floor and roof units. Finishes: facing brick walls to staircases, emulsion painted brick walls in craft block; gymnasium walls, white brick; classrooms, plaster; floors, thermoplastic tiles, wood block in halls; Maple strip in gym. Area: 47,194 sq. ft. Cost: £198,000.



Clients requirements: kitchen, assembly and dining hall, and two laboratories detached from main building. Site: adjoining existing school on playing field. Plan: covered access from existing building, cross ventilation to labs, conversion of solid



designed by

County grammar school at Ystalyfera, Glam. H M R BURGESS AND PARTNERS WYN THOMAS and DAVID BURGESS, architects in charge quantity surveyor SAWYER AND HORSBURGH structural engineer J G VERYARD



fuel heating system to oil to serve new and part of old building. Construction: steel frame, curtain wall cladding, timber trussed fly tower. Finishes: linoleum tiles and wood block; ceilings, plasterboard and skim; roof, felt. Area: 8,283 sq. ft. Cost, £,32,000.

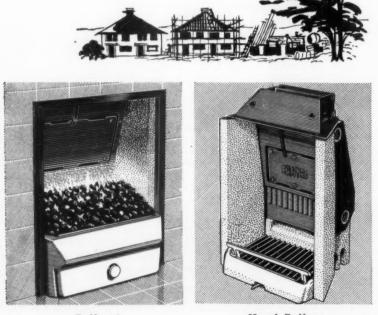
High school at Newport, Mon.

designed by

JOHNSON BLACKETT, borough architect L W DESMOND WALL, deputy D B OWEN, chief assistant J L RUSSELL, assistant architect quantity surveyors DAVIS, BELFIELD AND EVEREST

Clients requirements: this 3-form entry school will be one of four on the Duffryn base site of 29 acres. A further 22 acres has been acquired for playing fields. Accommodation required consisted of hall, gym, kitchen, library, 12 form rooms and 7 labs, specialist and practical rooms. Construction; r.c. frame, floors and roof; brick and curtain wall cladding. Finishes: floors, wood block and strip in halls and gym respectively, elsewhere thermoplastic; walls, plaster; ceiling, asbestos panels; roof, felt. Area: 40,000 sq. ft. Cost, £250,000.

There's nothing to touch a Redfyre Bacboiler for successful low-cost water heating



THAT'S WHAT MAINTENANCE PEOPLE SAY — and that's why huge numbers go into new homes every week. And now there are twonew Ministry-approved Bacboiler fires—the Hearth Redfyre with underfloor air-feed; and the low-cost Redfyre 60, a controlled-burning fire accepted by the Council of Industrial Design. Both have exceptionally pleasing modern lines. And both (like all the Bacboiler range) supply ample hot water and heat one or two fadiators or up to four if hot water isn't needed. May we send you full details?



Redfyre 60

Hearth Redfyre

NEWTON CHAMBERS & COMPANY LIMITED Redfyre Products Thorncliffe Sheffield

The Architects' Journal for June 11, 1959 [886

PUBLIC AUTHORITY HOUSING



Shops, houses and maisonettes at Wyesham, Monmouth designed by JOHN H EVANS

Client: Monmouth Borough Council required shops, garages and living accommodation to replace slum property in developing area. Site: part slum, part orchard. Construction: traditional. Roofs, concrete slates. Cladding: western red cedar.

Clients requirements: 126 two-bedroom flats. Site: adjoining the River Taff, opposite Llandaff Cathedral. Plan: to preserve views of the cathedral, the flats arranged in eleven-storey towers; two 8-passenger lifts. Construction: *in situ*, no fines concrete, brick facings to ground storey. Spar dash elsewhere. Stairs and public floors: terrazzo. Floor area: 104,628 sq. ft. Cost: $\pounds_{315,687}$.





Flats at Gabalfa, Cardiff designed by JOHN DRYBURGH, city architect



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FOR LASTING

PROTECTION

The surface of Mr. K. R. Richardson's house at Gayton needed completely re-decorating, as the brand of cement paint covering it, had badly deteriorated. The decorator strongly recommended first priming the surface with 'Pudlo' Cement Paint Primer, followed by two coats of 'Pudlo' white Waterproof Cement Paint. Both the owner and the decorator are now thoroughly satisfied with the finished result, and in the decorator's appreciation he states "In all my 27 years as a craftsman, I consider that 'Pudlo' Waterproof Cement Paint is the best of its type I have ever used. I am using it on a number of jobs I have in hand''. THE RANGE OF 'PUDLO' PRODUCTS INCLUDES:

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The Architects' Journal for June 11, 1959 [887

PUBLIC AUTHORITY HOUSING









Housing at Town Centre North, Cwmbran designed by J C P WEST, chief architect MIALL RHYS DAVIES, architect quantity surveyor JAMES DONOVAN

General: 577 dwellings on a 30-acre, flat, site enclosed on 3 sides by railway, post-war spec. housing and 19th c. development. A relatively high population was required to support the town centre shopping area. Emphasis on pedestrian circulation. Construction: cross-wall with non loadbearing brick facing, strip foundations. Roofs: purlin construction, straw slab, felt. Finishes: partitions in halls veneered flaxboard or match boarding; elsewhere, plaster.





REVOLUTIONARY!

FIRST CLOSE-COUPLED SUITE WITH PLASTIC CISTERN AND POTTERY WASH-DOWN PAN

56)

Shires UNI-LYNX

The Shires UNI-LYNX is the first close-coupled suite to combine plastic cistern and pottery wash-down pan. It's years ahead in design—scientifically and aesthetically. That's why it was chosen by the Council of Industrial Design for inclusion in a display of sanitary and plumbing equipment that was awarded a Gold Medal at the 1958 Brussels International Exhibition.

- Unfailingly efficient! The UNI-LYNX has Shires silent-flush 'Hydromatic Action'—a design of ducts and channels directing water in correct volume to the right places to effect controlled maximum efficiency.
- Neat, compact-low height-short projection.

SNIRES ARE THE LARGEST MANUFACTURERS OF FLUSHING CISTERNS IN THE WORLD

Full details and trade terms from DIVISION A4, SHIRES & CO. (LONDON) LTD, GREENBOTTOM WORKS, GUISELEY, YORKS and at LONDON, BIRMINGHAM & GLASGOW Also supplied by W. & J. LAWLEY LTD, WEST BROMWICH



Wash-down pan with trap to BSS 1213 dimension to elimin-

Chromium-plated, all-brass supply fittings-incorporating

So easy to install! No flush pipes or brackets required.

Fitted with Shires 'Continental' seat-beautifully designed.

Virtually unbreakable Duranite cistern and seat in black. Seat cover in choice of ten colours. Also available with

Keramic cistern and matching pan in choice of seven

Shires registered design volume control valve.

Replaces high level suites at minimum cost.

flexible, immensely strong-and no buffers!

ate risk of blockage.

colours.

Sime)

80

PRIVATE HOUSES

House at Llanbedrgoch, Anglesey designed by HARRY BANISTER AND PARTNERS

Site: quarry beside main road. Plan: living room, top floor with view over Red Wharf Bay, two floors bedrooms, basement for boat storage; shower and galley on mezzanine. Construction: uncoursed stone walls of existing lime kiln, balconies, r.c. on cantilevered steelwork. Finishes: walls, painted; doors and windows, steel; laminated fibreglass panel on balcony. Area: 600 sq. ft.



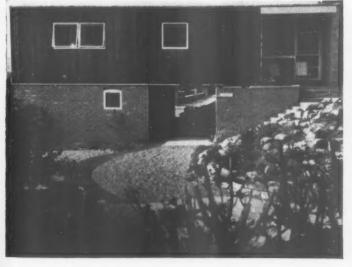


House near Cowbridge, Glam. designed_by KEITH J EVANS

Site: ² acre, long and narrow, sloping south west, view to north. Plan: minimum bedrooms to allow large open-plan living area. Construction: cavity wall with clay block inner skin, 9-in. brick faced with cedar. Windows: Columbian pine, double-glazed. Roof: felt and wood-wool slabs. Floor area: 1,274 sq. ft.

House at Llanfrechfa, Cwmbran designed by NIALL RHYS-DAVIES

Site: fall to west overlooking river, views south to forest, north to mountains. Construction: brick load-bearing walls, with softwood framing above, clad in cedar. Floor, first, cork tile on chipboard over glass silk. Roof, straw slab on foil and glass quilt, with felt finish. Internal partitions: match boarding. Floor area: 2,000 sq. ft. Cost, materials, $\pounds_{3,200}$.





bringing imagination to bear on building ...

Whether it is a question of building a large housing estate or a block of flats, or finding a new material to fit a particular need, the Unit Construction Company bring to the task imagination, scientific research methods, efficient organisation and skilful craftsmanship.

The "Wallframe" Construction, at present being used in the Kensal High Flats (Architect: Sir William Holford, FRIBA, MTFI, Consulting Engineers R. Travers Morgan and Partners) is just one of many examples of the success of this philosophy. Unit and its Associated Companies, which operate throughout the country, form one of the major groups in the building industry. We welcome the opportunity to co-operate with Architects in the imaginative interpretation of their ideas, or we can handle the entire designing and building job on our own.

May we send you details of our services and of our "Wallframe" construction?



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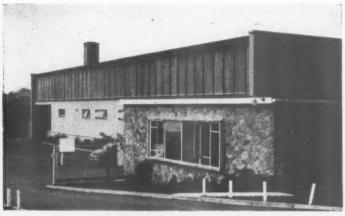
The Architects' Journal for June 11, 1959 [689 INDUSTRIAL BUILDINGS



designed by

Gas works at Aberavon T ALWYN LLOYD AND GORDON D HUMPHREYS VERNON KINCH, assistant architects

On nationalization it was decided to develop these works to handle larger quantities of gas from adjoining steelworks to distribute throughout western section of gas grid. Space





was provided by filling in lake. The architect worked in close collaboration with the engineer of the gas undertaking. The plant consists of the water gas plant, compressor house, laboratories, workshops, offices, showroom and welfare buildings. All except the first two are to a standard design developed for use on smaller works throughout Wales. The gas plant, shown right, is clad with straw slabs, faced with aluminium on both sides.

designed by JOHN H EVANS quantity surveyor BRIAN E FIELD

Factory at Monmouth JOHN H EVANS BRIAN E FIELD

Clients requirements : a factory for the manufacture of washing machines, to be operating in 12 weeks from commencement of contract, plus office accommodation. Site: floodable, rural, at head of Wye valley. Construction: standard steel roof and brick walls, corrugated blue plastic sheeting on south side. Cost : £48,000.

designed by

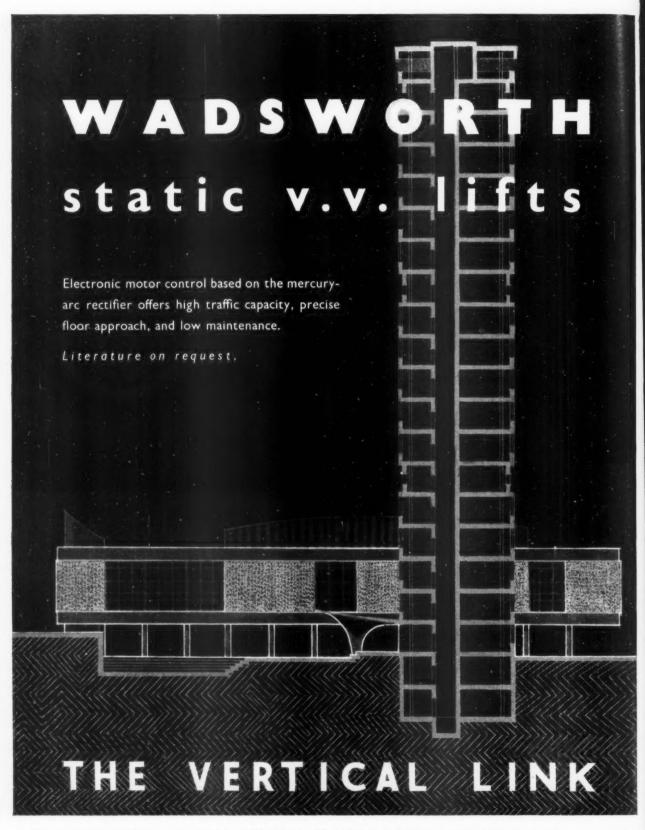
Rolling mill at Moriston, Swansea SIR PERCY THOMAS AND SON NORMAN P THOMAS, HOWEL MENDUS, architects in charge JOHN VERGETTE, principal assistant GARDINER AND THEOBALD W S ATKINS AND PARTNERS

quantity surveyors engineers

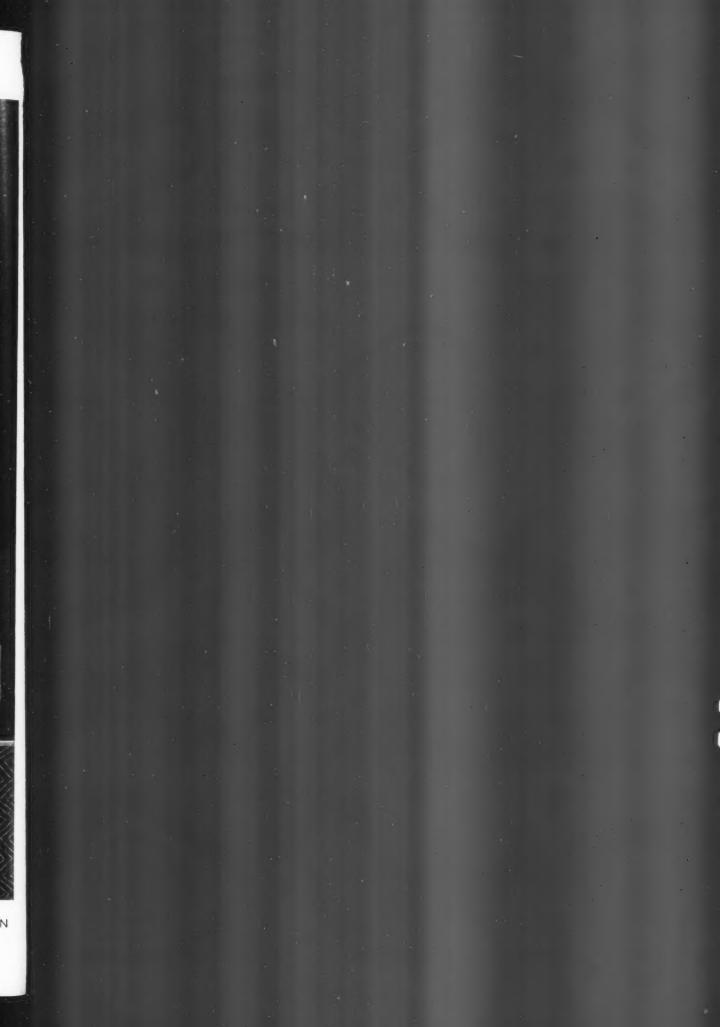
This is a cold reduction and tinning mill forming part of the Steel Company of Wales. The scheme also includes offices, laboratory, medical centre, hall and amenity buildings. The ancillary buildings are steel framed and clad in cavity brickwork with precast concrete floors and roof. The mill is clad in a special, heavy, corrugated sheet. The mill, together with its sister plant at Trostre, in Llanelly, produces 425,000 tons of tinplate a year, three-quarters of all the tinplate made in Britain.

