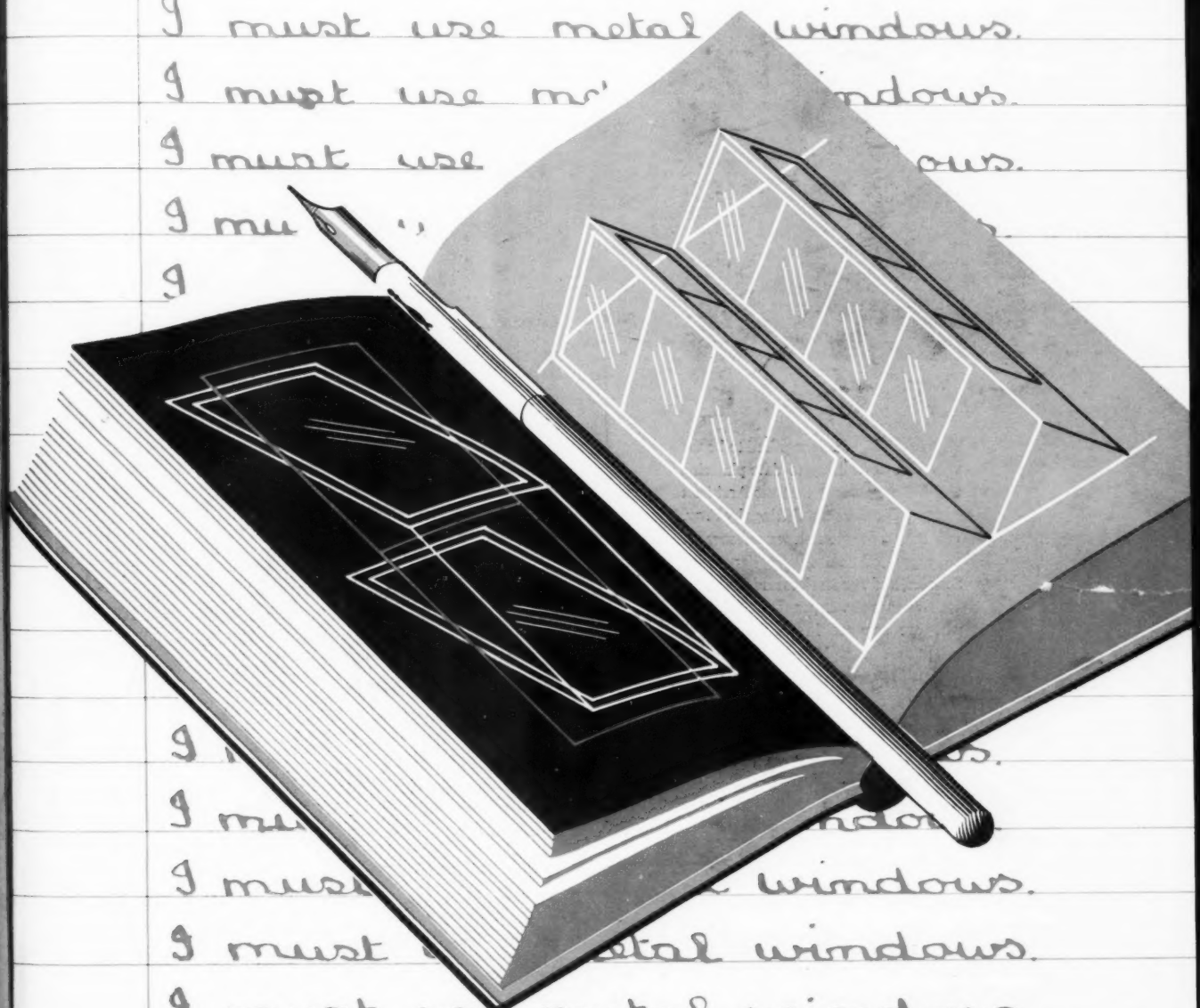
No. 2780 Vol. 107 · The Architects' Journal for May 20, 1948 · Registered as a Newspaper

THE ARCHITECTS' JOURNAL

SCHOOLS NUMBER

PRICE: NINEPENCE



Architect, Howard V. Lobb, F.R.I.B.A., for the Middlesex County Council

This new school is recognised to be the very last word in up-to-date planning and it is significant that the Architect has specified Sanitary Fittings by Froy. We have considerable experience in the supply of Sanitary Appliances for Schools, and our services and resources are always at the disposal of Architects who are engaged in the erection or extension of such buildings.

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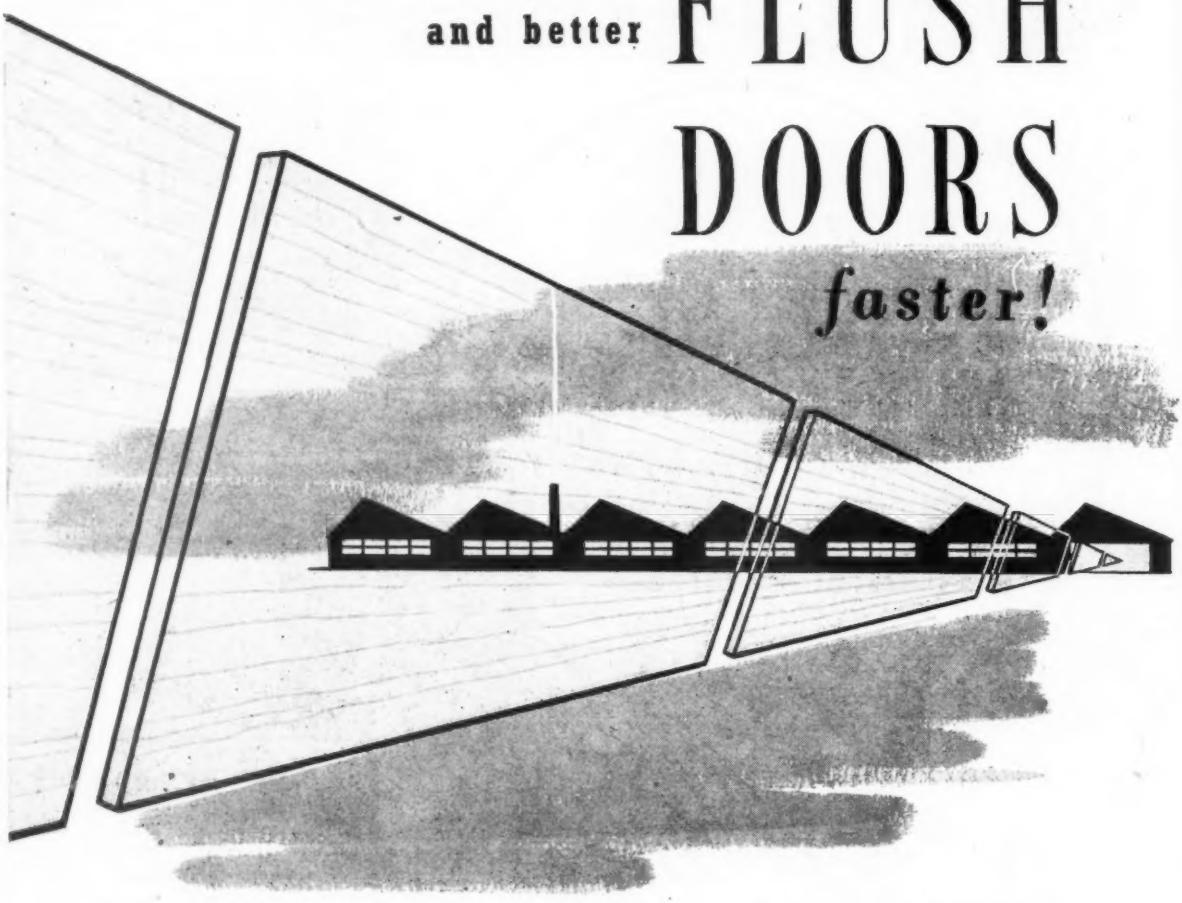
to give you more and better FLUSH DOORS *faster!*



We planned ahead to meet the inevitable demands for Britain's Best Flush Doors. Now our plant replanned and enlarged is proving equal to the tremendous demands placed upon its resources. And while our output increases, the quality of our doors remains as high as ever.

IMPORTANT NOTICE TO ALL OUR CUSTOMERS

Our contract with the Adamite Co. Ltd., of London, who were our National Distributors for Midlands and the South for both Flush and Panel Doors, has now expired, and in future we shall be glad if you will send all correspondence, enquiries and orders direct to our Head Office at Trowell, Nottingham.

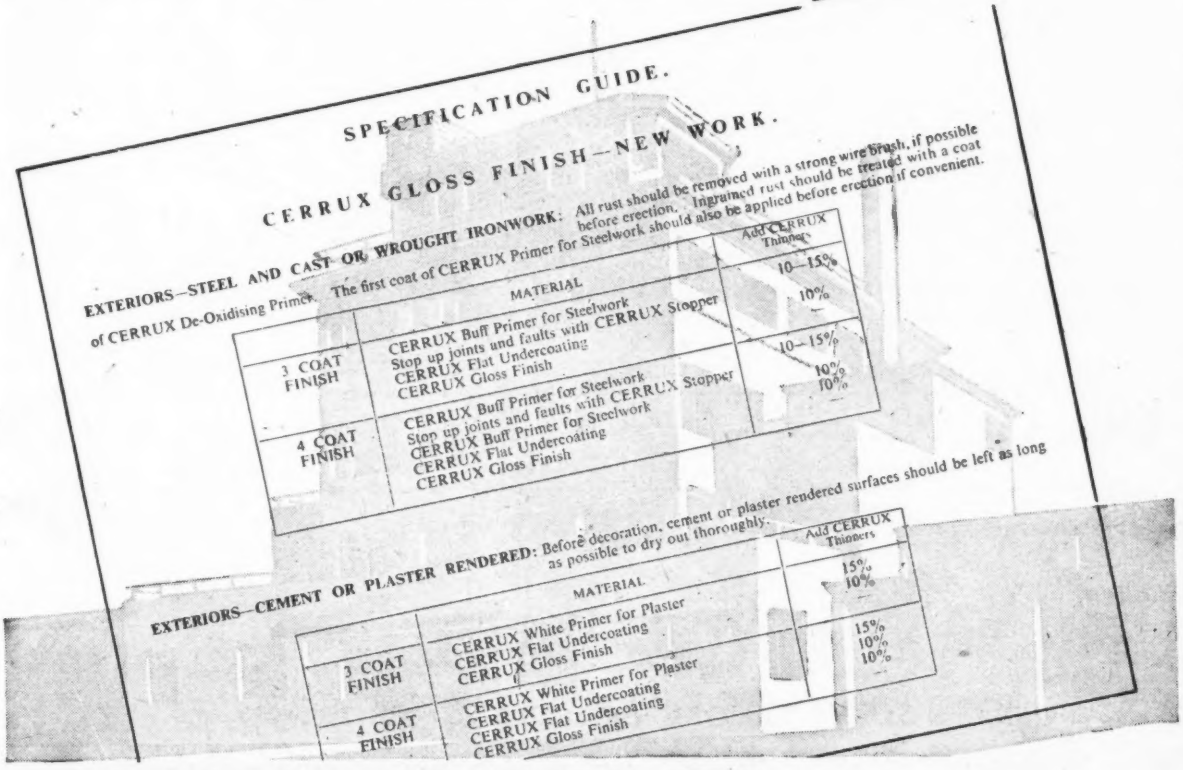
LEADERFLUSH LTD.

HEAD OFFICE: TROWELL, NOTTINGHAM

Cogent

Finished throughout—to a CERRUX schedule

The Cerrux Schedules take much of the weight off your shoulders when it comes to the application of finishes. For most jobs there's a 'cut and dried' schedule which gives you a clear lead through all the processes from priming to the final coat. You need but look up the type of job you propose doing and follow the Cerrux recommendations through all the stages. The Cerrux range provides finishes for interior and exterior work on all types of material. The colours in the range are of special interest to decorators on account of their unusual brightness and fastness to light.



SPECIFICATION GUIDE.

CERRUX GLOSS FINISH—NEW WORK.

EXTERIORS—STEEL AND CAST OR WROUGHT IRONWORK: All rust should be removed with a strong wire brush, if possible before erection. Ingrained rust should be treated with a coat of CERRUX De-Oxidising Primer. The first coat of CERRUX Primer for Steelwork should also be applied before erection if convenient.

	MATERIAL	Add CERRUX Thinners
3 COAT FINISH	CERRUX Buff Primer for Steelwork	10—15%
	Stop up joints and faults with CERRUX Stopper	10%
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	CERRUX Flat Undercoating	—
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EXTERIORS—CEMENT OR PLASTER RENDERED: Before decoration, cement or plaster rendered surfaces should be left as long as possible to dry out thoroughly.

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3 COAT FINISH	CERRUX White Primer for Plaster	15%
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	CERRUX Gloss Finish	—

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FULL DETAILS OF FINISHES FOR ANY SPECIFIC PURPOSE FROM CELLON LTD., KINGSTON-ON-THAMES, Phone Kingston 1234 (7 lines)
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ARCHITECTS !

A New Idea for both Administration and Production

There are two simple diagrams below.

Please take the trouble to examine them—because they can mean a lot to *your* organisation.

They are bird's-eye-view impressions of the new shannographic system of co-ordinated control.

What is this ?

First, it is a system of full-vision files. Each is separately hung, metal on metal. Each is fully enclosed to protect its contents. And each has a full-width flat top. This means : (a) ample room for description ; (b) colour-coded signals which make misfiling impossible ; (c) full-vision " progress " facilities.

(a) and (b) mean you have the finest filing system ever devised. And that, in itself, is important. But even more so are the *extra* facilities afforded you. The flat-top can serve *any production or administration purpose you require.*

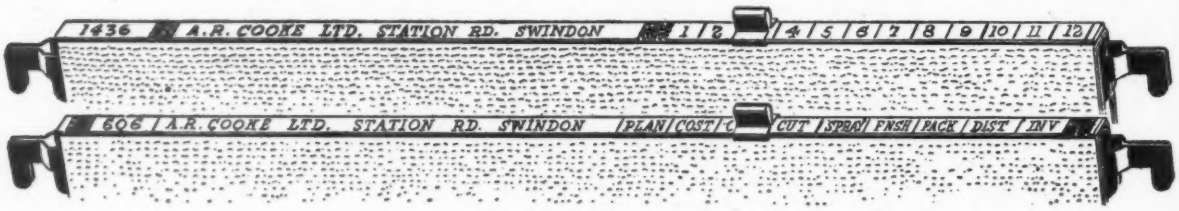
It can bear any code-marks you like—and a sliding signal shows the point of progress.

Let us suppose you want to control materials in relation to an order : the left-hand side bears the order number, customer and address. The right-hand side can carry your own code or—say—numbers 1 to 40, each meaning any steps you wish. A Manager can control —VISUALLY—each order and check supplies and components against contracts ; a Works Foreman can see the whereabouts of any job at any moment ; a Managing Director can watch correspondence, delivery promises, personnel involved, future steps to be taken. And so on. Shannographics, the new science of VISUAL CONTROL will similarly serve any executive, be he on administration, production, buying or selling.

The file (or series of files) holds all correspondence, agreements, contracts, orders, deliveries, samples, plans, and all other related matters.

A slotted-in record card on the front of the file (or inside it) carries any more detailed data needed.

These are the bare bones of a new *principle* which has arrived to help modern business. This principle can be applied to help *your* organisation. If you will just jot the words " Shannographic control of—" on your letter-heading and add the problem you want handled, full details will be sent you by return (or send the handy space below if it is helpful).



Shannon Systems

SOLVE THOSE SEARCHING PROBLEMS

The Shannon Ltd 100 Shannon Corner New Malden Surrey

I am interested in Shannographic control for :

1. Architects
2. Production
3. General Correspondence
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6. Other Purposes

Please send me full details of such special applications

Name.....

Address.....

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AUSTINS doors are DOWEL DOORS for

STRENGTH

Even without glue the dowel joint is superior to a mortise and tenon one. Under stress the stile or rail will break before the dowel joint. In other words the joint—which is normally the weakest point in joinery—becomes the strongest.

STABILITY

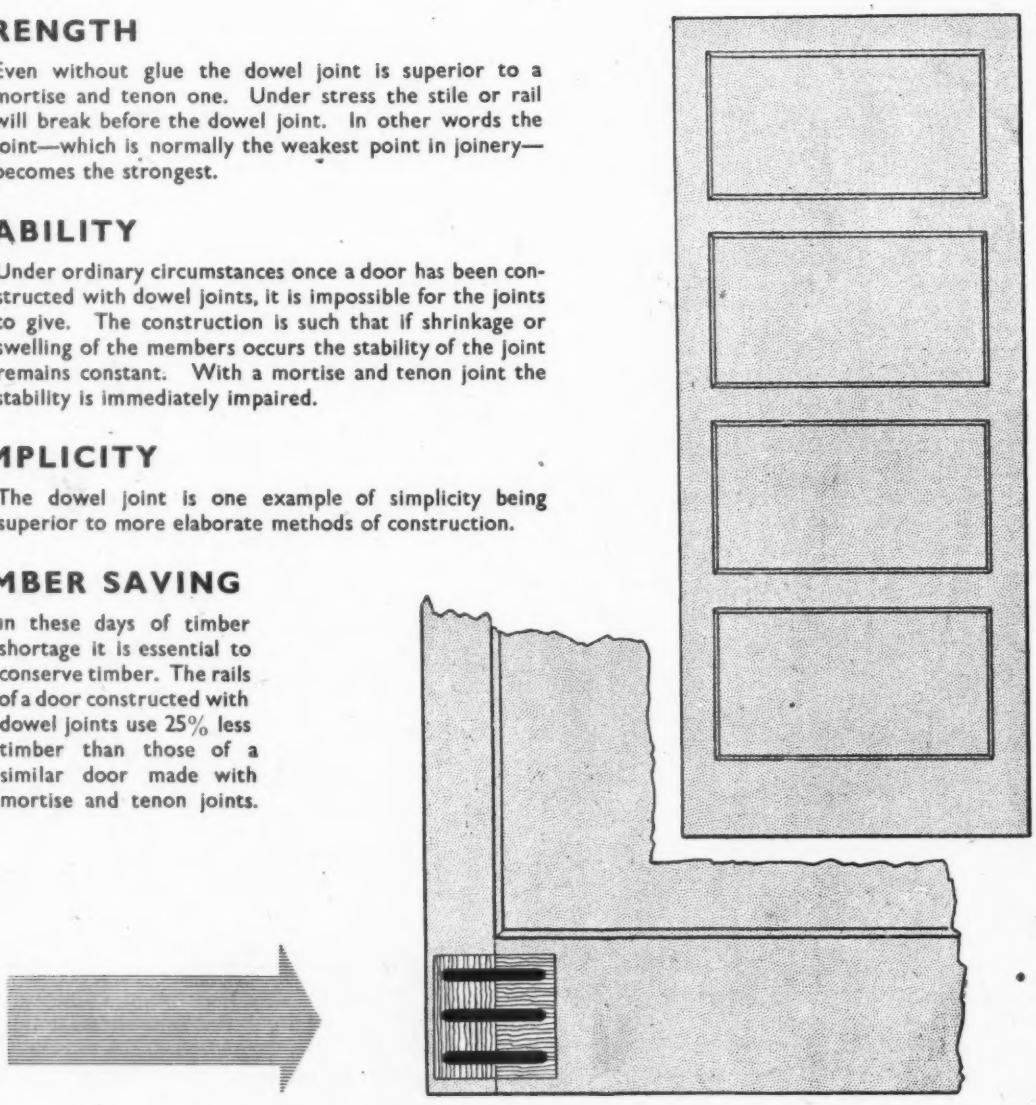
Under ordinary circumstances once a door has been constructed with dowel joints, it is impossible for the joints to give. The construction is such that if shrinkage or swelling of the members occurs the stability of the joint remains constant. With a mortise and tenon joint the stability is immediately impaired.

SIMPLICITY

The dowel joint is one example of simplicity being superior to more elaborate methods of construction.

TIMBER SAVING

In these days of timber shortage it is essential to conserve timber. The rails of a door constructed with dowel joints use 25% less timber than those of a similar door made with mortise and tenon joints.



THE

AUSTIN-HALL GROUP OF COMPANIES

AUSTINS OF EAST HAM LTD.

LONDON E.6 GRAngewood 3444

A.XII/4-48

Painting by Rowland Hilder, R.I., S.M.A., M.S.I.A.

TRADE WINDS No 10

CHINA CLIPPERS

The spirit of the English sea-captains, who roamed the oceans far and wide in the age of discovery, not only established a glorious tradition but was an inspiration to the designers and builders of their vessels. Ships grew in size and sea-worthiness; their lines and spread of canvas acquired a beauty in keeping with their qualities of navigation. Athwart the principal trade routes between the Old World and the New, the English grasped the opportunity to become masters of the sea and the world's greatest sea-carriers of international trade. Safer and quicker passages resulted in an abundance of Eastern goods to Europe. Prices were such that tea, pepper and spices were no longer luxuries.

The magnificent China Clippers reached their zenith by the middle of the 19th century. The first of the season's cargoes of tea to reach London secured a premium, and this inspired many famous races of which that of 1866 is still a classic in Mincing Lane. Five clippers left Foo-Chow as nearly as possible together, *Fiery Cross*, *Taeping*, *Serica*, *Ariel* and *Taitsung*, the flower of the fleet. *Fiery Cross* was the first to load her final chest and cast off early on May 29th; *Ariel* followed on the same day and the remainder before another two days were past.

Fresh Trade Winds were found in the Indian Ocean and on this run they averaged 320 miles in twenty four hours. The Cape of Good Hope was rounded on July 14th with *Fiery Cross* leading *Ariel* by less than a day. Twenty days later *Fiery Cross* was on the equator with *Ariel* still one day astern. *Taeping* and *Taitsung* had by now each gained one day and *Serica* two days. Variable breezes were encountered and *Fiery Cross* became becalmed for twenty-four hours. So it was that between the Azores and the English Channel, *Taeping* and *Serica* passed the *Taitsung* and *Fiery Cross* and closed on *Ariel*, with *Taeping* leading *Serica* by about six hours. At dawn on September 5th the two clippers sighted each other running for the Lizard. They were about five miles apart, beam and beam, steering on slightly converging courses. *Taeping*, *Ariel* and *Serica*, swept up the Thames on the same tide and docked within a few hours of each other on September 6th. *Fiery Cross* passed Deal on the 7th and *Taitsung* on the 9th, each 101 days out of Foo-Chow.

Taeping won this race by a bare twelve minutes, having made, with *Ariel* and *Serica*, the 16,000 mile voyage in ninety-nine days. Between them they brought home five million pounds weight of tea. These lovely ships were evenly matched and the race was fairly contested with a close and exciting finish. It was one of the finest ocean races ever sailed and a triumph of superb seamanship.

IN

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Facto

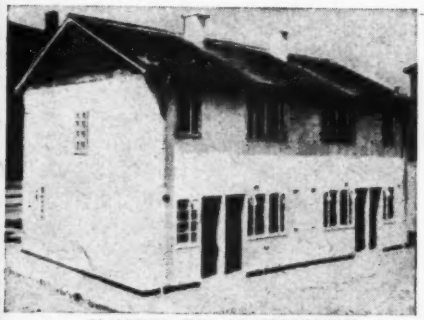
INDISPENSABLE IN MODERN HOUSING CONSTRUCTION . .

'FLEUR DE LIS' BRAND

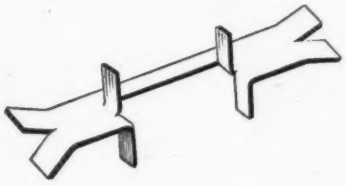
"FIXITS"

What is a "FIXIT"? It is one of an extensive range of metal parts produced specially for modern housing construction. Wherever cladding of special type is required, "FIXITS" will solve the problem. Already adopted by leading building authorities on many housing schemes including L.C.C., Surrey County Council, Poplar Borough Council, etc., etc.

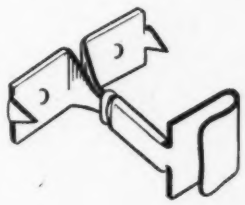
FOR INTERNAL AND EXTERNAL CLADDING



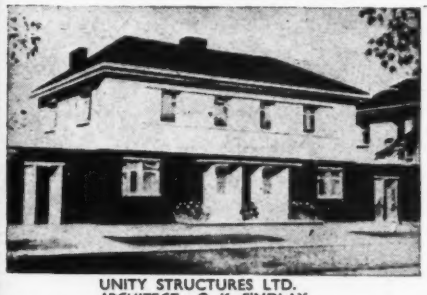
CRANWELL TYPE CONSTRUCTIONS



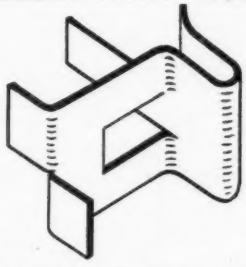
Clip for holding wood wool slab to brick



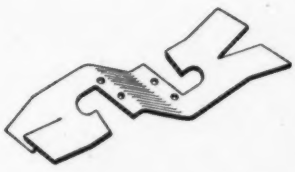
Ratchet Clip



UNITY STRUCTURES LTD.
ARCHITECT: G. K. FINDLAY

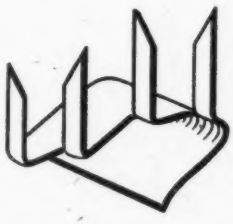


Steel Stanchion Clip for concrete slabs

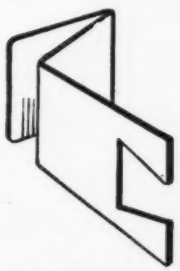


Clip to hold brick to steelwork for all R.S.J. sizes

B.I.S.F. ARCHITECT: F. GIBBERD, F.R.I.B.A., A.M.T.P.I.
CONSULTING ENGINEER: DONOVAN H. LEE, B.Sc., M.I.C.E., M.I.MECH. E., M.I. STRUCT. E.



Clip to fix wood framing to R.S. joints

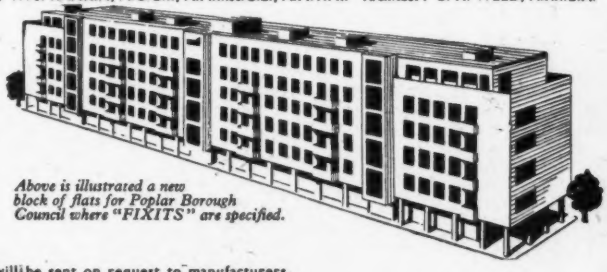


Clip for holding concrete or wood wool slabs to steel stanchions

Borough Engineer & Surveyor: W. J. RANKIN, A.C.G.I., A.M.Inst.C.E., A.M.T.P.I. Architect: C. H. WEED, A.R.I.B.A.

Why not make use of our advisory service?

Six special type "FIXITS" are shown here—we could just as well show sixty more and you still might not find the particular "FIXIT" you need. Probably it is not made yet. That is where our research and experimental department can be so useful. Most of the wide range of "FIXITS" were evolved in collaboration with architects and building authorities to meet some special purpose. Let us know your difficulty and we will probably solve it and add yet another "FIXIT" to this growing family of many parts.



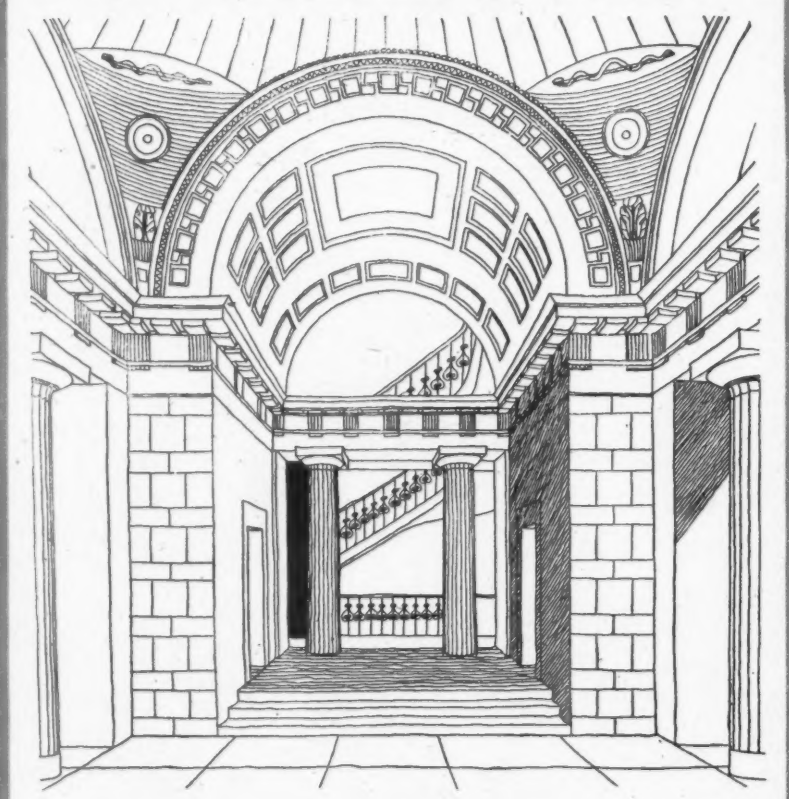
Above is illustrated a new block of flats for Poplar Borough Council where "FIXITS" are specified.

Architects' Journal: the following Information Sheets are available and will be sent on request to manufacturers.
SHEET 44 D.2. ('RUFFLETTE' B/L and M Type Rails). SHEET 44 D.1. ('RUFFLETTE' RECESSED TRACK).

