# TO BE OPENED TO-DAY DE LA WARR PAVILION, BEXHILL





TO-DAY the Duke of York, accompanied by the Duchess of York, will officially open the new De La Warr Pavilion at Bexhill. The architects are Messrs. Mendelsohn and Chermayeff, whose design was placed first in an open competition at the beginning of last year.

On this page are two views of the north elevation: top, a general view looking towards

a general view looking towards the car park; right, a detail of the staircase tower.



DE LA WARR PAVILION, BEXHILL

A view from the west, showing the central (south) staircase. Further photographs of the building are given on pages 873-878; and the planning and construction is the subject of the fourth of our series "Analysis of a Building," on pages 879-885.



### EAST THE END

N the last fifteen years public opinion has come to accept the view that a decent minimum of living accommodation must be provided for every family, whatever its circumstances, and, despite the failure of individual schemes and the continuing difficulty of cost, a very great deal has been done towards fulfilling this ambition.

But although much of the determination and all of the legislation necessary has come from London, most of the more effective schemes have been carried

out in the provinces.

There have been many reasons for this: provincial cities have had space for long-term building schemes, sites have been available of good size and reasonable cost. They are good reasons, and for London, in far different circumstances, good excuses. For a city, however, which prides itself on an enlightened local government these considerations cannot remain permanent excuses. And meanwhile the East End, by and large, remains much the same as it ever was.

Here and there blocks of flats, quite good flats, have been built in the centre. Big and fine housing schemes have been built at a distance. The huge population

of the East End has remained unaffected.

The flats inside are too few and too closely built to be a lasting and good solution; the dwellings outside, with their accompanying fares, are too expensive.

What is the solution for the housing of this huge poor population, hemmed in on all sides by industrial, commercial and transport structures? London cannot wring its hands for ever over the East End, or provide it with groups of palaces 15 miles away in which none of its families can afford to live.

There seems only one solution. The East End, as one unit, must be tackled and replanned on an altogether different scale from previous housing problems. In this area no tender local government nibbles with one eye on the rates, no charming 30-flat block wedged between a railway viaduct and a fish-manure

factory, will ever do any good at all.

The L.C.C. at present seems to have taken up a position midway between the larger and the habitual views, and nobody seems to know what it is going to do next. The recently amalgamated Housing

and Town Planning Committee of the Council has a terrific responsibility—no local government body ever had a greater-and it deserves the sympathetic support of all thoughtful opinion. But this support would be more generous if it were better informed. The Committee is known to be working on the vastness of a plan for all London, and it is rumoured to be considering a planning scheme for the whole of the East End. But what of cut-anddried proposals?

There seems to be one only: the proposal to take 30 acres of Hackney Marsh for housing purposes, and upon that there have centred sharp divisions of opinion.

In its leading article last week the Architect and Building News excellently analysed this dispute. L.C.C., in brief, maintains that to start rehousing in the East End it must first obtain a single area of good size on which to start the process of "decanting," that no other so suitable a site is obtainable. The opposition holds that the East End is already desperately short of open space and that the L.C.C. should not begin to make things better by making them worse. And there, for the moment, the matter

The Hackney Marsh affair, indeed, contains the kernel of the whole East End problem. Mr. Morrison deplores that public opinion will not take a big view and bring to bear on the Hackney Marsh dispute the broad imagination which the East End needs. The public, tacitly but clearly, says that it is quite prepared to be big and imaginative providing it is sure that the L.C.C. is doing the same and doing it first. It does not want a barrage of large words merely to cover another hole-and-corner scheme.

We think that in this matter the L.C.C. should make clear whether its intentions are honourable. Enlightened local governments are no longer compelled to secrecy to avoid the frustration of their efforts by private speculation. If the L.C.C. prepares a plan commensurate with the East End problem, and publishes it in outline at least, there will be no more trouble over Hackney Marshes. Such a plan would be one of the best guarantees of its authors being returned to power until it was completed.

T



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NOTES &

THE PRESERVATION OF STREETS

HERE was a letter in *The Times* the other day, signed by about a dozen people, protesting against a proposed redevelopment of part of Downshire Hill, in Hampstead.

As anyone who is familiar with it knows, although the individual houses are not of outstanding merit, it is a very charming street with the exception of the Police station and the building opposite to it, but it is getting on in years, and is reaching that age when redevelopment is the natural thing to expect.

The question, therefore, arises—is Downshire Hill a street which should be preserved—is it the sort of street which should be counted as a museum piece?

This seems to me to be a question which is outside the competence of a normal town planning committee to decide, and one that should be referred to some body—it may be that the Royal Commission on Fine Arts would do. Most buildings become worn out after a time, and one cannot, in the language of town planning, "sterilize" whole districts.

# TOWN PLANNING IN SUSSEX

I missed the report on it myself, but I am told that the West Sussex County Council's town planning scheme, which includes preservation of the Downs, has been approved. This is very good news; now we must wait for Fast Sussex to do something about it as well.

West Sussex is one of the counties in which all the local authorities have combined in delegating their planning powers to the county council—a step which is well in the right direction.

# MORE SUBURBS

The L.C.C. is reported to be proposing to purchase

another great area of land for housing, this time at Chigwell, and 434 acres of it.

At a normal density of development this means that a town with almost the population of Winchester will be created.

The L.C.C. has a large job in hand and must provide housing somehow, but this does seem to me to exemplify an absurd situation, when the only reason for the placing of what amounts to a fair-sized town is that there is some vacant land. What about planning?

### THAMES BRIDGES

What a passion there is for widening or reconstructing the Thames bridges. In the last few years Lambeth, Putney, Waterloo and Chelsea have all been tackled, and now it is Wandsworth's turn.

I think the last entirely new bridge to be built over the Thames was Southwark, and it seems about time we had another. It is tempting to suggest that it might be in the neighbourhood of Charing Cross.

### BRAKE ON PROGRESS

This is not the first time that I have written under this heading about the decreasing percentage of skilled workers in the traditional trades who are being employed on modern buildings.

Talking to several manufacturers recently I discover that the more progressive of them have almost entirely given up using the older type of worker—the joiner, the plumber, the plasterer, and so on.

The maker of some gas appliances finds his work better since employing men trained in an aeroplane factory. The maker of a well-known type of flush doors told me of their immediate improvement as soon as he employed none but machinists in the factory.

This development is, of course, parallel to that in the motor car industry, which now uses machinists instead of wheelwrights and carriage builders.

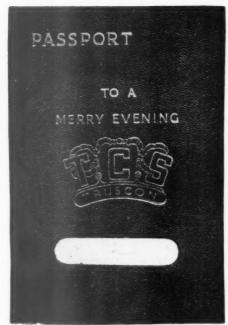
It is beside the point to compare the quality of the present work with that produced by the older organization—the real point is that the machine-trained worker makes a better job of an article designed for machine production than a man trained for hand work.

But this is in the factory. What of developments in the personnel employed on the job?

# EVERYDAY THINGS

The History of Everyday Things, by the Quennells (for few of the general public ever thought of "Marjorie and C. H. B." as anything but that), has meant such a lot in many people's lives that it comes as a shock to discover that the authors are mortal.

For "C. H. B." has died, and the famous partnership,



The cover of the "passport" issued to guests at the annual supper-dance of Truscon. See note on this page.

which had explored every detail of the everyday life of man from the old Stone Age onwards, has come to an end. Though not before one phase of its work was finished, for Batsford's are to publish the Good New Days almost at once.

The freshness of outlook, and the diffidence with which his explanations of prehistoric customs were put forward, makes it hard to realize that Quennell was on the R.I.B.A. Council as long ago as 1912, and that his active architectural practice was abandoned at the end of the war. Few people get a chance to finish their life's work before their deaths: Quennell had started with earliest man and finished up at the present day—I doubt whether he would have asked for much more.

# PASSPORT

The combined menu-programme and general cautionary guide, produced in the form of a "passport" and available for guests of Truscon at the Wharncliffe Rooms last Friday, was an extremely helpful innovation in entertainments of this kind.

The "passport," the cover of which is reproduced on this page, makes interesting reading. I give below some extracts from "A Short Guide for Travellers: Familiar Terms Explained":

Steel—what thou must not do; bending moments—taking the kicks; tension—shall we get the job; stress and/or strain—keeping up with an architect's changing plans; site—a building contractor looking satisfied with something.

Or did they seem funnier on Friday?

# TIMBER HOUSES

My note in last week's JOURNAL that five out of the six

prize-winners in the Timber House competition were exstudents of the A.A. School of Architecture has brought me two letters by way of reply.