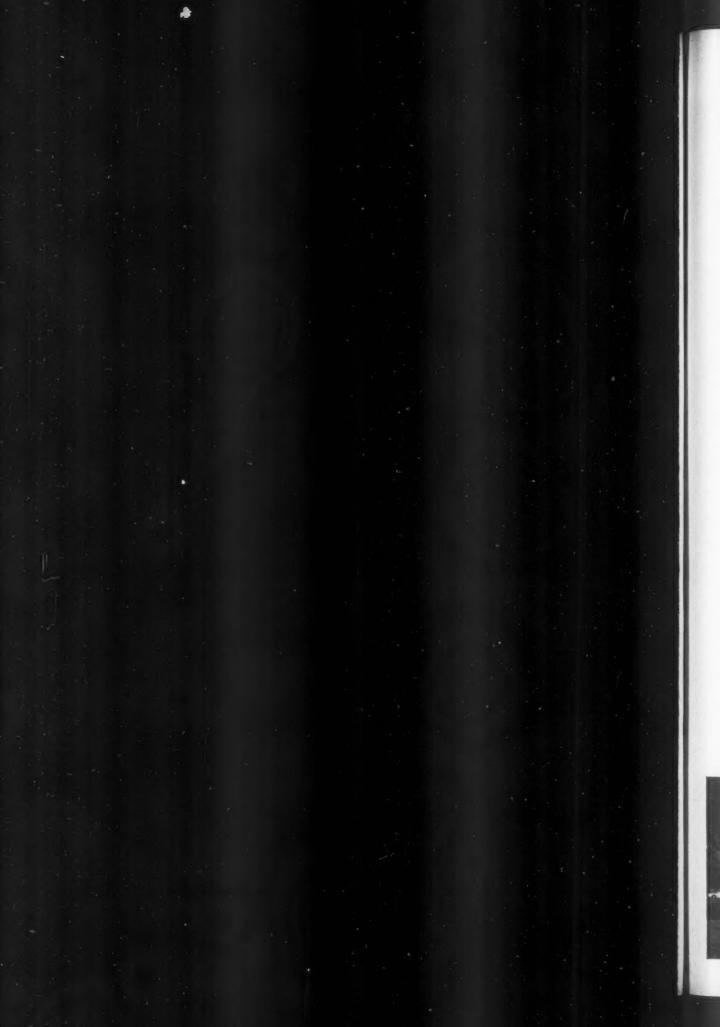


THE ARCHITECTS' JOURNAL for June 11, 1959



WM. WADSWORTH & SONS LTD . VERTICAL TRANSPORT SPECIALISTS . HIGH STREET . BOLTON







Showroom and petrol station, Cardiff

designed by T ALWYN LLOYD AND GORDON L BEAVEN, architect in charge quantity surveyor G A DOWNIE

Clients requirements: to convert fire-damaged offices into car showroom, and provide repair facilities and petrol station. Site: island on busy street to docks, part cleared, part derelict. Plan: servicing in basement, forecourt for petrol sale, car sales on ground floor, workshops, stores and offices on floors above. Construction: existing r.c. frame by Hennebique (1919). Curtain wall with stoved steel panels provided over open facade. Asbestos fibre sprayed on ceilings to reduce noise and increase fire-grading. Area: 22,500 sq. ft. Cost: £72,000 approx.

MISCELLANEOUS BUILDINGS

Offices and warehouse at Fforestfach, Swansea designed by SMITH, WILSON AND COX

quantity surveyors W T HILLS AND CO.

Clients requirements: offices for administration of foodstuffs distribution, with warehouse of 18,000 sq. ft. Six loading bays with hydraulic ramp tail loading, which can be used as garages. Site: four miles from town centre, of four acres on industrial estate. Plan: warehouse, loading at rear, with bulk storage and processing area over packing department (site slopes); office block has separate canteens on first floor, general offices and storage on ground floor. Construction: warehouse, steel frame spanning 60 ft., with stanchions at 22-ft. centres; roofs, metal decking; cladding, aluminium. Area: 30,400 sq. ft. Cost: £,74,000.



Offices in Cardiff designed by **RONALD FIELDING** quantity surveyor CYRIL SWEETT AND PARTNERS

Clients requirements: a regional office and depot as a distribution centre and for storage of parts and space for heavy earth-moving equipment. Site: on made-up ground in prominent position on Newport Road. Plan: two-storey offices have internal and external access to allow separate letting. Storage area to rear 86 ft. by 56.5 ft. Construction: offices, r.c. frame and floors, walls, brick and precast concrete; store, welded steel portal frames. Area: offices, 3,950 sq. ft., store, 4,915 sq. ft. Cost: £36,149.

Railway station at Whitland. Carmarthenshire

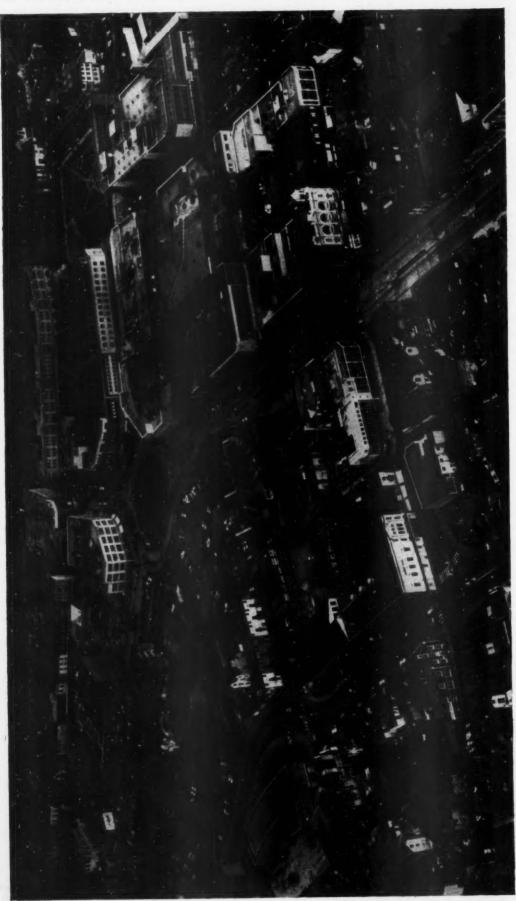
designed by

H E B CAVANAGH, regional architect, British Railways

Clients requirements: reconstruction of 1854 station to provide more passenger facilities; canopies and refreshment room. Plan: all units of accommodation required direct access from the platform or forecourt, resulting in " railway carriage " planning. Construction: r.c. substructure, timber panel walls with brickwork, joist and wood wool roof, castellated steel beams for canopies with aluminium decking and fascia. Finishes: walls, painted lignacite blocks, tiling; ceiling, asbestos panels; floors, terrazzo, grano and asphalt. Floor area: buildings, 3,000 sq. ft. Canopies, 12,000 sq. ft.





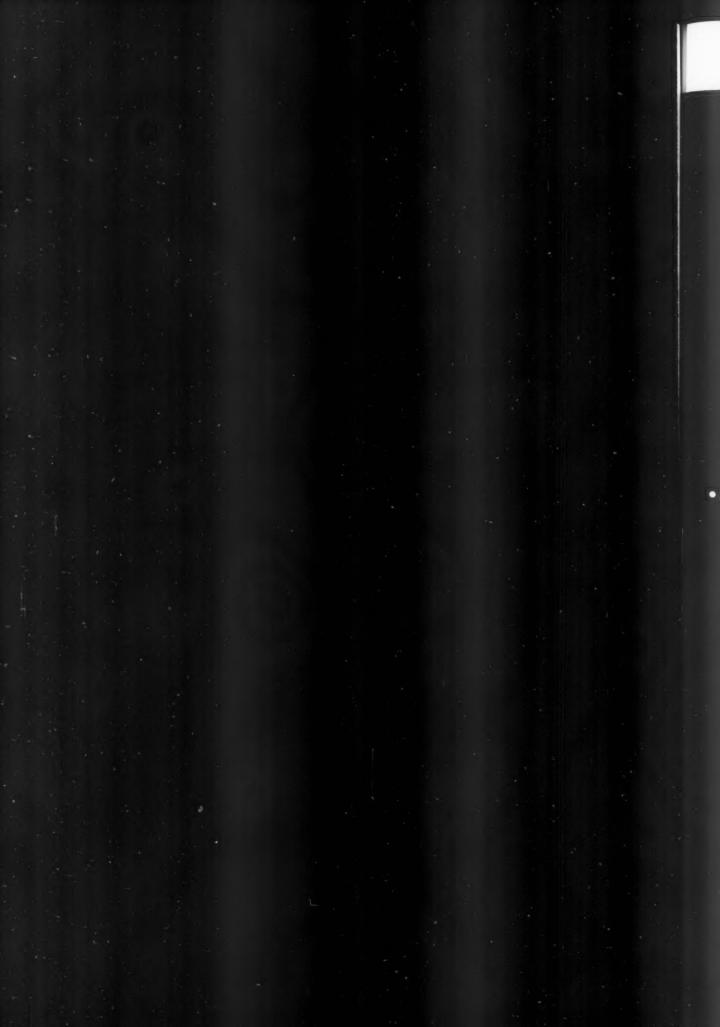


SWANSEA : ANOTHER MISSED OPPORTUNITY

Swamsea was one of the blitzed cities of the last war, and therefore, in common with the others, received an added, if bitterly painful incentive, to recreate a city fit to live in. In common with most of the other blitzed cities it has not achieved much, but bearing in mind the potentiality that lay

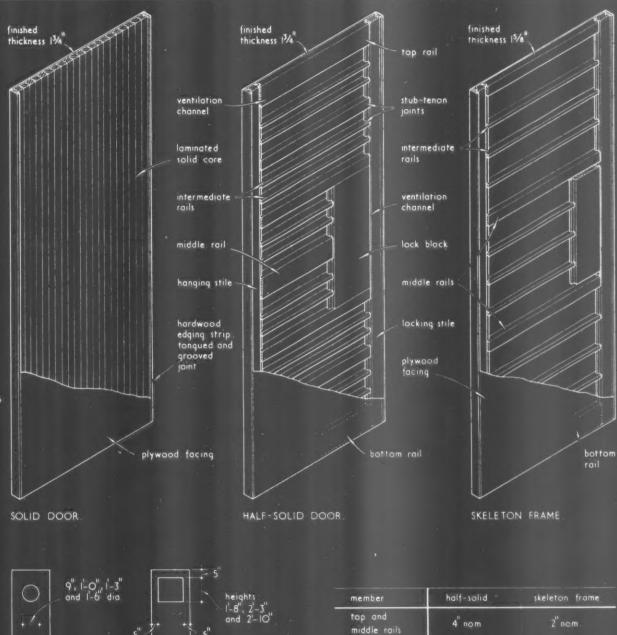
behind the large area of cleared sites compared with other cities, it could hardly have set itself a lower standard to achieve. A dual carriageway, a roundabout and a lot of infilling, that, in effect, is the new Swansea, an effort as impoverished in imagination as those of Hull and Portsmouth. This aerial photograph shows the slightly tidled appearance typical of a repaired blitzed city, and is mercifully too distant

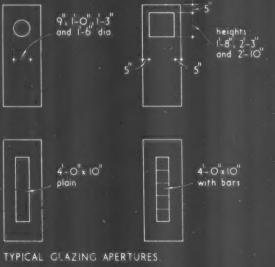
a view to show fully the architectural mediocrity which has been added to the planner's inadequacies. Connoisseurs of revivalism will appreciate the neo-rudor shop forming one side of the square in the top right corner, and will note that the problem of fitting pitched roofs on large buildings has been solved no more successfully than it was in Regent Street by Blomfield nearly forty years ago. achieved much, but bearing in mind the potentiality that lay typical of a repaired blitzed city, and is mercifully too distant Street by Blomfield nearly forty years ago. のないのであるとなっているというであると the second se and the second se



DOORS TIMBER FLUSH

The Architects' Journal Library of Information Sheets 724. Editor: Cotterell Butler, A.R.I.B.A.





member	1. 1. 197	half-solid	skeleton frome
top and middle r	36.8	4" nom	2"ncm.
intermed roils	liate	2" nom 3/4" nom	
bottom	rails	4" nom	4" nom.
stiles		2" nom.	2" nom.
lock blo	ock	2'-4"x 8"nom.	1'-8"x 51/4"nom.

half-solid and skeleton frame

standard overall sizes for all types. $6-6^{\circ}x 2^{\circ}-0^{\circ}, 2-3^{\circ}, 2^{\circ}-6^{\circ}$ and $2-9^{\circ}$

STANDARD SIZES.

LEADERFLUSH DOORS

Manufacturer: Leaderflush (Doors) Ltd.

23.B3 ...

23.B3 ·LEADERFLUSH· DOORS

This Sheet describes Leaderflush doors. Three types are available, each consisting of a timber core faced with two skins of plywood.

Material and Construction

The doors are designed to combat the stresses inevitable in a flush door. The grain of the first plywood face runs vertically and stiles are limited to 2 in. in width, as any movement begins in the stiles and is accentuated when they are too wide: if wider stiles are required they are laminated, i.e. half-widths, reversed grain. No nails are used in the construction of the cores, all joints being glued. Doors are only lipped on the long edges to avoid breaking the line of the veneer: they may be lipped top and bottom, as required, for external use or in factories where pieces of damaging material could be trapped under the door.

Core: The timber used for the core in every case is Canadian Western red cedar. The very low coefficient of expansion of this timber makes the risk of shrinking, swelling or warping negligible even when it is subjected to changing temperatures and humidity. It has a natural resistance to decay and insect attack and is extremely durable. The timber is kiln-dried to the exact moisture content required for internal or external application, as the case may be, so that any subsequent movement is reduced to a minimum. Naturally-seasoned timber can only be dried to a moisture content of 20 to 25 per cent and, timber being hygroscopic, will subsequently shrink considerably in a centrally-heated atmosphere or swell when used externally.

Plywood: The plywood used for facing all internal doors is resin-bonded and for external doors WBP quality is used, which means that the adhesive is weather- and boil-proof as laid down in B.S.1203, *Synthetic Resin Adhesives for Plywood.* The standard plywoods available are beech (for internal use only), various West African mahoganies and oak.