MANUFACTURED BY THOMAS FRENCH & SONS LTD., CHESTER ROAD, MANCHESTER 15

Factories: Manchester, Wythenshawe & Fall River, Mass., U.S.A.
Also British Empire Building, New York City.

London Office: 156-162 Oxford Street, W.1.
Canada: 751 Victoria Square, Montreal.



THE BANK OF ENGLAND

THE INTERIOR of the Bank of England has often been decorated with Duresco, as used in so many other famous buildings.

Great public buildings, places of tradition and state, are fitly decorated with Duresco. But in other places, too, it plays its part: in factories and shops, small houses and sea-going ships. Wherever a workmanlike and lasting finish is needed Duresco Water Paint has proved its worth. Trying conditions and climates do not affect its surface, which will neither scale nor flake.

Duresco, the ideal Flat Wall Paint, is only one of a number of Duresco products, each particularly designed to do a particular job supremely well. Each product — be it oil paint, water paint or enamel — is available in a wide range of colours; each is the result of long years of manufacturing experience and a constant striving for perfection.

DURESCO products

Duresco, *King of Water Paints;* Silpaco Flat Oil Paint, Silcolac Hard-Gloss Paints, Silkardo Washable Distemper; Duresco Varnishes.

For fuller details please write to Duresco Products Ltd., Charlton, London, S.E.7.

THE FACTORY OF HOLOPLAST LIMITED, NEW HYTHE, KENT.
Architect: Denes Pogany, Esq., A.R.I.B.A.

FACTORY

thermal & acoustic INSULATION

at low cost with good appearance

In this light-weight roof, MARLITH SLABS are supported over steel purlins by transverse and longitudinal "tee" pieces of pressed steel, the latter being secured to the purlins by clips. The roof finish consists of a ¾" cement and sand screed and 2 layers of 1-ply felt. The underside of the Marlith Slabs is finished with "Snowcem"

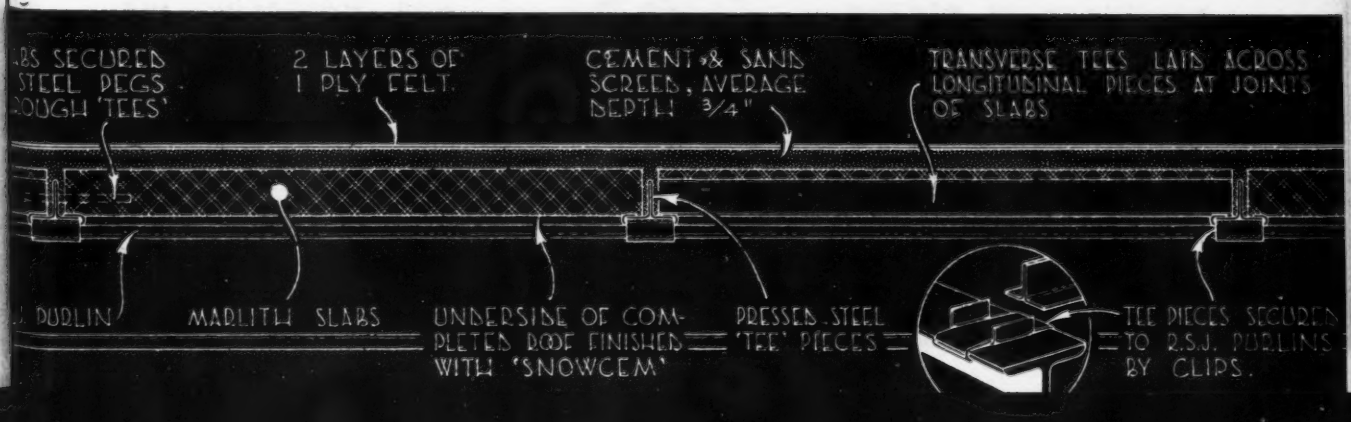
MARLITH Wood Wool Building Slabs conform to B·S·1105 and are made in the standard sizes of 6′ 0″ x 2′ 0″ x 1″, 1½″, 2″ and 3″. The slabs give an excellent key for plaster or cement rendering. These light weight slabs provide a high degree of thermal and acoustic insulation when used for lining walls or roofs. Slabs of 2″ or more thickness can be used as self-supporting non-loadbearing partitions

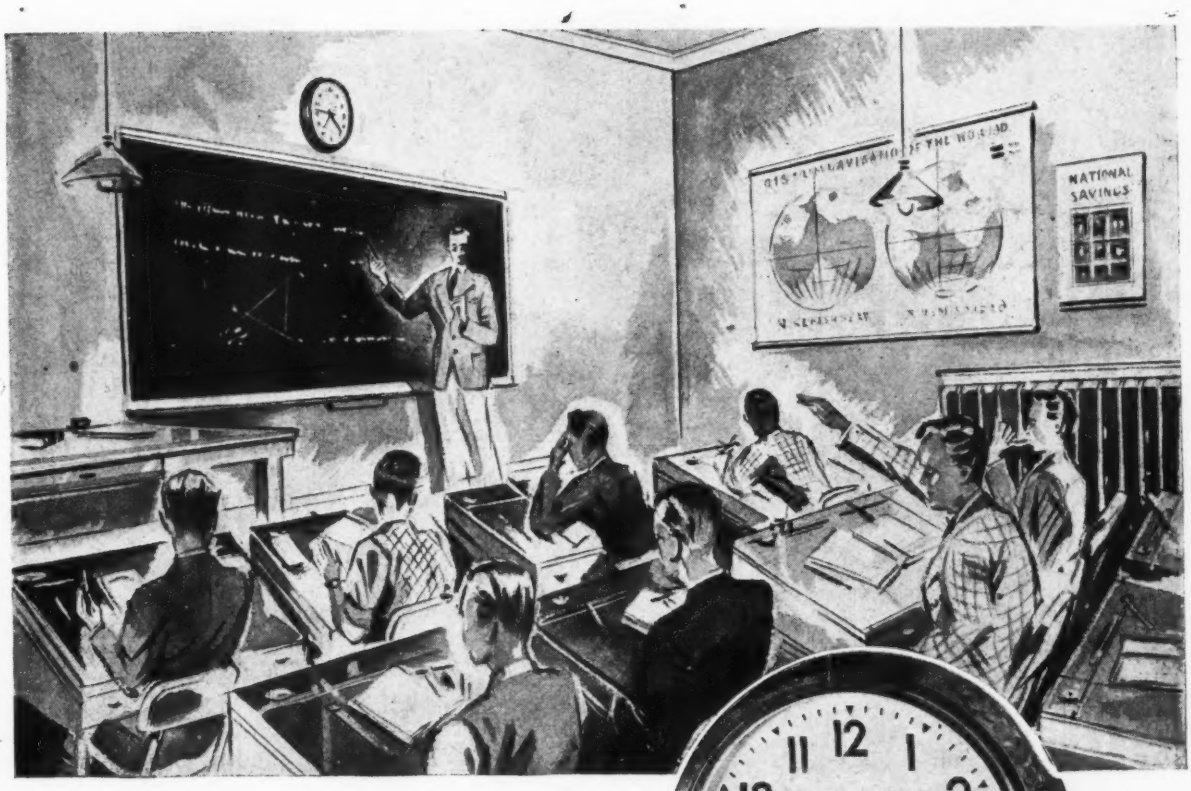
MARLITH

Wood Wool Building Slabs

THE MARLEY TILE COMPANY LTD.
SEVENOAKS KENT. *Works throughout the country*

M.M.1





THE *Delhi*

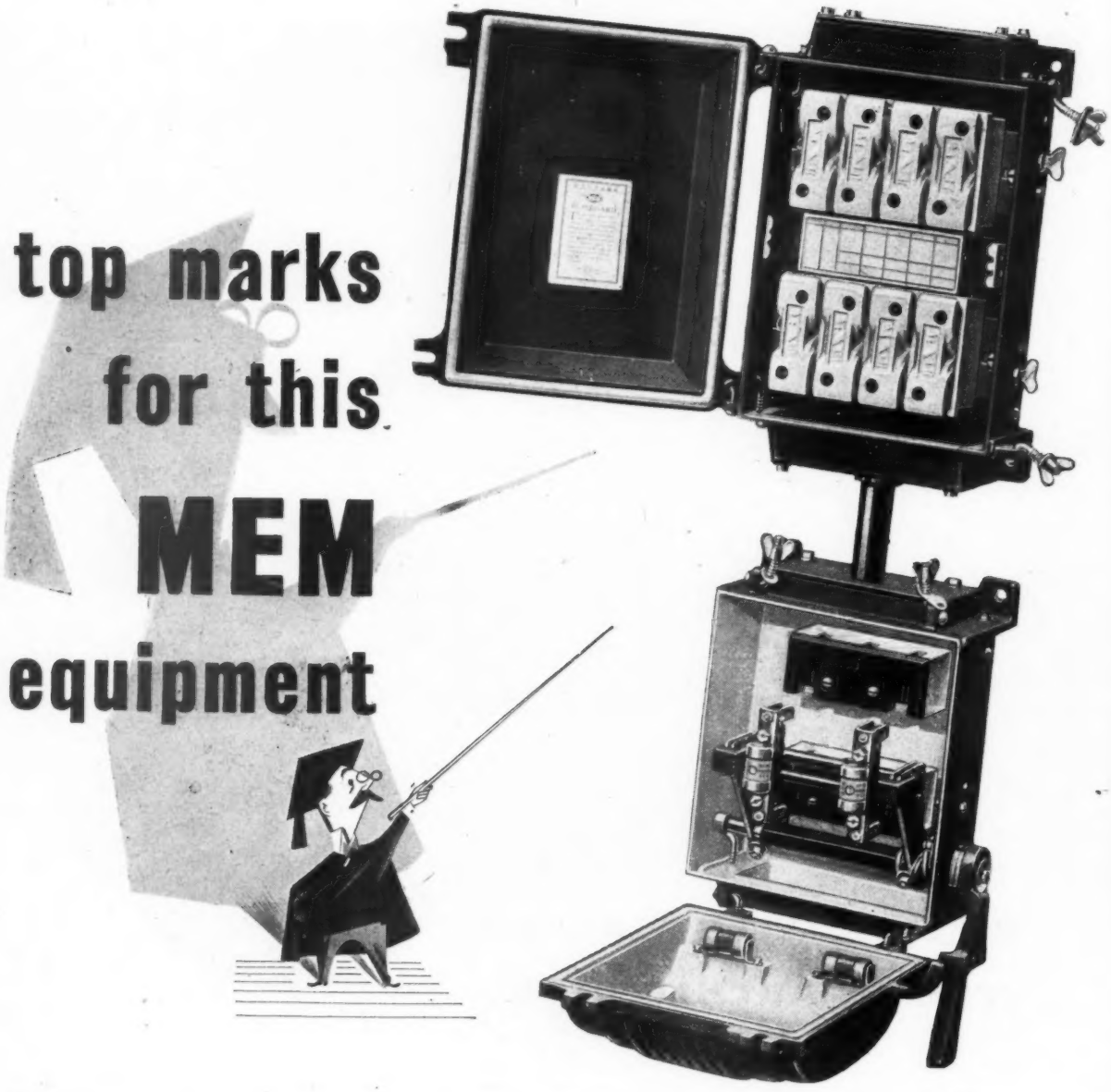
IN LINE WITH MODERN SCHOOL ARCHITECTURE

The Smiths 'Sectric' Delhi, with its clear, easily read dial, and its smart but dignified appearance, is ideal for the modern school, as well as for offices, shops, factories and similar buildings. SMITHS, the largest manufacturers of Clocks, Watches, and Precision Instruments in the world, are always at your service to help you plan unified and efficient timekeeping systems for indoor and outdoor use.

SMITHS SECTRIC CLOCKS

SMITHS ENGLISH CLOCKS LIMITED, SECTRIC HOUSE, LONDON, N.W.2

top marks for this MEM equipment



This MEM combination of main switch-fuse and distribution fuseboard is an excellent choice for the modern school building. Here are some of the reasons why you can safely specify this MEM Gear:

(1) Substantial well-fitting iron cases reduce fire risk to a minimum, prevent unauthorised interference and keep out dust and damp.

(2) When used with a conduit system properly earthed there is absolutely no danger of electric shock.

(3) The new Glasgow-Rex switch is the most advanced design on the market. In spite of its robust construction it is surprisingly compact. It is fused with easy-to-handle H.R.C. cartridge fuse-links, and complies fully with I.E.E. regulations and with BS 861.

(4) The simple well-planned MEM fuseboard is easy to install and maintain. The banks of fuses are fitted to give quick access for wiring and can be removed in a moment. The fuses are 'Kantark' rewirable type, or carriers for 'Kantark' H.R.C. cartridge fuse-links can be supplied.

(5) MEM Gear is available for Single Pole and Neutral, Double Pole, Triple Pole, and Triple Pole and Neutral circuits.

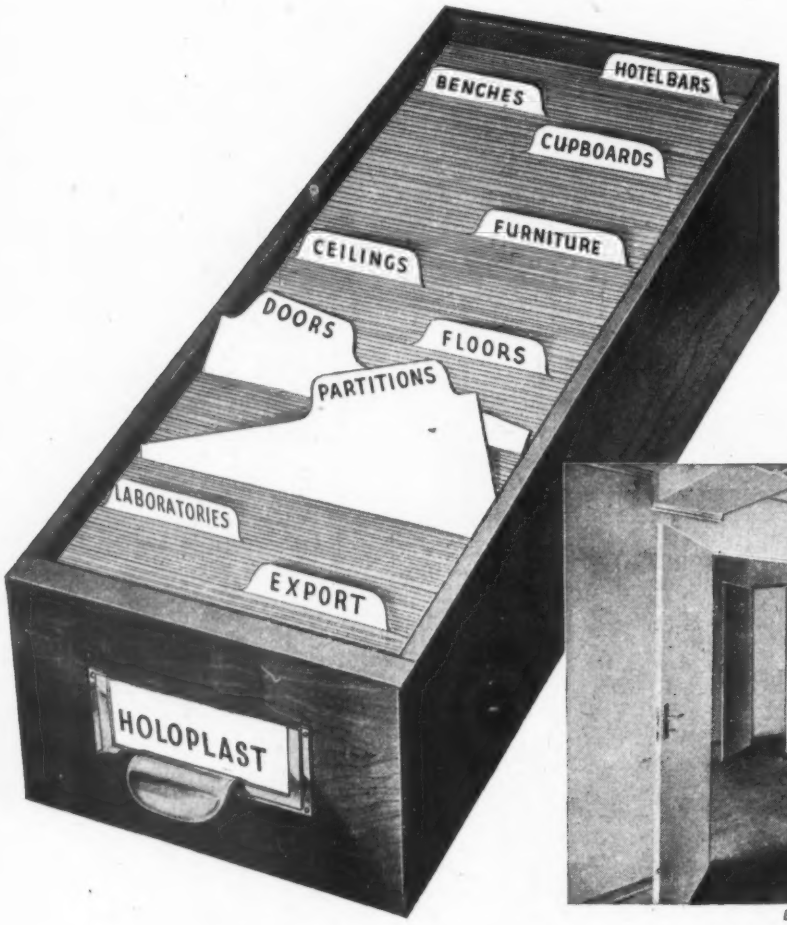
Architects are invited to ask for copies of the MEM switchcraft catalogue.

MEM

Switch, fuse and motor control gear, electric fires and localised lighting equipment

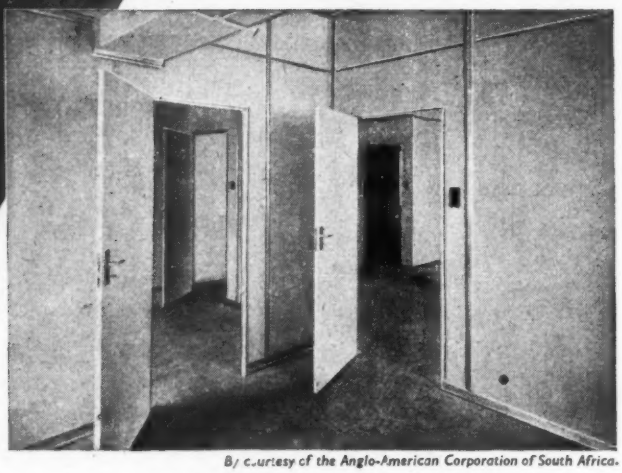
MIDLAND ELECTRIC MANUFACTURING CO. LTD., BIRMINGHAM 11

Branches in London and Manchester



FLUSH DOORS

"Holoplast" laminated structural plastic panels can be used for the construction of doors of all sizes up to 8 ft. x 4 ft.



By courtesy of the Anglo-American Corporation of South Africa.

In the forefront of plastic achievement

A standard sized door can be cut direct from the 8 ft. x 4 ft. " Holoplast " panel and mounted on an extruded aluminium frame in the surrounding panel, the cavities of the panel offering excellent concealment for the lock fittings.

Doors made from " Holoplast " are :

STRONG and RIGID	RESISTANT TO FIRE
SOUND INSULATING	HEAT INSULATING
HYGIENIC	DECORATIVE
RESISTANT TO VERMIN	EASILY FABRICATED

SUITABLE FOR ALL CLIMATES

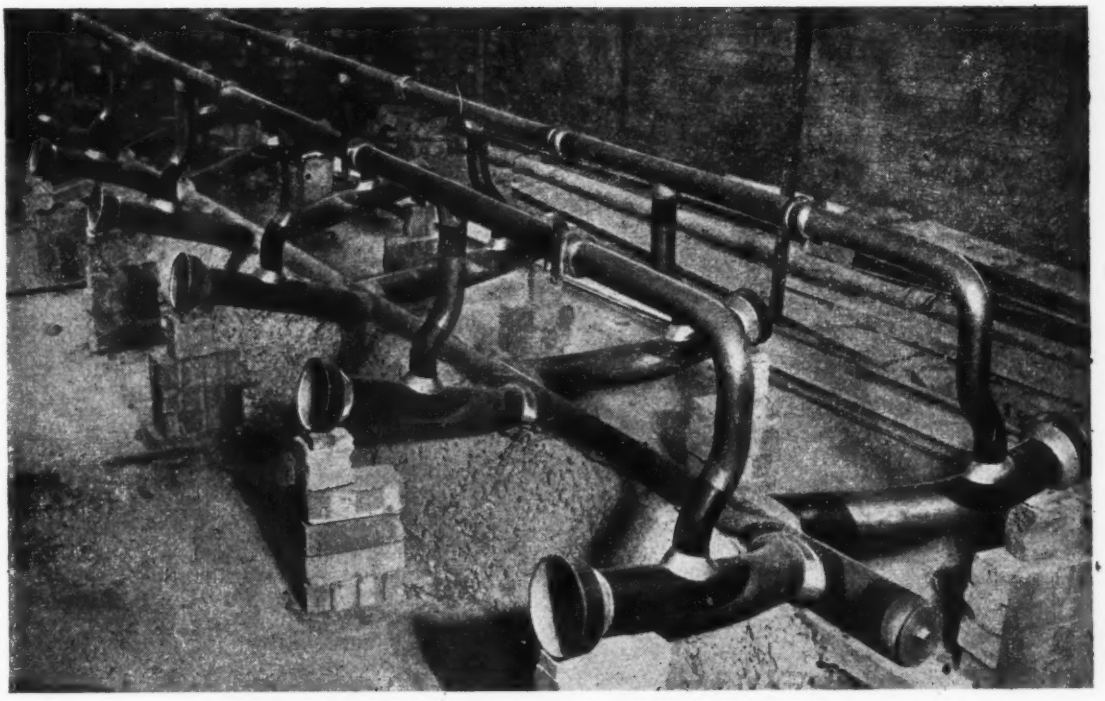
HOLOPLAST LTD

NEW HYTHE, Near MAIDSTONE, KENT

LONDON OFFICE : 68, VICTORIA STREET, S.W.1. Telephone : Victoria 9981

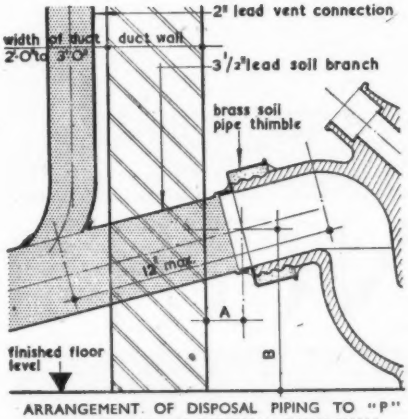
Authorised Distributors for the United Kingdom: Denny, Mott & Dickson Ltd., Gabriel, Wade & English Ltd., Gliksten Plastics. L. Keizer & Co. Ltd., Metropolitan Plywood Company, Venesta Ltd.

C.M.34



PLUMBING to W.C.'s

in schools, hospitals, factories



ARRANGEMENT OF DISPOSAL PIPING TO "P" TRAP FITMENT ON INTERNAL DUCT WALL

Arrangement of two ranges of W.C.'s set back to back with a separating duct 2' to 3' wide to contain soil and vent pipes, soil stack and other pipe runs if required.

One of the most complicated examples of pipework met with in normal plumbing is the disposal piping to ranges of appliances. LEAD has a great advantage over other materials for this type of work because of its flexibility in small and large diameters, and the ease with which it can be worked and bent by hand.

These characteristics of LEAD are of special value when elements of pipework are prepared in the workshop for rapid assembly on the site. The necessary provision for easy, *in situ* adjustments to meet the dimensional variations of normal building work and sanitary appliances are best made by the use of lead or lead alloy pipe.

LEAD

The Technical Information Bureau of the Lead Industries Development Council, which exists to give assistance on problems relating to the use of lead sheet and pipe in building work, will be pleased to give advice on any questions relating to the present restricted uses of the materials.

LEAD INDUSTRIES DEVELOPMENT COUNCIL, EAGLE HOUSE, JERMYN STREET, LONDON, S.W.1

LEAD TECHNICAL INFORMATION BUREAU, 25 LOWER BELGRAVE STREET, LONDON, S.W.1. TELEPHONE: SLOANE 0474

B51/5/48

NO building restrictions for the snail. The coiled shell he bears fulfils all his housing needs. No lack of supplies, no bottlenecks, no planning or direction save where his fancy guides him. Lucky snail!

Yet, his pace is slow and his end is swift and sticky. Perhaps, after all, we have the better part. We are not sentenced to solitary confinement and in our adaptability we have the challenge to a host of troubles.

WE BUILD IN STEEL

BANISTER, WALTON & CO. LTD

STRUCTURAL STEELWORK

RIVETED ★ WELDED

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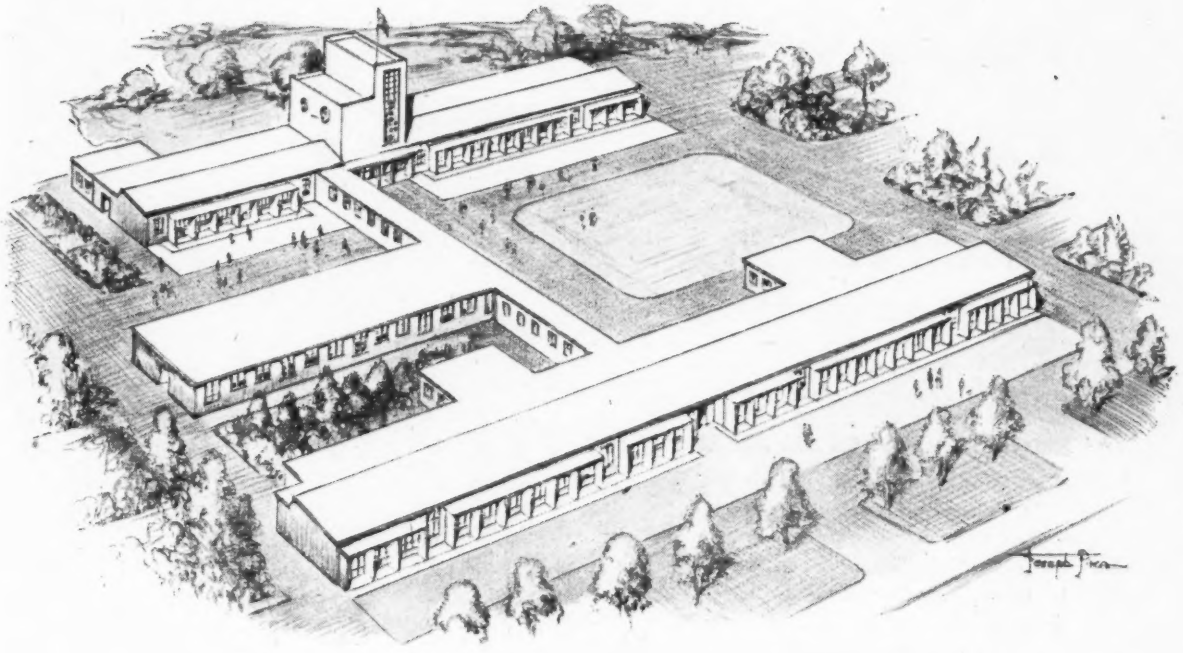

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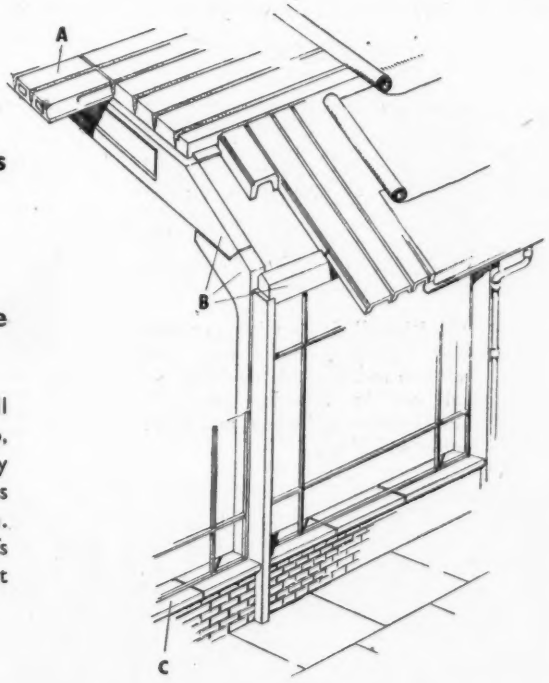

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POTTERY THROUGH THE AGES · NO. 12

Specially drawn by Gordon Nicoll, R.I.

HISPANO-MORESQUE POTTERS

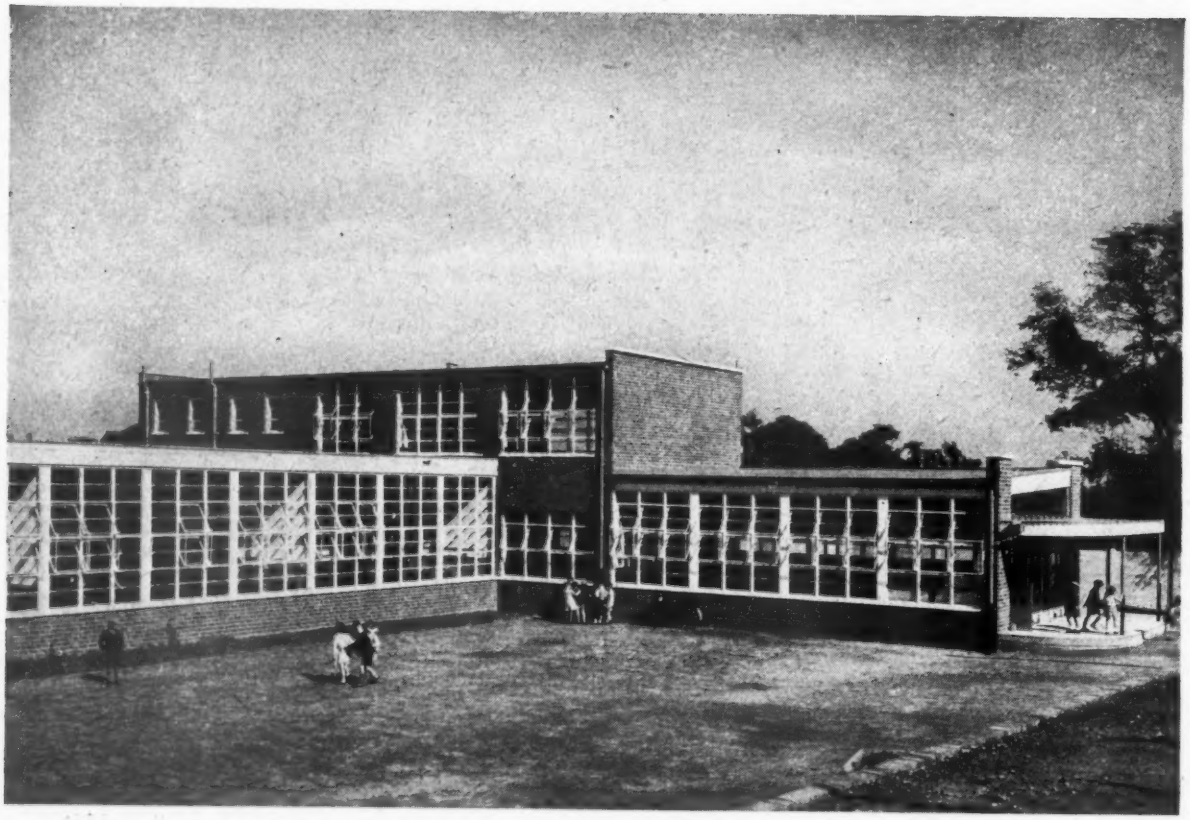
Islamic pottery and tiles brought to Europe by traders and Crusaders influenced early Italian tin-enamelled earthenware and mediaeval English tile-work. The conquest of Southern Spain by the Moors about 710 A.D., however, was destined to have a much more direct influence upon European ceramics. Their supremacy endured for nearly eight centuries, especially in Granada, where the hand-painted and lustred tiles of the Alhambra Palace are a brilliant testimony to the craftsmanship and artistry of Moorish and Persian Potters.