One points out that "as a slight set off against this" all the perspectives illustrated, at any rate, were the work of an ex-student of the Liverpool School. The other that the sixth premium was won by an ex-student of the Polytechnic School, Regent Street.

I am very happy to publish these acknowledgments.

# QUETTA

I am not quite sure who the "Main Royal Engineers" in Quetta are; but they are reported to have advertised for, and now to have appointed, a civilian engineer to advise them on the rebuilding of Quetta.

I have not the slightest doubt that an engineer will be extremely useful, in fact essential, but would it have been prejudicial to military discipline to have appointed an architect as well? I believe the idea is to rebuild a town.

### PHOTOGRAPHY

A quick glance at a small yellow card from Lund Humphries sent me galloping along to Bedford Square, hoping to see an exhibition of photographs by Man Ray.

When I got there I found that the photographs weren't there but Man Ray was, and I had to admit that the mistake was my fault, for the card says nothing at all about exhibitions, though it might be taken to imply it.

Anyway, Man Ray is here to do some work, and if I wanted myself or anything else photographed I should get him to do it, even though he is only here for another week. But the exhibition, I gather, will, after all, probably happen some time in February of next year.

# TANKS AND SHOWERS

Excrescences on top of flat roofs annoy me, especially when they have the appearance of (and probably are) afterthoughts.

It is usually a simple matter, in the case of a house, to arrange a roof terrace for sitting or sleeping on at first floor level, utilizing the higher portion of the building as an effective wind shield. And with proper design of the services it is quite practicable to place the water tanks below the top ceiling level and so keep a clean flat roof.

I came across an example recently where this has been done, where all the bathroom fittings and the first floor heating circuits worked excellently and the client was overjoyed.

The snag came some weeks later, when he fitted a portable shower rose, capable of being held above the water pressure level. But man is an adaptable animal and after one or two experiences of a trickle of cold water on his elevated pate, soon gets used to kneeling for his shower bath.

ASTRAGAL

# NEWS

# POINTS FROM THIS ISSUE

" The East End of London, as one unit, must be tackled and replanned on an altogether different scale from previous housing problems ".....

" How anyone can see anything to admire in these dreadful specimens of chicken-house architecture (timber houses) passes comprehension "....

Photographs, plans and constructional drawings of the De La Warr Pavilion, Bexhill, which is to be officially opened by H.R.H. the Duke of York

# HACKNEY MARSHES

In the High Court last week Sir Patrick Hastings, K.C., successfully applied for a rule nisi against the Minister of Health in connection with the proposed appropriation of a part of Hackney Marshes for housing. He said there was a prima facie case that the action taken under the Housing Act of 1925 (which gives a local authority power to appropriate land vested in it) was erroneous and ultra vires in that this Act in its terms could not derogate from the rights granted under the London Open Spaces Act of 1893, which secured the land as a perpetual open space.

### LEEDS HOUSING SCHEME ABANDONED

The Leeds City Council, on which the Socialist majority was dispossessed by the Conservatives at the recent elections, decided last week, by 50 votes to 46, to cancel the plans for a £1,000,000 housing estate in the suburb of Moortown.

# NEW TOWN HALL AT NEWCASTLE

Newcastle-on-Tyne is proposing to replace its present Town Hall with a new building at the north end of the city's shopping centre. The cost is estimated at £300,000.

# NOTTS., DERBY AND LINCS. ARCHITECTURAL SOCIETY

Mr. Serge Chermayeff, in a lecture entitled "The Architect and the Modern World," given at a recent meeting of the above Society, said: "The reconstruction of our world rests largely with the architect's initiative. He must influence the renaissance of a social consciousness in art, which will enable him to take the leading part again, which, by his training, he is particularly fitted to do."

# WELSH SCHOOL OF ARCHITECTURE

"Timber" was the title of a lecture given by Mr. P. Morton Shand at a joint meeting

# THE ARCHITECTS' DIARY

# Thursday, December 12

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ARCHITECTURAL ASSOCIATION, 36 Bedford Square, W.C.1. Exhibition of hand specimens of timber and veneers, photographs, a series of Information Sheets and Publications. Until December 17.

INTERNATIONAL EXHIBITION OF CHINESE ART. At the Royal Academy, Burlington House, Piccadilly, W.1.

SOCIETY OF ANTIQUARIES, Burlington House, Piccadilly, W.1. "Roof Bosses in Lincoln Cathedral." By C. J. P. Cave.

8.30 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS, 10 Upper Belgrave Street, S.W.1. "Some Bridge and Foundation Problems." By Lestie Turner. "Explanation of the Company of

# Friday, December 13

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LONDON SOCIETY.—Visit to St. Pancras
Housing Schemes. 2.30 p.m.
INSTITUTE OF WELDING, Midlands Branch.
At the James Watt Memorial Institute,
Birmingham. "Automatic Carbon Are Welding." By Dr. Reiter. 7.15 p.m.
SOCIETY OF CHEMICAL INDUSTRY. At the
Armstrong College, Neucasite-on-Tyne.
"Physical Properties of Some Synthetic
Plasters." By Dr. A. Caress. 7.30 p.m.
TOWN PLANNING INSTITUTE. At Carton
Hall, Caxion Street, S.W.1. "The Practical
Adoption of Recent Legislation in Connection
with Town and Country Planning and the
Restriction of Ribbon Development in the
County of Essex." By R. H. Buckley.

6 p.m.

# Saturday, December 14

aturday, December 14
ST. PAUL'S ECCLESIOLOGICAL SOCIETY.
Visit to the Watermen's and Lightermen's Hall,
18 St. Mary-at-Hill, City.
2.30 p.m.
Also, St. Margaret Pattens, Eastcheap.
3.30 p.m.

### Monday, December 16

R.I.B.A., 66 Portland Place, W.1. Social Evening, arranged by the Social Committee.

Evening, arranges of 8 p.m.,
SOUTH WALES INSTITUTE OF ARCHITECTS
CENTRAL (CARDIFF) BRANCH AND THE
WELSH SCHOOL OF ARCHITECTERE. At the
Technical College, Cardiff. Annual Exhibition of Designs and Measured Drawings.
5 p.m.

# Tuesday, December 17

Architects' Registration Council of the United Kingdom. At 66 Portland Place, W.1. Fifteenth Ordinary Council Meeting.

ILLUMINATING ENGINEERING SOCIETY. At 35 Russell Square, W.C.1. "The Photographic Representation of Street Lighting Installations." By Ralph G. Hopkinson. 7 n.m.

Housing Centre, 13 Suffolk Street, S. W. 1.
"Housing and Territorial Planning in Russia." By E. Kaufmann. 8.15 p.m.
INSTITUTION OF STRUCTURAL ENGINEERS, Sectish Branch. At Edinburgh University Old College. "Bridges." By J. Shannon, 7.15 p.m.

# Wednesday, December 18

Vednesday, December 10

St. Paul's Ecclesiological Society.
At 66 Portland Place, W.I. "The Architecture of the Franciscans in England." By Alan B. Martin.

ROYAL SOCIETY OF ARTS, John Street, Adelphi, W.C.2. "Post-War Tendencies in German Art Schools." By Dr. Nikolaus Persner.

8 p.m.

of the Welsh School of Architecture and the South Wales Institute on Architects (Centre Branch) held last week at the Technical College, Cardiff.

Mr. Shand dealt first with the types of timber used for plywood in different regions, touching on the growth of the tree, its felling and its transport to the factory, the rotary cutting of the logs into veneers, and the cementing of these veneers into plywoods of varying thicknesses. After explaining the characteristics of the leading types of plywood Mr. Shand showed, by means of slides and a running commentary on them, the various uses to which plywoods can be put to advantage, including the covering of walls and ceilings and the making of furniture. He concluded with a brief account of metal-faced plywood.

A vote of thanks was accorded to the

lecturer on the proposal of Mr. C. F. Jones, A.R.I.B.A., chairman of the Central Branch of the South Wales Institute of Architects, seconded by Mr. Lewis John, A.R.I.B.A., and supported by Mr. Norman Edwards and Mr. J. A. Hallam. Mr. W. S. Purchon, F.R.I.B.A., presided.

# WEST YORKSHIRE SOCIETY OF ARCHITECTS

Over 200 members and guests were present at the annual dinner of the West Yorkshire Society of Architects, held at Mr. Victor Bradford, on December 6.

Bain, F.R.I.B.A., presided.