Types

Solid: The longitudinal laminations of reversed-grain Canadian Western red cedar are butt-jointed and glued with resin-based, weatherproofed glue under hydraulic pressure. The completed core is precisionplaned before pressing to ensure a flat, true surface. Edging strips of hardwood are tongued into the long edges. For internal use the plywood facing is first quality resin-bonded 4 mm. beech and for external use first quality 5 mm. mahogany (or similar), WBP. The doors can be supplied with glazing apertures as required, with ovolo bolection-mould glazing beads. These doors are soundproof and are accepted as fire-check doors by most Authorities. They are recommended for hospitals, schools and institutions generally, offices, factories and warehouses.

Half-solid: These doors are 50 per cent solid timber framing as shown in the drawing on the face of the Sheet. The joints are stub-tenoned and glued with resin-based, weatherproof glue. Edging strips of hardwood are tongued into the long edges. The plywood facing is WBP for all applications and is first quality 5 mm. mahogany (or similar) for painting, staining or varnishing or first quality 5 mm. unjointed utile mahogany for polishing. Glazing apertures can be provided as required, with ovolo bolection-mould glazing beads.

These doors are recommended for their strength and stability for all applications where they are to be subjected to heavy wear: they can be specified wherever the expense of a solid door is prohibitive.

Skeleton frame: The framing of these doors is as shown on the face of the Sheet, joints being stubtenoned and glued with resin-based weatherproof glue. Edging strips of hardwood are tongued into the long edges. For internal use the plywood facing is first quality resin-bonded 4 mm. beech and for external use first quality 5 mm. West African mahogany, WBP. Glazing apertures can be provided as required, with ovolo bolection-mould glazing beads. These doors are recommended for schools, offices and housing where economy is desirable.

Additional Services

If required the manufacturer will undertake the following additional services when supplying doors. The doors can be factory-primed as a protection against weather while in transit and when stored on the site. Mortises can be cut for the main bodies of the locks: a sample lock must be supplied and the required height from the bottom of the door to the centre of the spindle stated. Recesses for hinges can be cut by machine: a sample hinge and instructions as to location must be supplied. Letterboxes can be cut to the required size and position.

Finishes

When unprimed (see Additional Services), doors are supplied fine-sanded for painting, staining or polishing. The standard plywoods for painting are beech for interior use, mahogany for exterior. The standard range of veneers available for polishing includes utile mahogany, oak, sapele and Nigerian and Australian walnut: these veneers are laid at the time of manufacture of the plywood and, though selected and unjointed, are not book-matched. Almost any other kind of book-matched veneer can be arranged to order.

Further Information

The manufacturer maintains a technical advisory service to deal with any problems relating to doors, their construction and suitability for any particular application.

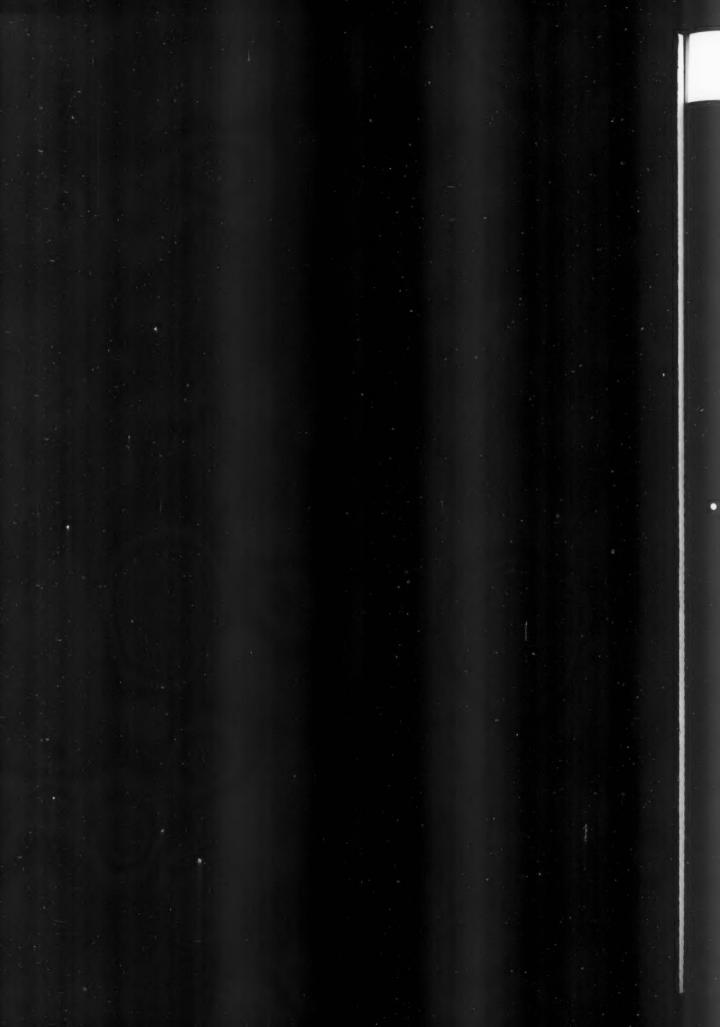
In addition to the standard ranges, special flush doors can be supplied to order.

Compiled from information supplied by: Leaderflush (Doors) Ltd. Head Office and Works: Trowell, Nottingham. Telephone: Ilkeston 623. London Office: Bush House, Aldwych, W.C.2. Telephone: Covent Garden 2243. Belfast Office and Depot: Knockdarragh Park, Belmont Road, Belfast.

Telephone: Belfast 63349.

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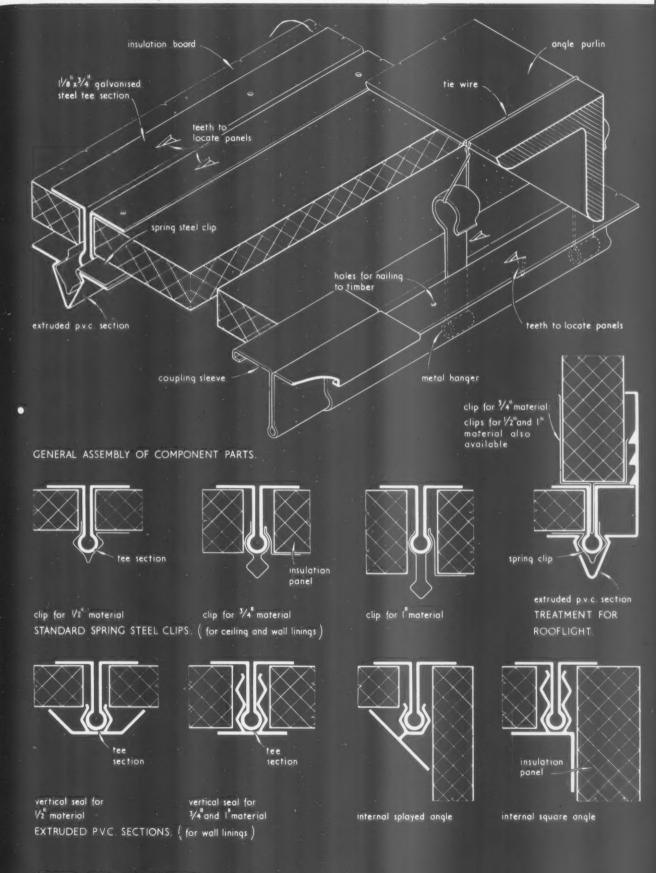




CEILINGS FIXING SYSTEM'

'The Architects' Journal Library of Information Sheets 725. Editor: Cotterell Butler, A.R.I.B.A.

26.14



Manufacturer : Grecon Systems Ltd.

Architects' Journal 11.6.59

26.J4 ·GRECON· METAL FIXING SYSTEM

This Sheet describes Grecon fixing components for ceiling and wall linings and suspended ceilings. The drawings on the face show the general assembly of components and the clips and sections available for various applications.

Material and Construction

The slotted galvanised steel tee sections, of 20 or 24 gauge, are suspended by special hangers from the structural members, as shown in the drawing on the face of the Sheet. With timber members, the tee sections are nailed direct through the holes provided in the flanges. Lengths of tee section are joined by the coupling sleeves. The sections can be continuous across the ridge of a roof or the angle between ceiling and walls: the web is cut, as described under *Fixing*, and the tee bent as required. The teeth provided can be pressed out if required to grip the insulating boards in position until the spring steel clips or extruded p.v.c. capping sections have been applied to the underside of the web. The spring clips are available in three sizes, for 1-in., 3-in. and 1-in. insulating board. Extruded p.v.c. sections are also designed to take the three thicknesses of board with variations for specific applications as shown. For inclined or horizontal work, clips must be used with the p.v.c. sections, but for vertical work the latter may be used as an alternative to clips. P.v.c. sections for ceilings are beaded and those for vertical panelling are flush.

Sizes

The galvanised steel tee sections are $1\frac{1}{8}$ in. by $\frac{3}{4}$ in. and are in lengths of 9 ft. 0 in.

Fixing

The tee sections can be bent as necessary in either direction by the following method. An $\frac{1}{8}$ -in. hole should be drilled through the web just below the flanges, and two saw-cuts at right angles to each other made to the hole, removing the vee-shaped piece and filing off the burrs. To provide starting points at the eaves for wall lining sections, the bend should be about 4 in. from the eaves end of the section.

Fixing to metal: The hangers are inserted in the open web of the tee, two to each structural member, and a piece of galvanised wire attached to the eye of one hanger long enough to pass round the structural member and through the eye of the second hanger, with a little tolerance for levelling. The hanging of the tee sections should be started from the eaves, the short leg of the section being left to provide a starting point for fixing the wall lining sections. The tees should be provided at 2 ft. 0 in. centres. The boards are finally fixed and held by the spring clips at centres varying according to the type of insulating panel used.

Fixing to timber: Where the structural supports are of timber, the tee sections are fixed direct with galvanised clout nails through the holes in the flanges. Otherwise fixing is as for metal structures.

Wall linings: The fixing procedure for wall linings is as for ceilings using the appropriate components for the board thickness. Brick or masonry walls should be plugged for the clout nails securing the flanges of the tee sections.

Special applications: Fixing instructions for suspended ceilings and special vertical linings are available from the manufacturer.

Applications

Grecon components are designed primarily for fixing foamed polystyrene panels, but can be used for all other types of board up to 2 lb. per sq. ft. in weight.

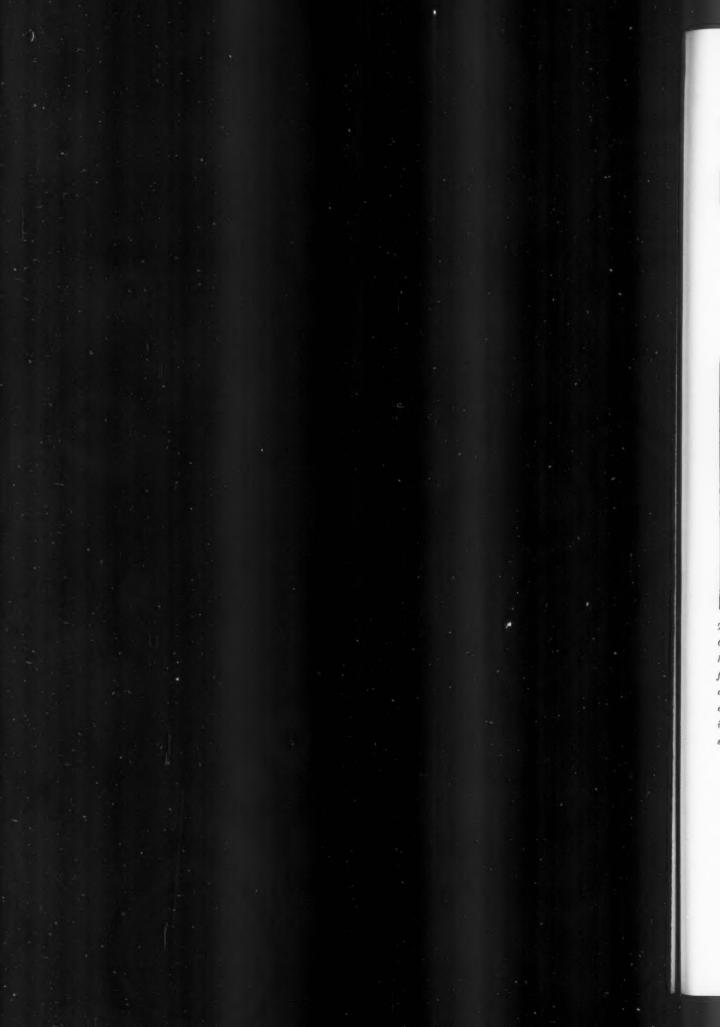
Further Information

The manufacturer maintains a technical advisory department available to answer questions dealing with this subject generally.

Compiled from information supplied by: Grecon Systems Limited Address: 29, St. James's Street, London, S.W.1. Telephone : Trafalgar 1454.

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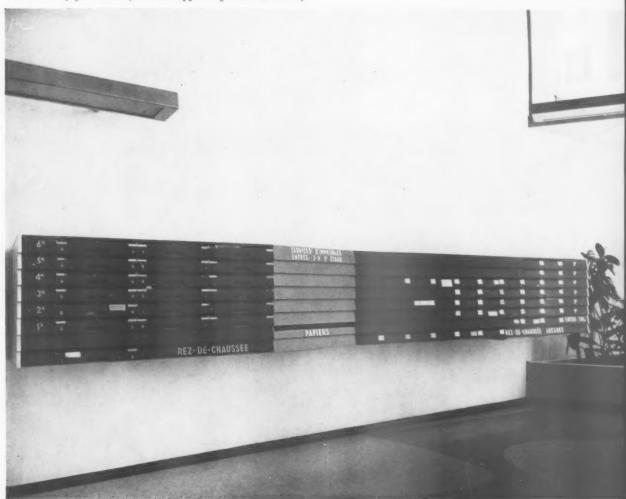


Architects' Journal 11.6.59

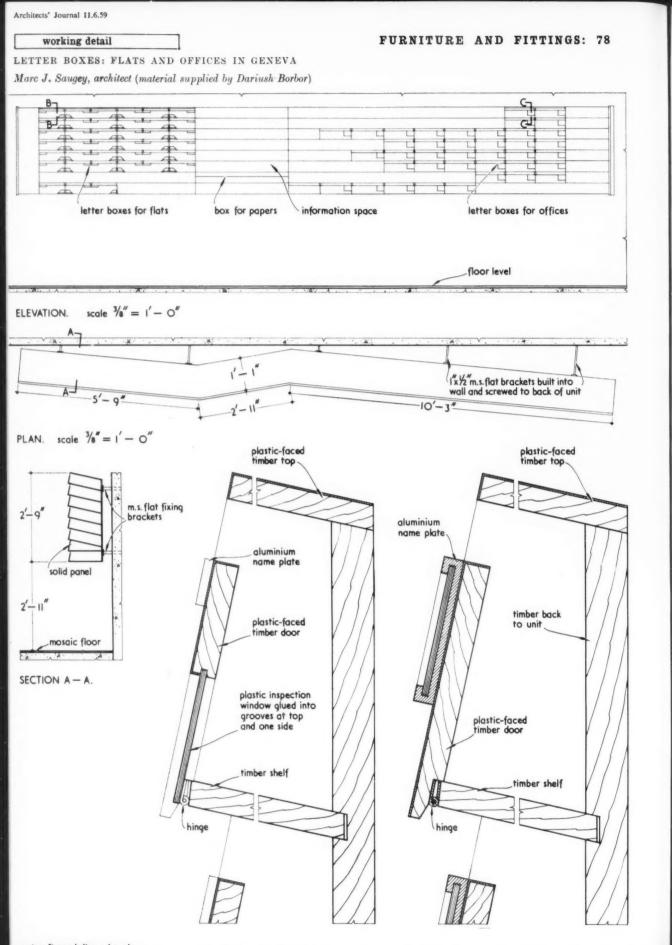
working detail

FURNITURE AND FITTINGS: 78

LETTER BOXES: FLATS AND OFFICES IN GENEVA Marc J. Saugey, architect (material supplied by Dariush Borbor)



There is a more robust tradition of letter boxes on the Continent than there is in England. The tilt of the boxes has the double advantage that it prevents piled up letters from falling out on to the floor when the door is opened and the upward turning of the name plates makes them easier to read. The main point of the detail, however, is the organisation of a number of diverse elements into a single architectural form.