Tile-work was used on a considerable scale for the embellishment of buildings such as mosques, palaces and, later, churches. Green, yellow, purple, white and blue were the colours most generally employed and the tiles were pieced together in complicated geometrical patterns. Arabic script was often used with delightful effectiveness as a decorative feature.

The art of lustre-painting, especially in golden-brown, yellow and blue lustres derived from metallic oxides, was developed in Valencia, Malaga, Majorca and other centres. The lustre pigments were painted over-glaze on an opaque smooth tin-enamel which masked the earthenware body.

The Moors were expelled at the end of the 15th century, but many of their potters were allowed to remain to teach the Spaniards. Roman inscriptions, hand-painted themes inspired by the Christian religion, and heraldic designs began to supersede Islamic motifs. The range of shapes included deep serving dishes, flat "chargers," bowls, plates and other domestic wares, apothecaries' drug jars, wine bottles and large storage vessels. The whole surface was often covered with decoration; yet, despite this, harmonious and balanced designs were achieved without any feeling of overcrowding.

Manises, Mislata and Paterna lustre wares, made near Valencia in the 15th century, became especially famous; by the 17th century, Talavera had become the chief centre. Orders came from all over Europe from kings, princes and cardinals, and the imported Hispano-Moresque wares unquestionably had a profound influence on the work of Italian, Dutch and English potters. From Spain, potters went to Mexico to teach Indian craftsmen and their influence has endured there to this day.



CHERRY ORCHARD ROAD SCHOOLS for the City of Birmingham Education Committee
Architect: W. T. Benslyn, A.R.C.A., F.R.I.B.A. J. R. Deacon Ltd., *Building Contractors*

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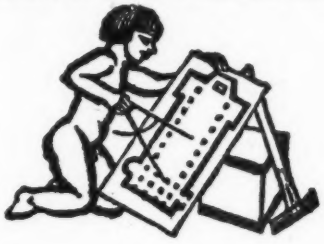


DIARY FOR MAY JUNE AND JULY

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first.

CARDIFF. *TCPA One-Day Conference.* At the Reardon Smith Lecture Theatre, Cardiff. (Sponsor, TCPA.) JUNE 5

CHATHAM. *Visit to Fort Luton School.* (Sponsor, S.E. Society of Architects, Maidstone Group.) JULY 10

EDINBURGH. *TPI 22nd Annual Country Meeting.* (Sponsor, TPI.) JUNE 4-6

GATESHEAD. *RSI Gateshead Sessional Meeting.* Lt.-Col. G. Perry. *The Planning of Industrial Estates.* Afternoon visits to Queen Elizabeth Hospital and Sheriff Hill Isolation Hospital, Gateshead, Shipcote Baths and the Team Valley Trading Estate. At the Greenesfield Health Centre, Mulgrave Terrace, Gateshead. (Sponsor, RSI.) JUNE 26

HARROGATE. *RSI Conference.* At Harrogate. (Sponsor, RSI.) MAY 24-28

IRELAND. *TCPA Irish Study Tour.* (Sponsor, TCPA.) MAY 31-JUNE 13

LIVERPOOL. *British Architects Conference.* (Sponsor, RIBA.) MAY 27-30

LONDON. *Darkness into Daylight Exhibition.* At the Science Museum, South Kensington. (Sponsor, Science Museum.) UNTIL SEPTEMBER 30

New Schools Exhibition. At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) Weekdays 10-6, Saturdays 10-5. MAY 26-JUNE 19 (inclusive)

Institute of Welding Luncheon. At the Connaught Rooms, Great Queen Street, W.C.1. (Sponsor, Institute of Welding.) 12.30 for 1 p.m. MAY 26

Lady Pepler. *Recent Developments in the Work of the International Federation.* At the Planning Centre, 28, King Street, W.C.2. (Sponsor, TCPA.) Buffet lunch 12.45 p.m. Meeting 1.15-2.15 MAY 27

ABT Open Evening. At the Building Centre, 9, Conduit Street, W.1. (Sponsor, ABT.) 6.30 p.m. MAY 28

Prof. A. E. Richardson. *Craftsmanship.* Peter Le Neve Foster Lecture. At the RSA, John Adam Street, Adelphi, W.C.2. (Sponsor, RSA.) 2.30 p.m. JUNE 2

Discussion on the 4th Edition of the Standard Method of Measurement of Building Works. To be opened by P. T. Walters. At the IAAS, 75, Eaton Place, S.W.1. (Sponsor, IAAS.) 6.30 p.m. JUNE 7

R. B. Hounsfield. *Are Railways the Key to Planning?* At the Planning Centre, 28, King Street, W.C.2. (Sponsor, TCPA.) 6.15 p.m. JUNE 16

RIBA Council Election Results. Charles Woodward and Sydney Redfern. *Questions and Answers in Practice.* At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) JUNE 22

Annual Prize-giving of the AA School of Architecture. At the AA, 34/6, Bedford Square, W.C.1. (Sponsor, AA.) 3.30 p.m. JULY 9

Mechanical Handling Exhibition. At Olympia. The exhibits will include aerial ropeways, conveyors and elevators; coal, coke and ash-handling plant; cranes, gears and chains, hoists, stackers, pulley blocks and lifting gear; hand-trucks, power-driven industrial trucks, runways, wagon-tippers, pneumatic handling plant and all types of accessories. (Sponsor, "Mechanical Handling.") JULY 12-21

MANCHESTER. *TCPA One-Day Conference.* At the Town Hall, Manchester. (Sponsor, TCPA.) MAY 29

Design Week. (Sponsor, CID.) JUNE 21-26

SEVENOAKS. *Visit to Knole Park.* (Sponsor, S.E. Society of Architects, Maidstone Group.) MAY 22

SHEFFIELD. *TCPA One-Day Conference.* At the Central Library Theatre, Sheffield. (Sponsor, TCPA.) JUNE 12

TORONTO. *Canadian International Trade Fair.* At the Exhibition Grounds, Toronto. (Sponsor, Canadian Government Exhibition Commission.) MAY 31-JUNE 12

COMPETITIONS

Art Competition and Exhibition of the XIV Olympiad, London, 1948. Designs eligible: (*a*) Town planning, (*b*) Architectural designs. Entries will be limited to designs for sports grounds and to buildings intended for use in connection with sport only, and must be received before June 11, 1948. Full particulars from the Organizing Committee for the XIV Olympiad, London, 1948, 105, Victoria Street, London, S.W.1.

Royal National Eisteddfod of Wales Architectural Competitions, 1948. Competition 192 for a county college. Competition 193 for a neighbourhood unit layout. Assessors: C. F. Bates and T. Alwyn Lloyd. Premiums: £50 in each case. Conditions and entry forms from Rev. W. J. Samuel, General Secretary, 38, Dunraven Place, Bridgend. Entries to be submitted between June 5 and 14. JUNE 5-14

NEWS

THURSDAY, May 20, 1948
No. 2780 VOL. 107

Though no feature in the JOURNAL *is without value for someone, there are often good reasons why certain news calls for special emphasis.*

★ *means spare a second for this, it will probably be worth it.*

★★ *means important news, for reasons which may or may not be obvious.*

Any feature marked with more than two stars is very big building news indeed.

A CONFERENCE OF ARCHITECTS in charge of the ENGLISH CATHEDRALS was organised by the Central Council for the Care of Churches.

It was held in the Subdeanery, Lincoln, from May 10-13. The programme included a demonstration of the Cathedral apparatus for the cleaning and preservation of the fabric, an exhibition of modern stained glass designs in the Chapter House, and a visit to the Usher Gallery to see the Peter de Wint pictures and a special exhibition of architectural drawings by Pugin and others. The lighting and the heating of Cathedrals were subjects for discussion.

The death has been announced of Mr. CLYDE YOUNG, F.R.I.B.A., who designed the War Office building in Whitehall.

Born in 1871, he went to University College, Lille, after private schooling in England, and received his professional training at South Kensington, and in France, Belgium, and Italy. Elected A.R.I.B.A. in 1900, he became a Fellow some 10 years later. The War Office building is a good example of his style, which may also be seen on a smaller scale in his additions to the Imperial Service College at Windsor and at University College, Southampton. He was also responsible for the restoration of the Lamb Building, Pump Court, and the Cloisters in the Temple before it was bombed. He was editor of *Spon's Architects' and Builders' Price Book* and of *Coleman's Approximate Estimates.*

★

The Ministry of Supply is giving up its responsibility for the production and erection of ALUMINIUM HOUSES after achieving its target of 54,500 of them since 1945.

Since the scheme started a new industry has been established, and it is hoped that this type of construction may lead to the development of export markets on a substantial scale. The Ministry will continue to be responsible until October for houses which were taken over only last month. The Ministry of Health, in conjunction with local authorities, has ordered 15,000 permanent aluminium houses, which are the same as the temporary buildings except for certain modifications.

SPECIAL SCHOOLS ISSUE. This issue of the JOURNAL, published to coincide with the Schools Exhibition at the RIBA, is devoted entirely to the new school building programme that has come into being as a result of the 1944 Education Act, a programme which, because of its importance, remains largely unaffected by the present curtailment of capital expenditure. The scope of the Act is vast, and it must necessarily set many new problems to school architects. An attempt has been made in this issue to define and clarify these problems. It therefore begins with an analysis of the Education Act from which they arise, and an account of modern educational methods. These are followed by illustrated articles dealing with the four main types of school buildings, written by practising architects who have given special study to the problems involved and illustrated by buildings completed since 1945.

★

THE SCOTTISH HOUSING RETURNS FOR MARCH show a rise in the monthly number of permanent houses completed. The figures for March stand at 1,529 houses as opposed to 1,024 in January. During the past six months completions have been at an annual rate of 17,282. A continuation of the monthly rise depends upon supplies of steel, cement, and timber. Steel can now be counted out, temporarily, as a building material for hulls, but promoters of such houses are switching over to alternative materials and it is unlikely that their rate of production will drop. Housing now ranks at 100 per cent. priority for cement, and the Secretary of State for Scotland has made special arrangements for extra supplies, 95 per cent. of which will go to housing. Every effort is being made to maintain the higher rate. Timber contracts are not finally settled, but it is believed that sufficient will be available to maintain the rate of house completion. The completion of the temporary house and Swedish timber house programmes, which should be achieved some time this year, will release a considerable amount of components for permanent house needs.

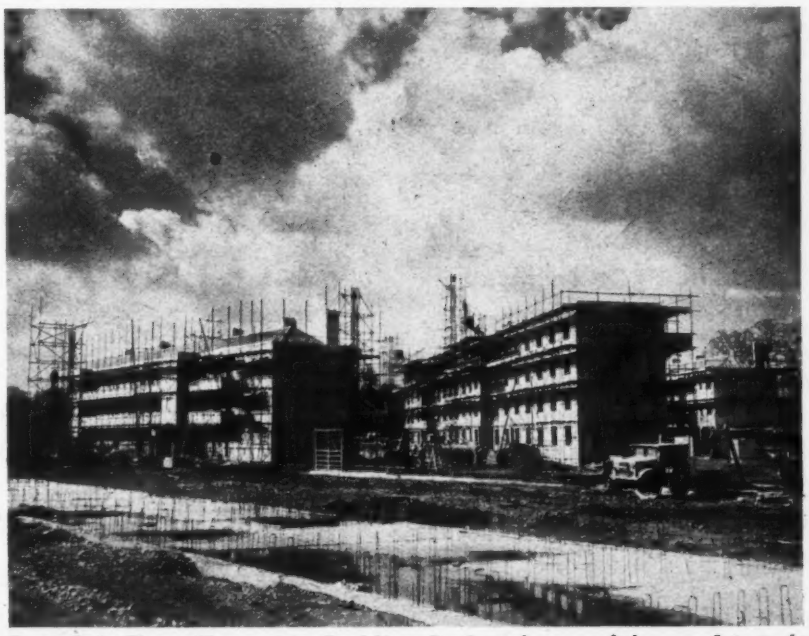
The returns show that the houses completed in Scotland in March numbered 2,835, bringing the total for the first three months of this year to 6,505. The figure for the first three months of 1947 was 3,336. Altogether, the number of homes provided in Scotland during March was 2,970, which included 100 made available by conversion and adaptation of existing premises, 18 in requisitioned properties, and 17 in Service camps. Of the new houses, 1,529 were permanent and 1,306 temporary. The permanent houses included 1,384 by local authorities and the Scottish Special Housing Association, 92 by private enterprise, 1 by a Government Department, and 52 war-destroyed houses rebuilt by local authorities. In addition to the 1,306 temporary houses, 1,046 others have been completed but cannot be occupied until connected to electricity and other services. The number of requisitioned properties held by local authorities at the end of March was 2,195. It is estimated that accommodation for 3,432 families has been provided in these properties after adaptation.

The number of new houses being built in Scotland at the end of March was:—Permanent, 47,127; temporary, 3,528. The labour force employed was 58,900, as against 57,900 (revised figure) at February 29. In England and Wales the figures for houses completed during the month were 18,828 permanents and 1,656 temporaries.

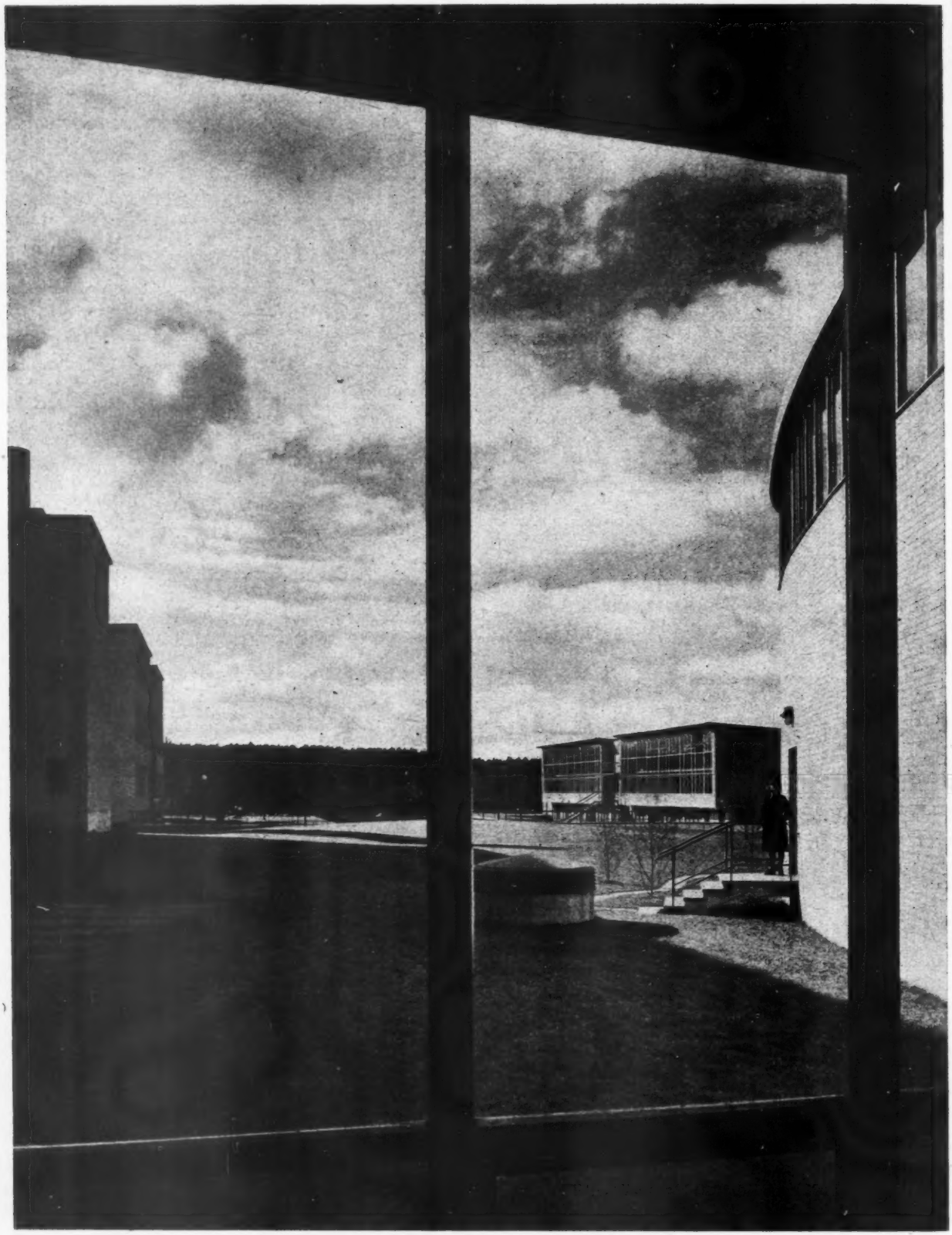
The Council for the Preservation of Rural England have published their ANNUAL REPORT FOR 1947. It states that 1947 was "without exception the busiest year in the Council's existence." In the last eighteen months the work done by the CPRE in connection with the use of rural land for the training and accommodation of the armed forces has been on an "unprecedented scale." The report says: "Until there is some sign of the Services sharing—and, if necessary, being *forced* to share—certain of their training areas and ranges, it will be difficult to take seriously the Government's professions regarding the desirability of 'joint user,' or to believe that they are really interested in economizing in the Services' use of land." Recalling that the Hobhouse report recommended the establishment of twelve national parks, the report remarks: "It is the opinion of the CPRE that, except on grounds of inescapable national necessity, training areas—especially those involving the use of live ammunition—should be excluded from this comparatively short list." Dealing with coastal preservation and recognizing the attraction of the seaside, the Council urge that, all around the coast, planning authorities should consider the extent of unspoiled coast that remains and schedule certain areas of prime importance for protection from all manner of building development, apart from essential agricultural buildings.

Proposals to use LANGDALE FELL AND CROSBY RAVENSWORTH in Westmorland, as training areas have been abandoned by the War Office. This has been announced from headquarters, Western Command, when it was stated that Crosby Ravensworth will shortly be released. Crosby Ravensworth was used as a training area during the war, and the area affected is about 4,000 acres. Langdale Fell, not previously used for training, was tentatively earmarked as a firing range.

An order for the FIRST PREFABRICATED ALUMINIUM SCHOOL IN SCOTLAND, building of which will begin in September, at the mining village of Ballingry, Fife, has been placed by Fife Education Committee with the Bristol Aeroplane Company, Ltd. The school will cost £170,000. It will consist of an infant unit of four classrooms and a primary school of 16 classrooms, which will cost about £55,000. In addition, a gymnasium, assembly hall, dining hall, and administrative building will be provided. The site is about 4½ acres in extent and the building will last 60 years.



Part of the Flower House estate, Lewisham, London, where 30 of the 330 flats to be constructed will be completed by September. The completed scheme will consist of fifteen blocks in which there will be 165 flats of three rooms, 110 of four rooms and the remainder of one, two or five rooms. The scheme is the responsibility of the Director of Housing, Mr. C. H. Walker, and the architect in charge is Mr. S. Howard.



The Contemporary School

This example is from Sweden, where there is a long tradition of good design in public buildings. The Eriksdalsskolorna at Stockholm is seen here from the main staircase. The layout and appearance of this secondary school differ radically from their English counterparts, as may be expected from the divergence in each country's needs and limitations. This school, with apparently plenty of land at its disposal, favours detached multi-storey blocks in contrast to the English preference for integrated single-storey planning.

FOREWORD BY THE MINISTER OF EDUCATION

AFTER a long interval due to the war, educational building has come into the picture again, and the first group of post-war schools is now under construction. Already the volume of educational building is far greater than it was after the first World War, and the urgent requirements resulting from new housing developments and the rise in the birthrate coupled with the requirements in the Education Act, 1944, point to the need for a very substantial building programme for some time to come.

The design of school buildings, which today cover a wide range from the nursery school to the technical college, offers a challenge to the architect. New educational ideas and new constructional possibilities, combined with shortages of materials and labour set him problems which are sometimes baffling, but I hope always interesting. There is no single set solution, and I trust that there never will be. If we are to get schools of first-class design and good construction at a reasonable cost in men, money and materials, we shall need the combined efforts of many minds. For this reason, I am anxious to see more work on research and development and the widest possible spread of knowledge, particularly among architects, of the ideas being developed and the work being done in school building at present. To this end, this series of special issues of the ARCHITECTS' JOURNAL will, I am sure, make a useful contribution.

Geo. Tomlinson

CONTENTS

The RIBA New Schools Exhibition opens next week. Mr. H. V. Lobb, who is chairman of the RIBA exhibition committee, is well known as a school architect.

DESIGN OF SCHOOLS

TO-DAY as never before school building is of paramount importance, a fact which is recognized by the forthcoming exhibition at the RIBA. The Butler Act of 1944 constitutes a revolution in the State's approach to education. It envisages ultimately a free and compulsory education from the age of two to eighteen, of which each stage will be carefully integrated with the next, and of which the aim will be to provide a sufficient variety of courses to ensure the best possible development for children of every aptitude. This implies a building programme not only vast in extent but of a complexity hitherto unparalleled both in its conception and execution: it is officially estimated that the cost will be £1,000 millions, spread over the next fifteen years. This programme remains in very large measure unaffected by the present cuts in capital expenditure, so that school architecture will be one of the few fields where development and experiment can go forward on a large scale in the next few years.

In this issue the JOURNAL presents a survey of architectural trends in the sphere of education. Such a survey can be comprehensive but not exhaustive, because there has been little opportunity for experiment since the enactment of the Butler Bill; ideas have not had time to harden, and opinion is still controversial. Moreover, within its framework the 1944 Act gives the widest discretion to local educational authorities to work out detailed solutions of the new problems it poses in their own way.

This issue begins—as to-day's school-building programme must begin—with an analysis of the Butler Act. Next, an educationist writes upon educational methods and theory, which are still in process of rapid evolution and will largely condition the whole approach to school design in its provision both of accommodation and amenities. The main body of the issue consists of four articles covering the four main types of school: Nursery, Junior and Infant, Secondary (of which the Act proposes three distinct divisions: Grammar, Technical and Modern), and Buildings for Adult Education. The Butler Act itself divides education into three stages: Primary, Secondary and Further Education. But since the education of the very young presents its own peculiarities, the primary stage has been further subdivided to make Nursery Schools a separate subject. At the other extreme, buildings for Adult Education cannot be dealt with in great detail, because experiment with the problems they set has hardly begun. They will be the last to develop, since they are contingent upon the raising of the school-leaving age. These four articles are the work of architects who have special experience of the type of school they write about. Though their opinions are individual ones, their analysis of the principles on which the various types of school should be designed can be taken as authoritative and up to date.

A second Schools issue of the JOURNAL will appear on June 10. This will cover the more detailed technical aspects of the

school building programme by means of articles on the structural problems arising from modern school design, on lighting and decoration, heating and ventilation, acoustics and sound insulation, wall and floor finishes, sanitary equipment, prices, furniture and teaching equipment, etc. The issue will contain a selected bibliography. Readers are recommended to supplement these issues with a visit to the Schools Exhibition at the RIBA, which will be on show concurrently with their publication. There, examples of contemporary school-building practice can be studied in detail.

The Right Hon. R. A. Butler who, as President of the Board of Education in the Coalition Government, gave his name to the 1944 *Education Act.*

The Education Act of 1944 (known as the Butler Act) is the starting point for all new school building. The following article outlines the scope of the Act and describes the new educational programme that it has launched.

THE EDUCATION ACT

by Merton Tester

The Butler Education Act of 1944 constitutes a radical change in the State's attitude to education. Although, by 1899, with the establishment of the Board of Education, the State accepted full responsibility for elementary education it is only with the advent of the 1944 Act that this has been extended to cover education at every stage from the Nursery school to the University. Hitherto a post-elementary education was confined to a comparatively small proportion of school pupils who were either educated privately—as in the public schools—or in secondary Grammar schools (usually old foundations) subsidised either by the central or local education authority. At the universities students were either fee paying, or the recipients of college or State scholarships, or those provided by local education authorities; the Butler Act does not interfere with this arrangement, but the number of scholarships other than college scholarships is to be considerably increased. At the other end of the scale although nursery schools for children below the elementary school age were sometimes available, this by no means generally applied and the provision of them was left to the discretion of the local education authorities.

The 1944 Act both widens the scope of State education and places the control of educational policy more firmly in the hand of the central authority. Section 7 of the Act states:—

"The Statutory system of public education shall be organized in three progressive stages to be known as primary education, secondary education, and further education; and it shall be the duty of the local education authority for every area, so far as their powers extend, to contribute towards the spiritual, moral, mental, and physical development of the community by securing that efficient education throughout these states shall be available to meet the needs of the population of their area."

It should be noted that the emphasis is upon continuity of education and the provision of a sufficient variety of educational establishments to cover the needs of pupils of varying ages, aptitudes and abilities.

With regard to the organisation and direction of educational policy the Act abolishes the old Board of Education and in its stead establishes a Government Department under a Minister of Education. The Act requires the Minister to appoint two Central Advisory Councils, one for England and one for Wales, to advise him on educational theory and practice. County Council and County Borough Councils remain the local education authorities, but whereas the old Board of Education had only advisory powers the new Ministry is able to issue directives in the form of statutory regulations and in circulars addressed to the local authorities. Thus, although administration remains decentralised the effective power of control by the central authority has been markedly increased. The Universities remain independent and receive direct Treasury grants. The Minister's duty under the new Act (Section 1) is defined as being:—

"To promote the education of the people of England and Wales and the progressive development of institutions devoted to that purpose and to secure the effective execution by local authorities under his control and direction, of the national policy for providing a varied and comprehensive educational service in every area."

Apart from the Act's administrative clauses the most immediate and comprehensive change consists in the provision of secondary education for all children and in the raising of the compulsory school-leaving age. The Act provided that the school-leaving age should be raised to 15 not later than April 1, 1947, and then to 16 as soon as the Minister is satisfied that adequate building and sufficient trained teachers are available. Secondary education itself is viewed in a new light. Hitherto it has been almost exclusively of the Grammar school type, *i.e.*, essentially academic and intended ultimately to fit pupils for the University. The Act shows a realisation that an education of this type is not necessarily always best suited to each child, and divides secondary schools into three categories: Grammar, Technical, and Modern. The curriculum of the Secondary Grammar schools will remain largely unchanged, The Secondary Technical schools will be developed from the comparatively few Junior Technical Schools which already existed to provide vocational training, and although they will continue to give a general education it will be largely related to industry, agriculture and commerce. Schools of this type will be useful not only in supplying industrial needs but also in providing the most suitable training for children of a practical turn of mind who feel happier when they can see their school work directly related to a more concrete application.

Those children who show no special aptitude for either an academical or technical education will attend the secondary modern schools. It has been argued that the sense of superiority at

present enjoyed by the old Grammar schools will now be shared by the technical schools with an implied inferiority accruing to the modern schools. This is certainly a danger, and the division of secondary schools into their three new categories has been further criticised as being too watertight. But any such defects will no doubt be remedied when the system is in action. Every type of secondary school is intended preferably to be self-contained in separate buildings. But where sites are restricted (as in towns) this may not be possible and proposals have been made to incorporate all three types as departments, in one set of buildings, of huge " multi-bias " schools each with 1,500 to 2,000 pupils. These schools will be highly experimental and some feel that although such an arrangement will be most economical in the provision of teaching staff and equipment it is too unwieldy, and, possibly, too impersonal.

Under the new Act the pre-secondary school stage is now to be known as " primary education." This is all part of the emphasis on continuity of education, and the term " primary education " is now intended to cover all educational provisions for children of 11 years and under. This includes nursery schools, which each local authority must now provide where the need becomes apparent, preferably as separate and self-contained schools containing not more than 40 children. Where this is inexpedient nursery classes may be substituted.

The post-secondary or " further education " stage is dealt with in section 41 of the Act which lays down that

" it shall be the duty of every local education authority to secure the provision for their area of adequate facilities for further education, that is to say:—

" (*a*) full-time and part-time education for persons over compulsory schools age; and

" (*b*) leisure-time occupation, in such organized cultural training and recreative activities as are suited to their requirements for any persons over compulsory school age who are able and willing to profit by the facilities provided for that purpose."

It is probable that these provisions, which will be the last part of the Act to be implemented, will fall under four main headings: Technical, Commercial and Art Education—*i.e.*, vocational education; non-vocational education for young people and adults; County colleges; and the Youth Service. Before the 1944 Act the provision of further education was at the discretion of the local authorities whereas now it becomes their duty. The Act lays down that compulsory part-time attendance at a further educational establishment will be introduced for young people under 18 who have left school, for approximately 44 full days a year. The local authorities must submit a suitable development scheme to the Minister and co-operate with neighbouring authorities and educational bodies (*e.g.*, universities). The Act requires the local education authorities to establish county colleges within three years of the school-leaving age having been raised to 15. The age range for attendance will be built up gradually, the full age range from 15 to 18 being attained in the third year following the appointed day for bringing compulsory attendance into force.