Mr. Percy Thomas, P.R.I.B.A., in responding to the toast of "The R.I.B.A." (proposed by Mr. H. Holdsworth, M.P.), said that almost every week, he might say almost every day, the Institute was called upon to nominate members of the profession for the carrying out of some important public work. He expressed the hope that registration would soon become a very much more real thing than at present.

# BLUE CIRCLE PLAYERS

On Tuesday of last week the Blue Circle Players (members of the staff of the Cement Marketing Co.) presented, at the Arts Theatre, "Laburnum Grove," a play by Theatre, "Laburnum Grove," a play by J. B. Priestley. The players can seldom have done better than in this production, there was not a hitch during the whole performance. This is the seventh of the presentations given by these Players on behalf of charity. The net proceeds on this occasion will be given to the Builders' The net proceeds on this Benevolent Institution.

# CHANGE OF ADDRESS

Mr. James V. McGrane, M.INST.R.A., has removed his offices from No. 4 Cavendish Row, to National Bank Chambers, No. 1 Cavendish Row, Dublin.



# R. I. B. A.

# SOCIAL EVENING

On Monday next, December 16, a concert of chamber opera will be given at the R.I.B.A. at 8.30 p.m. by a group of young singers who propose to produce small operas of all types under the direction of Ernest Schoen and Georg Knepler.

The programme will be as follows: and Æneas (third act), Henry Purcell (1656-1695). La Carosse du Saint Sacrement (scene v), Lord Berners (b. 1883); Don Pasquale (finale of second act), Gaetano Donizetti (1797-1848). The concert has been arranged by the R.I.B.A. Social Committee.

R.I.B.A. PRIZE FOR SCHOOLS OF ART AND TECHNICAL COLLEGES

The R.I.B.A. prize of £5 in books for schools of art and technical colleges with

facilities for the instruction of intending architects has been awarded to Mr. W. Garner, of the City of Hull College of Arts and Crafts.

### R.I.B.A. MEDALS FOR STUDENTS

The Council of the R.I.B.A., on the recommendation of the Board of Architectural Education, has made the following awards:—

R.I.B.A. Silver Medal and £5 in Books. The R.I.B.A. Silver Medal and £5 in books for schools of architecture recognized for exemption fom the R.I.B.A. Final Examination has been awarded to Mr. Cecil Stewart, of the School of Architecture, Edinburgh College of Art.

R.I.B.A. Bronze Medal and £5 in Books. The R.I.B.A. Bronze Medal and £5 in books for schools of architecture recognized for exemption from the R.I.B.A. Intermediate Examination has been awarded to Mr. C. H. Hyde, of the Birmingham School of Architecture. Certificates of Honourable Mention have been awarded to Mr. Douglas Beaton, of the School of Architecture, Robert Gordon's Colleges, Aberdeen, and Mr. N. P. Thomas, of the Welsh School of Architecture, The Technical College, Cardiff.

### ELECTION OF MEMBERS

At a recent meeting of the Council of the Institute, the following members were elected:—

As Fellows (9): G. L. Broad, J. Burford, F. T. Dear, W. King, F. J. Lander, M. A. Sisson. (Miss) J. E. Townsend, R. P. Watson and N. Jewson.

As Associates (105): E. W. Anderson, R. W. Anderson, W. B. Attenbrow, H. Armitage, F. O. Baddiley, J. C. Ball, G. W. Banfield, P. M. Barnes, C. G. Bath, G. H. Beech, H. K. Brown, W. E. Brown, M. J. Bunney, G. E. Cardew, T. Cartlidge, H. H. Clark, R. H. Clay, F. J. Connell, A. C. Couch, W. E. Cousins, H. P. Crallan, R. C. Davis, D. H. Deare, M. Dembitzer, W. G. Dey, N. Dickenson, D. C. Earle, R. C. Edleston, C. Elgey, S. F. Everson, N. I. Finkelstein, J. E. Flatman, D. E. Fleming, M. Foreman, B. L. Frank, M. F. Freedman, A. F. Fry, A. W. Gaunt, H. Gillespie, A. E. Gordon, H. A. Govan, D. K. Graham-Cumming, N. L. Hanson, J. M. Harrison, J. H. Hayes, L. Hayes, A. H. Honikman, A. S. Hood, J. L. Hope, J. Howe, W. A. Hutchinson, C. W. Inglis, R. J. Jackson, C. J. Jerram, W. J. Jobson, L. K. Kaines, H. A. Kent, T. W. Knight, H. R. Lanchester, V. N. La Salle, G. H. Lawrence, A. D. Leary, S. A. Leonard, A. L. Luke, H. C. Macaree, J. S. McFadyen, A. C. Manuel, A. R. Meadley, A. S. Morris, T. S. Morris, L. D. Morrison, H. T. Murrell, R. W. Paterson, L. R. Penman, W. I. D. K. Graham-Cumming, N. L. Hanson, R. W. Paterson, L. R. Penman, W. J. Pierre-Hunt, R. Procter, H. J. Reid, D. W. Roberts, P. H. Ronaldson, H. G. Round, D. H. Rowledge, H. P. Shepherd, W. G. Sinning, H. E. Sise, E. T. Smith, C. A. Smith, K. R. Smith, (Miss) R. O. Smith, B. S. Smyth, V. Smyth, E. F. Stacy, A. Sturrock, A. Tattersfield, S. N. Tomkin, H. T. Townsend, C. O. Tremeer, H. G. Tuffley, J. W. Turner, H. J. Vincent, H. Walters, A. Wilkinson, S. L. Williams, H. Wilson, R. Woodcock, and F. S. Wright.

As Licentiates (13): R. K. Barton, T. A. Brittain, A. C. Day, J. Easton, J. Findlay, P. W. Haine, F. Herron, W. S. Joss, J. Lovelock, W. Macdonald, J. H. May, J. H. Stewart, and B. F. Stokes.

# LETTERS

FROM

# READERS

# Architectural Education

SIR,—We students have for some years now read the columns of your JOURNAL, without putting forward our special views.

Our apparent lack of interest to date is the result of your dual function: guiding the profession on the one hand, and, on the other, expressing its outlook. Had we turned to one, you had always the other in which to bury your head.

But—the point has come for us, when what the profession is thinking and doing is beginning to affect our future as well as that of the entire country.

We find it expedient, therefore, to present our opinion, which is that of a large part of the student body, and which, because of our position as students, is relatively objective both to what you say and to what the profession does.

We have watched your attempt to inoculate the profession with a sense of reality and have found it more ridiculous than amusing. The failure has been in not realizing the limited capability of the profession.

Had you realized this limitation you would have concentrated your efforts in turning them, not to what is already history, but to sustaining your ideas through those men now being educated, who will ultimately replace them.

Your JOURNAL has asked the question: "What can it (the profession) do, save to follow the easiest course of a narrow ostrich-like self-interest?"

The answer is obvious.

And further—that will be our course— UNLESS—our training which now recognizes only obsolescent requirements is changed.

We know, within our own experience and observation, what is wrong with the present system of architectural education: but we cannot institute a change without support and guidance.

We have appealed to the schools. There has been some talk, but little action. What then?

"For—fortunately or otherwise—it rests today most chiefly with architects how pleasant or otherwise Britain becomes as a place to live in."

That is your statement. It is also ours. May we ask what is going to be done about it?

VINCENT J. ROTHER London

VINCENT ROTHER

F. POTTER

E. D. JEFFERISS MATHEWS

G. N. KENT, L.R.I.B.A.

E. H. B. BOULTON, Manager, Timber Development Association

# Information Sheets

SIR,—I have been very interested in the recent correspondence following your leading article on Filing of Information Sheets.

My own method of filing these sheets is similar to that described by Mr. Austin, differing only inasmuch as I use binders instead of box files.

I also have a set of foolscap size box files, lettered alphabetically, in which I file cuttings and articles from current technical journals.

F. POTTER (Bromsgrove)

SIR,—The filing system for the Information Sheets which I have introduced into this office, although, like the statements of your other correspondents, it cannot lay claim to perfection, expresses yet another method.

The system depends on the fact that our worthy tradesmen serve us with their information in two distinct the catalogue, bound, manners: stable, and self-supporting; and the pamphlet, flimsy, and entirely unable to look after itself. I consider that the better of both these articles are worthy of retention and record, and that the record should bear a direct relation to each. Your Information Sheets should have their relation directly or indirectly to the tradesmen's articles. have, therefore, endeavoured to obtain a unit of reference to form an encyclopædia of information.