THERMALITE — The first name in loadbearing insulation is now readily available

Despite the heavy current demand for this top quality insulating building block, the greatly increased output of the new Thermalite production unit at Birmingham is ensuring rapid delivery.

SOME FACTS ABOUT THERMALITE

Aerated concrete is a material originally developed in Scandinavia where it has been widely used for many years.

Since the development of Thermalite (the British counterpart) in this country eight years ago it has achieved a first class reputation and has been repeatedly specified for domestic and industrial buildings of all kinds. Thermalite is loadbearing, non-combustible, stable yet light and easily worked. It has an extremely low "U" value.



Sutton Goldfield, Warwickshire Telephone: Goleshill 2081 A LAING COMPANY

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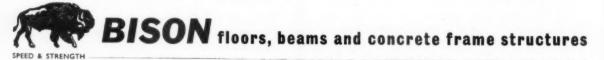
Belfry for Clermiston New Church, Edinburgh

This belfry was made and assembled at our Falkirk Works. Its height is 52' 0" and weight 12[‡] tons.

The legs of the tripod were first prestressed on a long line. They are of triangular section, the sides being 15" at the bottom and 191" at the top so as to give the illusion of symetry when the belfry is erected. Lugs were cast into the legs for the steel cross members, which were welded on : and after the cap unit was cast on the belfry was transported to site in one piece and erected by mobile crane. Alternative designs were prepared in laminated timber,

steelwork unencased, post-tensioned concrete and insitu reinforced concrete. There was no quotation for the insitu design and the post-tensioned method was abandoned by the Consulting Engineers as it was clearly going to prove too expensive. As regards the two other methods, our price was approximately half the cost of the quotation for laminated timber and two-thirds the cost of unencased steel.

Architects : Basil Spence & Partners, F.R.I.B.A., Edinburgh Consulting Engineers : Thos. Harley Haddow & Partners, M.I.C.E., M.I.Struct.E., Edinburgh



CONCRETE LIMITED are the largest structural precast concrete manufacturers in the world

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NEWS BOSSOM LECTURE

Modular Co-ordination

Giving this year's Bossom Gift Lecture at the Royal Society of Health on May 27, Anthony Williams, Assistant Secretary, RIBA, presented the case for the acceptance of the draft British Standard on Modular Co-ordination in Building which is now being circulated for comment. Speaking to what was primarily a lay audience, he described clearly and in detail the present proposal for a 4-inch module. Speaking of "the intangible aspect" of modular coordination, he said: "The knowledge that all components are modular, that they can he only multiples of four inches simplifies everyone's job; these sizes can be carried in one's head, one can know every nominal dimension in any building without difficulty, and one gets to know the "feel" of them. One knows the capacity of a 3-ft. or a 3-ft. 4-in., or of a 3-ft. 8-in. corridor when one is not concerned with the infinite variations on these sizes. Designers, manufacturers, and contractors alike find their work considerably simple when using this restricted range. The range of modular sizes is like the range of notes on a piano keyboard, one gets to know precisely how to make the best use of it. One should not underestimate

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the intangible, for it may be possible to discover in it many small, hidden savings, particularly in time, which could amount to a worthwhile economy."

Sir Alfred Bossom was in the Chair.

NEWS IN BRIEF

There are a few tickets (25s. each) left for the Mid-Summer Ball which is being held at the RIBA on June 19.

Architects who are anxious to attend and who have not yet applied for tickets should do so at once to the Hon. Organizing Secretary, ABS, 66, Portland Place, London, W.1.

The summer programme of the York Institute of Advanced Architectural Studies includes a new course on contemporary architectural design and theory under F. I. Jenkins, Lecturer in Architecture, University in Manchester, from July 25 to August 8. The summer school for architectural students, the post-graduate seminar on architectural design and the course on town planning design run between the same dates. The course on Landscape Design is from July 25 to August 15, and the course on architectural design from July 25 to August 22.

Professor Robert Matthew and Dr. Nikolaus Pevsner have been made Honorary Fellows of the New Zealand Institute of Architects.

Contractors

Kenfig Hill Secondary School, Glamorgan (page 884).— Architects: Denis Clarke Hall, E.R.B.A., A.A.Dip, Architect-in-charge: stage I, H. S. Scoter, A.R.B.A., A.A.(Hons.) Dip.; stage II, D. W. R. Davies, A.R.B.A. Quantify surveyors: Davis, Belfield and Everest. Consul-tants: (structural) stage I, the late L. W. Elliott; stage II, Dr. K. Hajnal-Konyi; (heating and ventilating). Roger Preston & Partners. General contractor: Gee, Walker and Slater Ltd. Sub-contractors (stage I): Thermoplastic tiles: Semtex Ltd. Aluminium roofing: William Briggs Ltd. Roofing felt: William Briggs Ltd. Terrazzo: Marriott & Price Ltd. Metal windows: Williams & Williams Ltd. Sanitary fittings: B. Finch & Co. Ltd. Structural steel: Sherratta Smith Ltd. Ironomogney: James Gibbons Ltd. Paint: Duresco Products Ltd. Heating and ventilation: Henley Jenkins. Sub-contractors (stage II): Thermoplastic tiles: Semtex Ltd. Timber roofing: H. Newsum Sons & Co. Ltd. Roofing felt: Ruberoid & Co. Ltd. Terrazzo: Mosaic & Terrazzo. Metal windows: Williams at Williams Ltd. Zanitary Gibbons Ltd. Paint. Duresco Products Ltd. Heating and ventilation. Norris Warming (?). Electrical installation: Henley Jenkins. Pling: Franki Pile Co.

Pyle Cross Infants School, Pyle, Glamorgan (page 884).— Architects: H. M. R. Burgess & Partners, A.R.I.B.A., F.R.I.C.S. Quantity surveyors: White & Hayton, F./F.R.I.C.S. Consultants: (heating and engineering services) M. McCann, M.I.H.Y.E.; (electrical) GCC Architects' Depart-ment; (structural) J. G. Veryard, A.M.Istruct.E. General contractor: Bennett Bros. Ltd. Sub-contractors: Heating and engineering services: F. P. Hurley & Sons. Flooring: Morgan & Williams (Swansea) Ltd. Electrical; L, Griffiths. Superstructure: Vie Hallam Ltd.

Griffiths. Superstructure: Vic Hallam Ltd. Waterhall County Secondary Mixed School, Cardiff (page 885).—Architects: Smith, Wilson & Cox, F./A./A.R.I.B.A. Quantity surveyors: L. C. Patterson, W. T. Seaton & Co. Consultants: (heating) M. McCann; (electrical) City Surveyor, E. C. Roberts: General contractor : E. Turner & Sons Ltd. Sub-contractors: Concrete frame and precast floors: Concrete Ltd. Timber infill panels: H. Newsum Sons & Co. Ltd. Metal windows and doors: Williams and Williams Ltd. Felt roofing: Trinidad Lake Asphalt Co. Ltd. Precast concrete clls and copings: Cambrian Concrete Co. Ltd. Abesion spray cellings: John Bland & Co. Ltd. Flash doors: F. Hills and Son Ltd. Roof lights: T. & W. Ide Ltd. W.c. partitions: Flexo Plywood Industries Ltd. Balustrades: Best & Lloyd Ltd. Granwood floor: The Granwood Flooring Co. Ltd.



Thermoplastic floors: The Marley Tile Co. Ltd. Shower parititions and trays: Cardiff Mosaic & Terr. Co. Ltd. Hardwood strip and block floor: Horsley Srsith & Co. (Hayes) Ltd. Duct covers: The Dover Engineering Works Ltd. Sanitary fittings: Perkins and Seward Ltd. Steelwork: Connies & Meaden Ltd. Boundary gates: M.A.C. (Engineering) Bristol. Sun and dark blinds: Rodd Bros. Ltd. Heating and allied services: G. N. Haden & Sons Ltd. Electrical installation: Campbell & Isherwood. Suspended ceilings: Baileys (Bristol) Ltd. Painting: Thompson Bros. Ltd. and M. McCarthy and Sons Ltd. Blickovcks Co. Ltd. and M. McCarthy and Sons Ltd. Blickovcks Sons (Engineeris) Ltd.

Sons (Engineers) Etd. Ystalyfera County Grammar School, Glam. (page 885).— Architects: H. M. R. Burgess & Partners A.R.I.B.A., F.R.I.C.S. Architects-in-charge: Wyn Thomas and David Burgess, A./A.R.I.C.S. Consultants: (heating and engineering services) M. McCann, M.I.H.V.E.; (electrical) GCC Architects' Department; (structural) J.G. Veryard, A.M.I.Struct.E. General contractor: Bennett Bros. Ltd. Sub-contractors: Heating and engineering services; F. P. Hurley & Sons. Structural steelwork: The Iron & Marble Co. Ltd. Electrical: South Wales Electricity Board (Pontardawe), Flooring, linoleum: Western Trinidad Lake Asphalt Co. Ltd. Wood bluck: Stevens & Adams Ltd. Wall cladding: John Williams & Sons (Cardiff) Ltd. Roofing felt: F. McNeill & Co. Ltd.

Roong Jeff, F., McNelli & Co. Lid.
Duffryn High School, St. Bride's Road, Newport, Mon.
(page 885).—Architect: Johnson Blackett, F.R.I.B.A.,
Dist.T.P., Borough Architect. Architect-in-charge: L. W.
Desmond Wall, Dip. Arch., A.R.I.B.A., Deputy Borough
Architect. Chief assistant architect: J. L. Russell, Dip.
Arch., A.R.I.B.A. Assistant architect: J. B. Owen, Dip.
Arch., A.R.I.B.A. Augustant architect: J. L. Russell, Dip.
Arch., A.R.I.B.A. Quantity surveyors: Davis, Belfield and
Everest. General contractor: William T. Nicholls Ltd.
Subcontractors: Reinforced concrete foundations and structure: The Trussed Concrete Steel Co. Ltd. Heating windows, etc.: Henry Hope & Sons Ltd. Cartain walling,
windows, etc.: Henry Hope & Sons Ltd. Thermoplastic tile faors: Macley Tile Co. Ltd. Thermoplastic Collactorom Ltd. Roof felting: The Ruberoid Co. Ltd. Tarmacadam paving: William Adams & Co. Tennis Court Foneting: (Contractors) Ltd.
Paving William Adams & Co. Tennis Court Foreing: Boulton and Paul Ltd. Paving fields: Bradshaw
Bros. (Contractors) Ltd.

Flats at Lydstep Crescent, Gabalía, Cardiff (page 886).— Architect: John Dryburgh, A.R.I.B.A., A.R.I.C.S., A.M.T.P.I., City Architect. General contractor: George Wimpey & Co. Ltd. Sub-contractors: Plastering: Plasterers (Liverpool and Chester) Ltd. Plumbing: Arthur Scull and Son Ltd. Painting: Norman Oldham Ltd. Aerials and amplifiers: Aerialite Ltd. Glazing: Cardiff Glazing and Mirror

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Shops, Maisonettes and Houses at Church Row, Wyesham (Monmouth) (page 886).—Architect: John H. Evans, A.R.D.B.A., ALARD, Quantity surveyor: Brian E. Field, A.R.D.C.S. General contractor: Jones & Wisseman. Subcontractors: Electrical: H. Horsley Ltd. Joinery (windows and fittings): E. W. King (Newport) Ltd. Metal windows: Rowe Bros.

Kowe Dios.
Combran Town Centre, North Housing Area (page 887).— Architects: J. C. P. West, A.R.LB.A., Chief Architect. Architect-in-charge: Miall Rhys Davies, A.R.LB.A. Quantity surveyor: James Donovan. All of general contractor: George Wimpey & Co. Ltd. Sub-contractors: Electrical installation: A. W. Davies & Co. Ltd. Gas installation: Wales Gas Board. Built-up roofing: General contractor, Western Trinidad Lake Asphalte Co. Ltd., and Asphalte Specialists. Floor tiles: Neuchatel Asphalte Company.

Treetops, Penllyne, Nr. Cowbridge, Glam. (page 888).— Architect: Keith J. Evans, B.Arch., A.R.I.B.A. General contractor: Louis C. Fisher & Co. Ltd. Sub-contractors: Felt roofing: Macartney Ltd. Glazing: Penybont Glazing Co. Ltd. Plumbing: M. Jones & Co. Ltd.

Co. Eds. Fraining, M. Burg, Eds. Ref. Combran, Mor-(page 888).—Architects: Miall Rhys-Davies, A.R.I.B.A. Sub-contractors: Electrical: A. W. Davies and Co. Ltd. Plumbing: Ron. James (Cwmbran) Ltd. Built-up roofing: Western Trinidad Lake Asphalte Co. Ltd. Principal merchant: Clarence Trading Co. Ltd.

New Works at Aberavon for Wales Gas Board (page 889). —Architects: T. Alwyn Lloyd & Gordon, F./A.R.I.B.A. Assistant architects: David Humphreys, A.R.I.B.A., and Vernon Kinch, A.R.I.B.A. General contractors: CWG (plant) Peter Lind; (compressor house) T. F. Howells; (offices and governor house) Rush & Tomkins.