This vast expansion in the field of State education necessitates a wide review of the educational plans and requirements of the local authorities, who were required by the Act to submit development plans to the Minister. The date of submission was fixed for April 1, 1946, for development plans covering primary and secondary education (section 11), and August 1, 1948, for development plans for further education (section 42). In both cases the Minister has powers to grant an extension. The standards of accommodation and amenities to be provided in new school buildings are described in the Ministries building regulations. These are statutory rules and orders compiled by the Minister since the enforcement of the Act. But any modification of them now requires further legislation, such as the Education (Miscellaneous Provisions) Bill now before Parliament.

A new type of school resulting from the Education Act is known as the multi-bias school which combines the three types of secondary schools in one group of buildings. Above is a project for such a school in East Ham by J. W. Taylor, of the Architects' Department of the Borough Engineer's office.

In the following article the curator of the Geffrye Museum, Shoreditch, London, gives her own views of how educational method and theory affect school design and of the way in which school children react to the buildings in which they are taught.

THE EDUCATIONAL BACKGROUND

by Molly Harrison

In our modern world specialization is inevitable, but it is important not to lose sight of the dangers of working in a vacuum, without knowledge of the efforts of others in adjacent spheres. This is particularly true of education, which, when it is good, is a result of the combined insight, interest and efforts of a wide variety of people. Among the most important of these people is the architect. No one who has much contact with children would deny that they are very strongly influenced by their immediate environment. In a pleasant, harmonious and appropriate building they tend to behave in a much more civilized manner and actually become better balanced and more sensitive than they do if they grow up in an ugly, ill-planned or merely neutral environment. The bricks and mortar, concrete and glass of the school building are a basic influence in education.

Because of the importance of his function it is valuable for the school architect to be aware of educational trends, not only as they are laid down in official memoranda, but also as they have their day-to-day effect upon the child. He needs to spend some time inside schools, and such practical experience would enable him to exert his influence upon the decisions taken by Education Committees. The Education Act of 1944 established the legal framework of the educational system of this country for the next generation, but fortunately the last word has not been said. Even in this age of large-scale planning, the carrying out of an administrative measure is still the result of many social forces and its translation into daily practice is very much within the sphere of the layman's influence. The school architect has many opportunities of discussing problems, of influencing decisions and of selecting wisely from among the many educational theories which underlie his technical instructions.

Anyone comparing any good school

building of the past ten years with the prison-like structures built as schools at at the end of the last century needs little persuasion to believe that a revolution has taken place. Would he not find equally amazing changes inside the classrooms? There he might expect to find rows of children sitting quietly at desks facing the teacher and listening in silence to a lesson; instead, in any of the many schools which use newer methods he would probably see children scattered in groups about the room, moving freely to and fro, talking among themselves as they busily pursue a variety of practical activities. The teacher, far from standing in an authoritative manner in front of the class, would be mingling with them, giving the individual help and encouragement which is so important a part of learning; or, more surprisingly, there might be no teacher in the room, and the children would not have noticed the fact. What does this mean?

It means, in fact, that the whole emphasis and aim of education is changing. Until very recent times hardly anybody questioned the view that it was the business of education to train the child in the way he should go. He was to be taught moral maxims, habits of industry and a store of facts suitable to his social status. The methods by which this was to be achieved were rough and ready, but it cannot be denied that the system, for all its crudity, produced on the whole the results which the 19th century expected of it. But the needs of the 20th century are very different from those of the 19th, and the contemporary trend in education is new in four main respects: in the treatment of the child, in the relationship of school to society, in the material dealt with and in the methods used.

First, the approach to the child himself is different; less and less is he thought of as having to be moulded into a preconceived pattern and crammed with a specific quantity of facts. The purpose of education now is to provide the best opportunities for growth and to remove hampering influences. His individuality is respected in ways which were not thought of half a century ago; psychology has helped to explain facets of his nature which were then unknown; changing views on discipline have done much to encourage his co-operation with his teachers, and improving social and economic conditions cause him to come to school much better fitted physically than were his parents or grandparents. The good teacher now knows that "educare" means to nourish, and considers his job as akin to that of the gardener, who tends his flowers as best he can, never quite sure exactly what will result from his efforts. The emphasis has shifted from trying to fit children to a time-table to fitting the whole life of the school to the needs of the children. The modern child can *enjoy* his time at school more than ever before, for at its best it is a place full of life, activity and happiness.

A classroom at Winsor Junior Mixed and Infants' School, East Ham, designed by F. C. Ball, Borough Engineer, and J. W. Taylor, Chief Architect. The school is built in Uni-Seco prefabricated construction. It illustrates the kind of school atmosphere that is now considered desirable: intimacy and informality. As the writer of the article points out: "the emphasis has shifted from trying to fit children to a time-table to fitting the whole life of the school to the needs of the children."

Secondly, the relationship of school to society is changing. It is now widely recognised that education is one of the main instruments for promoting the development of society, and that if we want a better society one of the inescapable conditions is better education. The high playground walls of the past symbolized an isolation of spirit, which was reflected in much of what was taught. Schools are losing their monastic flavour, and young people are now helped to grow up as creative members of a changing society, able to see the connection between their work and the adult life into which they are gradually helped to fit themselves.

Further, these new conceptions of both the individual and the social functions of education are having an effect upon *what* is taught. There is a tendency away from the old academic learning of watertight "subjects," having little reference to the abilities and interests of the children. For most young people it is more appropriate to learn mainly through "projects"—areas of interest which overlap many subjects and which start with the child's familiar surroundings and develop outwards to the less familiar. There is also a growing tendency for children to learn about the present, to include social studies and to relate the material at every point to the child's experience.

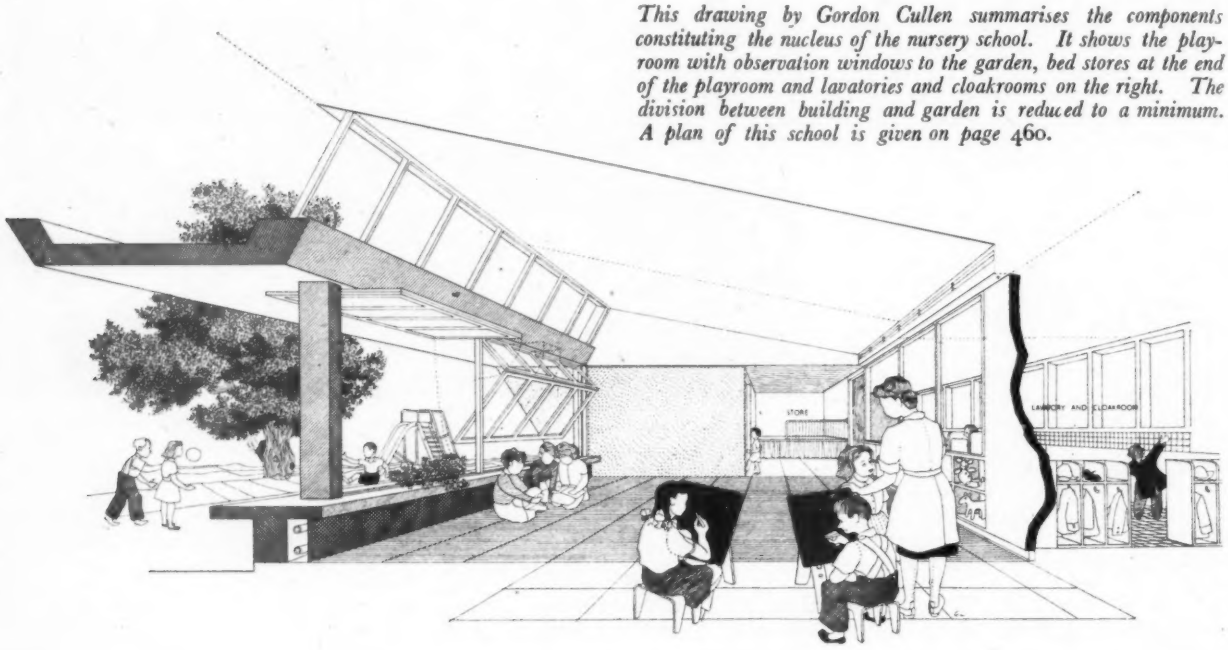
Lastly, this new emphasis upon what the child learns rather than upon what the teacher sets out to teach has brought to the fore the consideration of *how* children learn. Quite clearly, they learn through activity—by doing and making things themselves, by living through an experience, rather than by listening to the talk of someone else. So the new emphasis is upon practical, active methods; upon the visual and auditory techniques — film, lantern, radio, gramophone—which can help so much; and upon co-operation and group work rather than competition.

How do these new tendencies affect the job of the school architect? His whole concept of a school needs to reflect the changed educational emphasis. The physical layout should symbolize the fact that the school is an integral part of the community; it should be a social-looking building, inviting to adults as well as to children, not seeming to contain those who enter it, not needing gates to lock, for the children should be largely free to come and go without adult supervision, since they will wish to use the building for far longer than the minimum statutory school hours. This "feeling" of a building is of great importance to children, for they sense atmosphere very quickly.

SCHOOL TYPES

1. NURSERY SCHOOLS: Planning Requirements and Technique Surveyed by Denys Lasdun

This drawing by Gordon Cullen summarises the components constituting the nucleus of the nursery school. It shows the playroom with observation windows to the garden, bed stores at the end of the playroom and lavatories and cloakrooms on the right. The division between building and garden is reduced to a minimum. A plan of this school is given on page 460.



NURSERY schools cater for children between the ages 2-5. Such Schools are independent units accommodating groups of 40, 80 or 120 children. Nursery classes cater for children between the ages 3-5. Such Classes are attached to or are part of other schools. The standards and scales of accommodation to be provided are laid down in the following two documents :—

(*a*) Regulations Prescribing Standards for School Premises 1945, dated March 24, 1945.

(*b*) Memorandum on the Building Regulations of the Education Act, 1944.

This article, which takes the Nursery School of 40 children as a basic example, is written in amplification of the above documents and should furthermore be read in conjunction with the essential bibliography on the subject as listed. A study of these standards and scales in terms of the 40 children unit will show that the requisite area for playrooms is a total of 1,125 sq. ft., whereas the total area of all remaining ancillary accommodation in support of these playrooms is some 2,500 sq. ft., inclusive of corridors, lobbies and refuse yard.

This indicates the extent to which the planning programme may be regarded as comprehensive and ambitious in its reaction from pre-war substandards. It is not surprising, therefore, that the Ministry of Education is concerned at the high cost of these nursery schools, and in fact permission to proceed with actual building is held up temporarily pending investigation into cost reduction. Recent projects for nursery units have recorded figures as high as £375 per child—based on the current labour and material situation, and this was exclusive of garden layout. It is unlikely that any nursery school will be built in the immediate future except in specific instances where it can be shown as vital to the needs of women employed in industry.

It follows, therefore, that planning must be compact and the structure economical, and although school buildings are by statute exempt from the operation of local byelaws, any lowering of structural standards must safeguard against corresponding rise in maintenance costs. Any further action such as a general reduction in areas or modifications of programme in order to "shrink" the cube of the building is a question of Ministerial policy. It will be appreciated that this matter raises delicate issues since a speedy realization of the schools plan must on the one hand be consistent with the nation's means, on the other hand any lowering of standards may adversely compromise the intention of the Education Act. To meet this situation it might well be desirable to consider maintaining these standards, but planning in such a way that the less vital ancillary accommodation could be added as a future extension of the plans. For instance where meal service and medical attention are locally available, both the provision of kitchen and medical room could be temporarily omitted.

PURPOSE AND METHOD

". . . the schools available for an area shall not be deemed to be sufficient unless they are sufficient in number, character, and equipment to afford for all pupils opportunities for education offering such variety of instruction and training as may be desirable in view of their different ages, abilities, and aptitudes, and of the different periods for which they may be expected to remain at school, including practical instruction and training appropriate to their respective needs."—*Educ. Act*, 1944, *Part II, Section* 8, *para.* (1) (*b*).

The nursery school provides the first rung on the educational ladder. Its success, on this early adventure for the child, presupposes proper housing conditions for the child's family. Here the child is encouraged to explore fresh interests and to meet and co-operate with a group of children outside the immediate family circle. Habits of hygiene are formed and health is safeguarded. Ability, aptitude and observation are stimulated with the result that the child is physically, mentally and psychologically equipped to continue its progress through the infant school. Above all, the child,

in playing with and in helping others, has its first feelings of belonging to a community.

The age groups for primary schools are :

Nursery	..	2-5 year olds.
Infant	..	5-7 ,, ,,
Junior	..	7-11 ,, ,,

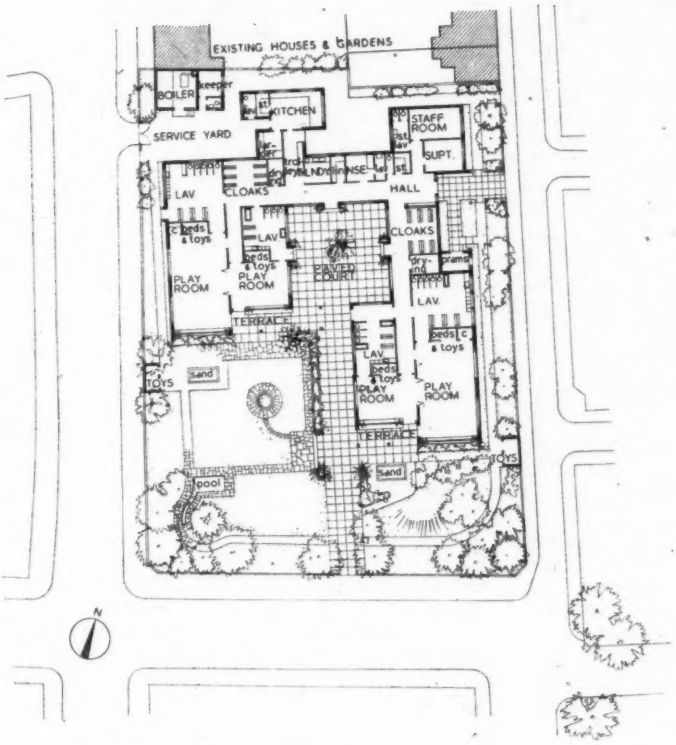
In the nursery school, this age group is further sub-divided into children between 2 and 3 years old and those between 3 and 5 years old. The reasons are as follow :—

(*a*) Children under three are less mobile and not so developed in muscular strength. They are mentally more subjective and correspondingly less inclined to share toys or co-operate. They are more dependent on adult assistance in matters of toilet, although many just under three can look after themselves providing their clothing is simple in character.

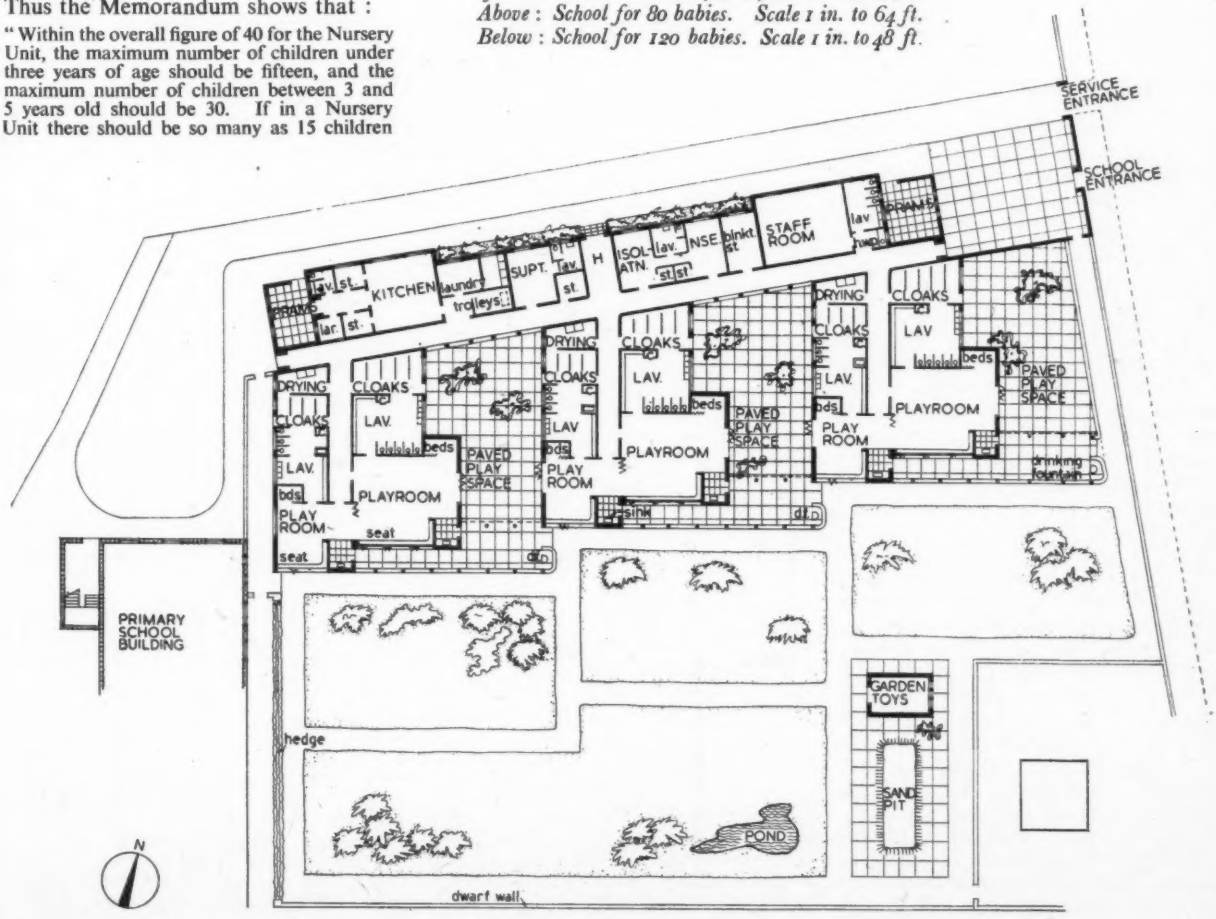
(*b*) Children between three and five have a wide range of movement and speed. They can organize, co-operate and look after themselves. They enjoy and are capable of doing jobs such as service at meals, washing the tablecloth, getting the beds out. They are beginning to read, write, count, paint, model and make things. It is with this group that the positive preparation for the Infants Class is achieved.

Thus the Memorandum shows that :

"Within the overall figure of 40 for the Nursery Unit, the maximum number of children under three years of age should be fifteen, and the maximum number of children between 3 and 5 years old should be 30. If in a Nursery Unit there should be so many as 15 children



These two plans exemplify the nursery school build-up in multiples of forty babies. Both are projects designed for the London County Council by Robert H. Matthew, Architect to the LCC. Above : School for 80 babies. Scale 1 in. to 64 ft. Below : School for 120 babies. Scale 1 in. to 48 ft.



under 3 years of age, the number of children between 3 and 5 years of age should not exceed 25, and conversely if there are so many as 30 between the ages of 3 and 5 years' old, the number of those under 3 should not exceed 10. To provide for either group being of the maximum size, the playroom accommodation should normally be divided into two rooms of 375 square feet and 750 square feet respectively. The smaller of the two rooms will be available for the children under 3 years of age, but may at times be used for other purposes."—*Section* 12, *para.* (*a*).

This separation of age groups in its implication on planning does not imply a difference of routine or timetable and is not a hard division. In fact a consensus of opinion shows a preference for a combined playroom which can be divided off by a folding screen. This is of special advantage in scattered, rural districts, where the playroom becomes the hall and may be used by adults after school hours. In such cases provision should be made for chair storage. The staff establishment for a group of 40 children will normally be one Superintendent and 2 trained assistants, but accommodation should allow for the presence of 3 trainees. In addition there will be a domestic staff consisting of one cook and two or three assistants. The curriculum is limited by the general capability of this age group. Its pattern may vary slightly according to the individual method adopted by a superintendent, but a study of the daily routine in principle is required for a proper understanding of the problem.

THE DAILY ROUTINE

In the nursery school, the day begins with the arrival of parents and children. The younger children may be brought by pram. Parents and staff will assist with the removal of outer clothing placing it in drying cupboards if necessary. It is in the cloakroom, therefore, that parents and staff will meet daily and exchange information about the children. The staff will satisfy themselves that there are no cases of infection and any children feeling unwell may be sent to the medical room to await further attention.

The weather rarely prevents the children spending the greater part of their activities in the garden—running, climbing, gardening, looking after pets, playing with swings, seesaws, water and sand, etc. In wet weather, sand tables, climbing frames, toys, possibly an aviary and aquarium in the playroom, replace these outdoor amenities. During the mid-morning break each child will receive a glass of milk served by trolley on the terrace, or in bad weather either immediately outside the kitchen or in the playroom. After the break some of the older children may watch the kitchen staff preparing the mid-day meal while other groups of children will divide off for reading, singing, round games, individual activities, etc. The children will always be free to use the toilets and wash in their own time. Before the mid-day meal the tables and floor must be cleared of toys and arranged for dining. A few children may help lay the table while the remainder wash. The meal is brought from the kitchen on a trolley and 2 playroom tables can be used for service. The meal takes approximately 30 minutes and some diversion may have to be provided for the fast eaters until all have finished. After the meal, tables and chairs must again be cleared and beds and blankets arranged for the afternoon rest. The children will then wash and clean their teeth under supervision before the rest period which normally lasts about 45 minutes. In the meantime, the staff will dine and continue with their work. After the rest, beds and blankets will be put away and the remainder of the day spent in further free activities—camping in the garden, playing at tea parties, story-telling, etc. The garden and playroom will then be tidied and the children taken home.

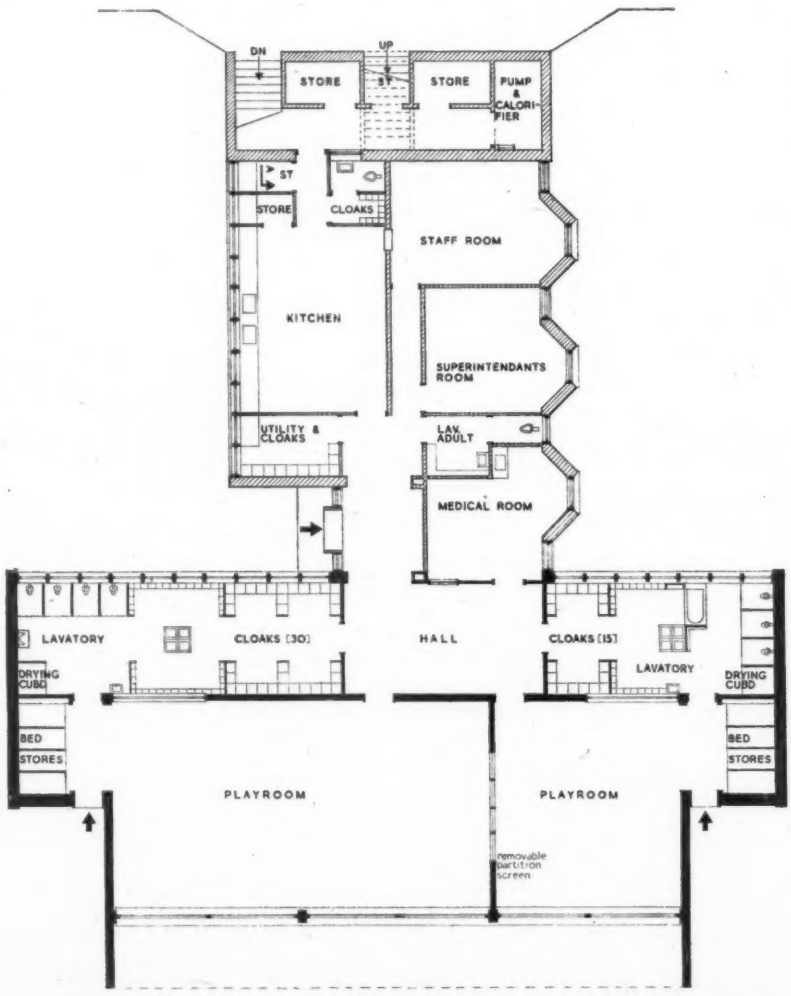
From the above it is evident that the peak hour of activity is around the mid-day meal. This situation becomes aggravated in wet weather when the transition from eating to sleeping has to be catered for entirely in the playroom.

EXAMINATION AND SUMMARY OF COMPONENTS

The following authorised minimum requirements are given in terms of a Nursery school for 40 children :

(*a*) *Site.*—Minimum one-third acre, of which approximately ¼ will be occupied by the school building itself.

Disposition of roads should be such as to minimize noise and dirt and provide direct access right up to the school. Unrestricted sunlight is essential. The garden is important and demands imaginative lay-out. In this respect sites of irregular shape and contour can be an advantage provided the above conditions are satisfied. The Nursery school and its gardens are part of the community pattern. Thus the necessary fencing of the site does not mean visual isolation.



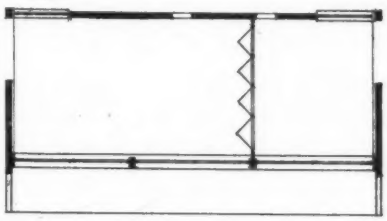
Proposed nursery school for 40 babies by Tecton. The ancillary administrative area is lightly hatched and the basic playroom unit drawn heavily in black. Scale 1 inch to 16 ft.

(*b*) *Garden Playing Space.*—Minimum 200 sq. ft. per child, of which 40 sq. ft. per child shall be paved.

This paved area should be immediately accessible from the playroom and partly covered by an overhanging canopy. It should not be a sheer expanse of tarmac, but can be broken up with grass areas which remain cool in summer and dwarf walls and shrubs giving shade and shelter from the prevailing wind. It can incorporate a sandpit, protected from cats when not in use, and a paddling pool, and must be properly drained. Consideration must be given around the school itself to pram shelters and the proper screening of all refuse and an area of the garden allocated to the domestic staff.

(*c*) *Playrooms.*—Minimum area 375 sq. ft. for children between 2 and 3 and 750 sq. ft. for children between 3 and 5. Height 10 to 11 ft. Aspect, S.S.E.

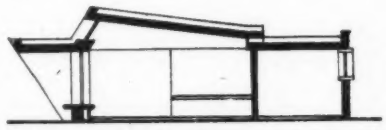
In essence the playroom replaces the garden in bad weather. It must be warm and soft and easily cleanable and the disposition of doors such that draughts are eliminated. Each playroom will require not more than one pair of French windows or doors opening on to the garden. If the lavatories and cloakrooms do not provide direct access to the garden, then these French windows should be so placed as to minimise the traffic across the playroom floor to the lavatories.



The basic playroom unit, divided up by a partition screen. French windows should lead to the garden.

In addition to providing cross ventilation, special attention must be paid to the type and operation of windows on the south wall. Some days partial ventilation only will be required, while on other days it will be desirable to expose the entire structural window opening. Projection of parked windows against which the child may bang its head must be avoided. The windows should be set in deep reveals with a sill height of not more than 18 in. above the floor. A projecting canopy at the head of the window and sheltered clerestory windows over must ensure comfortable and uniform lighting without glare from midsummer sun and at the same time allowing maximum penetration of winter sunlight.

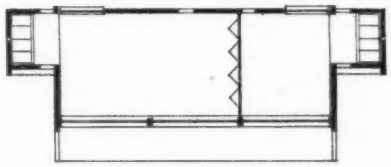
A fixed observation window in the wall separating the playroom from the lavatories is recommended. This will allow supervision without movement from the playroom. The remaining walls, one of which may be a folding



Section through the playroom, showing the clerestorey lighting above the cantilever over the loggia, and with the lavatory and cloakroom on the right.

screen separating the two playrooms, will be taken up with equipment and fittings. These will include cupboards for general storage, toys, books and games. Free standing equipment will normally consist of chairs and tables, piano, radio, climbing-frames, sand-table, easels and scribbling paper, possibly a small aquarium and aviary and provision for indoor planting. A sink for use in the playroom will be required. All equipment and fittings must be planned and designed within the reach of the child.

Bed storage is not included in the playroom area but must be planned as an integral part of the playroom. Accommodation will be required for one bed and two blankets per child, so disposed as to give direct access either to the playroom or to the garden terrace. It should be dustproof and ventilated. A solution such as the one illustrated has the following advantages. It is designed for light-weight folding rest beds as recommended in Post-War Building Studies No. 24. It is within the reach of children and is simple to construct and ventilate. The platform provides a good location for small group activity such as a tea party.



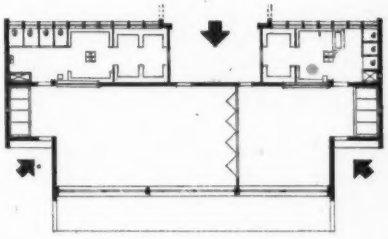
The playroom with bed stores added at each end.

(*d*) *Cloakrooms.*—App. 65 sq. ft. for children between 2 and 3. App. 115 sq. ft. for children between 3 to 5. Height, 8 ft. 6 in.

These should open off and be planned *en suite* with each playroom. They should be conveniently accessible both from the main entrance hall of the school and from the garden. Accommodation will be required in terms of stands or racks per child, fixed or moveable, for hats, coats, shoes, rubber boots, play rompers. Arrangement must provide for free circulation of air between all articles of clothing. Sufficient space should be allowed for staff and parents to assist the children and a small table is desirable. Walls should be tiled up to 5 ft. A partition is not required between cloakroom and wash-room.

(*e*) *Washing and Sanitary Accommodation.*—App. 170 sq. ft. for children between 2 and 3. App. 210 sq. ft. for children between 3 to 5. Height, 8 ft. 6 in.