The Sheets are filed in expanding folders under the very broad heading of trades, with the addition of folders to cover information dealing with the size of sundry objects, costing etc. Into these folders go also the better and more valuable of the tradesmen's pamphlets. Folders are numbered and are in turn filed in metal boxes, which can conveniently stand upon a shelf. The catalogue shelves are divided into trades by movable partitions, each partition, or trade, bearing a corresponding number to the folder accommodating the Information Sheets and pamphlets of the same trade.

To keep these together and to form a general index, there is a card index under two heads, materials and manufacturers' names, carefully cross-indexed to meet all likely trends of thought when information is required.

The obvious criticisms of this scheme are perhaps fourfold: accumulation of pamphlets and Information Sheets; the difficulty in allocating some infor-



Subject to the Minister of Transport agreeing to grant not less than 60 per cent. of the net cost from the Road Fund, the London County Council proposes to rebuild Wandsworth Bridge without further delay. The work is expected to take three years and to cost £500,000. The proposed new bridge, which has been designed by the chief engineer of the L.C.C. in collaboration with the architect, will be of steel, with three spans and granite-faced piers and abutments. In the report of the Highways Committee, which is to come before the Council on Tuesday next, it is stated that "in the design of the bridge a simplicity of treatment has been aimed at, expressed in a technique essentially related to the material (steel) proposed for its construction and finish. The low curved lines of the bridge are designed to be in keeping with the flatness of the river banks in the neighbourhood, and, as the bridge is of the deck type, the public will have full opportunity of enjoying views over and along the river." Above is a perspective of the proposed bridge.

mation to a particular trade; the time to maintain the system; cumbersome. I can dispose of the first by carrying out seasonal and regular pruning of obsolete pamphlets and catalogues. To the second I agree, but the occasions are not numerous, and can be overcome by careful cross indexing; of the third I say that the few minutes regularly spent each day by an assistant in filing is time well spent if information is at hand in the hurry in which it is always wanted; and of the last my answer is that practice has proved the system and found it practical and effective.

E. D. JEFFERISS MATHEWS

# Timber Houses

SIR,—I have been looking at the premiated designs for the Timber House Competition shown in your issue for December 5. How anyone can see anything to admire in these dreadful specimens of chicken-house architecture passes comprehension. The late eighteenth century and early nineteenth century craftsmen showed us how charming a timber house can be, and I should imagine that a very large percentage of such houses were built without the aid of architects. Some of the American Colonial houses of this period are very delightful, too.

Astragal's remarks are astonishing wherein he ascribes these dreadful designs to a familiarity with reinforced concrete. He tells us that timber is a material quite new to these competitors; that no one can doubt. How is it possible to design in reinforced concrete without considering the shuttering is beyond me, and shuttering is usually of timber!

G. N. KENT

London

SIR,—I was most interested in Astragal's remark that five of the prize-winners in the Timber House Competi-

tion were ex-students of the Architectural Association who had spent much of their time in the school studying design in reinforced concrete.

The results of the Competition attest the truth of Astragal's statement about the soundness of teaching the principles behind design in any materials; for in the winning designs the forms that are associated with the modern movement in design have been most happily expressed in terms of wood. But I cannot forbear adding to Astragal's remark-that timber as a material was quite new to those former A.A. students the gentle suggestion that timber is really the oldest building material, not something out of date that has just been rediscovered because a competition has made a number of people think about it in a fresh, vigorous and intelligent

> E. H. B. BOULTON Manager, Timber Development Association, London

# OBITUARY

C. H. B. QUENNELL

We regret to record the death of Mr. Charles Henry Bourne Quennell, at the age of 63.

Mr. Quennell was articled to Messrs. Newman and Newman, and started practice for himself in Westminster in 1896. The previous year he had won both the National Gold Medal for architectural design at South Kensington, and the Silver Medal. Examples of his work in London include St. John's Church, Upper Edmonton; Speaight's Galleries, New Bond Street; and Templehill House, Hampstead. At Braintree, Essex, he was responsible for the housing scheme for the employees of Messrs. Crittall & Co.

He was a member of the Council of the R.I.B.A. from 1912 until 1915, and served on the Town Planning Committee from 1914 until 1925, and on the Board of Architectural Education from 1928 until

He married, in 1904, Miss Marjorie Courtney, an artist, and together they have published many books. They realized that youngsters are not half so interested in the signing of the Magna Carta (for instance) as in the sort of boats in which the King and his barons travelled to Runnymede. In their books, therefore, they told the story of things in everyday use, not merely in the twentieth century but for thousands of years back. Their skill in drawing and in writing enabled them to produce fascinating pictures, which appealed not merely to children but to adults.

Mr. Quennell's own publications include Norwich Cathedral and Modern Suburban Houses. Joint publications with his wife: A History of Everyday Things in England; Everyday Life in the Old Stone Age; New Stone, Bronze, and Early Iron Ages; Roman Britain; Anglo-Saxon-Viking and Norman Times; Everyday Things in Homeric Greece; Everyday Things in Archaic Greece; Everyday Things in Classical Greece; and Rise of Industrialism.

An authority on the British Museum, Mr.

Quennell was a strong believer in a "Children's Museum."

W. H. M'NAB

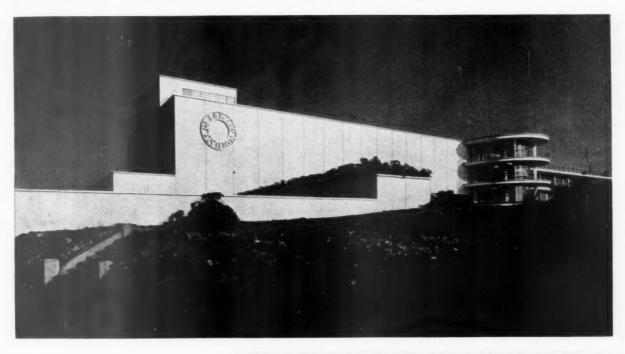
We regret to record the death of Mr. William Hunter M'Nab, F.R.I.B.A., of Glasgow.

Mr. M'Nab, who was 74 years of age, received his early training as an architect in Stirling, and went to Glasgow in 1881, entering the office of the late William Leiper, R.S.A. When Mr. Leiper retired in 1908, Mr. M'Nab carried on the practice and was joined by his son in 1927, when the firm took the name of William Hunter M'Nab and Son.

# Announcement

Messrs. Fitt and Prior-Hale have taken into partnership Mr. L. D. Tomlinson, A.R.I.B.A., and will practise as Fitt, Prior-Hale and Tomlinson, Chartered Architects, at Quadrant Arcadem, Romford, Essex. Telephone No.: Romford 2533, to which all trade catalogues should be sent. The present practice of Fitt and Prior-Hale will be continued as heretofore at 58 Theobald's Road, London, W.C.1.

# DE LA WARR PAVILION, BEXHILL





facing is pale cream-yellow coarse-textured cement rendering. Vertical segmental recessed expansion joints about 1½ ins. wide are in chocolate brown. Window and door surrounds are in cream faience, in narrow widths, and steel windows and doors are painted chocolate brown on the south front and cream on the north. The terraces and approaches are paved with brown-buff grit-finished precast squares, grouped in eights with wide joints between. The metal signs of the pavilion are in royal blue, with blue neon tubing for night use. Flower boxes are rendered in cream cement, finished smooth.

EXTERNAL FINISH .- The external sur-

The photographs show: above, the south elevation to the sea, showing the wing housing the auditorium on the left, with stage tower; right, the south central staircase.

DESIGNED BY

MENDELSOHN AND CHERMAYEFF

# DE LA WARR PAVILION, BEXHILL:



SERVICES.—The lighting and cooking is by electricity. The heating of the auditorium is by a full plenum system, with intake from circular louvres and extract in ceiling, the air being either heated or cooled as necessary. The entrance hall is heated by warm-air ceiling panels, heating elsewhere being by radiators behind hardwood grilles or free standing, on the low-pressure hot-water system from coke-fired boilers.

The hot water heating is from independent coke-fired boilers.

The hot water heating is from independent coke-fired boilers. The principal stair has vertical heating risers incorporated in

the mullions to counteract heat loss, and the entrance stair similar horizontal runs. The stage is fully equipped either for theatrical performances or for concerts.

Above is a night view from the terrace, looking towards the south staircase. On the facing page is another view of the staircase, looking east. The lettering on the foundation plate in the foreground reads: "This plate was laid by the Mayor of Bexhill, the Rt. Hon. Earl De La Warr on 6th May, 1935. Erich Mendelsohn, Serge Chermayeff, F.R.I.B.A., Architects."