(offices and governor house) Rush & Tomkins. Velindre Works, Morriston, Swansea, for The Steel Company of Wales Ltd. (page 889).—Architects: Bir Percy Thomas & Son, F.A.R.I.B.A. Architects-in-charge: Norman P. Thomas, Dip. Arch., A.R. I.B.A. Howel Mendus, L.R.I.B.A. Principal assistant: John Vergette, A.R.I.B.A. Quantity surveyors: Gardiner & Theobald. Consultants: (structural and mechanical) W.S. Atkins and Partners; (electrical) McLellan and Partners. General contractors: Robert M. Douglas Ltd. Sub-contractors: Steelwork: (mill) Dorman Long; (ancillary building) T. C. Jones & Son, Connies & Meaden Ltd. Heating, etc.: G. N. Haden Ltd. Heated ceilings: Frenger Ceilings Ltd. Electrical: F. H. Wheeler Ltd. Metal windows and patent glazing: John Williams Ltd., Henry Hope and Son, Williams and Williams Ltd. Precast concrete: Concrete Ltd. Woodblock floors: Acme Flooring and Paving Co. Ltd. Granolithic floors: Acme Flooring and Paving Co. Ltd. Granolithic floors: Huarts Canchithic Ltd. Tilms: Langley London Ltd., Carter Tiles Ltd. Flat roofing: Frazzi Ltd. Roof decking: William Briggs Ltd. Corrugated sheeting:

Cwmfelin Press Ltd. Steel partitions: Chatwood Milner Ltd. Kitchen equipment: Radiation Group Sales Ltd. Rolling shutters: David Pickett Ltd. Service lifts: Shorts Lifts Ltd.

Whitland Station, Carmarthenshire (page 889).—Architects: British Railways, Western Region. Architectinctarge: H. E. B. Cavanagh, A.R.I.B.A., Regional Architect, under the direction of M. G. R. Smith, M.L.C., Chief Civil Engineer. General contractor: Bennett Bros., Ltd. Sub-contractors: Canopy steelwork: Fairfield Shipbuilding & Engineering Co. Ltd. Felt roof and canopy decking: D. Anderson & Son Ltd. Electrical installations: Lee Beasley & Co. Ltd. Heating installation: John Legg & Sons Ltd. Reinforcement: Square Grip Reinforcement Designs Ltd. Paint supply: Lewis Berger (Great Britain) Ltd. Painting: Wason Bros. Ltd.

Ltd. Painting: Wason Bros. Ltd. Xardov Buildings, Nr. Swansea (page 891).—Architects: Smith, Wilson & Cox F.A./A.R.L.B.A. Quantity surveyors: W.T. Hills & Co. General contractor: E. Turner & Sons Ltd. Sub-contractors: Structural steelwork: Connies & Meaden Ltd. Steel reinforcement: T. C. Jones & Co. Ltd. Metati roof decking and wall cladding: Robertson Thain Ltd. Patient glazing: Mellowes & Co. Ltd. Precast concrete floors: Concrete Ltd. Electrical installation: J. Smith & Son (Swansea) Ltd. Gas installation: Wales Gas Board, Cold room insulation: J.D. Insulating Co. Ltd. Refrigeration equipment: Pressed Steel Co. Ltd. Suspended ceilings: Baileys (Bristoi) Ltd. Cartain walling: John Williams & Sons (Cardiff) Ltd. External timber screens: H. Newsum Sons & Co. Ltd. Roller shutters: G. Brady & Co. Ltd. Bricks: Star Brick Co. Ltd. Hydraulic ramps: S. Bailey (Ore) Ltd. Sack hoist: G. Cohen & Co. Ltd. Thermoplastic filors: Semitex Ltd. Paint: Permoglaze Ltd. Inonmongery: James Gibbons Ltd. Lettering: Ward & Co. Sanitary ware: Associated Clay Industries Ltd. Metal balustrades: M.A.C. Engineering (Bristol). Partitions to offices: British Plasterboard Ltd.

Merthyr House Garage, James Street, Cardiff (page 891).— Architects: T. Alwyn Lloyd & Gordon, F./A.R.I.B.A. Architects: T. Alwyn Lloyd & Gordon, F./A.R.I.B.A. Architect-in-charge: L. Beaven, A.R.I.B.A., A.M.T.P.I. Quantity surveyors: G. A. Downie, F.R.I.C.S. Consultants M. McCann, M.I.H.Y.E. General contractor: L. J. Hop Lid. Sub-contractors: Structural steelwork: Dawnays Ltd, Lifts: Evans Lifts Ltd. Signs: Ward Ltd. Shopfitting: A. Edmunds. Heating and ancillary services: Progers Ltd. Electrical installations: Hartley Installations Ltd. Automatic fire alarms: Gent Ltd. Internal telephones and public address: Reliance Ltd.

Factory for Monmouth Borough Council, Leased to Scotts Engineering Ltd. (page 891).—Architect: John H. Evans, A.R.I.B.A., A.J.Arb. Quantity surveyor: Brian E. Field, A.R.I.C.S. General contractor: J. Henry Williams & Sons (Ellwood) Ltd. Sub-contractors: Standard steelwork and roof construction: Taylor Woodrow Export Ltd. Electrical work: T. Clarke & Co. Ltd. Heating: The Hampton Heating Co. Ltd. Marley floor tiling: The Clarence Tiling Co. Ltd.

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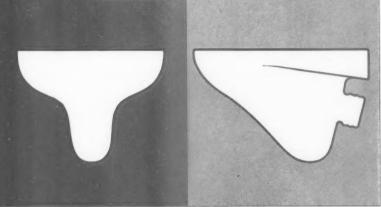
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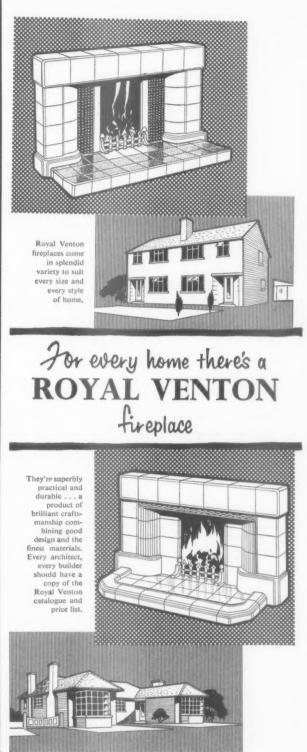
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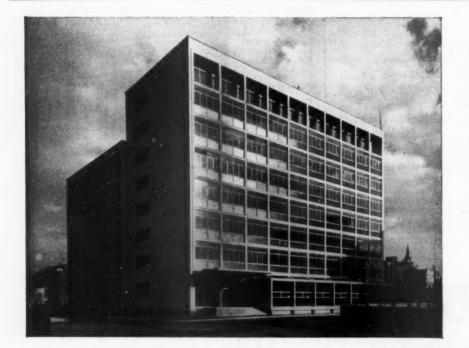
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Architect: R. N. Wakelin, F.R.I.B.A., of Campbell Jones & Sons

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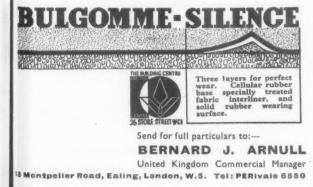
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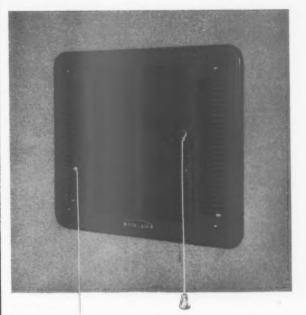
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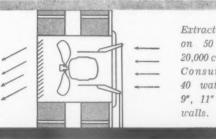
O the manufacturers of this new flooring that has just been fitted; it really is remarkable you know—soft and quiet to walk on, pleasant to look at and easy to keep clean (even the office cleaner admits its pretty good). We should have had Bulgomme Silence flooring years ago. Yes, take a letter Miss Jones, we don't often hand out compliments but this is really something to talk about.





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THE ARCHITECTS' JOURNAL for June 11, 1959



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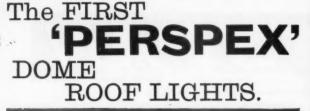
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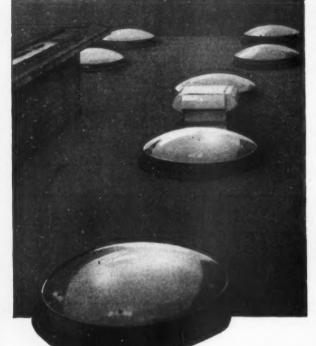
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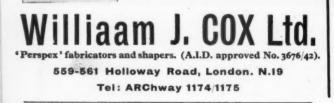
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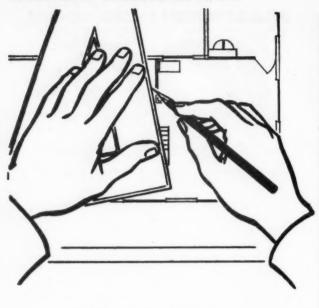


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CLASSIFIED ADVERTISEMENTS

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

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

AIR-MAIL SERVICE available on request: AIR-MAIL SERVICE available on request: In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appoint-ments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (ls. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

Public and Official Announcements

30s. per inch; each additional line, 2s. 6d.

30s. per inch: each additional line, 2s. 6d. GOVERNMENT OF NORTHERN IRELAND (a) ASSISTANT ARCHITECT, CLASS II (b) ARCHITECTURAL ASSISTANT Applications invited for above posts in Chief Architect's Branch, Ministry of Finance. Posts (a) are pensionable and candidates must be Registered Architects by examination with at least two years' experience in an Architect's Office in preparing working drawings. Salary scale £805 (at age 25)-£1.95 (age 34 and over)-£1,260. Existing pension rights may, in certain circumstances, be transferred. Candidates for unestablished posts (b) should have recognised architectural training and fair experience. Salary scale £555-£905; appointees who have passed R.I.B.A. Intermediate examina-tion start at £730. Preference for ox-Service men. Application forms for beth posts obtainable from Director of Establishments, Room 271, Stormont, Belfast. 201

4201

4201 HEMEL HEMPSTEAD DEVELOPMENT CORPORATION Applications are invited for the following vacan-cies in the Chief Architect's Department: SENIOR PLANNING OFFICER: £934-£1,273. Vacancy No. 154. Duties include liaison with other planning authorities on matters affecting revised Master Plan, planning applications, etc. Experience in planning office essential. Short-term post which might be attractive to senior man approaching retiring age.

migni be attractive to senior man approaching retiring age. SENIOR ASSISTANT ARCHITECT: £934-£1,273. Vacancy No. 155. To take charge of small team responsible for bousing. neighbourhood centre. etc., development. ARCHITECTURAL ASSISTANTS: Vacancy No. 156.

ARCHITECTURAL ASSISTANTS: Takang to 156. In grades with salaries ranging from £265-£939, according to age, qualifications and experience. Junior posts available for architectural students not yet qualified, and for those who have qualified and wish to gain practical experience. Conditions of service similar to those in Local Government. Housing may be provided. Applications, endorsed with appropriate vacancy number, giving age, education, qualifications and experience and names of two business referees to General Manager, Westbrook Hay, Hemel Hempstead.

Require trainager, westbrook Hay, Hemel 4368 KUMASI COLLEGE OF TECHNOLOGY, Require temporary ARCHITECTURAL STAFF at their London Office for aboat nine months to prepare contract drawings for a large building programme in Ghana: salary range from 280 to c120 per month according to experience. Applica-tions are invited from qualified architects and architectural assistants. Further details may be obtained from the London Office of Kumasi College of Technology, 29, Tavistock Square. Lon-don, W.C.2, to whom applications should be sent as soon as possible.

CORPORATION OF LONDON CITY PLANNING OFFICE

CORPORATION OF LONDON require for CITY LANNING OFFICE FORMATION ASSISTANT (4655 by eight in-forments to £1.025.) Primarily for design, detail into and modelling redevelopment proposals in the City. Should be an architect with a good ducational background and progressive interest in large scale, three-dimensional planning: pre-trably an Associate Member of the Town Plan-ting Institute. or taking a course leading to this qualification. TEMPARY PLANNING ASSISTANT (4595 by eight increments to £915). Duties include assistance with redevelopment progress in the City, general draughting, and architectural aspects of development prodress in the courd and preferably be a qualified architect. To entry on salary scales subject to age and ex-perience. Medical examination; Local Act super-annation. Molications, with details of training, age, ex-perience mesent salary, and copies of two recent actionals to City Planning Officer, Guidhall, BC.2, as soon as possible.

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A. R. DAVIS, Clerk of the County Counc 4611

 RADNORSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

 Applications are invited for the undermentioned permanent appointments in the County Architect's Department:—

 (a) QUALIFIED ARCHITECTURAL ASSIS-TANT (must be A.R.I.B.A.). Salary in accordance with Special Grade for qualified assistants having at least five years' experience (i.e. £750 × £40-£1,530 per annum). Should be experienced in con-temporary school architecture.

 (b) QUALIFIED QUANTITY SURVEYOR (must be A.R.IC.S.). Special Grade £750 × £40-£1,630 per annum. Required for preparation of Bills of Quantities. Estimates and Schemes and Direct Labour Costing.

 The appointments will be terminable by one month's notice in writing on either side and will be subject to the provisions of the Local Govern-ment Superannuation.

 The conditions of Service will be those of the National Joint Council for Local Authorities Administrative, etc., Service.

 Applications stating age, qualifications and ex-perience with the names of two referees must be values with the undersigned not late than 20th June 1989.

D. C. S. LANE, Clerk of the Council.

County Hall, Llandrindod Wells, Radnorshire.

COUNTY BOROUGH OF CARLISLE Applications are invited for the appointment of ASSISTANT ARCHITECT in the City Surveyor's Department at a salary in accordance with the A.P.T. Special Scale, 2750-21,030 (revised scale awaiting approval by Conncil). Starting salary according to qualifications and experience. Applicants should be A.B.I.B.A. This post is in a section normally carrying out General work, but at present Educational work is also being done. The office is sectionalised, the architectural work being under the immediate control of the Deputy City Architect. Forms of application from City Surveyor, 18, Fisher Street, Carliele, returnable to him not later than 20th June, 1959. H. D. A. ROBERTSON.

H. D. A. ROBERTSON. Town Clerk

4569 CITY OF HALIFAX. NOVA SCOTIA, CANADA ASSISTANT PLANNEB Urgently required to assist the Director of Planning, K. M. Munnich, in work on an ex-tensive redevelopment programme shortly to be undertaken by the City. Candidates to this new post should be mem-bers of the Town Planning Institute and the Royal Institute of British Architects, with con-siderable design ability and experience in three dimensional planning. The work will include design for residential and commercial renewal of the central areas of the City and Development Plans for the whole of Halifax. It will offer to the successful can-didate splendid opportunities for self-expression in progressive planning and professional advance-mer.

in progressive planning and proressional aurancement. Salary range from \$5,544 to \$6,600 per amanm depending on experience. Help in defraying travelling expenses from overseas a strong possi-bility for the successful candidate. Apply by Air Mail enclosing a recent photo-graph and stating age, marital status, education. training, details of experience, names and addresses of three references and when available to G. F. West. Commissioner of Works, City Hall, Halitax, Nova Scotia, Canada. K. M. MUNNICH. Director of Planning. 4652

CITY OF MANCHESTER PPOINTMENT OF ASSISTANT CITY PLANNING OFFICER Applications are invited for this appointment in the City Surveyor and Engineer's Department at a salary within J.N.C. Scale "G" (£1,990) £2,280). Candidates must be appropriately quali-fied by examination and must have had con-siderable experience in the planning and develop-ment work of a local authority. The person appointed will be responsible to the City Surveyor for the control of the Planning and Development Section of the Department and the duties will include redevelopment and the location and design of major highways. Housing accommodation and removal expenses.