It must be simple for a child to leave its occupation, wherever it may be, go to the toilet and wash its hands. Arrangement must provide for free circulation of air between all articles



The complete playroom unit with its loggia, bedstores at each end, and cloakrooms to the north, with through access to the administrative rooms.

of toilet. Provision of a mirror is desirable.

W.Cs will be divided by low partitions, and doors, if provided, should be free swinging " stable doors " approximately 2 ft. 6 in. high. No locking devices are needed but the door should be able to be hooked back into the open position and its action such that the child cannot pinch its fingers. Walls should be tiled up to 5 ft. and the floor drained.

Scale of sanitary fittings is as follows : For children 2-3 : 4 basins, 1 bath, 3 W.Cs, 1 sink (if not included in the playroom).

For children 3-5: 4 basins, 2 urinals, (this is an authorized but unpublished amendment to the Regulations), 4 W.Cs, 1 sink (if not included in the playroom).

(*f*) *Drying facilities.*—These should be capable of dealing simultaneously with garments of approximately 50 per cent. of the children. Heating must be independent of the main system since it will be required all the year round. Gas drying cupboards in each cloakroom or wash-room would be suitable.

(*g*) *Staff rooms.*—(1) Superintendent: minimum, 120 sq. ft.; height, 8 ft. 6 in. Disposed near school entrance conveniently accessible from playrooms and kitchen. Normal equipment will include desk and 2 chairs, telephone, bookshelves and cupboards.

(2) Common room : minimum, 180 sq. ft.; height, 8 ft. 6 in. This room will frequently be used by children for quiet activities in adult company and surroundings.

(3) Cloaks and lavatory: May on occasions be used by adult visitors of

both sexes. The cloakroom should therefore be separated. Sanitary fittings in the lavatory will be one W.C. and two basins.

(*h*) *Medical and isolation room.*—Minimum, 120 sq. ft.; height, 8 ft. 6 in. Disposed adjacent to one of the play rooms if possible. An observation window at bed level looking on to the playroom will help remove children's fears of isolation and allow supervision without movement from the playroom. It must be within easy reach of the W.C. It should be well lighted and suitable for eye testing. When not in use it may be used by the children for special group activities.

(*i*) *Storage.*—App. 15 per cent. of play area.

(*j*) *Laundry.*—Arrangements should be made outside the kitchen.

(*k*) *Kitchen.*—225-250 sq. ft., inclusive of ancillary rooms as follows:—Larder, dry store and larder store, 25-30 sq. ft. Vegetable store, 15-18 sq. ft.

The Memorandum reads:—

"The provision of separate kitchens in all nursery schools is considered essential because of the special importance of nutrition in the case of children under 5 years of age, and because nursery school experience has shown that the kitchen plays an important part in the social training of these young children."—*Appendix III, Section 6.*

Disposition to be such as to facilitate service of meals both to play room and staff room and to allow separate service staff entrance. Equipment to be suitable for the preparation of mid-morning milk, mid-day meal and afternoon tea.

(*l*) *Refuse Disposal and Heating Chamber.*—Adequate screened arrangements must be made for disposal of empty bottles, swill, ashes, etc.

CHARACTER

What is the character in terms of architectural form which will appeal to child and adult? Plainly, it is neither monumental nor institutional nor is it quite that of a school.

A clue is to be found in the daily routine of the nursery school. Here emphasis is placed on outdoor activities. It follows that if the climate was temperate and constant, the ancillary accommodation could almost be housed in a tent. In other words the character of a garden pavilion with its close link in pattern and scale to natural surroundings giving shelter in inclement weather seems eminently suitable.

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SCHOOL TYPES

2. PRIMARY SCHOOLS: The Contemporary Planning Approach by C. H. Aslin

Junior mixed and infants' school for 320 children at Blindman's Lane. Cheshunt, by C. H. Aslin, county architect for Hertfordshire. Plan on page 464.

THE following are the factors determining the need for the new primary scools:

Replacement of war damage.
Rise in the birth-rate.
Relief of overcrowding due to lack of building during six war years.
Shift of population to new towns and new estates and growth of existing towns.

At the request of the Ministry of Education, all Local Authorities responsible for education have prepared programmes to meet these demands, and although the present economic state of the nation only permits a fraction of the programmes to be built annually, the value of new Primary schools authorized during 1947 and 1948 amounted to £12,250,000.

The execution of this work provides architects with a splendid opportunity for the development of their art; an opportunity for experiment on a series of planned building programmes whose scale is unique in the history of this country.

BASIC REQUIREMENTS OF PRIMARY SCHOOLS

The modern conception of the school as a social, cultural and recreational centre for the local community changes the whole policy of site acquisition. No longer is the school to be tucked away in the graveyard (like many of the early schools) or in the irregular "left-over" island encircled by the back-gardens of housing schemes. The size and importance of school sites have both increased, and they will become not only considerable "open spaces" but centres of interest for their immediate neighbourhood.

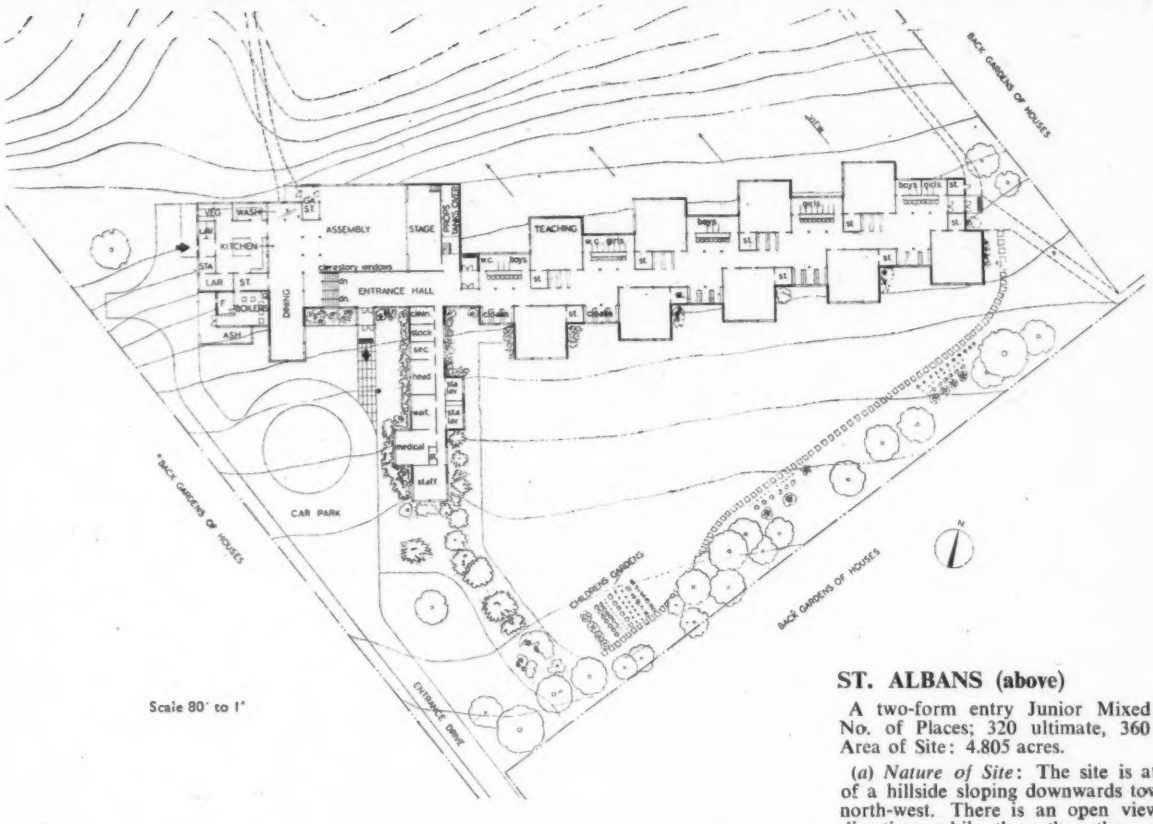
What factors are to be considered in choosing a site? Is the ground to be sloping or flat? If it does not fall towards the south, what possibilities are there of orientating the building towards the sun? What sort of a view is there? Is it windy or sheltered? Is the access safe for children? Can the technical requirements of services and drainage be met? Are there tree or other interesting natural features to be preserved and incorporated in the design, so that the space can be broken up into informal play areas and outdoor teaching spaces, as well well as into areas of hard-surfaced playgrounds? In every Primary school layout there needs to be the invitation to adventure and initiative, whether it is climbing on jungle-jims or commando nets slung on to poles, balancing along low walls, or clambering over an old tree trunk, planting seeds in small garden patches, watching newts in ponds, or "driving" an old disused car.

THE BUILDING

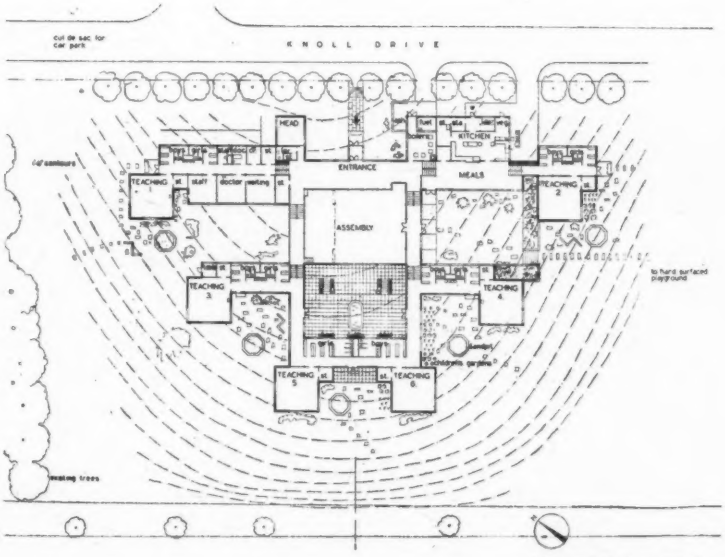
Coming to the design of the building itself, which should be so closely linked with its surroundings that no feeling of abrupt change is evident between one and the other—it is true to say that every part will exert some influence on its inhabitants. The old, forbidding institution surrounded by grey asphalte and iron railings is giving way to a welcoming, friendly building. Schemes of the past were, of course, designed to satisfy the educational need prevalent at the time of their building, and these provided little more than enclosures of minimum space for herd instruction, and that all too permanently.

To-day, however, children are the basis of school design, and a child's environment, to give health for the body and for the mind, needs sunshine, fresh air, good lighting, encouragements for cleanliness, good feeding and opportunities for relaxation and quietness as well as for noise and excitement; and, above all, an atmosphere in which children will enjoy themselves and feel at home and will absorb, without necessarily realizing it, standards of beauty in colour, texture and form. Sill heights will be low enough for children to look out of windows even when sitting down; heights of shelves, pictures, door handles, taps will be right for children; there will be children's

[Continued on page 464]



Scale 80′ to 1″



[Scale: 112 ft. to 1 in.]

ST. ALBANS (above)

A two-form entry Junior Mixed School. No. of Places; 320 ultimate, 360 interim. Area of Site: 4.805 acres.

(*a*) *Nature of Site*: The site is at the top of a hillside sloping downwards towards the north-west. There is an open view in this direction, while the other three sides are bounded by the back gardens of terrace and semi-detached housing.

(*b*) *Site Layout*: The building is placed diagonally across the centre of the site in order to provide open area to the south, to take advantage of the view to the north-west, and to reduce site excavations to a minimum.

The main run of the teaching spaces is parallel to the contours, with the Assembly Hall, Dining Hall and Kitchen on a lower level. The entrance drive goes directly to the turning circle in front of the main entrance and to the Kitchen area.

(*c*) *General Planning*: The central units—Entrance Hall, Assembly Hall, and Dining Hall—are grouped to take advantage of the view and also to have windows to the south.

The Kitchen, Ancillary Rooms, and Boiler House are grouped to the west of the Dining Room, while the Administrative Offices and Adult Lavatories are in a wing off the Entrance Hall to the south. The teaching spaces, with their Cloak Rooms and Lavatories, are off the east of the Entrance Hall and the stage end of the Assembly Hall. All the teaching spaces have clerestory lighting. Four face the view and have west windows. The other five face the garden to the south. The corridor is designed to receive south light and overlook the garden area.

SOUTH BARNET (above)

A two-form entry Infants' School. No. of Places: 200 ultimate, 240 interim. Area of Site: Approx. 3 acres.

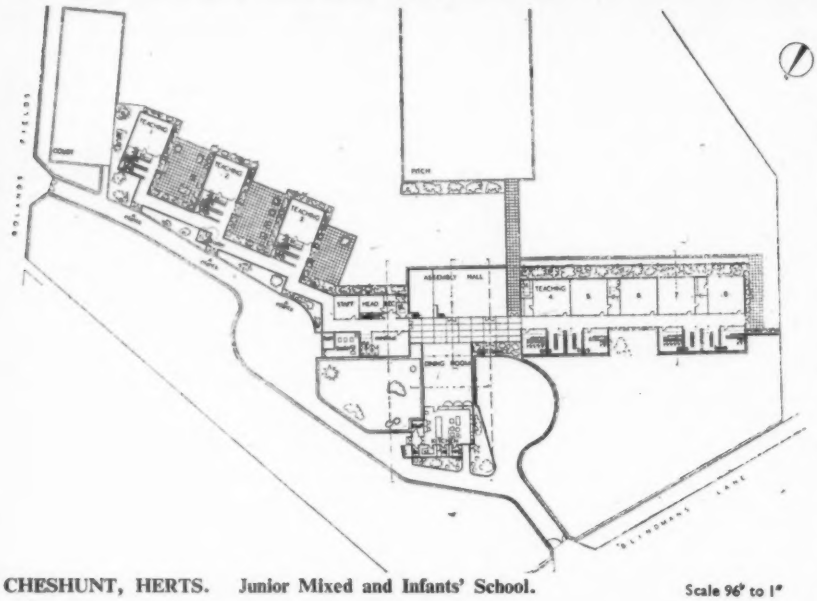
(*a*) *Nature of Site*. The site slopes with circular contours from the north-west, with a fall of approximately 18 feet across the site. There is an open view towards the south-west, and a group of elms gives shelter from the north-west.

(*b*) *Site Layout*: It would not be possible with these site conditions to build long blocks of classrooms without sacrificing aspect or involving great cost of levelling. The building, therefore follows the contours as closely as possible, with small stepped units on a series of "platforms" along the contour lines. The different parts of the school are grouped about the central axis. The main entrance will be from Knole Drive to the north-east of the site. The cul-de-sac at the end of this road can be used as a car park, so that the need for a vehicular drive into the school, with its own parking space, is eliminated.

The hard-surfaced playground, with sand-pit and play equipment, is to the south-east at the lower level. Small garden courts have been planned as extensions to the building itself.

(*c*) *General Planning*: The school has been designed as a series of small units radiating from the central communal spaces (administrative, assembly and canteen). This approach has been dictated by the steeply sloping site, but it is also hoped to meet the particular needs of an infants' school, with emphasis on small self-contained plan units for groups of forty children, with their own entrances, lavatories, and cloaks, and individual gardens.

TWO JUNIOR SCHOOLS IN HERTFORDSHIRE



CHESHUNT, HERTS. Junior Mixed and Infants' School. Scale 96' to 1"

colours, with gaiety, surprise and lightness in all parts of the building.

It is becoming increasingly apparent that school design is concerned with what *happens* and not merely with boxes of rooms linked by sinister corridors. Everything that goes on in a school is education whether it is project work in a classroom, or "shopping" in the corridor, gardening out of doors, or singing in the hall, eating, washing, resting and playing.

ACCOMMODATION

The Entrance Hall, Assembly Hall and Dining Room will be the centre of gravity of the whole school building and will be grouped for a wide variety of uses, being the meeting-place—not only during school hours—for both children and adults. The old practice of welcoming the children into the school through the gloomy back doors of lavatories is deprecated. If the school belongs to the children, they have a right to enter it more graciously. Parents are also becoming a part of the school life, and should be able to find the head teacher's room without innumerable enquiries along chocolate-coloured corridors.

Teaching spaces have different requirements for different ages. The youngest children, even if they must congregate in large numbers, need to be split into small and intimate groups. If their living quarters are almost self-contained, each with its own entrance, cloakroom and lavatories, and garden space, the children will be able gradually to adapt themselves to the new conditions of school life, while supervision and training is made easier for the teacher. The infants' classrooms are becoming miniature workshops and must be planned for many small, simultaneous activities. In junior classrooms there tends to be more directional teaching, but these rooms, too, are used increasingly for group project work, while the practical rooms are more specialized for craft activities. No library is as yet suggested in the regulations, but one of the medical rooms can well be fitted with book shelves to introduce the idea as a possibility.

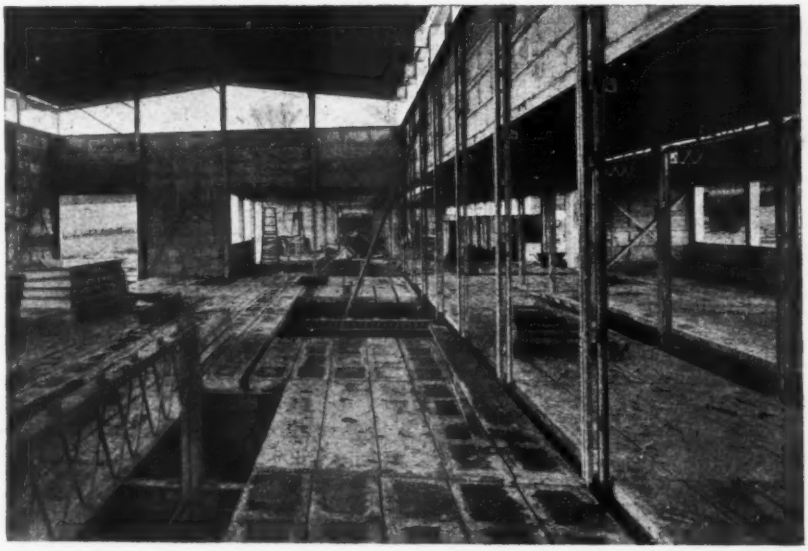
Washing and eating are two fairly recent additions to the activities encouraged in school, and the new building regulations have increased lavatory and washing accommodation very considerably and suggest dispersal. This is an excellent idea, but it inevitably involves increased cost.

It is now the duty of all Authorities to make provision for dinners, and the dining room and kitchen, with their ancillary rooms, have become an important part of the plan. They must be linked closely with the rest of the communal spaces, so that the dining room may be used for other community purposes apart from meals, care being taken that food smells are excluded. Kitchen noises should be insulated from the rest of the school, and easy, separate access provided for the delivery of stores.

The Assembly Hall itself is a multi-purpose space, and there is here the difficulty of reconciling the requirements of physical training, with its vigorous ball games and races, with the requirements of other activities, such as acting, singing, music and film projection. Even in infants' schools there are often quite complicated entertainments, and stages need to be planned for the easy coming and going of large numbers of performers.

THE PROCESS OF SOLUTION

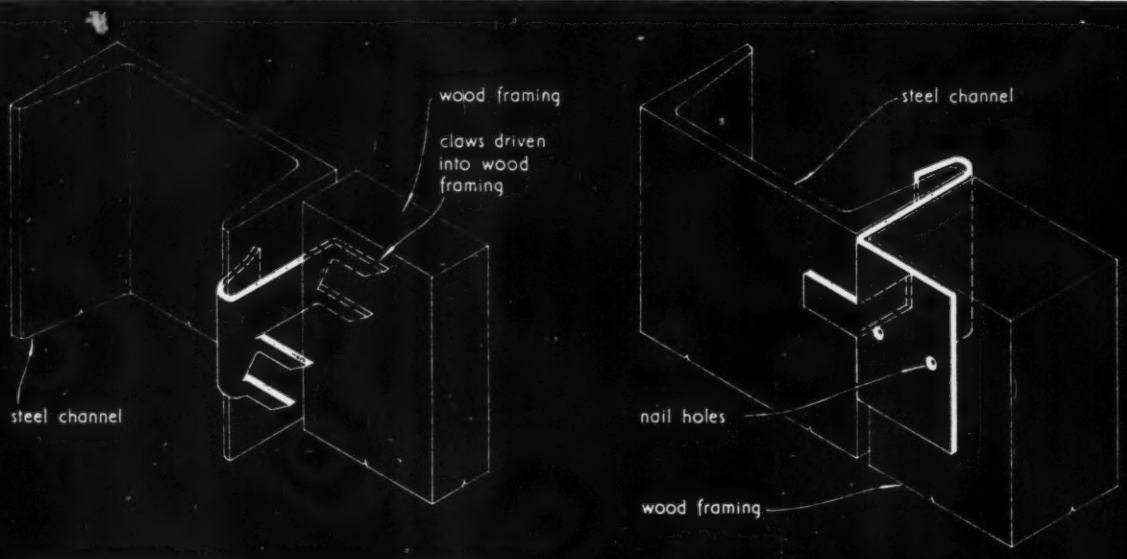
The concept of primary education has been revolutionized during the past 10 years, and change has been accelerated by the 1944 Act. Educational development is hampered now by traditional building. The majority of existing schools have been conceived as rigid enclosures of space, to be used for limited specific purposes, instead of



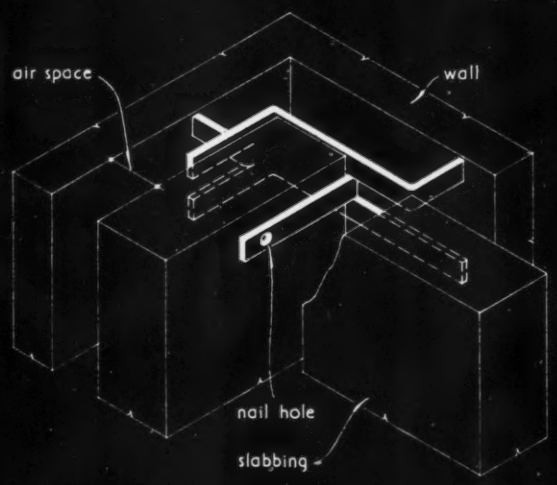
Hertfordshire County Council, whose school building programme under the direction of the County Architect, C. H. Aslin, author of the accompanying article, is one of the most advanced in the country, has been experimenting with forms of construction combining speed with economy of labour and materials. Unit construction is clearly the answer, and the photograph shows a typical structure in one of the new Hertfordshire primary schools. The bay system consists of welded rolled steel angle uprights at intervals of 8 ft. 3 in., multi-punched for window fittings so that only three different stanchions are needed. Little timber and a minimum of steel has been used. Roof and floor joists consist of lightweight welded steel trusses, and floor and panel walls are of precast concrete, the latter reinforced with cross bracing over the larger areas. The whole construction is very flexible since a series of component units can be repeated indefinitely in any direction.

PRODUCTS | MISCELLANEOUS | FIXING COMPONENTS **26.J4**

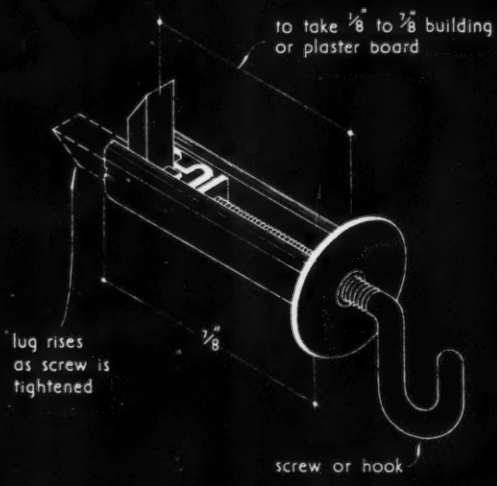
The Architects' Journal Library of Information Sheets 67 Editor : Cotterell Butler, A.R.I.B.A.



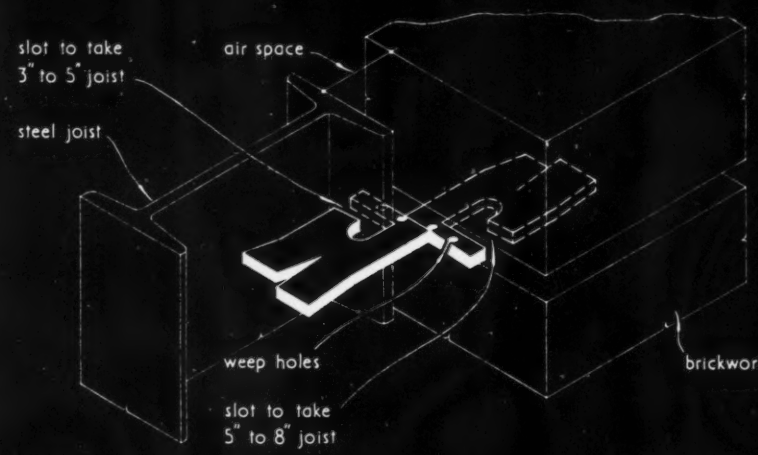
WOOD FRAMING TO STEEL CHANNEL OR JOIST.



CORNER CLIP FOR WALL LINING OF LIGHTWEIGHT SLABBING.



TOGGLE BOLT.



BRICKWORK TO STEEL CHANNEL OR JOIST.

scale for details excluding toggle bolt ⅜ full size

·FIXITS·: METAL FIXING CLIPS: MISCELLANEOUS EXAMPLES.

Manufacturer: Thomas French and Sons Limited.

26.J4 ·FIXITS· METAL FIXING CLIPS: MISCELLANEOUS EXAMPLES

This Sheet is the first illustrating examples from a range of clips evolved to solve the problem of fixing lightweight slabbing, timber, etc., to structural members. Sheet 26.J5 illustrates six types of clip, all for fixing lightweight slabbing. The clips are purpose-made to the extent that fixings for special problems are developed to order, but use of an already developed type is more economical.

Types

Wood framing to steel channel or joist: Two types of clip are illustrated. In the first, the claws of the clip are driven into the wood framing and the other end is slipped over the flange of the channel or joist. The second type is nailed to the wood framing and its end slipped over the flange of the channel or joist as before.

Corner clip for wall lining of lightweight slabbing: This clip is designed to act as a brace at the corner of a wall lining where the main structural supports are set back from the corner.

Toggle bolt (*Patent No.* 24378/44)*:* The toggle bolt is used for hanging fittings or securing lightweight fixtures to building or plaster board partitions.

Brickwork to steel channel or joist: The lower drawing shows a clip for holding brickwork to a steel channel or joist. The clip is reversible and has two different sized slots to accommodate varying sizes of joist.

Trade Name

These products are manufactured under the trade name ·Fixits· *fleur de lis brand.*

26.J5 Reference

On the face of Sheet 26.J5 a correction should be made to the scale. It should read "scale $\frac{3}{8}$ in. = 1 in.," instead of "$\frac{3}{8}$ in. = 1 ft."

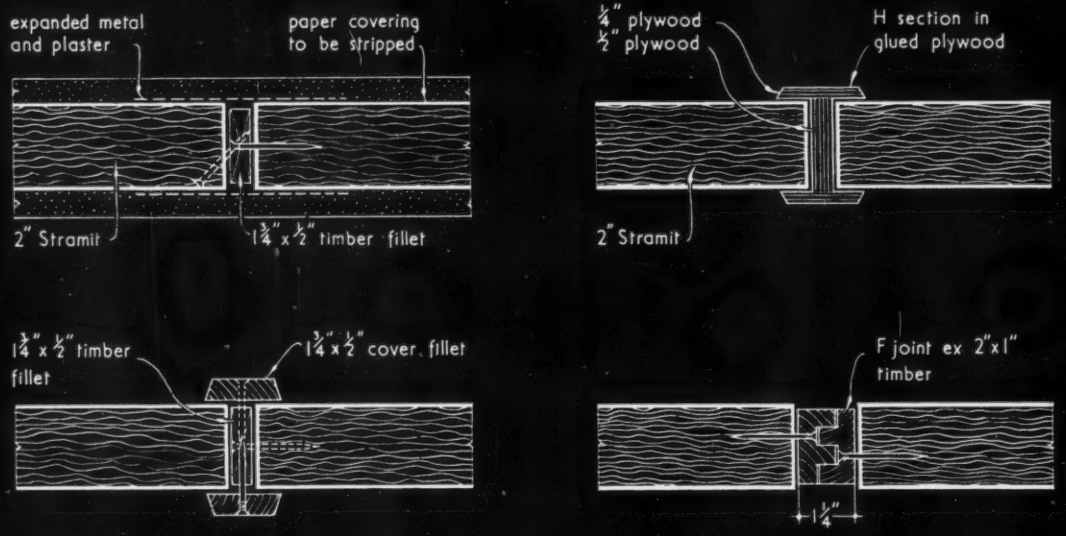
Compiled from information supplied by:

Thomas French & Sons, Ltd.