# BY MENDELSOHN AND CHERMAYEFF



# DE LA WARR PAVILION, BEXHILL:



# DECORATIVE TREATMENT .--

The entrance hall is finished with cream plaster walls and ceilings, and cream terrazzo floors with narrow ebonite division strips. Inner doors are of wood, glazed and painted brown. Adjoining stair, treads and risers are of cream terrazzo, with painted balustrade and stainless steel rail.

painted brown. Adjoining stair, treads and risers are of cream terrazzo, with painted balustrade and stainless steel rail.

Cloakrooms are tiled with 3 in. by 6 in. cream glazed tiles, with cream quarry tile floors and skirtings. Counters and doors are in oak with stainless steel fittings: counter tops are of white rubber. Ceilings are of cream plaster, and light fittings are circular and of opal obscurea glass. W.C. partitions are of cream painted metal-faced plywood, and doors are flush oak veneer.

The photographs show: a view from the principal stair balcony, looking along the south elevation; below, the main entrance looking south.



# BY MENDELSOHN AND CHERMAYEFF



# DECORATIVE TREATMENT (continued)

Foyer: the floor up to steps is brown close-carpeted. The doors to hall are stainless steel sheathed, and the removable battery of doors to auditorium of waxed Australian walnut veneer with stainless steel filtings. The upper ceiling and cove are cream, and the lower white. Steps are of cream terrazzo with ebonite divisions.

Restaurant: the ceiling, curtains and circular steel columns are cream, the north wall green-white, and the east u painted panel by Edward Wadsworth. The sliding glazed panels to the terrace are cream inside and chocolate brown out. The floor (as are those of the conference hall, lounge and library) is of bleached cork composition tiles. The dance floor is of maple strip. The chairs and tables are of natural beech bent plywood, with brilliant red seats. Tables have cream lino tops.

Lounge and reading room: cream walls and ceilings, with north partition wall powder blue. The bar and fittings are in natural oak, and chairs in library are in black and red and tables in oak veneer.

Lighting generally is by 16 in. diameter whiteobscured glass ball fittings.

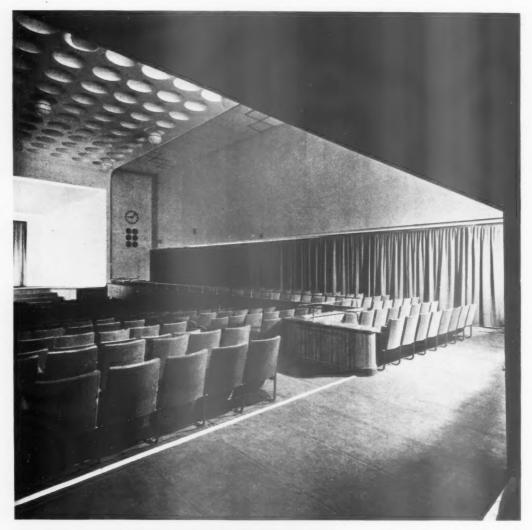
Signs are in applied sans serif lettering.

The photographs show: top, the auditorium foyer; centre, the restaurant on the ground floor; right, the reading room on the first floor.





### LA. WARR PAVILION, BEXHILL DE





Auditorium: the ceiling is of white fibrous plaster semi-spherical recessing throughout. Proscenium curtaining is of orange-red mohair satin. The panelling and other joinery at stalls level is of Australian walnut, with chromium guard rail around well. The floor is close carpeted in brown, the steppings and seating being amounts. removable. Seating is of tubular steel, painted chocolate brown, and upholstered in powder blue. Curtains are of brown satin. Windows are of steel, painted chocolate brown, with stainless steel fittings.

The walls elsewhere are of fibrous wallboard, left

its natural textured buff colour.

Gallery: panelled in sycamore, with blue-upholstered seating. A cream curtain can be extended to leave only three rows of gallery seating overlooking the stalls, for use during dances. Lighting to the auditorium is by 24 circular white obscured glass fittings, which can

be lowered for ballroom use.

Conference hall: the ceiling and east wall are of buff fibrous wallboard left natural colour, the other walls white. The doors are of natural oak, and nesting plywood

chairs are in grey and brown.

The photographs show: above, the auditorium; left, the conference hall on the first floor.

For list of general and sub-contractors see page 896.

DESIGNED BY MENDELSOHN AND CHERMAYEFF

# ANALYSIS OF A BUILDING : 4 THE DE LA WARR PAVILION, BEXHILL

DESIGNED
BY
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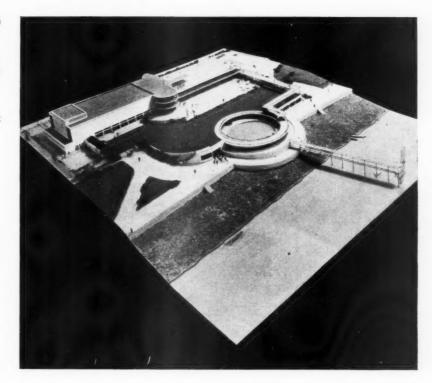
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# SITE PLAN:

The main mass of the building consists of the entertainments hall, and this has been placed to the west of the site for several reasons.

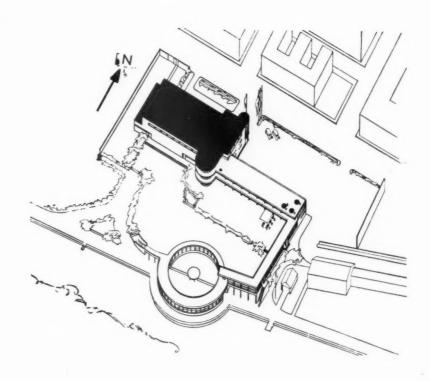
I. The natural slope of the ground allows economical basement accommodation for the heating and stage services.

2. It gives a separate and convenient entrance for service to the heating chamber and stage in the least attractive part of the site immediately outside the back of the Metropole Hotel.

3. The entertainments hall and the projecting staircase help to hide the hotel from the restaurant terrace.

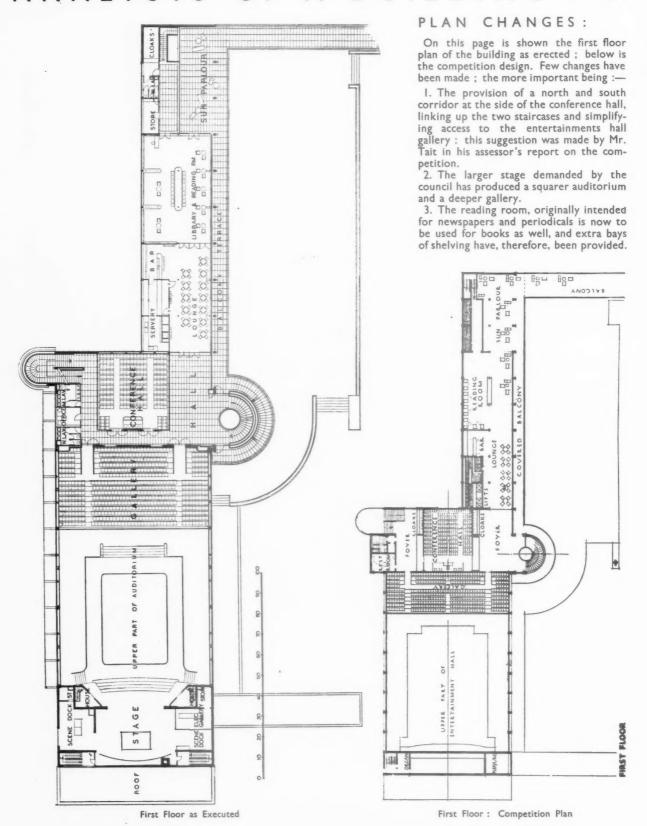
4. The principal approach road runs roughly east and west across the northern boundary of the site and the circulations for approaching traffic are easily arranged with a car park on the north-east corner of the site.

The drawing and photograph on the right show, below, the original competition lay-out and, above, the final scheme. The restaurant and terrace are placed to the east, with the main foyer as a connecting link. The pergola to the east will also serve as a connecting link between the new buildings and the reconstructed colonnade on the lower promenade level.



### 880

# ANALYSIS OF A BUILDING : 4:



# DE LA WARR PAVILION, BEXHILL

# PLAN:

ENTRANCE HALL.—This runs the full depth of the building north and south and contains a large office for general inquiries. Since access to all other units is from this hall, it has been planned as flexibly as possible so as to allow the whole building, or portions of it, to be used as a single coherent unit, or as separate units if various receptions or entertainments are being held at the same time.