Forms of application may be obtained from the Forms of application may be obtained from the Town Clerk and must be returned to him at the Town Hall, Manchester, 2, in an envelope endorsed "Assistant City Planning Officer" not later than 29th June, 1959. 4570

Later than 28th June, 1959. 4570 KENT COUNTY COUNCIL require, In connec-tion with the Council's extensive building pro-gramme, QUANTTY SURVEYORS and ASSIS TANTS with experience in the preparation of estimates, bills of quantities and final accounts for building projects. Salaries within scales 2785-21,070 or £610-2755 a year. Candidates for appointment to the higher scale should have passed the Final Examination of the Boyal Insti-tution of Chartered Surveyors (Quantity Survey-ing Section (and be familiar with recent develop-ments in cost analysis and cost planning. Other candidates should have passed the Intermediate Examination of the Institution. Further details and application forms from the County Architect, Springfield, Maidstone. Closing date 24th June, 1959. 4533

ASSISTANT ARCHITECTS required by PERTH AND KINROSS COUNTY COUNCIL—One on Scale 2860-21.140 as a Senior Assistant in the Housing Section (car allowance payable) and Four on Scale 2760-21.040 for work on County Offices Extension and Schools. Applicants should have passed the Final Examination (all parts) of the R.I.B.A., but consideration will be given to applicants holding a Diploma in Architecture. Placing on scales may be given according to ex-perience. Houses available. Particulars of appointment and forms of application from The County Clerk, P.O. Box 15, County Offices, York Place, Perth. Applications to be lodged by 22nd June, 1959.

Place, Pern. Applications to be longed by 22nd 4672 EBBW VALE URBAN DISTRICT COUNCIL ACHITECT'S DEPARTMENT APPOINTMENT OF DEPUTY ARCHITECT Applications are invited from corporate Mem-bers of the R.I.B.A. for the appointment of Deputy Architect in the Department of the Architect to the Council at a salary within A.P.T. Grade IV (21,065-21,220) of the National Joint Conneil's Scales. The supconstructure will be expected to commence duties on September 1st, 1959. The supcontinent will be subject to three months' notice on either side, to the provisions of the Local Government Superannuation Acts and to the passing of a medical examination. Housing accommodation may be made available if required. The Architect's Department has a varied pro-ramme of work including new housing, slum clearance, redevelopment schemes, proposed civic Architect's Denart.

clearance redevelopment science, hyperbasic centre, etc. Applications endorsed "Deputy Architect," stating age, education, training, qualifications, experience, present and past appointments, and enclosing copies of two recent testimonials, should be submitted to the undersigned not later than Wednesday, 22nd June, 1959. HOWARD J. WILLIAMS. Clerk of the Council.

28th May, 1959. 4631 ST. GERMANS RURAL DISTRICT COUNCIL APPOINTMENT OF ARCHITECTURAL ASSISTANT Applications are invited for the appointment of an Architectural Assistant at a salary in accordance with A.P.T. I of the National Scales of Salaries, viz. 2610 rising to 2765 per annum. Applicaties should be qualified in accordance with the Scheme of Conditions of Service. The appointment is superannuable and subject to one month's notice on either side. Applications, together with a copy of one testimonial and the names of two referees, should reach the Clerk of the Council, Lower Port View. Saltash, Cornwall, by the 1st July, 1959. 4661

Saltash, Cornwall, by the 1st July, 1907. BEESTON AND STAPLEFORD URBAN DISTRICT COUNCIL SENIOR ARCHITECTURAL ASSISTANT Applications are invited for the above appoint-ment at a salary according to experience in Special Grade (2785–61.070). Housing accommodation will be provided, if necessary. Candidates mast be A.R. I.B.A., with preferably some exnerience of Municipal Housing. Annlications, stating age, qualifications, with details of training and exnerience, accompanied by the Housing Architect, Town Hall, Beeston. Notingham, not later than the 26th June, 1959. H.D. JEFFRIES. Clerk of the Council.

Town Hall. Beeston. ston. Nottingham. APPOIN

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Town Hall, Ossett.

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Architect. 19th June.

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Council Offices, The Walk, Ebbw V 28th May, 1959. Vale, Mon.

BOROUGH OF OSSETT APPOINTMENT OF ARCHITECTURAL ASISTANT Indications are invited for the above appoint-ment at a salary in accordance with A.P.T. Grade II (a765-2880). Candidates should have passed in the intermediate Examination of the R.I.B.A. the apperienced in Local Authority Housing

The appointment will be subject to the N.J.C. where of Conditions of Service, the Local Guernment Supersanuation Acts, Medical mamination, and one month's notice on either

Trainiation, and one months honce a vailable Housing accommodation will be made available is the successful applicant if required. Applications, including the names of two efferes and declaring may relationship between the applicant and any member or senior Officer of the Council, are to be received by me not ater than Monday, 29th June, 1959. B. FREEMAN. Town Clerk.

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Town Hall, <u>Ossett.</u> 4666 **NORTHERN POLYTECHNIC, HOLLOWAY,** LONDON, N. 7 The Governing Body invite immediate applica. The Governing Body invite immediate applica. The Governing Body invite immediate applica. THEORY OF STRUCTURES AND BUILDING EQULATIONS. Salary scale £1,260 × 231 lbs. "THORY OF STRUCTURES AND BUILDING EQULATIONS. Salary scale £1,260 × 231 lbs. "Thomas and submitted in the Burnham Award." Applicants are expected to have an appropriate professional qualification and to have had at eaching experience is desirable. Apply for form of application and further matchilder to the Governors. 4642 ThurROCK U.D.C. (Engineer & Surveyor's Dept.) require ARCHITECTURAL ASSISTANT. III: 661-2890 p.a. Good architectural experi-meter Architect to the Council. Salary A.P.T. (III: 661-2890 p.a. Good architectural experi-meter accessary. Applicants must be capable of meter Architect to the Intermediate Examination of the R.B.A. The Council have interesting projects in hand, including an Indoor Swimning sating age, qualifications and experience, and moting three referees, to Clerk of the Council ave and the experises. Starter of the Council may interesting age. Grays, Essex, by 23rd June, 1959. Canvassing disgualities. Relationship with mem-balance of the R.IB.A. The Council have interesting age. Grays, Essex, by 23rd June, 1959. Canvassing disgualities. Relationship with mem-balance of the Council may interesting age. MORTH RIDING COUNTY COUNCIL

sciosed. 4639 NORTH RIDING COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT Applications are invited for the appointment

COUNTY A RUMITENTS OF A appointment Applications are invited for the appointment (a) ASSISTANT ARCHITECTS, on permanent safe, with Final R.I.B.A. Examination. Salary special Scale (2760-41,030) (under review), point of entry will denend on experience. (b) TEMPORARY JUNIOR ARCHITECTURAL ASSISTANT, with Intermediate R.I.B.A. Examination, or equivalent school examination. Salary A.P.T. I (2610-2765), point of entry will denend on experience. Posts superannuable if medically fit. Forms of splication not issued. Applications should state and be sent to the Clerk of the County Council. County Hall, Northallerton, by 22nd June, 1959. Yames and addresses of three referees to be driven. Canvassing. directly or indirectly, will be deemed a dissualification and candidates should state in writing whether they are related to any member of, or senior officer under, the deaneil. DODUCH OF BASINGSTOKE

BOROUGH OF BASINGSTOKE BOROUGH ARCHITECT'S DEPARTMENT A rapidly expanding town offers interesting work for a SENIOR ARCHITECTURAL ASSIS-IANT who has passed the R.I.B.A. Final. Salary mage 2750 × 240-€1.030 according to experience. House or Flat available. N.J.C. conditions; post pensionable; medical examination. Applications, giving details of age, training, experience, etc., and two referees, to Borough Architect, Municipal Buildings, Basingstoke, by 30h June, 1959. 4418 DOBMCHURCH UNDERN DESCRETAR

Architect, Municipal Buildings, Basingstoke, by 441 June, 1959. MORNCHURCH URBAN DISTRICT COUNCIL CLERK OF WORKS (BUILDING) Applications are invited from suitably quali-fied persons for the above temporary appoint-ment. Applicants must have had considerable experience in the supervision of housing con-struction, have a sound knowledge of all the trades in connection therewith including the set-ting out and measurements of all works on the site, and the keeping of the necessary records. The salary to be paid is within the range of the Miscellaneous Division Grade VI, 2715-2775 per annum, and in addition, an amount equiva-ent to London Weichting will be paid. The post is subject to the appropriate N.J.C. Conditions of Service, the mormal hours worked in the building trade, a medical examination, and termination by one month's notice on either side. Applications, on the forms provided by the madersigned, stating qualifications, experience and the names of two referees, must be returned not laice than Saturday. 20th June, 1959. P. L. COX. Billet Lane.

4680

Council Offices. Billet Lane, Hornchurch.

BOROUGH OF ASHTON-UNDER-LYNE APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT Applications are invited for the above appoint-ment in the office of the Borough Engineer and Surveyor at a salary within Grade 1 of the Administrative, Professional and Technical Divi-sion of the National Scales. The position offers valuable experience in con-nection with housing development by direct labour and contract, central area re-development of houses, flats, maisonettes and shops, and the construction of various public buildings. The provision of housing accommodation for the successful candidate will be considered if necessary.

The successful candidate with the mecessary. Particulars of the appointment and application forms may be obtained by application to the Borough Engineer and Surveyor and should be returned to me by Tuesday, the 16th June, 1959, G. A. MALONE, Town Clerk.

4564

4601

Conncil Offices, Corby. Northants. 23rd May, 1959.

DEVELOPMENT COUNTY COUNCIL COUNTY PLANNING DEPARTMENT Applications are invited from suitably qualified persons for the following appointments, viz.:--(a) RENIOR COUNTY PLANNING ASSIS-TANT (Development Plan), A.P.T. Grade IV (Raiarv 21.065-21.20 per annum). (b) ARCHITECT. Social Scale. (Salary 2785-£1.070 per annum). Both appointments are to the Headmarters Staff of the County Planning Department at Buthin.

Both approximation Planning Deparations Staff of the County Planning Deparations Ruthin. Application forms and further particulars can be obtained from me. Completed applications, giving the names of two referees, must be re-turned by 29th June, 1969. Clerk of the County Council.

County Offices, Ruthin. Denbighshire.

CARMARTHENSHIRE COUNTY COUNCIL ABCHITECT'S DEPARTMENT Applications are invited from suitably qualified and experienced persons for appointment as ARCHITECTURAL ASSISTANT (A.F.T. I). Appointment superannuable and subject to medical examination. Applications, giving details of age, qualifica-tions and experience, with copies of three recent testimonials, to County Architect. County Hall, Carmarthen, not later than Saturday, 20th June, 1959.

W. S. THOMAS, Clerk of the County Council.

County Hall, Carmarthen. June, 1959.

4686

COUNTY BOROUGH OF EAST HAM BOROUGH ENGINEER'S DEPARTMENT Applications are invited for the following tem-orary appointments:-SENIOR ASSISTANT ARCHITECT, Grade IV

(1.065-£1.220). ARCHITECTURAL ASSISTANT, Grade II (2765-2880).

ARCHITECTURAL ASSISTANT, Grave and Cross and C

Burther details and application forms, returnable, by 26th June, 1959, from the Town Clerk. Town Hall, East Ham, E.5.
 NEWCASTLE REGIONAL HOSPITAL BOARD REGIONAL ARCHITECT'S DEPARTMENT
 During the next two years the Board plans to spend several millions on hospital developments and larger programmes are being planned to follow. The present building programme includes a wide variety of projects, ranging from houses to hospital, and (since a large hospital resembles a small town) affords ample opportunity for gaining both general and hospital experience is multaneously.
 The following posts in the Regional Architect's Department are at present open to applicants. The salary-scales quoted include interim increases provide of salaries.
 (i) ASSISTANT ARCHITECTS (4). Salary £730 × £25 (2) × £30 (2) × £35 (5) = £40 (1) - £1,055.
 Applicants should be registered architects and have had experience of the planning and construction of public buildings. The commencing salary will be fixed within the Grade by £30 (2) to 2765.
 (ii) ARCHITECTURAL ASSISTANT. Salary £30 (2) to 2765.
 (ii) ARCHITECTURAL ASSISTANT. Salary £30 (2) to 2765.
 (ii) ARCHITECTURAL ASSISTANT. Salary £30 (2) to 2765.
 (iii) ARCHITECTURAL ASSISTANT. Salary £30 (2) to 2765.
 (iii) ARCHITECTURAL ASSISTANT. Salary £45 (4) × £25 (4) × £30 (2) to 2765.
 (iii) ARCHITECTURAL ASSISTANT. Salary £45 at age 21 × 220 (3) × 225 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (2) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × £30 (3) × 256 (4) × 530 (3) × 256 (4) ×

the Secretary to the Board, Jennersk time, Newcasite upon Tyne, 6, not later than 18th Tume, 641
 TKENT COUNTY COUNCIL invites applications for superannuable appointments in the PLAN-NING DEPARTMENT as follows:-(a) ARCHITECTURAL ASSISTANT in the Headquarters at Maidstone. Salary within experience, Candidates must be Associates of the Royal Institute of British Architects or hold an equivalent emailification.
 (b) PLANNING ASSISTANT for work in an equivalent email of the preparation of the concerned principally with develop-ment control matters and the preparation of Town Mass. Salary within Grade A.P.T. I (260-2765) or A.P.T II (266-2630) according to qualifications and experience. Candidates must posses an appropriate University degree or diploma or have passed a recognised intermediate professional examination.
 TBOROUGH OF BASINGSTOKE BOROUGH OF RASINGSTOKE BOROUGH ARCHITECTS DEPARTMENT A rapidly examinating to more fores. Interesting varial or assed the RLB.A. Maidstone.
 BOROUGH ARCHITECTS DEPARTMENT A rapidly examinating to more fores. For yourk for a SENIOR ARCHITECTURAL ASSIS-TANT who has nassed the RLB.A. Final. Salary varia e 275-21.070 according to experience. Honse or have passed the RLB.A. Final. Salary varia e available. NJ.C. conditions; post pen-sonale; medical examination.

Town Hall, Ashton-under-Lyne.

GEORGE HOOPER, Clerk and Solicitor.