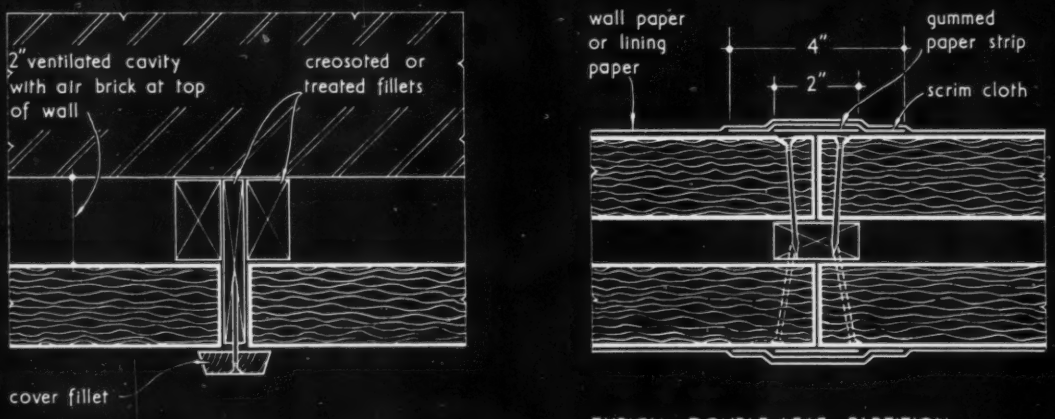
Head Office: Chester Road, Manchester, 15.
Telephone: Blackfriars 1887 (10 lines).
Telegrams: Rufflette Manchester.
London Office: 156-162, Oxford Street, W.1.
Telephone: Museum 5558-9.
Branch Factory: Sharston Road, Wythenshawe.
New York: 620, Fifth Avenue.
Massachusetts: Fleur-de-Lis Mills, Fall River.
Canada: 751, Victoria Square, Montreal.

BUILDING SLABS | LIGHTWEIGHT MATERIALS | APPLICATIONS **14.L3**

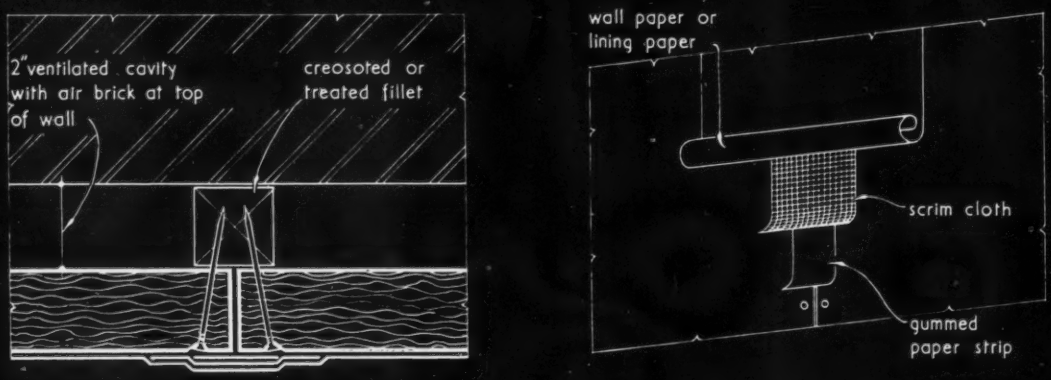
The Architects' Journal Library of Information Sheets 68. Editor : Cotterell Butler, A.R.I.B.A.



TYPICAL SINGLE-LEAF PARTITIONS.



TYPICAL DOUBLE-LEAF PARTITION.



TYPICAL WALL LININGS.

TREATMENT AT JOINT WHEN NO COVER FILLET USED.

'STRAMIT' BUILDING SLABS: 3. PARTITIONS AND WALLS. (scale ¼ full size)
TYPICAL VERTICAL JOINTING METHODS.
Compiled by Messrs. F.R.S. Yorke F.R.I.B.A., E. Rosenberg and C. S. Mardall A.R.I.B.A.

14.L3 ·STRAMIT· BUILDING SLABS: 3. PARTITIONS AND WALLS: TYPICAL VERTICAL JOINTING METHODS

This Sheet describes the use of Stramit building slabs in the construction of partitions and wall linings and shows typical methods of vertical jointing. Sheet 14.L1 describes the material and its characteristics and illustrates its application to roofs and ceilings. Sheet 14.L2 illustrates a typical structural detail showing horizontal jointing methods.

Partitions

The drawings illustrate four typical joints for single-leaf partitions and one jointing method for double-leaf partitions.

Wall Linings

The drawings illustrate two typical joints in the slabs when used as a wall lining.

Compiled from information supplied by :

Stramit Boards Ltd.

for the selling agents

Bowaters Building Boards Limited.

Address : 15, Portman Street, London, W.1.
Telephone : Welbeck 8527

as flexible spaces adjustable to the new and varied activities which grow out of educational development. It is no mere dictate of fashion which calls a classroom a teaching space.

The Ministry of Education regulations lay down a generous floor allocation for the most important spaces, but their equipment, their ancillary accommodation and their spatial arrangement provide architects with a considerable field for experiment, but the architect must experiment in the closest co-operation with the educationists. In fact, educational development and architectural development are entirely interdependent.

The difficulty arises because a large number of educationists think of their activities in terms of out-dated building and cannot visualize the possible new uses of space until they are given the kind of surroundings which will stimulate their imagination. Their reaction will in turn open up further fields of experiment to the architect. Thus the architect, if he is to make a real contribution to the design of educational building, has to make frequent contacts with all concerned, whether it is through the Ministry of Education and the County or County Borough Councils for policy, the education officer and his staff for implementation, or the local committee and teachers for particular needs. By repetition, this process will more and more closely identify the architect with the user, giving him an intimate and not merely a superficial understanding of educational needs.

He should also be prepared to avoid any preconceived ideas on school design and the easy pitfalls of fashion and set pattern. No two programmes are in fact identical, although they may appear so after superficial examination. Every solution is determined by the subtle influences of aspect, contour, view and local wishes.

THE ARCHITECTURAL TECHNIQUE

We are essentially at the beginning of a period of experiment—of education, of building technique, of æsthetic expression. The field is so large and the provision of buildings so urgent that work should be conducted by as many architects as possible. The problem is to find structures which will impose the fewest limitations on the building. This seems to indicate the need for " an awning, held up by the minimum number of supports, punctured if necessary for light, with under it a series of screens which can be transparent, translucent or opaque."

In order to advance his technique the architect should be prepared to function in new ways. For example, if his components are factory-made he must adopt the rôle of industrial designer in order that the parts of his building should be considered not only for their suitability when assembled, but also for their suitability to the machines available for production, to transport and to handling in the factory and on the site. Awareness of a large planned programme and the need for experimental development make necessary the consideration of the most suitable conditions for their fulfilment. Education Authorities in this country are unique in the freedom to experiment which they accord to their teachers. They must be prepared to be equally enlightened in their attitude towards the development of architecture.

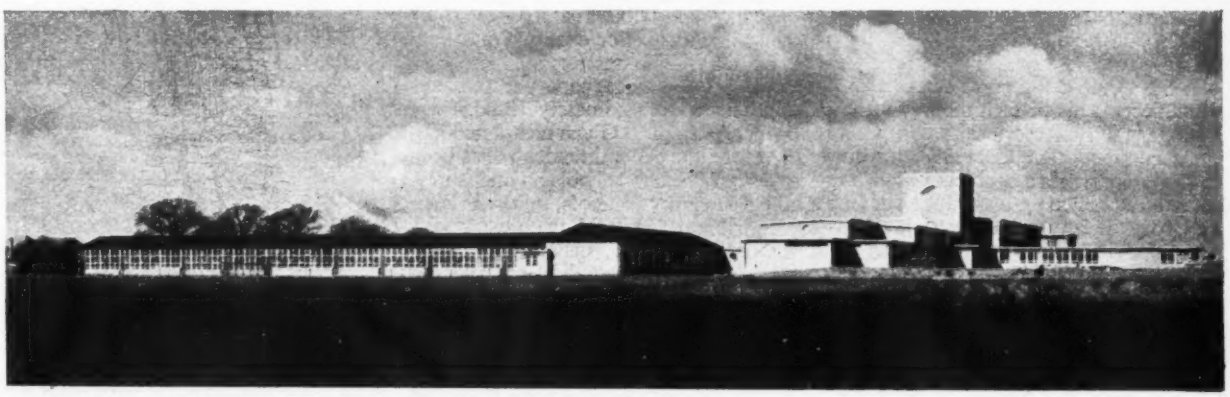
The new problems posed by these opportunities are so complex that each programme needs the co-ordinated efforts of a group of several architects, each having varying aptitudes but sharing a common attitude of mind towards architecture. They must be willing to follow through the continuous development of a series of programmes of buildings with similar characteristics. The widely held view that inspiration comes best to those who design a large variety of buildings in a short period of time—a palace for the Emir of Timbuctoo and a branch library on adjacent boards—should be reconsidered.

If architecture is to take its place as a vital factor in the world of education it must make considerable progress during the next few years. The prerequisites to this progress are:

Continuity of programmes of a suitable size (five to ten schools).

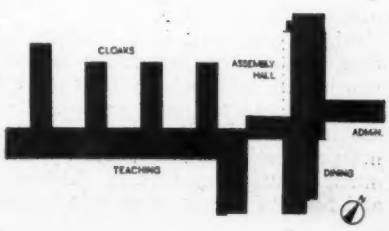
Continuity of development, so that as each advance is made it can be incorporated in the appropriate programme.

Continuity of architects, grouped in a new way.



EASTCOTE, MIDDLESEX. Primary School by H. V. Lobb.

This school was built to the order of the Ministry of Works to replace a school taken over for offices. Speed of erection was therefore important. The building comprises classrooms and general purpose rooms for 400 boys and girls, and four classrooms with a cloakroom block forming a partially self-contained unit for infants. The assembly hall and dining hall are common to infants and juniors. The site is rectangular with road access along one long side and at two points on the opposite side. The ground rises to a low crest about half way along and at this point the school is sited. The width of the site and the aspect enable the classrooms to be planned in one line. The assembly hall and dining hall are sited and planned so as to be available for public use. The separation of blocks, although it involves long corridors, makes possible a compensating economy because the floor levels of the various blocks can closely follow natural ground level, the change of level being met by ramps in the corridors. The photograph above shows a general view of the school from the south; right, a diagrammatic block plan.

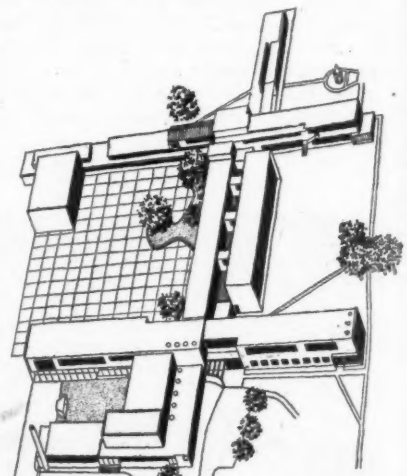


D

SCHOOL TYPES

3. SECONDARY SCHOOLS: Their Planning Problems Analysed by Denis Clarke Hall

Above, a photograph of the model for the proposed secondary modern school at Walkern Road, Stevenage, by Yorke, Rosenberg and Mardall. Below, an aerial perspective showing the layout.



SECONDARY schools are for the education of pupils in the 12 to 15+ age group. Some of these will be continuing their education to 18 and others going straight to work at 16. In either case, in the latter years at a Secondary school they are becoming responsible people who are capable, to a great extent, of looking after their own affairs, and are capable of taking an interest and pride in the school activities and in the building itself. These facts have a definite bearing, not only on the methods of teaching, but also on the internal equipment of the schools.

At this age pupils also develop some bias towards a definite subject, or group of subjects. This in turn directly affects not only the type of education, but also the accommodation. Generally this bias towards particular subjects can be roughly classified into groups, Literary and Art, Scientific, Industrial, Commercial, Agricultural and Domestic. Of these it is only the literary group that is not directly associated with a large degree of practical work.

In Secondary Education this specialization in subjects is always supported by a general educational syllabus and pupils passing through Secondary schools start with a general education which gradually develops into a more specialized training. The more highly specialized training takes place in technical schools or colleges after the normal age for Secondary pupils.

This development is a fundamental characteristic of Secondary schools which can be seen in their design. When examining the accommodation requirements of a Secondary school the most noticeable feature is the approximately equal proportion of classrooms and practical rooms, when this is compared with Primary schools, where the teaching areas consist mainly of classrooms, and in buildings used for further education, where the teaching areas mainly consist of practical rooms.

As far as possible, every form should have a form room or classroom of its own, irrespective of the practical accommodation. This, however, has proved impracticable and there are always a certain number of "floating" classes, but even so, the area per pupil required for a Secondary school, is approximately double that of any other type of school. For example, a Secondary school requires approximately 30 sq. ft. of teaching space per pupil as opposed to approximately 15 sq. ft. in Primary schools. Given adequate sites, therefore, the general tendency has been to design Primary schools on one storey, and Secondary schools, with a large proportion of the building on two floors.

Dramatic Art and Music is also an important item in Secondary schools and leads directly to an Assembly Hall with well equipped stage, green rooms, etc. Finally, at the secondary stage, pupils go through advanced courses of physical training that require fully equipped gymnasia and changing rooms.

TEACHING CONSIDERATIONS

From these three examples it can be seen that the curriculum and methods of teaching not only affect the accommodation and equipment, but also the whole character and massing of the architecture.

The different age groups of Primary and Secondary pupils also affect the total number attending any particular school. As it is inadvisable to send young children any great distance to school, Primary schools tend to accommodate smaller numbers of pupils and be more dispersed in the town or county plan, while older pupils can safely travel farther, and often possess bicycles, with the result that Secondary schools tend to accommodate more pupils and to become more centralized. For example, one of the most common Primary schools is the one form Entry combined Infant and Junior school accommodating 120 Infants and 200 Juniors, while the common Secondary schools are Three Form Entry accommodating 480 pupils, and in heavily populated areas, multi - lateral

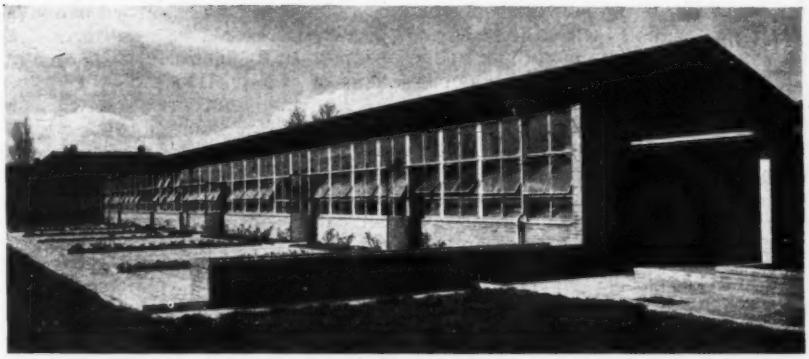
Secondary schools are being considered with accommodation for over 1,000 pupils. This is emphasized by the fact that there are 6 to 7 age groups in a Primary school and only 4 to 5 in a Secondary school, which may be extended to 6 if the school-leaving age is, at some future date, extended to 16.

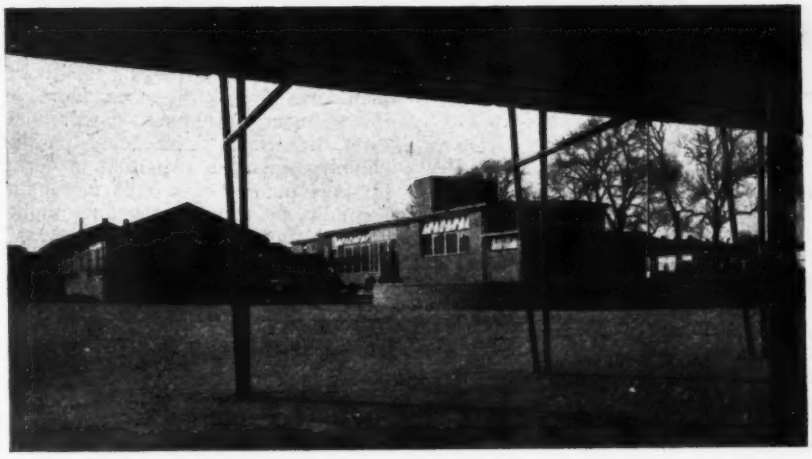
This trend is also important when considering equipment. It is possible to have available in a large centralized school items of expensive equipment that could not be economically supplied to a number of small schools. This applies to such items as books, particularly reference books, film projectors and scientific instruments. Generally, the larger the school the better the equipment. As good equipment is particularly important for the training of senior pupils, a large Secondary school tends to offer better technical and practical training than a small school. Here, again, the type of education and age of pupils has a direct effect on the plan and the size of this type of building.

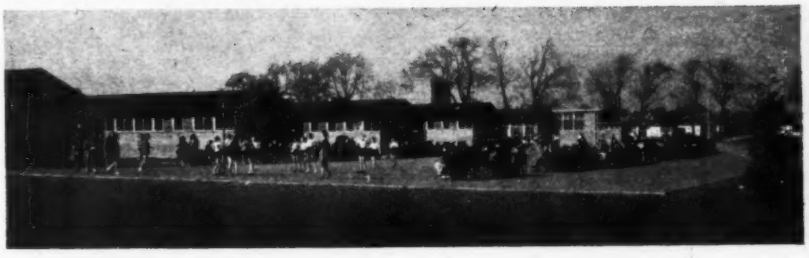
School hours only occupy a comparatively small part of the day and do not cover late afternoons and evenings, and if considerable sums of money have been spent in equipping a Secondary school, that equipment and accommodation should be used to the greatest advantage. This introduces another feature, most noticeable in many Secondary schools, which is the use of parts of the school for adult education and evening classes and the use of the hall by the community for drama, concert and films. In this way the school building ceases to become simply " a place to go to school " but becomes a centre of communal activity and training, which in turn directly affects the layout and plan.

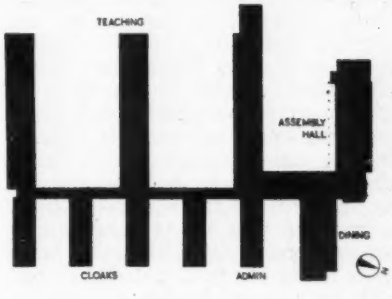
In broad terms, the direct results of the educational system, methods of teaching, and the age group of Secondary education leads to four main architectural characteristics. First, the greatly increased teaching area for each pupil, generally leading to a large part of the school being on two storeys. Secondly, the introduction of an equipped stage with the Assembly Hall a main feature of the plan. Thirdly, the introduction of gymnasia and changing rooms; and finally, a plan pattern that allows for certain sections of the school to be used for purposes other than school use.

From the architect's point of view, the Assembly Hall may be considered as the focal point of the whole building. While an Assembly Hall in Primary schools is essentially a school Hall, that of a Secondary school can be regarded more as a general-purpose dramatic hall that is not only used for school assembly, dramatics and concerts, but also by adult audiences as a theatre or concert hall for both amateur and professional players, as a cinema and as a meeting hall. Many of these halls are of 3,000 sq. ft. and over and are in themselves an architectural problem that bears little relationship to the problems of the rest of the school. Because of the varied dramatic requirements, there is often a tendency to consider the Hall as purely a theatre; at the expense of its use for the school. In my opinion this emphasis on one side of the problem ignores the primary function, that of a school Hall. On the other hand, if it is designed purely as a school Hall, with little more than a glorified platform as a stage, the school, as well as the community, lose a very valuable asset.









Three photographs of Bourne Secondary Modern School, Ruislip, by H. V. Lobb. Top, a typical classroom block. Centre, a view of the dining room block from the play sheds. Bottom, general view of the playground and the cloakroom blocks. Right, layout plan. This was the first secondary school to be completed since the passing of the new Act.

PLAN GROUPING

As the plan is dictated, apart from site conditions, primarily by orientation of classrooms, circulation and acoustic segregation, the grouping of the plan form of a Secondary school

falls naturally into one overall pattern. Wherever possible, circulation should be as dispersed and as short as possible. Undue concentrations of pupils and long, straggling corridors to isolated groups of buildings should be avoided where possible. This leads to a plan pattern that is as compact as the requirements of light, ventilation, orientation and segregation allow.

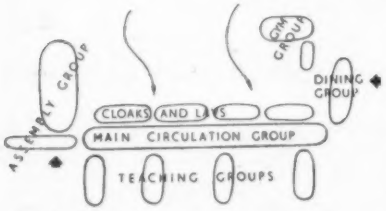


DIAGRAM 1 MAIN PLAN GROUPS

There are, however, two main plan groups where large concentrations of pupils must take place, namely, the Assembly Hall and the Dining Room, all other rooms and groups of rooms being occupied by small groups of pupils. This leads directly to two plan patterns: one, where both the Assembly Hall and Dining Room are planned in one group; and the other, a more dispersed plan, where the Assembly group and the Dining group are at opposite ends of a main circulation core. Subsidiary circulation requirements tend to make the second type of grouping more satisfactory. For example, the Assembly group, when used as a general Hall, should be planned as an independent unit off the main Entrance away from the main school activities, while the Dining group should have an independent service access to the kitchen. In this grouping the main circulation core forms a natural sound barrier between quiet and noisy occupation. (Dia. 2.)

Other main circulation periods are, arriving and leaving, period changes, and break. The arrival and leaving circulation dictates the position of cloakrooms (noisy areas), which should be placed on the noisy side and adjoining the main circulation. The period changes determine the link between teaching rooms and staffrooms (quiet areas) and also the lavatories (noisy areas), some of which should be as close to the change circulation as possible for use both during and between classes. The break circulation determines the position of playgrounds (noisy areas) in relation to teaching

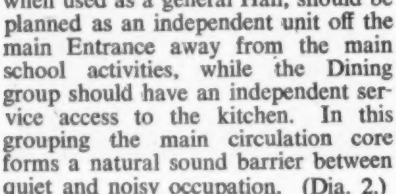


DIAGRAM 2 MAIN PLAN DIVISIONS

accommodation (quiet areas) and lavatories, and should be as dispersed as possible to avoid excessive concentrations of pupils. (Dia. 2.)

Thus circulation divides itself into three types: concentrated longitudinal circulation for Assembly and Dining; dispersed circulation for period changes; and dispersed cross circulation for break, arriving and leaving, while the plan groups are divided into two main areas, for noisy and quiet occupations. (Dia. 3.)

In a more detailed examination of the plan requirements it will be found that with suitable spans an approximately equal "run" in length can be given to the accommodation required for classrooms, practical rooms, and lavatories and cloakrooms. Applying this to the plan form already discussed, there are three main grouping possibilities. First, by using single-storey parallel planning, giving a plan that may run up to a quarter of a mile in length. Secondly, by using single-storey right-angle planning, in which the overall

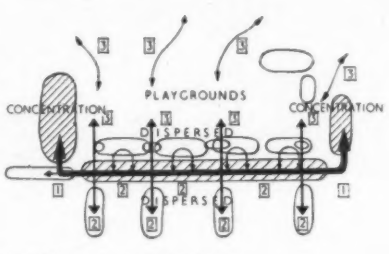


DIAGRAM 3 MAIN CIRCULATION

length of the school is reduced but not the length of the corridors. This plan complicates and extends the length of the break circulation, as the playgrounds have to be away from the main circulation. Thirdly, by adopting a two-storey plan of either the parallel or right-angle type. The second storey can be either over the ground-floor teaching area or over the main circulation, lavatory and cloakroom blocks. (Dia. 4.)

UPPER STOREYS

Many advantages can be gained by planning the second storey over the lavatories and cloakrooms instead of over the teaching areas. If this is done, about 3 ft. of staircase, or vertical circulation, is saved, as the height of the lavatories and cloakrooms need only be 9 ft., as opposed to the 12 ft. which is the general height of the lower floor teaching rooms. Again, the unsupported span of the teaching area is approximately 21 ft. or 25 ft., and if the second floor is over this, the structural framework has to be designed to carry a load of 60 lb. per sq. ft. over these spans, while, on the other hand, if the second floor is over the cloakrooms and lavatories, the maximum unsupported span can be reduced to about 13 ft., so attaining a considerable saving in

DIAGRAM 4: SECOND STOREY OVER CENTRAL CORE

structure. Finally, it is easier to obtain adequate lighting standards, as lavatories and cloakrooms can adequately be lit from one side, provided cross ventilation is introduced, while teaching rooms should have a good source of light on two sides or some form of top lighting. As practical rooms generally require services such as gas and water, it is natural to place these on the first floor over lavatories, so concentrating the drainage and services along or parallel to the central circulation core. (Dia. 4.) While a South-East aspect is important for classrooms, it is not so important for practical rooms, which leaves the direction of the central core free to follow the main trend of the contours.

It will be seen that the requirements of circulation tend towards the plan form illustrated. There are, of course, a great number of variations to the grouping while detailed planning differs in every school. Further, site considerations can alter the whole conception. While the actual areas laid down in the Building Regulations are ample for the type of plan described, such considerations as the relationship of contours to aspect and to access can be extremely restrictive, and, again, in many areas it is impossible to obtain sites of the area required.

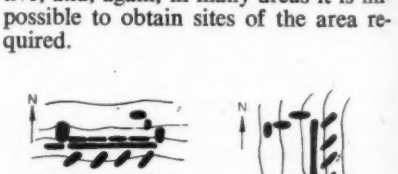


DIAGRAM 5 MAIN CORE ALONG CONTOURS

Diagram 5 illustrates methods by which excavation can be reduced by having the main core of the building following the contours when these run in various directions. In all cases the Assembly Hall group and Dining group can be interchanged, depending on the access. Should there be only one access to the site, it is necessary to adopt the plan where the two groups are at the same end as the main circulation core. Transverse changes in level can be met by introducing steps or ramps at junc-

tions of the main core. In diagram 5c the classroom block runs parallel to the main circulation core. If this is on two storeys, it generally becomes necessary to use the elbow access or similar plan in order to obtain cross ventilation in the lavatories and cloakrooms and at the same time attain the lighting standards in the teaching area.

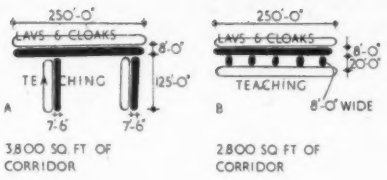


DIAGRAM 6 : CORRIDOR LENGTHS

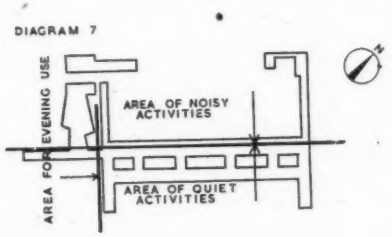
ECONOMICAL PLANNING

If the educational programme is to be achieved, it is essential that the greatest economy in plan and structure should be made. The areas laid down in the Building Regulations cannot be reduced, but a saving can be gained in the planning of corridors which generally represent between 20 per cent. and 30 per cent. of the total plan area. The width of a corridor depends on the volume of circulation and whether or not it is to be used to accommodate lockers, while the lengths depend on economical planning. One of the savings that can be made is by having no corridor on the first floor. For example, a practical room and store is approximately 45 ft. long, and the greatest distance allowed from any staircase is 100 ft. Thus two staircases would be needed for 200 ft. If the corridor width is taken as 7 ft. 6 in., this gives 1,500 sq. ft. of corridor plus two staircases of, say, 250 sq. ft. each, making a total of 2,000 sq. ft. If, on the other hand, a staircase is introduced at every pair of practical rooms, the whole of the corridor space is saved. If a longer run of, say, 400 ft. is required, four staircases would be needed with a total circulation area of 1,000 sq. ft. as opposed to 3,500 sq. ft. for a corridor, making a saving of 2,500 sq. ft.

One of the arguments against elbow access planning is that it is extravagant in the use of space. A comparative analysis shows that this is not always so. Taking a case where lavatories and cloakrooms are planned parallel to the main corridor, three alternatives are possible for teaching rooms. One is the right angle or "finger" plan. In this example there is a total of about 3,800 sq. ft. of corridor. The second alternative is the elbow access plan, which, using the same accommodation, gives a total of approximately only 2,800 sq. ft. of corridor. The third alternative is to have a central corridor with a complicated section for lighting and ventilation. This, using the same accommodation, would give only approximately 2,000 sq. ft. of corridor space (Dia. 6).

It can be seen that if the practical rooms have corridors and are put over the lavatories and cloakrooms, and the classrooms are planned as fingers, a corridor area of approximately 5,800 sq. ft. results. If, on the other hand, staircases are used for the practical rooms and elbow access planning used for the classrooms, only approximately 3,800 sq. ft. of corridor is required. In this way, by careful planning, the approximate average corridor area of about 25 per cent. can be reduced to about 16 per cent.

Planning large secondary schools on restricted sites where it is necessary to go up over two floors presents a special problem of its own. In broad principle, the type of grouping described earlier can still apply, but the main circulation core is divided, a large part being vertical. Diagram 7 puts the cloakrooms and main horizontal circulation on the ground floor and the lavatory and teaching areas in the form of towers, the main disadvantage of this being that the period change circulation is up and down, which tends to limit its use to three floors. Another method is to have cloakrooms, lavatories and circulation on alternate floors to the teaching areas. This can go up to any number of floors. There are, of course, many variations to these types (Dia. 8 and 9), but whatever type of plan is used, the requirements of circulation, light and ventilation must always be carefully considered. A further point in connection with multi-storey buildings is the simplification of structure. In both examples given the structure can be extremely economically designed and to a large degree standardized.



PLAN DETAILS

An analysis of the accommodation of a Secondary school shows that percentage areas are approximately as follows:

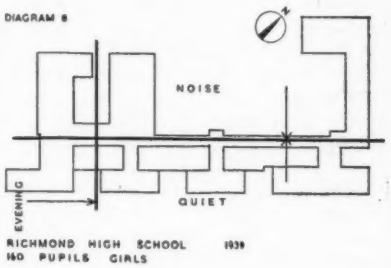
	Area	Cube
	Per cent.	Per cent.
Teaching	27	27
Circulation	23	20
Assembly, Gymnasia and Dining	25	35
Miscellaneous and storage ..	10	7
Lavatories, cloakrooms and changing rooms	15	11

These, of course, are only very average approximations, but are sufficient to show the relative importance of the areas and the relative cubic capacity.