AUDITORIUM.—The auditorium is separated from the main entrance hall by its own foyer, with which it can be combined by removing the dividing battery of doors. The auditorium floor is on two levels, having a low balcony running round it for use with cafe tables and chairs if the main floor is being used for a dance or a small afternoon concert.

Seating accommodation is as follows :— Main floor (stalls and lower

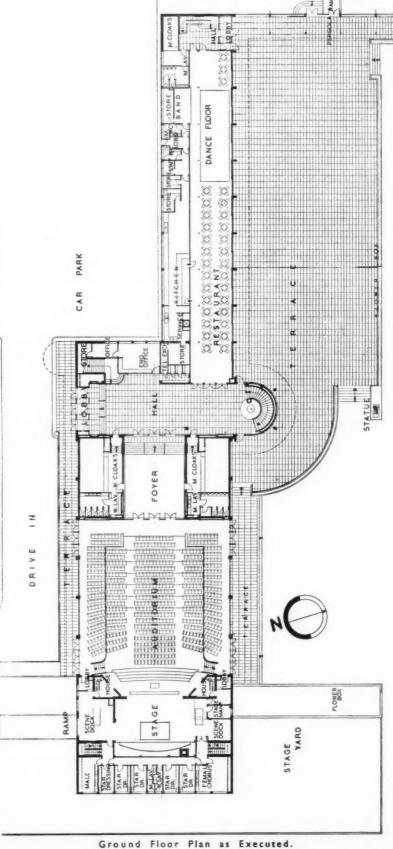
balcony level) - - - 800 Upper Gallery - - - 550

Total - 1,350

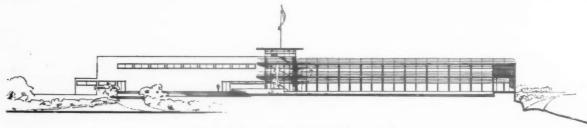
RESTAURANT.—The ground floor restaurant is a long narrow unit running east and west, with the kitchens running parallel with it along the north side, thus giving proper centre service to the restaurant, with a subsidiary trades entrance, approached from the car park and well away from the main circulations. Seating is provided for 200.

LECTURE HALL.—Seats 200, and is arranged for use as an exhibition room or for receptions. Sliding and folding doors on the south wall open on to the staircase foyer.

READING ROOM AND LOUNGE.— The reading room opens off the first floor lounge, which is virtually a miniature restaurant for 40 people. Shelving is arranged in a series of bays for reference books, with a centre table for periodicals.



# ANALYSIS OF A BUILDING: 4:



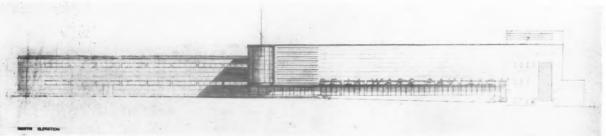
South Elevation: competition scheme



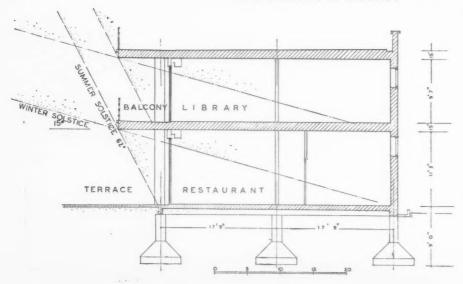
South Elevation as executed



North Elevation: competition scheme

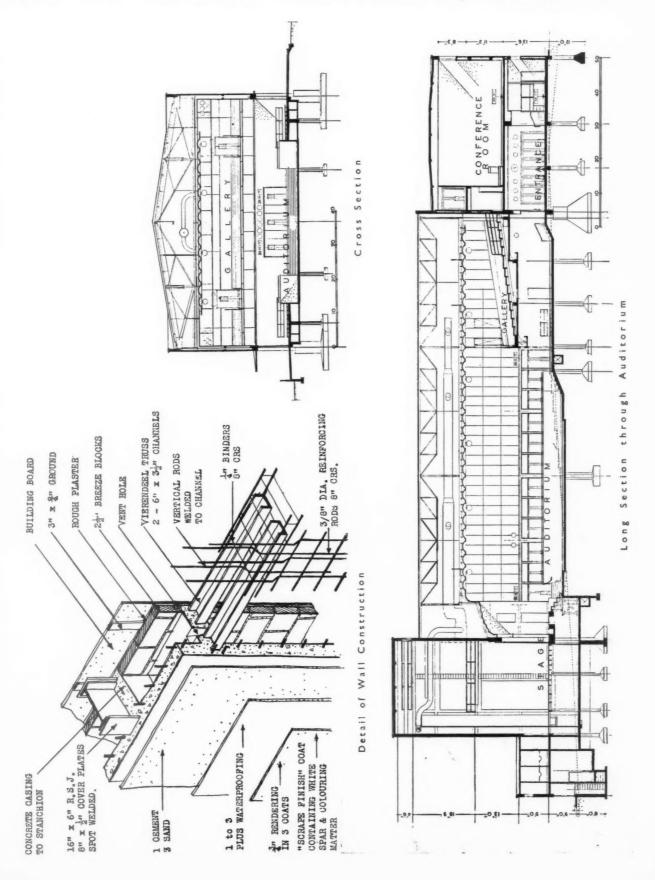


North Elevation as executed

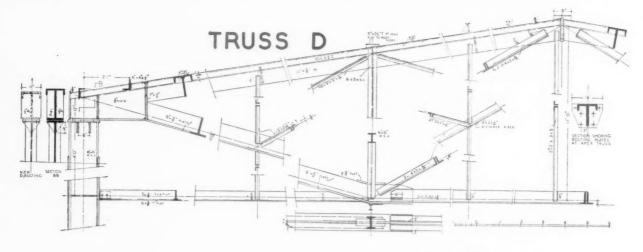


The drawings above show the elevations of the competition design and those of the building as it was actually carried out. On the left is a section through the restaurant wing of the building, showing how the sun is intercepted by the canopies at midday in summer, yet can penetrate the full depth of the building in winter.

# DE LA WARR PAVILION, BEXHILL

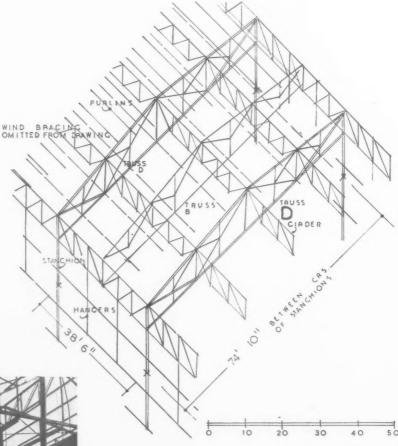


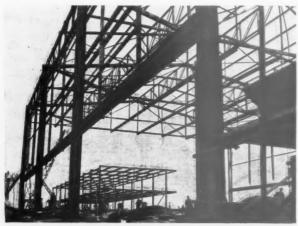
# ANALYSIS OF A BUILDING : 4:



# STRUCTURE:

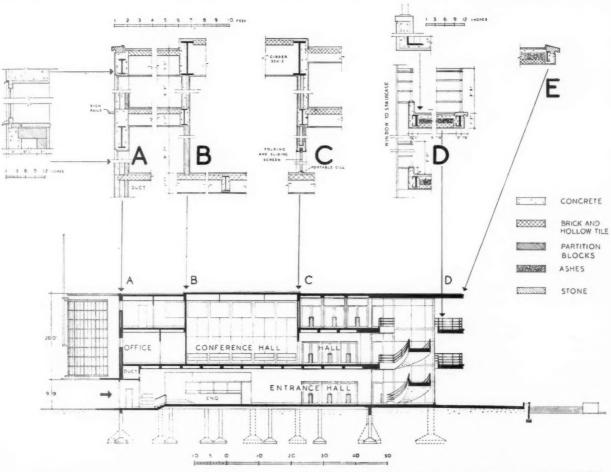
The structure throughout is a welded steel skeleton with curtain walls of reinforced concrete. The general arrangement of the main auditorium trusses is shown in the key diagram on the right, with a progress photograph below. The "N" trusses span between the main stanchions at eaves level, and the panel walls are carried by hangers in tension. The main roof trusses, one of which is shown in detail at the top of this page, were fabricated in three sections in the workshops, the three pieces being assembled and finally welded on site before being hoisted into position.