June, 1959. GEORGE HOOPER, Clerk and Solicitor. Clerk and Solicitor. Clerk and Solicitor. Market Development CORPORATION CHEEF ARCHITECT'S DEPARTMENT Applications are invited for appointment to post as ASSISTANT ARCHITECT on salary prades 4631 rising to 4811 p.a., 4733 rising to 1.039 p.a.-starting salary and grade according to experience and qualifications. Applications should have experience of the duccessful candidates will be engaged on work of a varied and interesting nature relating to the uilding of a New Yown, and will include Shop-poing Centres, Housing and Multi-storey Flats. Office Blocks and Industrial Buildings. More foreses in an appropriate case. Thorising accommodation will be available in the course in an appropriate case. More foreses, to be sent to the Chief Administra-to the the Alan House, nr. Stevenage, Herts. Not fore Alson House, nr. Stevenage, Herts. 104 Berger Handary, 26th June, 1969. COVENTE COVENTE COVENTE 104 AREA PLANNING OFFICERS, Special Grade (2785- f.1070), for creative Development Catol work, Planning and an additional quali-cation necessary. 104 PLANNING ASSISTANTS, A.P.T. I (£610-6765 p.a.), for work on Central Area Reconstruc-mediate qualification necessary. Mathematication necessary. Mathematication necessary. Mathematication necessary. Mathematication necessary. Mathematication available and available Mathematication necessary. Mathematication necessary. Mathematication necessary. Mathematication available and available. Application forms from Bull Yard, Coventry. Terturnable 14 day of publication.

made within the grade. Housing accommodation in approved cases. Removal expenses loan avail-able. Application forms from Bull Yard, Coventry. Furnable 14 days of publication. 4640 FURNITURE, INTERIOR AND COLOUR DESIGNERS Architect's Department, L.C.C., require (a) FURNITURE DESIGNER for work in wide range of furniture for Council establishments; (b) INTERIOR DESIGNER capable of dealing also with some fittings and furniture, preferably with architectural training; (c) INTERIOR DESIGNER for colour advisory work for Council establishments including Schools, Children's Hame, Homes for Goung Schools, Children's Hame, Homes for Goung Council establish energy of establishments; (c) INTERIOR DESIGNER for colour advisory work for Council AR EK 55159, County Hall, S.E.J. (122). 4616 COUNTY BORUGH OF ROCHALE Applications are invited for the post of QUANTITY SURREVOR on Special Classes Scale (2750-21.030 p.a.). The successful applicant, if fully qualified, will be offered housing accommodation. Applications, including names of two referees, to the Borough Surveyor, Town Hall, Rochdale, by 15 July, 1959. Canvassing or non-disclosure of relationship to any member or senior official of the Council disqualify. Appointment subject to medical examination. K. B. MOORE. Town Clerk.

K. B. MOORE, Town Clerk. 4716

4716 PUBLIC APPOINTMENTS ASSISTANT ARCHITECTS Salary 2730 D.a. to f1.055 D.a. (under review) required by the Livernool Regional Hospital on the staff of the Regional Architect. T. Noel Mit-chell. B.Arch., F.R.I.B.A., for work on interest-ing large new Hospital projects. Starting salary dependent on age and/or ex-perience.

Starting sainty uppendix on the periones. Candidates to be Onalified Architects. All posts subject to N.H.S. (Superannuation) Regulations. Applications, stating age, qualifications, pre-sent post and salary, previous appointments and names and addresses of three referees (two technical), to me at 55, Castle Street, Liverpool, 2, by 17th June, 1959. VINCENT COLLINGE, Secretary to the Board.

F.68	/RR/E	MC.		
2nd	June.	1959.		47

CITY OF PORTSMOUTH CITY ARCHITECT'S DEPARTMENT Applications are invited for the following appointments:-(a) ASSIBTANT ARCHITECT, Special Grade (1785-21,070), commencing salary according to experience. (b) ASSIBTANT ARCHITECT, A.P.T. Grade II (2765-280), commencing salary accord-ing to experience. (c) ACHITECTURAL ASSISTANT, A.P.T. Grade I (2610-2765), commencing salary according to experience. Applicants for (a) must be Associate Members of the R.I.B.A. and for (b) and (c) must have passed the Intermediate R.I.B.A. Examination, or its equivalent, at one of the recognised Schools of Architecture. Applications, with full details and names of two referees, must be delivered to the City Archi-tect. I, Western Parade, Portsmouth, not later tham Wednesday, the 24th June, 1959. Canvassing will disgualify. POPOUGH OF SOLUMUL.

BOROUGH OF SOLIHULL

Appointment of:-(a) HEATING & VENTILATING ENGINEER. (b) SENIOR ASSISTANT QUANTITY SUR-VEYOR.

(a) HEATING & VENTILATING ENGINEER.
(b) SENIOR ASSISTANT QUANTITY SURVEYOR.
Applications are invited for the above appointments in the Borough Surveyor's Department. The salary in respect of post (a) will be in accordance with A.P.T. Grade V (£1,220-£1,375 per annum) and for post (b) in accordance with A.P.T. Grade V (£1,220-£1,375 per annum).
Applicatis for the post as Heating & Ventilating Engineers and be capable of designing and detailing heating. Not water and ventilating installations. Experience in electrical engineering would be an advantage.
Applications for the post of Senior Assistant Quantity Surveyor should be Chartered Quantity Surveyors and have considerable experience in taking off, prenaration of final accounts and approximate estimating for deucational, housing and other works undertaken by a Local Authority. The appointments are subject to the provisions of the Local Government Superannuation Acts: the National Scheme of Conditions of presend to verifie the side.
Where appropriate, housing accommodation with the names and past appointments, together with the names and past appointments. Superiments of presend approximate, should be submitted to the Borough Engineer Surveyor, 90, Station Road, Solihull, Warwickshire, not later Low Menter Men

4710 COUNTY OF CORNWALL ASSISTANT ARCHITECTS Applications are invited from keen young Architect's Denariment at a salary within the Grade A.P.T. IV, 41.065-e1,220. Applicants should preferably he school trained and he capable of undertaking major works with a high degree of individual freedom and respon-sibility.

a high degree of individual freedom and respon-sibility. The department has a large programme of schools and other municipal projects. The appointment is subject to the usual con-ditions of Local Government Service. Applica-tions, accommanied by the mames of two persons to whom reference can be made, should reach Mr. F. K. Hicklin, A.B.I.B.A. County Architect. County Hall, Truro, not later than Monday, 22nd June, 1959. June, 1959

E. T. VERGER. Clerk of the County Council.

County Hall Truro. 1st June, 1959

 1st June, 1959.
 4711

 CITY OF ST. ALRANS

 ARCHITECTURAL ASSISTANT

 of R.I.B.A. Intermediate standard required in the City Engineer and Surveyor's Department within Grade A.P.T. I (6610-2765).

 Housing available. Apply with full details and names of two referees by Monday, 22nd June, to: Town Clerk, 38, St. Peter's Street, St. Albans. 4669

LONDON COUNTY COUNCIL ARCHITECUTERAL ASSISTANTS required an to 2860 (at present under review). Full and interesting programme of houses, flats, schools and general buildings. Annlication form and architect to Council, AR/EK/43/59, County Hall, S.R.1. (923.)

REL. (923.) 466 THE INIVERSITY OF LEEDS DEPARMENT OF CIVIL ENGINEERING Annications are invited for two LFCTURE. SHIPS in the Denartment of Civil Engineering, at salaries on the scale 6900 × 250-21,350 (efficiency bar) × 475-21.650 a year. For one nost practical experience in Nighway Engineer-ing is desirable. For the other post a snecialised knowledge of shell structures is essential and an interest in Architectural Engineering desirable. Apolications and experience. Josether with the names of three referees should reach the Bezis-trar. The Tniversity. Leeds. 2 (from whom fur-ther narticulars may be obtained), not later than 20th June, 1959.

BOROUGH OF NELSON SENIOR ASSISTANT ARCHITECT Applications are invited for the appointment of Senior Assistant Architect in the office of the Borough Engineer and Surveyor. Salary within Special Scale (4785–£1,070 p.a.). Commencies salary according to experience and qualifications. Applicants must be Associates of the Roya Institute of British Architects and have good general experience in Housing and Public Buildings.

Institute of Brinsa and Housing and runc general experience in Housing and runc Building. The appointment will be subject to the National Scheme of Conditions of Service and consider-tion will be given to the provision of housing accommodation. Applications (endorsed "Senior Assistant Architect"), giving details of age, education, qualifications, experience and present salary, with the names and addresses of two referees, to in sent to the undersigned, not later than the firm post on Saturday, the 27th June, 1959. F. W. ROBERTS, F. W. ROBERTS, Town Clerk.

4700

Town Hall, Nelson. 2nd June, 1959.

2nd June, 1959. The Armony of the Armony of Armony of Armony architect's Department, Motherweil Salary either £1,100/41,250 of 2,150/61,350 according to qualifications and experience, etc. May be A.R.I.B.A. In addition to all-round knowledge of architectural practice, should have knowledge of modern School building and be capable of assuming position of responsibility. In addition to large School Building Programme, work in Department embraces every aspect of building with exception of Houaing; and pointments, therefore, provide excellent opportunity for extending experience on an interesting and varied programme. Medical examination. Superannuation. No canvassing.

canvassing.

Medical examination. Superanauation. No canvassing, stating age, qualifications and en-perience, together with names and addresses of three referees, should be lodged with County Clerk, P.O. Box 1, Glasgow, within 14 days of date of advertisement. 403 LONDON COUNTY COUNCIL ARCHITECTS, Grade III (up to £1,135, com-mencing according to qualifications and experi-ence), for Housing, Schools and General Dir-sions. Full varied programme of new work including Schools, Multi-storey Flats and Tom Development. Particulars and application for from Hubert Bennett, F.R.I.B.A., Architect h Council, AR/EK/57/59, County Hall, S.E.I. (132).

461 LONDON COUNTY COUNCIL PARKS DEPARTMENT ARCHITECTURAL ASSISTANTS. Good draughis men with experience of preparation of working drawings and specifications and supervision of contract work. Up to 2860 (under review). Apply Chief Officer, Parks Department (AI/A), County Hall, S.E.1 (WATerloo 5000, Ext. 8076). (1146)

CARMARTHENSHIRE COUNTY COUNCIL COUNTY PLANNING DEPARTMENT Applications invited from suitably qualified and experienced persons for appointment as JUNIOB PLANNING ASSITATY (A.P.T. D. Appoint ment superannuable and subject to medical examination. Applications, giving details of age, qualifica-tions and experience, with names and addresses of two referees, to be received by undersigned by 17th June, 1959.

W. S. THOMAS, Clerk of the County Council

County Hall. Carmarthen

Carmarthen. 463 SCUNTHORPE BOROUGH COUNCIL invite applications from suitably qualified persons for a vacancy in the Surveyor's Department for an ASSISTANT ARCHITECT, Special Grade (2786-£1,070 p.a.). Housing accommodation is available, and applications giving experience and qualified-tions, together with the names of two referees, should be submitted to the Town Clerk, 34, High Street, Scunthorpe, not later than 22nd June 1959.

1955. IONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT Vacancy for ARCHITECTURAL AND TOPO-GRAPHICAL MODEL MAKER (up to £885 per annum). Previous experience essential and appli-cart should be able to work from Architect's plans and elevations on wood, card, metal and pageney.

perspex. Application form. returnable by 23rd June, 1999 from Architect (AR/EK/58/59), The County Hall S.E.1. (1267.) 467

Tenders Invited

Tenders Invited 6 lines or under, 15s.; sach additional line, 2s. 64 PAROCHTAL CHURCH COUNCIL OF ST. LUKE AND ST. MARK, WINCHESTER. INTUINING TO TENDER. NEW PARISH CHIRCH OF ST. LUKE WINCHESTER Tenders are shortly to be invited, on behalf of the Parochial Church Council, for the erec-tion of a new Parish Church of traditional construction to be built at Stammore. Winchester. Contractors with suitable experience wishing to be considered for inclusion in the list of ten-ferers, shortle notify the Architect, C. W. T. Evass, A.R.I.B.A. Wolvesey Palace, Collect Street, Winchester, not later than the 27th June. giving particulars of similar works undertaken. 703

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Architectural Appointments Vacant

Alguitectural Appointments vacant tisses or under, 98. 6d.; each additional line, 28. 6d. ses Number, inscluding Joroardany replies, 28. estra Denn H. D. MADIN, Chartered Architect, has further vacancies for Senior and Inter-regiate ASSISTANTS. Suitable senior assistants rould be required to take tuil responsibility for harge scale interesting projects. Write or tele-pione Edg. 4321. 4302

arge scate interesting projects. Write or tele phone Edg. 4321. 4309 R EQUIRED in Oxford office of W. H. Watkins, armored technical Laboratory. Apply in writing with the chinical Laboratory. Apply in writing armored technical Laboratory. Apply in writing armored technical Laboratory. Apply in writing armorary outlook, and willing to use own militaive. Congenial working conditions. Five-day militaive. Congenial working and selection of the charts. Apple constraints and public house. Some general office experience is necessary. 4065 Cay EREAL Senior and Intermediate day for the first of the f

inne general office experience in necessary. Tel. 144 7328. STEVERAL Senior and Intermediate AROHI-TRCTURAL ASSISTANTS are required for mercial projects including Hotel, Theatre and attantive development schemes of offices and attantive development schemes of offices and thi industry, etc., in London Architect's affice. Heiday arrangements will be recognized. Five-attantive development schemes of offices and thi industry, etc., in London Architect's affice. Heiday arrangements will be recognized. Five-attantion of the schemes of the schemes of the scheme of the schemes of the schemes of the SSISTANTS and DRAUGHTSMEN required. West End Practice, varied work. Apply writing, giving full particulars, to G. A. Corekett. 10, Adelaide Street, London, W.C.2. 4187 TAPERIENCEB ARCHITECTURAL ASSISTANT, Merchitect, programme of Commercial projects. The scheme of the schemes of the schemes works are pensionale and a five day work is operation. Applications, giving full particu-protentive Wholesale Society Ltd., 1, Balloon TRCHITECTURAL ASSISTANT, London, Marchitect, Schemes Architect, Assistrant, London, Marchitect, Schemes Architect, Assistrant, London, Marchitect, Schemes Architect, Assistrant, London, Marchitect, Schemes Architect, Schemes Architec

Street. Manchester. 4. 4307 **ABCHITECTURAL** ASSISTANT, London. Final standard. Industrial and commercial. Frogressive and interesting. Salary according to sperience and ability. Box 4329. **A RCHITECTURAL** ASSISTANT, Intermediate standard. Busy London office. Good pros-pects. Box 4330. **A SSISTANT** ARCHITECTS of Intermediate smahire office. The work is varied and Interest-ing with scope for initiative and responsibility. Please state age, expreince and salary required. Box 4224. **D** WOOLWORTH & COLUTD. Architector

F. Department, Kensington District Office. Applications are invited for the following appoint.

ARCHITECTURAL ASSISTANT of Inter-mediate R.I.B.A. Standard, capable of carrying out surveys, preparing sketch schemes, working drawings and detalls. The appointment is pensionable, five-day week. Dining room facilities. Application stating age. experience, qualifications and salary, to District Architect, F. W. Woolworth & Co. Ltz. 26140. Kensington High Street, London, W.8. 4425

Remsington High Street, London, W.J. ROWNTREE & CO. LTD. have a vacancy in their Architects' Department for an ABCHI-TECTURAL ASSISTANT. Applications are in-vited from men of Final R.I.B. A standard, who are preferably under 30 years of age and have experience and knowledge of factory construction and alteration. Please write for further details and application form to The Staff Officer (Man). Bowntree & Co. Ltd., The Coccoa Works, York. 4447

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INTERMEDIATE standard ASSISTANT with experience of industrial work required for Architects' London (City) Office. Salary by arrangement. Write Box 4355.