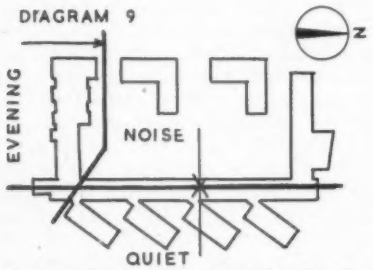
The Assembly Hall has already been mentioned as the most important individual feature in a Secondary school building. The size of the Hall depends on the number of pupils in the school, but there are certain occasions, such as speech days, when considerably more accommodation is required. This can be most easily achieved by either having a movable wall between the Assembly Hall and, say, the Entrance Hall, or by the introduction of a balcony. The first alternative is best for small halls of, say, 1,800 sq. ft. and the second for larger halls. Both methods can be carried out comparatively cheaply, and can considerably increase the capacity of the hall. I see no reason why assembly halls, especially the larger ones, should be rectangular, provided, of course, that the acoustics and structure are carefully considered.

Abroad it is quite a common practice to have halls of different shapes, while in this country the only departures from the rectangle seems to be the fan-shaped hall. Balconies, if used, can be either at the side or at the back, but if they are at the back, one of the main problems is the planning of the projection room.

The stage should be extremely simple, with a plain rectangular proscenium arch and cyclorama. A small balcony on one side is often useful and can be used as an electricians' gallery. The electrical installations should only consist of a number of lighting plugs in suitable positions controlled by a main switch battery. General lighting should be controlled either from the main entrance, from the stage or from the Projection room. It is unnecessary to have any complicated stage lighting equipment. Sky space over the stage is also unnecessary, and a flat ceiling with battens for skies and scenery is perfectly adequate. Three curtain tracks are useful, one for the proscenium curtain, one about 1 ft. 3 in. back from the proscenium and one just in front of the cyclorama. A small fore stage of about 4 to 5 ft. wide is an advantage. Adequate storage space and small workshop, two or three green rooms and lavatories should form part of the stage group. If Music practise rooms are required, they should also be placed in the stage group, as they



can be used as additional green rooms if necessary. The stage should have a separate entrance, and it is often a great advantage to have this adjoining the general cloakroom or changing room as they can be used as changing rooms for the actors.



PROJECT FOR HOME COUNTY E.A. 640 PUPILS. MIXED

The Hall should be planned directly off the main entrance and have either special cloakrooms and lavatories or some part of the school lavatories and cloakrooms cut off and made available for evening performances, while bye-laws in respect of escape, fire, etc., should always be complied with, so that the Hall can be used for the general public.

TEACHING AREAS

Areas of teaching accommodation are given in detail in the Building Regulations and the accompanying Memorandum, and it is interesting to note that different areas of practical accommodation are given to schools specializing in different subjects. For example, a Three Form Entry school, where a general education is provided requires practical accommodation of 5,400 sq. ft., and one where particular commercial education is included requires 4,700 sq. ft., while a school where a particular technical education is included required 6,900 or 8,100 sq. ft. Details of these areas are given in the Memorandum, which cannot be made to agree with the Regulations. For example, where a general education for one sex in a Three Form Entry school up to 16 years of age is provided, the Regulations ask for 5,400 sq. ft., the Memorandum only suggesting accommodation of 2,700 sq. ft. The Regulations and Memorandum lay down and suggest ten different areas for teaching accommodation — 230, 450, 480, 540, 600, 720, 850, 900, 960 and 1,200 sq. ft. These areas have presumably been given as a result of teaching experience, but from the architect's angle they present innumerable difficulties. Whether or not prefabrication is used, the architect today generally accepts some form of frame structure as the most economical form of construction, and this, for reasons of economy, invariably leads to some measure of standardization in span and spacing of the structure elements. It is virtually impossible to arrive at the most economical floor areas, *i.e.*, those given in the Regulations and Memorandum, while at the same time, using the most economical and simple form of structure.

There seems no good reason for selecting, say, 450 sq. ft. and 480 sq. ft. as two room sizes. The 480 sq. ft. size is determined by the area required for 30 pupils sitting at 30 standard desks in a classroom, and can be accepted as a basic room area, but the 450 sq. ft. area is an advanced laboratory, and it seems reasonable to suggest that this should be standardized at 480 sq. ft., since it only involves approximately 1 ft. on the length or breadth of the room. Invariably in practice the room areas are finally adjusted within these limits to the structural dimensions adopted. Again, the 600 sq. ft. room only occurs once in the whole range of Secondary schools —that of a Library in the One Form Entry schools. Admittedly this area forms one of the chief classrooms in Primary schools, but as the structural requirements of Secondary schools are generally quite different from Primary schools, it greatly complicates the Architect's work to have to consider such an isolated example.

When considering a simplified structure, the number of room sizes must be reduced and modified so that they are based on some module of planning. For example, if the 480 sq. ft. room is made up of two bays of, say, 20 ft., with a 24 ft. span the preparation room could be 240 sq. ft. or one bay. The room areas for Secondary schools that can be adjusted within reason to fit a standard bay and span are 230, 480, 720, 850, 960 and 1,200 sq. ft., and this selection should not in any way hamper the educational requirements.

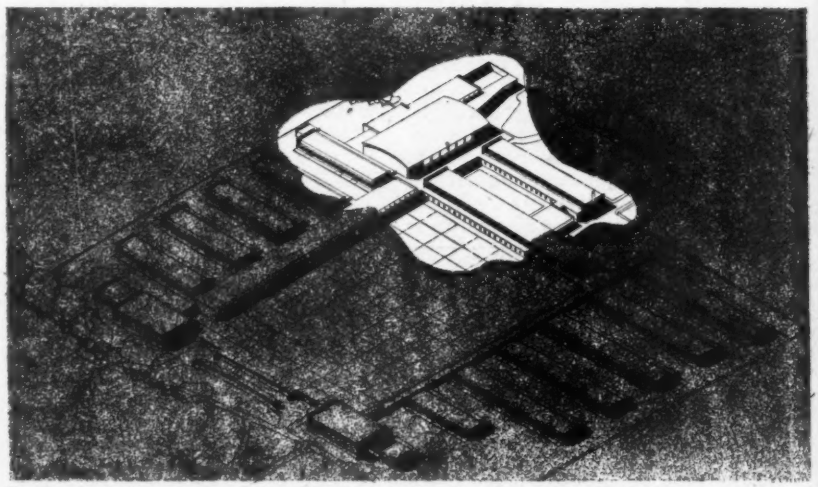
The total storage in a school should approximate 15 per cent. of the teaching area. One of the commonest forms of planning the storage directly relating to the teaching area is between classrooms. This, to my mind, is an extravagant use of space, as the height is in the neighbourhood of 11 ft., the upper 4 ft. being useless space. Thus, if the area required for the store is, say, 100 sq. ft., the cube is 1,100 cu. ft. If, on the other hand, the store is placed in the corridor area, which is approximately 7 ft. 6 in. high, the area can remain the same, but the cube is reduced to 750 cu. ft. As a saving in cube is as important as a saving in area, designing for economy in section is as important as designing for economical plans.

MAIN EFFECTS OF LEGISLATION

As a result of the 1944 Act the accommodation area of Secondary schools has been increased by approximately 49 per cent., and not only has the number of pupils been increased, but the actual area per child has risen. For example, the accommodation suggested in Pamphlet 107, published in 1936, gave about 20 sq. ft. per pupil for teaching areas, and this is now about 30 sq. ft. Whereas the total accommodation was approximately 65 sq. ft. per pupil, it is now well over 100 sq. ft.

Finally, there is the controversy on the new standards of daylight. In Pamphlet 107 the suggested minimum was 0.5 per cent. daylight factor. This has now been raised to a minimum of 2 per cent., with a recommended minimum of 5 per cent. Arguments have been put forward that this increase is unnecessary and grossly extravagant in plan and structure. These criticisms do not bear examination, and the new lighting standards may be considered as reasonable.

As yet there has been no valid objection to the old accepted standard of artificial lighting of 10 ft. candles on the working plane, which is also the standard laid down in the new Building Regulations. If this intensity of



Proposed six-form-entry co-educational comprehensive secondary school for 900 *pupils at Pinner, Middlesex, by C. G. Stillman and H. W. Burchett. The area in white comprises a central courtyard flanked by two gymnasia blocks, with cloakrooms on either side and the music and assembly blocks at the far end.*

illumination can be accepted as reasonable, the 2 per cent. daylight factor must also be accepted. As the average outside daylight intensity is approximately 500 foot candles, a 2 per cent. daylight factor gives 10 foot candles, whereas a 0.5 per cent. daylight factor only gives 2.5 foot candles. Further, W. D. Seymour, in his book, *The Heating, Ventilation and Lighting of School Buildings*, gives a graph showing the speed of reading in relation to the intensity of light which shows that the visual perception increases rapidly up to, and begins to flatten out at, about 10 foot candles. Arguments have been put forward that additional window areas are required, and there is a consequential loss of heat. This is not necessarily so, as all that is required is a redistribution of the normal window area. For example, in a traditional classroom the height of the main window is approximately 8 ft., with ventilators over the corridor of approximately 2 ft., and this gives about 10 ft. of window in section and a daylight factor of 0.5 per cent. By reducing the height of the main window to, say, 5 ft. 6 in. and introducing roof lights of, say, 3 ft. 6 in. and ventilators of, say, 1 ft. 6 in., the length of the window in the section remains at 10 ft., while the minimum daylight factor is increased to over 5 per cent., with little or no increase in cost. Further, this redistribution of window area tends to reduce contrasts, and the variation in intensity is reduced.

Ideal lighting can best be attained by controlled, screened top lighting with no vision windows, but this is bad psychologically, gives no focal contrast, and tends to cause muscular fatigue to the eye. Further, for good lighting the tone values of the decoration should be as light and as even as possible, but this tends to monotony. Finally, there is the conflict between bright, even light in a room decorated in light tones, which is mentally stimulating, and the low, even intensity in a room decorated in darker tones, which is mentally restful. These conflicting requirements can be, to a large extent, overcome as follows: First, all direct sun and sky should be screened where it comes within an angle of 50 deg. from the eye to the angle of vision both horizontally and vertically. Secondly, all surfaces capable of reflecting either sun or the direct sky exposure into the line of vision should be avoided either by tilting the surface or by using rough, non-reflective surfaces. Thirdly, window areas should be distributed so that an even distribution of light is obtained, but which has sufficient direction to give form to three-dimensional objects.

These provisions tend to increase the cost, but this is brought about not by increasing the minimum daylight factor to 2 per cent., but by distributing the light to take more advantage of the light obtained.

SCHOOL TYPES

4. ADULT EDUCATION: Requirements

Surveyed by H. V. Lobb and Lucy Crocker

A survey of the educational system would be incomplete without a reference to what the Butler Act calls "Further Education." But this must necessarily be in far less precise terms than the foregoing surveys of the earlier educational stages, since, as the authors of this article point out, both the theory of adult education and its requirements have yet to be thought out. They have, therefore, confined themselves to giving their own views in broad terms of how the problem should be approached and of the kind of buildings that architects may eventually be called upon to design.

The Village College at Bottisham, Cambridgeshire, by S. E. Urwin. One of a series of pre-war buildings representing a pioneer attempt to solve the problems of adult education.

IT may be said without challenge that in this country adult education is in a completely rudimentary state and for that reason it affords to the architect a special opportunity. Very few examples exist, and they are regarded by architects and educationists alike as experimental. This article is therefore not a summary of what has been done, hardly even of what could be done in terms of the buildings. It is simply an examination of some of the principles that should animate adult education—what might be described as both the architects' and the educationists' ruminative phase.

To build for adult education the architect must be himself an educated and educable man in the fullest and richest sense of the word. Then he must ask himself: What is *adult* education? No one doubts his ability to provide the buildings once he has answered that question. And it is specially urgent that he should answer it at the present time when increasingly architects are being employed by local authorities and government departments, and by corporations and influential bodies of all kinds. He can, in his professional capacity and providing his grasp of principles is adequate, sustain the ordinary man, who is in great danger of being crushed by the various organizations that have been called into being ostensibly for his interest and development.

THE EDUCATIONAL PROBLEM

What then is an adult, and what to an adult is education? Clearly we must exclude all full-time students; they are not usually adult and full-time student implies preparation: adult implies fully grown—mature—in full possession of his faculties—self-sustaining—reproductive. The reproductive unit of society is not man or woman, but the mated pair—the family. Our problem therefore is the education of the family, man and woman, and all appertaining thereto. All the subdivisions—child education, technical, etc., are parts of that greater whole. No great effort has been made to recognize the important distinction between the adolescent and the adult, or to examine what the term "adult" implies in human living. It is roughly assumed to cover man and woman as distinct entities and it is vaguely recognized that some form of social activity must be included in their "education." Unfortunately there are few places where men and women can gather in the circumstances which will enable the

educator to discover what is wanted for adult education. And if the educator doesn't know, how can the architect?

ADULT REQUIREMENTS

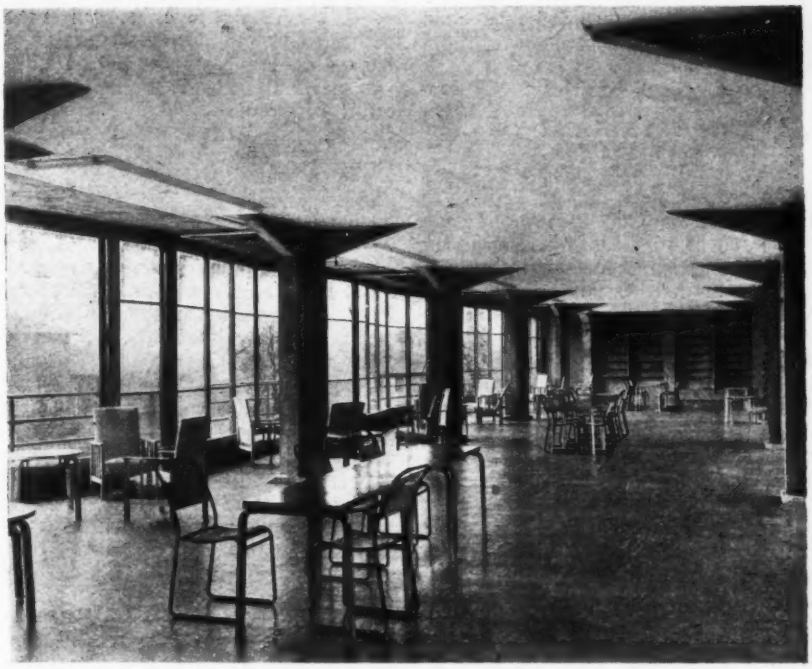
One of the drawbacks of urban life is that it tends to deprive the man in the street of the very elements and experiences that enable him to contemplate life. Birth and death are whisked away into hospital, the children's education is a closed book, the streets keep the wind off and hide the wide expanse of sky and stars, the bus and underground protect him from rain. The underlying assumption of the urban mind is that the universe exists for man. Let us then, once and for all dismiss the idea that adult education is primarily instruction or can be confined to the provision of hobbies or training in technical efficiency or physical exercise, much of which is no more than a continuation of adolescent interest or an attempt to make up for what is often mistakenly regarded as the lost opportunities of youth.

The class in literature or pottery may lead further into the depths of its own specialism but is available in such restricted circumstances that the associated social field is far too meagre. Everyone is familiar with the Evening Institute and Technical school and "club" and with the various types of community centre. Most of these provide for the already interested, seeking knowledge or training of a predetermined nature, or enrolling their members according to age, sex, class or interest, and never, therefore, providing the broad inclusive basis of membership that will ultimately allow for the growth of a variety of interests and contacts.

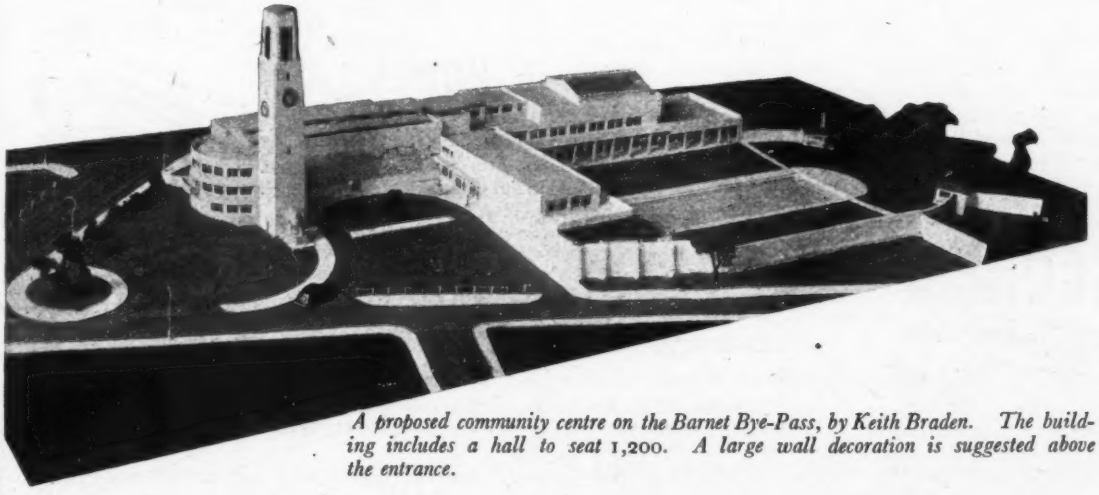
THE FAMILY UNIT

In many ways a more important contribution to adult education is one that affects the actual distribution of families in any area. Here the architect has been more fortunate than the educator. Dealing with houses for families he has run up against some of the essential biological facts that are fundamental to any planning and construction. So far he has only touched the fringe, but he shows that to some degree he has his fingers on the pulse. Perhaps the most important need is the encouragement of a sense of community among urban dwellers, an element which had largely been lost in the haphazard building of the past half century. The Cambridgeshire Village Colleges are a very real and outstanding attempt to fill the rural gap. But they provide for dual purposes. The buildings are schools by day, community centres or technical schools at night. There is only incidentally any continuity of membership between day and evening activities. What is needed is membership based on a common factor (as in the case of the Peckham Health Centre) so that child or adult is drawn to the building in the ordinary concerns of everyday life.

It is a topsy-turvy world where adult education is carried on in a building primarily designed for children. Surely in its proper perspective the school would find its niche in a building de-



A recreation room at the Peckham Health Centre. It can be used for a variety of purposes and has that flexibility which adult educational buildings are likely to require.



A proposed community centre on the Barnet Bye-Pass, by Keith Braden. The building includes a hall to seat 1,200. A large wall decoration is suggested above the entrance.

signed for adult education—the child loves to move in the adult world and is most richly educated when it does.

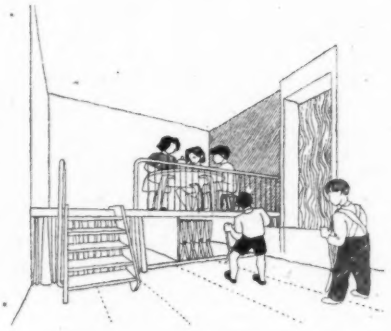
THE ARCHITECTURAL PROBLEM

For the architect the problem is to construct a building where all may come and move freely, where they can observe the actions of their neighbours and where there is some opportunity for contact with the significant stages of human life. Such a centre, encouraging action, exhibiting life in all its developmental phases and providing facilities for observation, will be an exciting new kind of building, giving the architect special opportunities. Once these conditions have been satisfied much else will flow and what is now popularly regarded as educational or vocational will develop. The carpenter, or the billiards player, the swimmer or the French student, will all find their place. Nowhere has this been done except in the Peckham Health Centre, where there is an open forum, broken where necessary by glass screens. The building must be, in the first place, *for the family*. On that basis, covering all ages and all sexes, dedicated to the pursuit of health, it has so broad and organic a base that it will inevitably provide the material for adult education. Within it even the children's school can find its place—a *part* of the whole.

FLEXIBLE PLANNING

In such buildings used by day and night there are certain practical problems whose technical solution should engage a lively interest. The use of floor materials that can be speedily cleaned by mechanical methods, stackable and easily transportable chairs, tables, etc., steel trolley equipment consisting of shelving and cupboards that can instantly be put into position. It is not difficult to visualize a room used from 3-5 as a library that from 8-11 is a ballroom—nor need either appear makeshift. In heating the building it must be possible so to control it that any part may be excluded, or put to maximum warmth with ease and speed at any time. Recent tremendous technical developments have given him the possibility of great flexibility and manœuvrability, varying from day to day and place to place, or hour to hour; screening can be transparent or opaque; sound can be transmitted or restricted; air can be warmed or cooled, circulated or stationary, humid or dry, and records are no longer confined to the written word, they can be visual or in sound.

These technical developments permit a fluidity more characteristic of the organic world than the inorganic, and it is in so close a fusion between man moving towards his maturity, and a building providing for all the possibilities of his development, that true education will be found.



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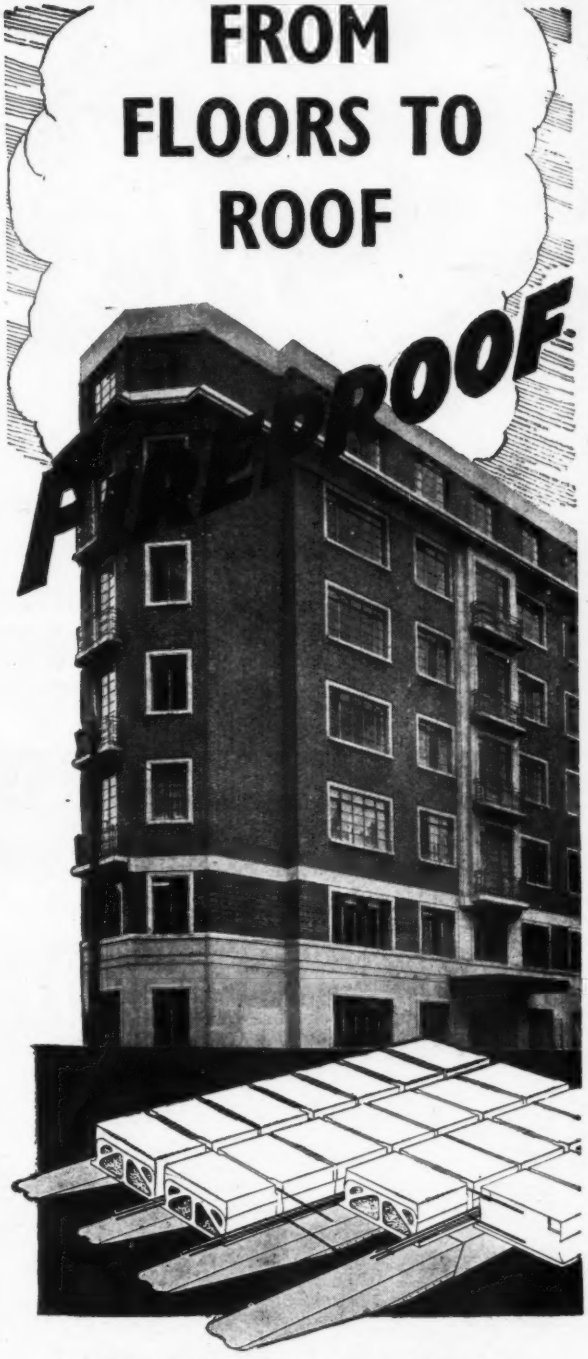

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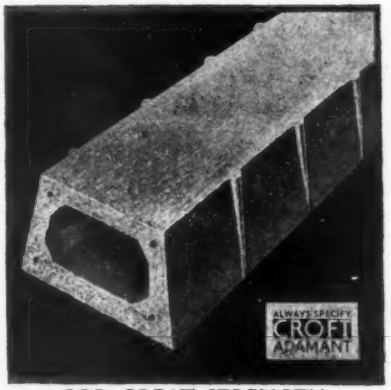

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CLASSIFIED ADVERTISEMENTS

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 given above.

None of the vacancies in these columns relates to a man between the age of 18 and 50, inclusive, or a woman between the age of 18 and 40, inclusive, unless he or she is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

Public and Official Announcements

6 lines or under, 10s.; each additional line, 1s. 6d.

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: 75, EATON PLACE, LONDON, S.W.1. TEL. SLOANE 5615. 991

LONDON COUNTY COUNCIL.
HOUSING AND VALUATION DEPARTMENT.
ARCHITECTURAL ASSISTANTS. Applications are invited for positions of Architectural Assistant, at salaries of up to £580 a year. Commencing salaries will be determined according to qualifications and experience, and qualified candidates will be eligible for appointment to the permanent staff of the Department on the occurrence of vacancies. Engagement will involve Superannuation contributions at the rate of 6 per cent. of salary.

Successful candidates will be required to undertake the design, layout, and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed foolscap envelope required). Canvassing disqualifies. (870) 1032

PETERLEE DEVELOPMENT CORPORATION.
A team of enthusiastic Architects is to be built up for immediate work on the design of Peterlee, the new miners' town in Co. Durham. Architects, with suitable qualifications and outlook, are needed to participate in the construction of the most modern town in the world. The following posts in the Architect's Department are to be filled :—

SENIOR ARCHITECTS. Salary, £1,000-£1,250 p.a.

Should have wide general experience in modern design, and knowledge of office organization and site supervision. They will be in charge of three different fields of work; organization and research, planning, and housing and public buildings.

ARCHITECTS. Salary, £750-£1,000 p.a.

Must be experienced, capable of taking charge of small groups, each working on a specific problem.

ASSISTANT ARCHITECTS. Salary, £600-£750 p.a.

JUNIOR ASSISTANT ARCHITECTS. Salary, £300-£450 p.a.

Applications, giving full particulars of experience, should be addressed to the Chief Architect, B. Lubetkin, Peterlee Development Corporation, c/o Council Offices, Seaham, Co. Durham. 785

WREXHAM RURAL DISTRICT COUNCIL.
APPOINTMENT OF QUANTITY SURVEYOR.
Applications are invited for the appointment of a Quantity Surveyor, in the Surveyor's Department of the Wrexham Rural District Council, at a salary in accordance with Grade V (Consolidated) of the A.P.T. Division of the National Scales of Salaries. The appointment will be subject to the provisions of the National Scheme of Conditions of Service and the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination. The appointment will be terminable by one month's notice on either side.

Applicants must be experienced in the preparation of Bills of Quantities from plans, estimates, specifications and in measuring up for interim and final certificates and settling final accounts. Applicants must be Associates of the Royal Institution of Chartered Surveyors (Quantities Section).

Applications, giving particulars of age, qualifications and experience, and accompanied by copies of three recent testimonials, should be delivered to the undersigned in sealed envelopes, endorsed "Quantity Surveyor," not later than Wednesday, the 26th May, 1948.

Canvassing, either directly or indirectly, will be a disqualification, and relationship to any member or senior officer of the Council must be disclosed.

The Council will if required make arrangements to provide housing accommodation for the successful applicant.

TREVOR L. WILLIAMS,
Clerk and Solicitor.
Imperial Buildings, Regent Street, Wrexham.
7th May, 1948. 873

DEVON COUNTY COUNCIL.
Applications are invited for the following appointments, on the permanent establishment of the County Architect's Department, at consolidated salaries, in accordance with the grades stated, of, and subject to, the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional and Technical Services.

(*a*) ONE ASSISTANT ARCHITECT. A.P.T., Grade V. Commencing salary £520 p.a., rising by three annual increments (£15×£15×£20) to £570 p.a.

(*b*) TWO ASSISTANT ARCHITECTS. A.P.T., Grade III. Commencing salary £450 p.a., rising by three annual increments (£15×£15×£15) to £495 p.a.

(*c*) ONE ARCHITECTURAL ASSISTANT. A.P.T., Grade I. Commencing salary £390 p.a., rising by three annual increments (£15×£15×£15) to £435 p.a.

Candidates for (*a*) must be Associates of the Royal Institute of British Architects and possess a sound experience in the design and maintenance of all types of buildings carried out by a large Local Authority; they must be conversant with the Building Regulations of the 1944 Education Act and the Regulations for Police Buildings and Public Health Buildings; and possess organizing ability and experience in the management of building contracts.

For (*b*) candidates must also be qualified, but consideration will be given to those who are preparing for the Associateship Examination of the Royal Institute of British Architects. Good general experience is necessary in the preparation of drawings and specifications for all types of new buildings, adaptations, etc.

For (*c*) candidates should have a good training in architecture, and preference will be given to those who have passed the Intermediate examination of the Royal Institute of British Architects.

Applications, stating age, qualifications and experience, accompanied by not more than three recent testimonials, should be sent to the County Architect, 97, Heavitree Road, Exeter, not later than Monday, the 7th June, 1948. No forms of application will be issued.

The attention of candidates is drawn to the fact that the County Council cannot at present assist successful candidates to obtain housing accommodation owing to the serious shortage of such in the district.

The appointments will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937.

The successful candidates will be required to pass a medical examination

H. A. DAVIS,
Clerk of the County Council.
The Castle, Exeter.
3rd May, 1948. 82

Applications are invited for the following appointments on the permanent staff :—
COUNTY OF LINCOLN—PARTS OF LINDSEY.
COUNTY ARCHITECT'S DEPARTMENT.
PRINCIPAL ASSISTANT ARCHITECT. Grade VIII, £685 per annum, rising by annual increments of £25 to £760.

CHIEF ASSISTANT ARCHITECT (EDUCATION). Grade VII, £635 per annum, rising by £25 to £710.