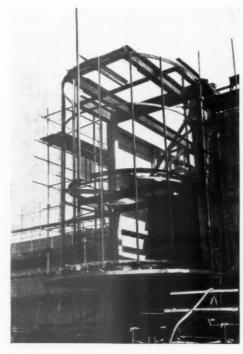


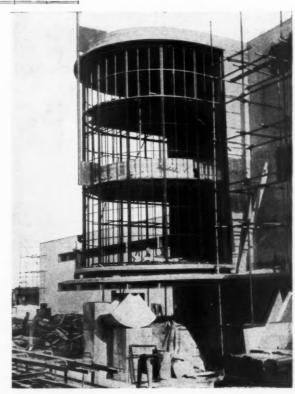


On the opposite page is a section through the main entrance hall, and two progress photographs of the north staircase at different stages of its construction. The whole structure is suspended from a pair of cantilevers at roof level, the two floors being carried by hangers in tension, in the same way as the auditorium walls. Heating is by horizontal pipes which run inside the windows at handrail level, thus preventing condensation.

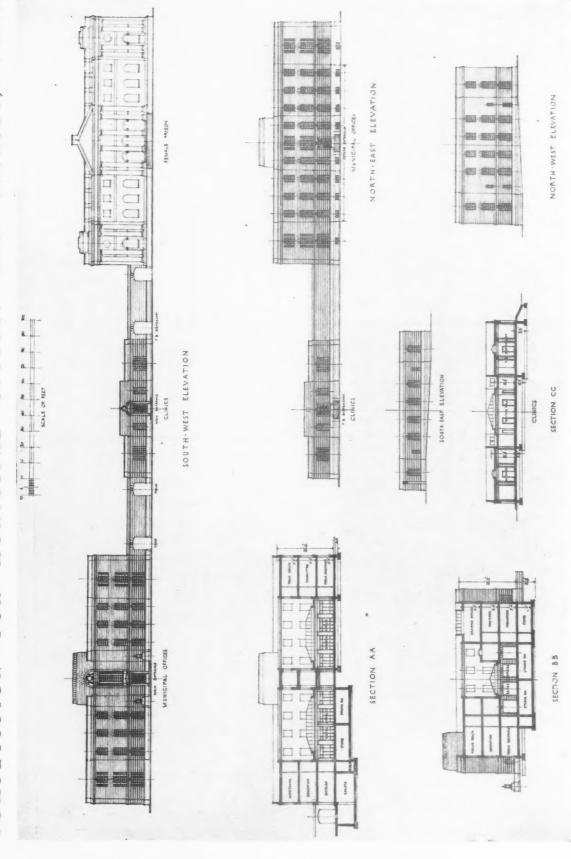
# DE LA WARR PAVILION, BEXHILL







# Y YOR CLINICS, AND OFFICES MUNICIPAL FOR COMPETITION

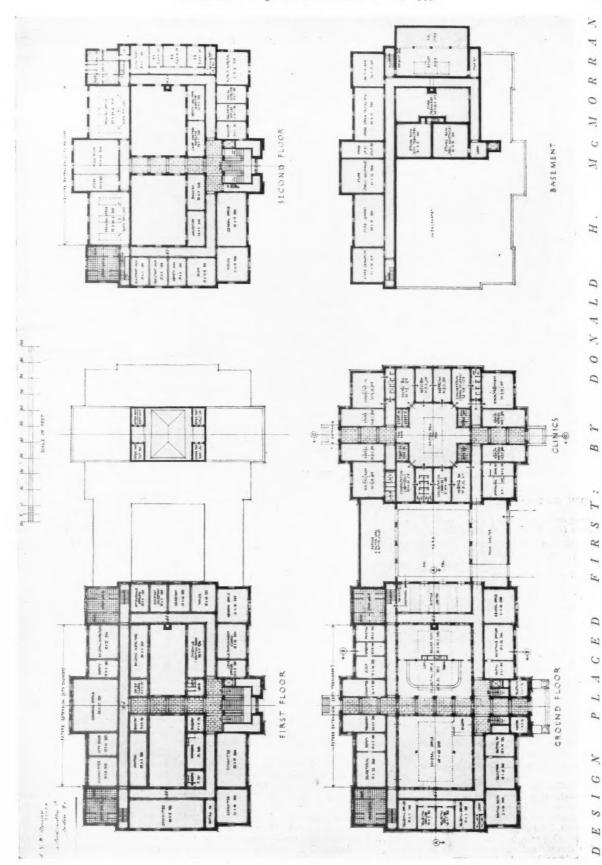


As announced in last week's issue, Mr. Henry V. Ashley, F.R.I.B.A., the assessor of the competition, has made his award as follows:

Design placed first (£250): Mr. Donald H. McMorran, A.R.I.B.A., of 34 Butler Avenue, Harrow-on-the Hill, Middlesex. Design placed second (£150): Messrs. Elcock and Sutcliffe, FF.R.I.B.A., of Adam House, 60 Strand, London, W.C.2. Design placed

third (£100): Mr. Frank Lishman, F.R.I.B.A., of 9 King's Bench Walk, Temple, E.C.4. Design placed fourth (£50): Messrs. Bradshaw Gass and Hope, FF.R.I.B.A., of 19 Silverwell Street, Bolton.

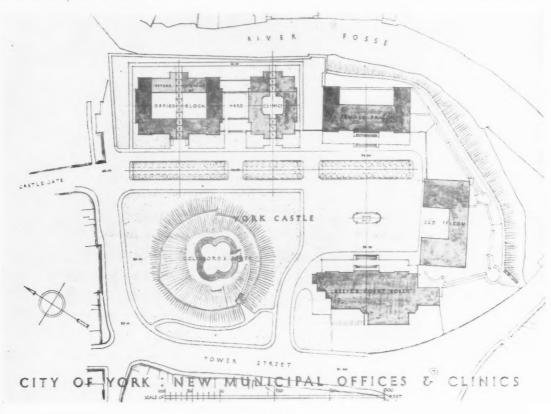
On this and the two pages following we illustrate the winning scheme. The design placed second is illustrated on pages 893-894.



Design placed second is illustrated on pages 893-894.

and Swichige, FF.K.I.B.A., of Adam Howse, 60 Strand, London, W.C.2. Design plac

# T H E Y O R K C O M P E T I T I O N DESIGN PLACED FIRST: BY D. H. McMORRAN



Site plan.

# THE ASSESSOR'S REPORT

Following are some extracts from the report of the assessor (Mr. H. V. Ashley, F.R.I.B.A.):

The conditions and instructions issued to competing architects and the answers to questions asked by them were drawn up with meticulous care to indicate both the general intentions and the detailed requirements of the City Council, and, having regard thereto, it is with regret that I have to set aside some otherwise good designs which failed to appreciate, from their very inception, the import of these conditions and instructions.

I refer particularly to the conditions requiring that the buildings should be so planned as to be capable of erection in two definite sections, and at different times, so that the first portion should group up satisfactorily on the site and that the harmony should not be disturbed by the erection of the second portion. The design placed first has fulfilled these conditions in an excellent and most economical manner, especially so far as the extension is concerned.

I am satisfied that the design placed first more nearly than any other fulfils the requirements and intentions as prescribed in the conditions and instructions of the competition, both in general lay-out and in detail planning and design. I am further satisfied that the author's estimate of cost is such as will enable a tender to be received

within the margin provided in the conditions. I have no doubt that the buildings when erected will be eminently suited to their purpose, and will have an architectural setting both dignified and restrained, and which, I am sure, will add to the amenities of your ancient city.

Forty-six designs were submitted.

# THE WINNER'S REPORT

Following are some extracts from the report submitted by author of the winning scheme:

The accompanying design for municipal offices and clinics presents a simple, direct solution to the problem stated in the instructions to competitors. The buildings at present occupying the historic precincts of the Castle of York form an architectural group of the greatest interest, and it is regarded as essential that the new buildings, while accommodating the city department in the most efficient and dignified manner, shall also form a definite contribution to the effect of this group.

It is proposed to place the new offices at the northern end of the site, forming a block which will balance the female prison on the south. A central position is allocated to the clinics, which are linked to the buildings on either side by screen walls. The proposed new road, forming a continuation of Castlegate, is planned with a double carriageway and a central grass alley lined with pleached trees; this treatment is extended in front of

the female prison, thus uniting the old and new work and forming a suitable back-ground for the picturesque Castle Mound. The space in front of the court house is treated as a paved square, having a central feature in the form of a fountain or statuary group. The offices are planned to be carried out in two portions, as directed, the first section being complete in itself. The future extension will be approached directly from the main entrance and from the main staircase and lift on the upper floors. A secondary entrance is provided at the rear, giving access on the ground floor in conjunction with the public rates hall. It is proposed to carry out the whole of the base-ment in the first section of the work, leaving a finished concrete surface at ground floor level to receive the future building.