Architects' London (City) Office. Salary by arrangement. Write Box 4355. INTERMEDIATE/FINAL ASSISTANT required with three or four years' experience, in busy expanding West End office. Excellent opportuni-ties for taking responsibility. Please write stating age, experience and salary required. Box 4468. OUTH KENSINGTON Architects' Office re-quire experienced Intermediate ASSISTANT rout good ability in design. Apply: R. Mount-ford Figott & Partners. KENsington 1242. 4448 A RCHITECTURAL ASSISTANT required. Office experience, one day per week for studies. Write with details of education and experience, D. Plaskett Marshall, 59, Gordon Square, London. W.C.1.

W.C.I. 4453
 ACHITECTURAL ASSISTANTS, Final and Intermediate, required by progressive firm of Birmingham Architects. Work involves pre-paration of designs, working drawings, site super-vision, etc., on numerous types of work. Salary by arrangement. Box 4406.
 SENIOR ASSISTANT required for Bourne-mouth Architect's office, Final or near Final standard. Age not material, state experience and salary required. Box 4414.
 JUNIOR ASSISTANT required for Bourne-mouth Architect's office. State age, experi-ence and salary required. Must be ex National service. Box 4415.
 CLIFEORD CULLPIN 30 Doughty Street.

service. Box 4415. CLIFFORD CULPIN, 39, Doughty Street, W.C.1, requires at once a senior man to take responsibility throughout all stages of impor-tant projects. Starting salary 9960-41,156 accord-ing to experience. Holiday this year. Phone or write for appointment CHA 535. 4421 J. BRIAN COOPER, F.B.I.B.A., requires Final standard and one Intermediate standard for interesting new building schemes throughout the country. Apply in writing giving full details to 30 St. George Street, Hanover Square, London. W.I.

4396 A RCHITECTURAL ASSISTANT of Inter-mediate standard required for interesting new building schemes throughout the country. Apply in writing giving full details to J. Brian Cooper, F. R. I.B.A., 38, Highfield Road, Edgbaston. Birmingham, 15. 4395

ST. ALBANS Architect requires an Inter-mediate standard ASSISTANT, who must be enthusiastic and have a high standard of draughtsmanship. Qualifications not essential. Salary by arrangement. Write immediately to Box 4401.

Box 4401. A BCHITECTS are invited to apply for posts in the Architect's Department at Ericsson Telephones Limited. Beeston, Notting-ham. Starting salary will be according to ability, qualifications and previous experience. Only applicants with an enthusiastic approach to new ideas and progressive design, and willing to accept responsibility will be considered. The Department at present works a five-day week. Holiday commitments will be honoured. Canteen facilities are available. Please write stating age and giving full details of training and experience to the Personnel Manager. 486

YOUNG ABCHITECTS in S.W. London, with growing modern practice require a Senior and a Junior ASSISTANT. Ample opportunities for responsibility and experience. Please telephone rules difficulty and experience. Please telephone rules difficulty and experience. Please telephone with present emphasis on local authority housing in writing only, stating age, qualifications, ex-perience and salary required to: Thomas Sib-thorp, F.R.L.B.A., A.R.I.C.A., A.M.F.I., 10, Manchester Square, London, W.I. Assistant required, Final standard. Salary sportosimately 2L000 per annum. Offices in Stroud, Dursley, and site office in Bristol. Market & HALL, Longdon House, Knowle, Imperial House, Stroud, Gloucestershire. 416 ASKER & HALL, Longdon House, Knowle, Excutata Assistants, Write or telephone Knowle Sog. 407

A Birlinigham, require experienced ABCH1-TECTURAL ASSISTANTS. Write or telephone Movie 3562.
 A RCHTFECTURAL ASSISTANT required for Office in S.E. London District. Intermediate standard. Box 4630.
 E XPANDING Practice offers two vacancies to vigorous and experienced ASSISTANTS wanting to take responsibility. Salary: Grade 1 up to £1,000 p.a.; Grade 2 £500 plus p.a. according to value. Jack E. Dalling, L.R.I.B.A., 55, St. Martin's Lane, W.C.2. COVent Gardon 2942, 4653
 A RCHTFECT required by London firm for interesting programme of work in Persia. Applicant who should be single is required for write stating age and experience to Box 4658.
 A. HALPERN and Associates are looking the following: proficiency in his profession, sound common sense, flexibility of nature, the ability to regotiate and who wishes to make both Architec-ture and this practice his career. Should you 'unaberland Chambers, 7, Edgware Road, Marble ARCHITECT LASSISTANTS for Lon-don office; five-day week. Apply with full par-ticulars to Box 4666.
 MTERMEDIATE ASSISTANT and ARCHI-TECTURAL ASSISTANT required urgently for varied practice. Write giving full all of these requirements, please write to 'Camberland Chambers, 7, Edgware Road, Marble ARCHITECTEAL ASSISTANTS for Lon-don office; five-day week. Apply with full par-ticulars to Box 4666.
 MTERMEDIATE ASSISTANT and ARCHI-TECTURAL ASSISTANT required urgently for varied practice. Write giving full all to the Fullon, LE.I.B.A., 57, heat M. M. H.IDBETTER require Junior the senter AND H. M. LIDBETTER require Junior the to the StataANT up to Intermediate standard.

High biree, Joseph Rone, Rone, AND H. M. LIDBETTER require Junior Apply stating age, experience and salary required to 2, Verulam Buildings, Gray's Inn, London, W.C.1.

4865 UNFURNISHED ACCOMMODATION for ASSISTANT interested in Contemporary Hospital project, with some Office experience, of Final standard or recently qualified. Edgington, Spink & Hyne, 52, High Street, Windsor. Write full details.

Two openings in Oxford Office. Cheerful and energetic TEAM LEADER, capable of good contemporary design. needed in expanding office. Also keen Intermediate standard ASSISTANT, preferably with some office experience. Write, stating qualifications, experience and salary sought, to P. H. Bosanquet, 60, St. John Street, Oxford.

TWO ARCHITECTURAL ASSISTANTS, Inter-mediate standard. required for very large scheme. West End Office. Excellent salary, bonus and luncheon vouchers. Box 4523.

APPLIED gates TAYLOR MADE All sizes, types and materials for internal or external use. liluminated letters and box signs. Brochures sent on request. Send for latest Illustrated Catalogue No. A/10 of our full range of WARD & GO. (letters) LTD. Wrought Iron Gates and Furniture etc. 6 - 12 WILDER ST . BRISTOL 2 . TELEPHONE BRISTOL 21536 TAYLOR & CO., BRIDGE WORKS, COMPTON, WOLVERHAMPTON

SENIOR ARCHITECTURAL ASSISTANT required by Leonard J. Multon & Farther, F/F.K.I.D.A., to be engaged on marge scale works, incluming industrial, Commercial, Hospitans and Multi-scored Mudsing. Frease write, stating ex-perience, quantesculos and safary required, to No. 6, Greenneid Crescent, Lagouston, Birming-ram. 15 SENIOR nam.

The standard required in Architect's onice. CROYDON.-ASSISTANT of Intermediate standard required in Architect's onice. Varied work and kood prospects. Apply in Writing, giving an particulars to George Lowe & Fariner,

Assistants required by Cecil Howitz & Parmers, St. Andrews House, Notingham. Write stating details of experience, salary required, etc.

4500 KEEN and energetic ASSISTANT of about Intermediate standard required for busy private onice. Write or phone W. F. P. Gran, 565, London Road, North Chean, Surrey, Tele-phone No.: DEENwent 0512. Salary by arrange-(453)

Asil ASISTANTS, both qualified and unqualified, required for extensive commercial and industrial programme. Salary according to ability and experience. Lunch facilities available. Box 454.

4634. A RCHITECTURAL ASSISTANTS required. Commercial work. Must be experienced and competent. Good salaries and bonuses to right men. Kive-day week. Holday dates res-pected. Apply in first instance by letter, giving details experience and qualifications, to Lewis & Hickey, F/A.R.I.B.A., 130, Regent Street, Lon-n, W.J.

ASSISTANT, about Intermediate standard, wanted in their Loughton, Essex, office by City Architects. Salary £600 to £700 per annum, according to experience. Box 4546.

according to experience. Box 2970. DOLCIS LTD. require immediately ARCHI-TECTURAL ASSISTANTS of both Inter-mediate and Senior standards. Previous shop-fitting experience not necessary, provided keen interest in contemporary shop design. Good salary, dependent on experience. Five-day week, non-contributory pension scheme. Reply, stating age, experience and salary required, to Ellis E. Somake, F.R.I.B.A. Chief Architect, Dolis Ltd., 7-13, Great Dover Street, S.E.I. 4545

7-13, Great Dover Street, S.E.I. 4946 WEST END Architects urgently require a competent ARCHITECTURAL ASSISTANT of Final standard with a minimum of four years experience, for interesting and varied work in-cluding Churches, Offices, Homes for the elderly, etc. Holiday this year and salary by arrange-ment. Telephone WELbeck 8863 for appointment.

ment. Telephone WELbeck 8863 for appointment. 4550 ARCHITECTURAL ASSISTANT required for small, busy general practice. Intermediate or Final standard, with salary according to ex-perience and capabilities. Write, giving full details of experience and salary required, to Tennant & Smith. F/A.B.I.B.A., Ropersate. Pontefract, Torkshire. 4555 GEORGE WIMPEY & CO., LIMITED THE Architects Department's current work covers all types of technical, industrial and domestic projects. Appointments are available for a wide range of experience, particularly for Assistants who appre-ciate the contribution good design cas make to wards efficient construction and are interested in applying cost knowledge to detailing. Appointments on a permanent basis are immediately available at Head Office for ASSIS-TANT ARCHITECTS and ARCHITECTURAL ASSISTANTS. Salaries will match qualifications and experi-mence and following contentions and experi-

ASSISTANTS. Salaries will match qualifications and experi-ence and, following a probationary period, there is a Pension Scheme available. Short Term Appointments for periods up to 12 months are also available for Senior and Inter-mediate ASSISTANTS at Head Office on working drawings and details for large industrial build-ing projects. Good salarles offered. Aurolicants should write to E. V. Collins, A.R.I.B.A., Hammersmith Grove. London, W.6. 4558

W.6.

A RCHITECTURAL ASSISTANT wanted to undertake really creative work from start to finish in pleasant surroundings with small staff of fairly anery young men. Unique oppor-tunity for preparation for own practice. West Midlands market town. Full particulars to Box 405.

ASKER & HALL, 13 Welbeck St., W.1, require experienced ABUHITECTURAL ASSISTANTS. Write or telephone Welbeck 0001. 4496

A SSISTANT of Intermediate standard required to work directly with the Principal, assist-ing in the running of contracts, including design stage. Saiary according to experience. Box 4602. W. S. ATKINS & PARTNERS, Consulting TEUTS and ASSISTANTS in their Architect's Department to work on major industrial projects and nuclear power stations. Conditions of service include a five-day week and superannuation scheme. Applications should be addressed to the Personnel Manager, 158, Victoria Street, S.W.1. 4665

A RCHITECT with Country Practice requires two ARCHITECTURAL ASSISTANTS of Intermediate standard; one to run small Branch Drawing Office and one to work in Head Office. Salaries according to ability and experience. Please reply, giving details of experience, age s according to ability reply, giving details of lary required, to Box 4608. and salary

And salary required, to Box 4608. A RCHITECT requires SENIOR ASSISTANT, preferably qualified for interesting work on shops, offices, schools, etc. Apply in writing, stating age, experience and salary required, to Roff Marsh, F.R.I.B.A., M.T.P.I., 125, London Road, Chelmsford, 1990 (1990) A SUBJECT STREAM (1990)

 Road, Chelmsford.
 4606

 A SISTANTS required with three to five years
 standard.

 Salary by arrangement.
 Apply

 Duncan and Partners, Chartered Architects.
 9,

 Hertford Street, Mayfair.
 Tel.: GRO. 1532, 4612

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 Ring VICtoria 7088 for appointment.

According to experience. Ring VICtoria 7088 for appointment. **EXPERIENCED ARCHITECTURAL ASSIS** TANTS required with a good sense of design and a sound knowledge of building con-struction. All applications in writing please with full details. C. H. Elsom & Partners, 10, Lower Grosvenor Place, S.W.1. **DLATNE & LACEY urgently require ASSIS** TANTS for varied and interesting work on a new University Building. Five-day week. Salary by arrangement. Ring Whitehall 2562 for interview and write 19, Queen Anne's Gate Westminster, S.W.1. **QUALIFIED ASSISTANT ARCHITECT and bility required in Midlands Office, varied work. Write, stating experience and salary required, to BOA 5587.**

BOX 4587. HARRY W. WEEDON, F.B.I.B.A., & PART-NERS, have vacancies for SENIOR and ASSISTANT ARCHITECTS for a wide scope of projects. Write with full particulars and salary required to Harry W. Weedon, F.R.I.B.A., & Partners, 45-47, Calthorpe Road, Edgbaston, Bir-mingham. 4586

Asso A BOHITBCTURAL ASSISTANT required for Jersey practice. Age 20-25. Intermediate or Final standard preferred. Apply in writing, stating qualifications and salary required. Box

AYR-ASSISTANT required. Intermediate to Final stage. Salary £450 to £600 depending on experience. B. Ailan, A.B.I.B.A., 3, Barns Street. Ayr.

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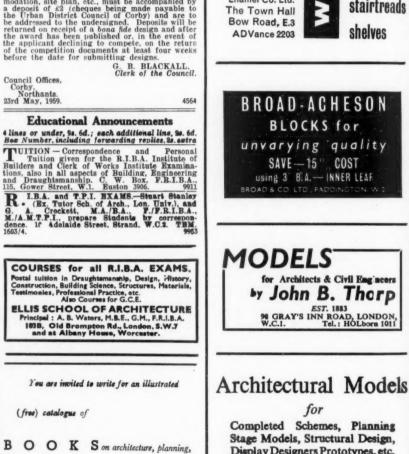
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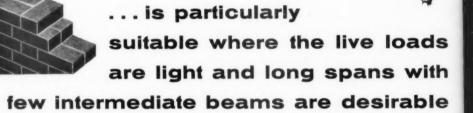
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