Candidates must have passed the qualifying examination for A.R.I.B.A., and be proficient in design and have had experience in control of staff. Applicants must have a knowledge of Local Government Administration and Procedure and be able to drive a car, which must be provided by the person appointed and for which an allowance on the County Council's scale will be paid.

In the case of the Chief Assistant, preference will be given to candidates having had considerable experience in the design of modern schools.

Applications, stating age, training, experience and qualifications, together with copies of two recent testimonials, and the names of two persons to whom reference can be made, should be sent to A. R. Clark, A.R.I.B.A., A.M.T.P.I., County Architect, County Offices, Lincoln, not later than Monday, 24th May, 1948. 822

LANCASHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for the following appointment on the permanent staff :—
SENIOR ARCHITECT (Health Branch). Salary £810—£50—£910 per annum.

Candidates should be members of the Royal Institute of British Architects, and have had experience in administration and the planning and design of buildings for Health Committee purposes.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937; to a satisfactory medical examination; and to the termination of each appointment by one month's notice in writing on either side.

Applications should be made on the forms to be obtained from G. Noel Hill, Esq., F.R.I.B.A., M.T.P.I., County Architect, County Offices, Preston, to whom they should be returned, accompanied by copies of three recent testimonials, to arrive not later than Monday, 31st May, 1948.

R. H. ADCOCK,
Clerk of the County Council.
County Offices, Preston.
7th May, 1948. 862

BOROUGH OF BEXLEY.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
ARCHITECTS' SECTION.
Applications are invited for the undermentioned appointments :—

(1) CHIEF ARCHITECT (Permanent). Salary grade, A.P.T., VIII, of the National Scales of Salaries. £685×£25—£760, plus London weighting.

(2) QUANTITY SURVEYOR (Temporary). Salary grade, A.P.T., V, of the National Scales of Salaries. £520×£15×£15×£20—£570, plus London weighting.

Forms of application, with conditions of appointment, may be obtained from the Borough Engineer and Surveyor, Council Offices, Bexleyheath, to whom completed applications must be returned by 31st May, 1948. Canvassing, directly or indirectly, will disqualify.

W. WOODWARD,
Town Clerk.
Council Offices, Bexleyheath, Kent. 843

COUNTY BOROUGH OF DERBY.
BOROUGH ARCHITECT'S DEPARTMENT.
Applications are invited for the following appointments, on the permanent staff, in accordance with the National Scale of Salaries :—

(*a*) ONE ASSISTANT ARCHITECT. Grade VI, A.P. & T. Division. Salary £595-£660 (consolidated).

Applicants should be Associate R.I.B.A., with a good knowledge of work undertaken by a Local Authority, and preferably with experience in housing.

(*b*) ONE ASSISTANT ARCHITECT. Grade IV, A.P. & T. Division. Salary £480-£525 (consolidated).

Applicants should have passed the Intermediate examination of the R.I.B.A., and have had good architectural experience.

(*c*) TWO SENIOR QUANTITY SURVEYORS. Grade VI, A.P. & T. Division. Salary £595-£660 (consolidated).

Applicants should be Chartered Quantity Surveyors or prospective, and have had experience in the preparation of quantities, specifications, site measuring, estimates and final accounts.

The appointments will be subject to one month's notice in writing on either side, and to the terms of the National Joint Council's Scheme of Conditions of Service, and the provisions of the Local Government Superannuation Act, 1937, and the successful applicants will be required to pass a medical examination.

Forms of application may be obtained from Thos. W. East, F.R.I.B.A., Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with copies of three testimonials, to arrive not later than Tuesday, 25th May, 1948.

Canvassing, directly or indirectly, will be a disqualification.

C. ASHTON,
Town Clerk.
Market Place, Derby. 817

COUNTY BOROUGH OF WEST HAM.
Applications are invited for TWO ARCHITECTURAL ASSISTANTS, Grade II (£420-£465, plus £20 L.A.).

Full particulars of duties, terms of appointment, and application form (which must be used), may be obtained from Borough Architect and Planning Officer, 100, West Ham Lane, Stratford, E.15, to be returned by 28th May, 1948. 861

QUANTITY SURVEYORS, qualified, are urgently required by several Government Departments for non-established posts, at salaries ranging from £400 p.a. upwards, according to qualifications and experience. Applications from unqualified men will be considered providing they have had at least 5 years' practical experience of quantity surveying.

Apply Ministry of Labour and National Service, Technical and Scientific Register, Room 377, York House, Kingsway, London, W.C.2, quoting Ref. J.Q.S. 22.1A37(51) 880

LONDON COUNTY COUNCIL.
VACANCIES FOR PLANNING STAFF IN THE ARCHITECT'S DEPARTMENT.
Applications are invited for a number of temporary positions in the following grades :—

PLANNING OFFICER. Grade II, £700 to £840 a year.

PLANNING OFFICER. Grade III, £550 to £700 a year.

TECHNICAL ASSISTANT. 55s. per week to £580 a year.

Commencing rate of pay, except for Grade II, according to qualifications and experience. Opportunities for competing, on merit, for permanent appointment and higher grades on the occurrence of vacancies. Successful candidates will be superannuable.

The planning work involved includes research assistance in preparation of the Development Plan and Reconstruction Areas, and work on interim development applications.

Knowledge of current town planning legislation is desirable, and candidates for Grade II and Grade III positions should possess Architectural, Surveying or Town Planning qualifications.

Application forms from Architect to the Council (P), County Hall, Westminster, S.E.1 (enclosing stamped addressed foolscap envelope). Canvassing disqualifies. (1222) 887

SCOTTISH SPECIAL HOUSING ASSOCIATION, LIMITED, invite applications for the appointment of QUANTITY SURVEYOR AND ESTIMATOR, at a salary of £1,000×£30—£1,200 per annum. No bonus will be payable in addition. Candidates must (1) be not less than 35 years of age; (2) be a Member of Royal Institution of Chartered Surveyors; (3) have extensive experience in the control and direction of staff, and be capable of undertaking all stages of work in connection with housing schemes developed by Direct Labour or Contract, including preparation of estimates of cost of building work; (4) possess administrative and organizing ability, and be familiar with Local Authority administration. The Association have adopted Part I of the Local Government Superannuation (Scotland) Act, 1937, and the successful applicant will be required to pass a medical examination. Forms of application may be obtained from the Secretary of the Association, 15/21, Palmerston Place, Edinburgh, and all applications must be in the hands of the Secretary within 14 days from the appearance of this advertisement. Canvassing will be a disqualification. 879

NEWMARKET URBAN DISTRICT COUNCIL.
TEMPORARY ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the Architect's Department.

Salary, Grade I, £390, rising by annual increments of £15 to £435 per annum.

Preference will be given to candidates who have passed the R.I.B.A., Intermediate examination, and who have had experience of housing work. The Council are prepared to offer the successful applicant, if married, limited housing accommodation in the district.

The appointment is subject to the National Joint Council Scheme of Conditions of Service.

Applications, endorsed "Architectural Assistant," stating age, qualifications and experience, past and present appointments, accompanied by copies of two recent testimonials, must be submitted to the undersigned not later than Monday, 31st May, 1948.

JOHN CRABB,
Clerk of the Council.

Severals House, Newmarket, Suffolk.
10th May, 1948. 861

CAMBRIDGESHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) QUANTITY SURVEYOR (Temporary). Grade VII, A.P.T. Division. Consolidated salary, £635-£710.

(*b*) ASSISTANT ARCHITECT (Temporary). Grade VI, A.P.T., Division. Consolidated salary, £595-£660.

(*c*) ENGINEERING ASSISTANT (Temporary). Grade VI, A.P.T. Division. Consolidated salary, £595-£660.

Candidates for (*a*) should have passed at least the Intermediate examination of the Royal Institute of Chartered Surveyors (Quantities Sub-Division), and be capable of writing specifications, preparing detailed estimates, taking-off quantities, abstracting and billing, and checking and agreeing final accounts.

Candidates for (*b*) should be fully qualified Architects and Members of the Royal Institute of British Architects, and have had experience in design and construction of all types of public buildings.

Candidates for (*c*) should be fully qualified Heating, Ventilating and Electrical Engineers, and have had experience in the preparation of schemes, including writing specifications and preparing estimates of costs.

Applications, stating age, qualifications and experience, accompanied by one recent testimonial, and the names and addresses of two Referees, should be sent to the Clerk of the County Council, Shire Hall, Cambridge, not later than Thursday, the 27th May, 1948.

The appointments to be subject to one month's notice on either side, and the selected candidates will be required to pass a medical examination.

CHARLES PHYTHIAN,
Clerk of the County Council.

Shire Hall, Cambridge.
1st May, 1948. 818

CAMBRIDGESHIRE EDUCATION COMMITTEE.
CAMBRIDGESHIRE TECHNICAL COLLEGE AND SCHOOL OF ART.

Applications are invited for the post of LECTURER IN ARCHITECTURE in the Building Department, required September, 1948. Candidates, who must be Associates of the Royal Institute of British Architects, and should possess a degree or diploma of a recognized School of Architecture, should be able to teach two or more of the following:—Architectural Design, Architectural Drawing, History of Architecture, Builders' Quantities, Reinforced Concrete.

Salary will be according to the Burnham (Technical) Scale for Assistants. Allowance will be made for professional or industrial experience where applicable. Further particulars and application forms, which should be returned within 14 days of the appearance of this advertisement, will be forwarded on receipt of a stamped, addressed foolscap envelope by the Chief Education Officer (T), Shire Hall, Cambridge. First enquiry should be endorsed "Architecture." 874

BOROUGH OF EDMONTON.
ENGINEERING ASSISTANT (MAIN DRAINAGE).

The Council require an Engineering Assistant, with special experience in the preparation of large schemes of Main Drainage. The appointment may be for 4 or 5 years, subject to satisfactory service.

The salary is fixed at £610 per annum, and the minimum qualification is Associate Member of the Institution of Civil Engineers or Institution of Municipal Engineers.

Further particulars, forms of application and conditions of service from the undersigned, to whom completed applications should be returned as quickly as possible.

H. BACKHOUSE,
Town Clerk.

Town Hall, Edmonton, N.9.
28th April, 1948. 791

WANDSWORTH BOROUGH COUNCIL.
SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the established appointment of Senior Architectural Assistant, in the Borough Architect's Department, at a salary in accordance with Grade A.P.T., VI, *viz.*, £615-£680 per annum inclusive.

Candidates should have had good professional training, experience with a Local Authority in housing schemes, the layout of estates, general architectural design, and the control of staff. Preference will be given to Associates of the R.I.B.A.

Forms of application may be obtained from Mr. W. H. Beesley, A.R.I.B.A., F.R.I.C.S., Borough Architect, and must be returned to the undersigned not later than 9th June, 1948.

R. H. JERMAN,
Town Clerk.

Municipal Buildings, Wandsworth, S.W.18.
7th May, 1948. 871

GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF HEALTH AND LOCAL GOVERNMENT.
VACANCIES FOR ARCHITECTS AND PLANNING ASSISTANTS.

Applications are invited for the above posts.

The appointments, which are for Housing and Planning work, will be temporary, but so far as can be foreseen will last for several years.

Remuneration: Successful candidates will be remunerated within one of the following salary ranges:—

Housing: Grade A, £700 to £900,
Planning: Grade B, £500 to £750,

and the commencing salary within these ranges will be fixed according to qualifications and experience. A lower salary than £500 may be fixed in the case of candidates for Grade B appointments who are under 26 years of age.

Qualifications: Housing Appointments.—Candidates must be Registered Architects by examination, and are required to have experience in up-to-date house design or layout, and some aptitude for research into comparative standards of design and construction.

Planning Appointments: These are open to architects, engineers and surveyors. Candidates must possess a recognized qualification in town planning or have good experience in town planning work, and must also be either Registered Architects by examination or Corporate Members of the Institution of Civil Engineers or Professional Associates of the Royal Institution of Chartered Surveyors.

Preference will be given to suitably qualified candidates who served with H.M. Forces during the 1914-18 or 1939-45 Wars, providing the Ministry is satisfied that such candidates can or within a reasonable time will be able to discharge the duties efficiently.

Closing Date for Receipt of Applications: Applications, giving date of birth, full details of training and qualifications, and accompanied by copies of two recent testimonials, must reach the Assistant Secretary (Establishments), Ministry of Finance, Stormont, Belfast, on or before 11th June, 1948. 892

COUNTY BOROUGH OF DUDLEY.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following Architectural appointments:—

(*a*) CHIEF ARCHITECTURAL ASSISTANT. Grade VI, £595-£660.

(*b*) TWO ARCHITECTURAL ASSISTANTS. Grade IV, £480-£525.

The appointments are superannuable, and the successful applicants will be required to pass a medical examination.

Applicants for post (*a*) must be members of the Royal Institute of British Architects, and possess good experience in the control of staff, organization of work, and have a sound knowledge of modern design and construction.

Applicants for post (*b*) must have passed the Intermediate examination of R.I.B.A., preference being given to those who have passed the Final. Previous experience in a Municipal office will be an advantage.

Applications, stating age, qualifications, and experience, and giving names of two persons to whom reference can be made, must be delivered to the undersigned not later than Friday, 11th June, 1948.

A. V. WILLIAMS,
Town Clerk.

The Council House, Dudley.
11th May, 1948. 883

COUNTY BOROUGH OF BRIGHTON.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Appointment of:—

(*a*) MAINTENANCE SURVEYOR.

(*b*) HOUSING MAINTENANCE SUPERINTENDENT.

Applications are invited for the following appointments on the permanent staff of the Department:—

(*a*) Maintenance Surveyor. A.P.T. Division, Grade VII, £635-£710, plus a fixed car allowance of £96 per annum.

(*b*) Housing Maintenance Superintendent. A.P.T. Division, Grade III, £450-£495.

Appointment (*a*). Candidates for this appointment must have had considerable experience of building surveying and the administrative duties connected with large building and maintenance works. They must also be experienced in the preparation of specifications, bills of quantities, estimating and the costing of direct labour building works. The successful candidates will be responsible for the administration of the Department's building maintenance organization for public buildings and houses, and will have under him both a Works Superintendent and a Housing Maintenance Superintendent to control the outside work.

Appointment (*b*). Candidates for this appointment must have had considerable experience of building work, with special reference to housing maintenance. The person appointed will be responsible for the direct supervision and execution of all housing maintenance work.

The appointments are subject to the Conditions of Service and the Salary Scale of the National Joint Council and to the provisions of the Local Government Superannuation Act, 1937. The successful candidates will be required to pass a medical examination. The appointments will be subject to one month's notice on either side.

Applications (clearly marked appointment "A" or "B"), stating age, experience, qualifications, war service (if any), together with the names of three persons to whom reference may be made, should be submitted to D. J. Howe, Esq., M.I.C.E., M.I.Mun.E., Borough Engineer and Surveyor, 26/30, King's Road, Brighton, not later than Saturday, 29th May, 1948.

J. G. DREW,
Town Clerk.

Town Hall, Brighton.
27th April, 1948. 807

CUMBERLAND COUNTY COUNCIL.
APPOINTMENT OF PLANNING ASSISTANT.

Applications are invited for the position of Planning Assistant, on a salary scale from £595 to £660 per annum, rising by two annual increments of £20 and one of £25. This salary includes the cost-of-living bonus, which has now been consolidated.

A car allowance will be paid in accordance with the Council's scale, subject to variation from time to time, but at present a standing charge of £80 per annum, plus a mileage allowance, and subsistence according to the National Charter scales.

The appointment is subject to the Local Government Superannuation Act, 1937, and the successful candidate will require to undergo a medical examination.

The appointment will be terminable by one month's notice in writing on either side.

Applicants must be Members or Associate Members of the Town Planning Institute, and a qualification in Architecture or in Engineering will be an advantage.

The commencing salary on the grade will be determined according to the successful candidate's previous experience.

Applicants must be fully conversant with the Town and Country Planning Acts and Orders made thereunder, and be fully competent to carry out field work, plotting and preparation of plans, and have had experience with a Planning Authority.

Applications, stating age, qualifications, experience and previous appointments held, accompanied by copies of three recent testimonials, and endorsed "Planning Assistant," should be sent to the County Planning Officer, Citadel Chambers, Carlisle, not later than Saturday, the 12th June, 1948.

G. N. C. SWIFT,
Clerk of the County Council.

11th May, 1948. 882

HUDDERSFIELD TECHNICAL COLLEGE.

Principal: DR. W. E. SCOTT, M.B.E.

Applications are invited for the post of HEAD OF THE BUILDING DEPARTMENT, which becomes vacant on the 1st September, 1948.

Candidates should hold suitable professional qualifications in Architecture or Building, and have had both teaching and industrial experience.

The Department is Grade II. Salary, £800—£25—£950, with additions in respect of training and graduation in accordance with the Burnham Report.

Further particulars of the post are obtainable from the Principal, to whom applications (there is no standard form), with two recent testimonials and the names of three referees, should be addressed as soon as possible.

H. KAY,
Director of Education.

27th April, 1948. 870

EAST SUFFOLK COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following posts, in the County Architect's Department :—

(*a*) **ONE QUANTITY SURVEYOR.** A.P.T., Grade VII. Consolidated salary, £635-£710.

(*b*) **GRADE A ASSISTANT ARCHITECTS.** A.P.T., Grades V and VI. Consolidated salary, £520-£660.

(*c*) **GRADE B ASSISTANT ARCHITECTS.** A.P.T., Grade III and IV. Consolidated salary, £450-£525.

The commencing salary in the grades will be fixed according to the qualifications and experience of the candidate.

Applicants for appointment (*a*) should be qualified and thoroughly experienced, and preference will be given to those who are Associates of the R.I.C.S. (Quantities Division). They should be capable of undertaking all stages of the work for the preparation of Bills of Quantities, including estimating, site measurements, and preparation of interim certificates and the preparation and settlement of final accounts. If satisfactory the successful applicant will take charge of the Quantity Surveyor's section when it is formed in the near future.

Applicants for appointment (*b*) must be Registered Architects, and preferably Associates of the R.I.B.A. The work to be dealt with is that normally carried out by a Local Authority. Candidates must be quick and accurate draughtsmen, capable of carrying a job through in all its stages and with a sound knowledge of design, building construction, and specifications.

Applicants for appointments (*c*) must be Registered Architects, and preferably members of the R.I.B.A. They must be quick and accurate draughtsmen, fully conversant with ⅛ in. scale, half inch and full size details for all types of buildings normally dealt with by a Local Authority, and have a good knowledge of design, construction and specifications.

The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937. The successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications and full details of previous experience, accompanied by copies of three recent testimonials, should be sent to E. J. Symcos, F.R.I.B.A., County Architect, County Hall, Ipswich, not later than 7th June, 1948.

Canvassing, either directly or indirectly, will disqualify a candidate from consideration.

G. C. LIGHTFOOT.
Clerk of the Council.

County Hall, Ipswich. 893

CARDIGANSHIRE JOINT PLANNING COMMITTEE.
COUNTY PLANNING DEPARTMENT.
AMENDED ADVERTISEMENT.

Applications are invited for the following appointments :—

(*a*) **SENIOR PLANNING ASSISTANT.** A.P.T., Grade VII, £635×£25—£710. The person appointed should have wide experience in the preparation of Town and Country Planning Schemes, with a sound knowledge of the relevant Acts and Orders.

Applicants will be required to assist in the preparation of outline and development plans for the County, including character zoning and estate layouts for both urban and rural areas. Experience in supervision of staff is essential, and preference will be given to applicants who are Members of the Town Planning Institute or hold an equivalent qualification in Architecture, Engineering or Surveying. It is desirable that the successful applicant shall possess and drive a car.

(*b*) **PLANNING ASSISTANT (RESEARCH)** (Male or Female). A.P.T., Grade II, £420×£15—£465. Applicants will be engaged on research work in connection with the preparation of the outline and development plan under the Town and Country Planning Act, 1947. Candidates should have had experience in the collection of industrial and other research data in relation to population changes, regional and economical geography, services and natural resources. Preference will be given to applicants who have a diploma in geography, economics, geology, or a similar background of research experience.

The commencing salaries within the grades will be determined according to the qualifications and experience of the successful applicants.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, the National Joint Council's Scheme of conditions of Service, the passing of a satisfactory medical examination, and to one month's notice on either side.

No forms of application are issued. Applications should give details of age, education, technical training, qualifications, present and previous appointments and experience. Copy of one recent testimonial and name and address of one referee should be submitted.

Applications, with the title of the appointment endorsed on the envelope, should reach the undersigned not later than 27th May, 1948.

N. GREENWOOD,
Clerk.

Cambrian Chambers, Aberystwyth.
11th May, 1948. 884

WARWICKSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the following appointments :—

(*a*) **DEPUTY COUNTY PLANNING OFFICER.** Salary £880, rising by three annual increments of £55 to £1,045 (consolidated).

(*b*) **SENIOR PLANNING ASSISTANT.** A.P.T., Grade VA/VI (£550-£660 per annum, consolidated).

(*c*) **FIVE PLANNING ASSISTANTS.** A.P.T., Grade V (£520-£570 per annum, consolidated).

(*d*) **THREE PLANNING ASSISTANTS.** A.P.T., Grade IV (£480-£525 per annum, consolidated).

Applicants for post (*a*) must be Corporate Members of the Town Planning Institute, and have had considerable experience in the preparation and administration of planning schemes. Preference will be given to persons who also possess a recognized qualification in architecture, civil engineering, or surveying. Experience in the control of staff is essential.

The person appointed will be required to use his own motor car in the service of the Council, and will be paid travelling and subsistence allowances according to the Council's scales applicable for the time being.

Applicants for post (*b*) must be Corporate Members of the Town Planning Institute, and must have had considerable experience in the preparation of planning schemes. The person appointed will be in charge of the work connected with one section of the County Development Plan.

Applicants for posts (*c*) must have had good general planning experience, and those appointed will be mainly engaged on development control. For one of these posts an architectural qualification will be an advantage.

Applicants for posts (*d*) should have had experience in a Planning Office, and those appointed will be required to assist in the preparation of the Development Plan.

The appointments are subject to the Local Government Superannuation Act, 1937, and the successful applicants will be required to pass a medical examination.

Forms of application and any further particulars required may be obtained from J. J. Brooks, M.T.P.I., M.I.Mun.E., County Planning Officer, Shire Hall, Warwick, to whom applications, with copies of not more than three testimonials, should be sent not later than the 7th June, 1948.

Canvassing, directly or indirectly, will be a disqualification.

L. EDGAR STEPHENS, C.B.E.,
Clerk of the County Council.

Shire Hall, Warwick.
7th May, 1948. 875

Architectural Appointments Vacant

4 lines or under, 5s.; each additional line, 1s. 6d.

ASSISTANT required; capable draughtsman, working drawings, details, specifications, schedules and surveys. Apply Clark, 44, Great Russell Street, W.C.1. 'Phone: MUS. 4400 & 0500. 787

ARCHITECTURAL DETAILERS required for large power station buildings. Write, stating previous experience and salary required, to L. G. Mouchel & Partners, Ltd., 38, Victoria Street, Westminster, S.W.1. 815

JUNIOR ASSISTANT required for varied practice; some office experience an advantage. Kenchington & Farms, F., A., and A.R.I.B.A., 130, Crawford Street, W.1. Welbeck 6543-4. 820

ARCHITECTURAL ASSISTANT required; experience in Factory Work, Domestic Buildings, etc. Reply, with full particulars, to E. William Palmer & Partners, Chartered Architects, 8, The Town, Enfield, Middx. 831

QUANTITY SURVEYING ASSISTANT required by busy firm of South Coast Architects; permanent, progressive post. Applications, giving full particulars of experience and salary required, to Box 844.

ARCHITECTURAL ASSISTANT required to firm of Building Contractors in Sutton (Surrey) area, for preparation of Joinery details and general work. Write Box 245, c/o George Murray (Advertising), Ltd., 184, Strand, London, W.C.2. 867

ARCHITECTS.—Senior Architectural Assistants required, with experience in Industrial and Commercial Buildings; salary in accordance with qualifications and experience. Applications in writing, giving details of experience, etc., should be sent to Controller of Works and Planning, S.C.W.S., Ltd., 119, Paisley Road, Glasgow, C.5, endorsed "Architect." QUANTITY SURVEYORS.—Senior Quantity Surveying Assistants required, with experience in Industrial and Commercial Buildings; salary in accordance with qualifications and experience. Applications in writing, giving details of experience, etc., should be sent to Controller of Works and Planning, S.C.W.S., Ltd., 119, Paisley Road, Glasgow, C.5, endorsed "Surveyor." 773

SMALL London Office.—Vacancy for ARCHITECTURAL ASSISTANT; permanent appointment preferred after trial period; must be capable of taking full charge of office. Write, stating experience, qualifications, and salary required, Box 889.

ARCHITECTURAL DRAUGHTSMAN required for Wembley (Middlesex) office; experience in design of Industrial Buildings. Write, stating age, experience, and salary required, to Box 885.

SENIOR ASSISTANT required; should be interested in contemporary exhibition and industrial design, and ready to work as a member of a co-operative group of architects and designers; commencing salary £500-£750, depending on experience. Letters only to Misha Black, Design Research Unit, 37, Park Street, London, W.1. 876

ARCHITECTURAL ASSISTANT required in North-West London office. Write, stating age, experience, and salary required, Box 891.

COMPETENT ARCHITECT'S ASSISTANT required for London office, N.W.1 area; willing to take some responsibility. Write, with full particulars, Box 890.

Architectural Appointments Wanted

CHARTERED ARCHITECT (26), with 9 years' office experience, including 3 years' executive (manager), seeks Managerial position, anywhere; minimum salary, £750 p.a.; available in 3 months. Box 91.

B.A./A.R.I.B.A. (37), considerable general experience, offers services as active ASSISTANT (not Draughtsman); preferably in Sussex area; salary, 8 gns. per five-day week. Box 95.

PROBATIONER would appreciate Architectural work in busy office until September, when entering school; London district preferred. Box 96.

ARCHITECTURAL ASSISTANT (25), taking Intermediate 7th May, desires work in Cambridge after May 15th. Box 100.

SUSSEX.—ARCHITECTURAL ASSISTANT requires job in Sussex; full particulars in exchange for details of office and type of work. Box 102.

SUMMER Vacation Post required by Fifth Year Liverpool STUDENT; varied experience. Box 103.

ARCHITECTURAL ASSISTANT (30), graduated at Liverpool, requires a job; pref. in London. Box 104.

STUDENT R.I.B.A., 7 years' varied experience, mainly housing and industrial, seeks position in London. Box 101.

Other Appointments Vacant

4 lines or under, 5s.; each additional line, 1s. 6d.

WANTED, immediately, SENIOR ASSISTANT EDITOR, for architectural journal; qualifications required; organizing ability, knowledge of architecture and the architectural profession, journalistic experience, and knowledge of magazine production. Box 90.

ESTIMATOR required, with experience of large Building and Public Works Contracts, to assist chief estimator to firm of Contractors in Sutton (Surrey) area. Write Box 244, c/o George Murray (Advertising), Ltd., 184, Strand, London, W.C.2. 865

ASSISTANT required to firm of Building Contractors in Sutton (Surrey) area, to deal with enquiries in connection with tendering; must be a capable typist and have a knowledge of the trade. Write Box 245, c/o George Murray (Advertising), Ltd., 184, Strand, London, W.C.2. 866

RICHARD COSTAIN, LTD., require CHIEF CONSTRUCTION SUPERVISOR OR AGENT for service in West Africa. Wide knowledge of large building and civil engineering contracts a necessity. Must also have had railroad and reinforced concrete experience. Only men who have served with large companies of repute need apply. Contracts likely to spread over large area. Adaptability essential. Post is permanent. Good salary payable, according to experience. Age preferably under 45. Reply in writing, giving full details, to Personnel Manager, Richard Costain, Ltd., Dolphin Square, London, S.W.1. 868

COMPANY SECRETARY ACCOUNTANT required by Richard Costain, Ltd., for service in West Africa. Must be qualified (Chartered or Incorporated Accountant preferred), with experience in handling large building and civil engineering contract accounts and the costing of such contracts. Free passage out and return. Free furnished accommodation and medical attention. Kit allowance. Post is permanent. Age preferably under 40. Reply in writing, giving full details, to Personnel Manager, Richard Costain, Ltd., Dolphin Square, London, S.W.1. 869

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GENTLEMAN, with extensive experience in the Building Industry, and very large personal connection with Architects, Surveyors and Local Authorities, seeks appointment with progressive company desiring experienced representation. Box 54.

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PERSPECTIVES in any medium for Architects; expert ready for further business; terms moderate. Write "New Services," 85, Heath Street, Birmingham, 18. 877

QUALIFIED and experienced Architect can undertake salaried post or (preferably) part-time work in own office for period July-September; London or South-East. Box 886.

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4 lines or under, 5s.; each additional line, 1s. 6d.

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FLOORS OF DISTINCTION Laid: in wood, rubber, composition, cork, mosaic; existing floors repaired, resurfaced and polished; also panelling restored. Davis Floorings, Grove Hall Court, Hall Road, N.W.8. CUN. 3205/6 and 5616. 600

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4 lines or under, 5s.; each additional line, 1s. 6d.

R.I.B.A. AND T.P.I. EXAMINATIONS.—Mr. L. Stuart Stanley, M.A., F.R.I.B.A., Dist.T.P., M.T.P.I., Tutor in the Bartlett School of Architecture, London University, prepares candidates by correspondence tuition. 212, Euston Road, N.W.1. Tel.: EUSton 7760.

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