The whole of the work will be carried out in accordance with the Corporation byelaws, fire-resisting materials of British origin and manufacture being used throughout.

The office block will be designed as a steel-framed structure, the whole of the external walls being executed in brickwork faced with an approved northern grit stone in courses alternately 9 ins. and  $4\frac{1}{2}$  ins. deep on bed. The roofs will be covered with natural rock asphalt,  $\frac{3}{4}$  in. thick in two layers, laid on roofing felt. and 3 ins. of compressed cork as insulation. Floors will be carried out in approved reinforced hollow tile construction.

# WORKING DETAILS: 371

COUNCIL CHAMBER . HORNSEY TOWN HALL . REGINALD H. UREN



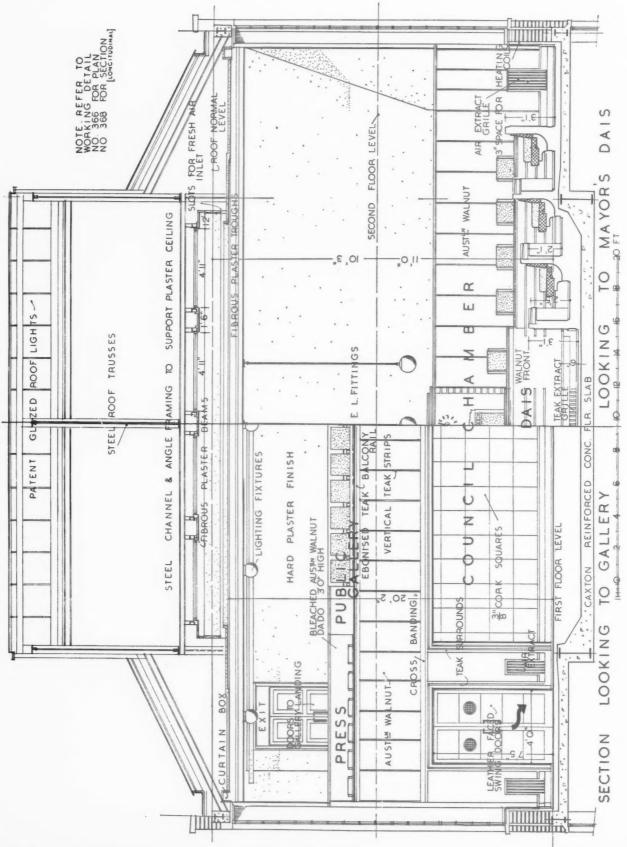
The council chamber dado panelling is in Australian walnut, Indian laurel and teak, and the seating is of Australian walnut veneer with red hide upholstery. The floor is of pine for close-carpeting. The tapestry wall panels mask acoustic slabbing, and the marble dados below the windows and tapestry panels cover heating coils. The cross section overleaf should be read in conjunction with the plan (Working Detail No. 366) and the longitudinal section (Working Detail No. 368).

# WORKING DETAILS: 372

COUNCIL CHAMBER

HORNSEY TOWN HALL

REGINALD H. UREN



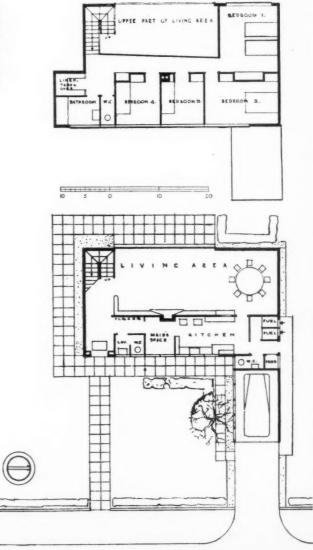
Cross sections of the council chamber illustrated overleaf.

# WORKING DETAILS: 373

WALL DETAILS • TIMBER HOUSE • REGINALD A. KIRBY



The house illustrated above was the first prize winning design in the £800 class of the recent Timber Development Association Competition. On the right are the first and ground floor plans. Overleaf is a section through the living room, with two details of the wall construction.



# THE ARCHITECTS' JOURNAL for December 12, 1935 FILING REFERENCE: WORKING DE TAILS: 374 WALL DETAILS . TIMBER HOUSE REGINALD A. KIRBY ELEVATION P U C -S Ш METHOD 3 RH PA Z - X SHE N S E 30.18 15, 0, al WEST

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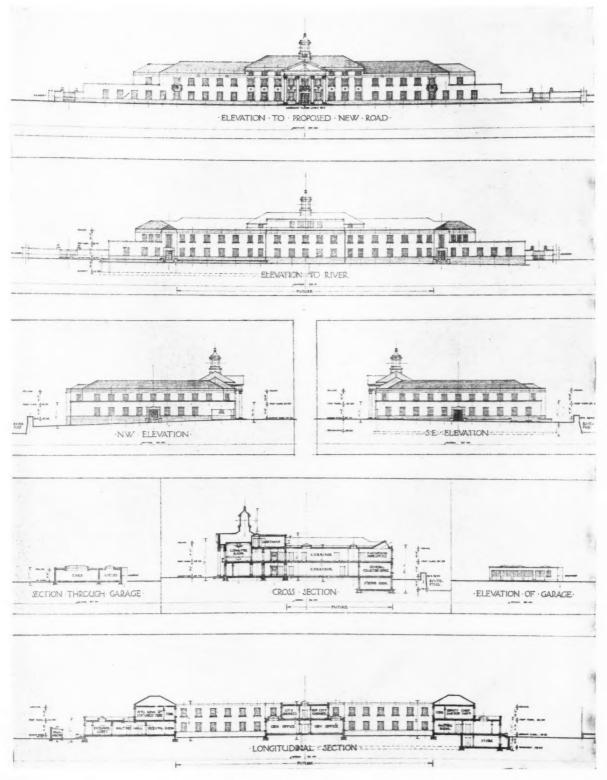
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Sections of the house illustrated overleaf.

And Harmon

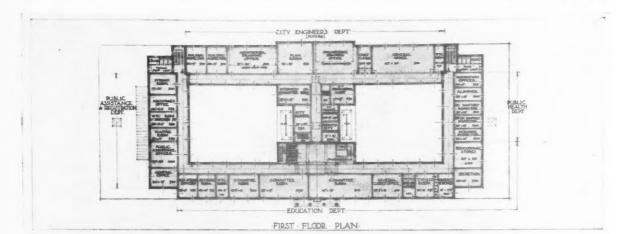
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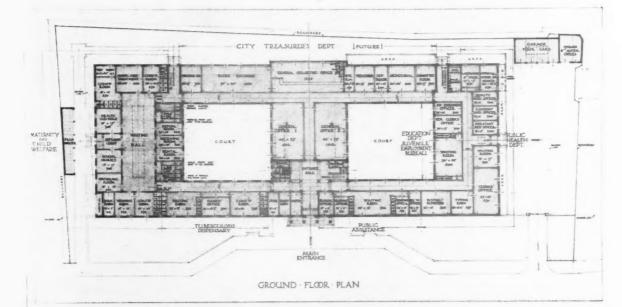
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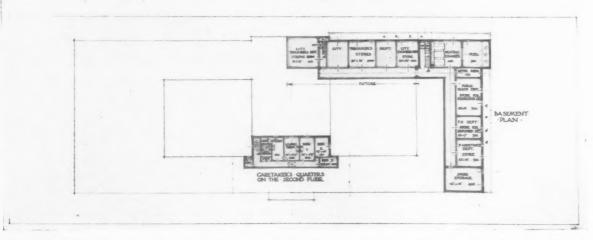


BY ELCOCK AND SUTCLIFFE

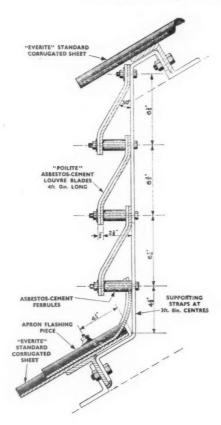
# T H E Y O R K C O M P E T I T I O N D E S I G N P L A C E D S E C O N D







 $m{B}$   $m{Y}$   $m{E}$   $m{L}$ .  $m{C}$   $m{O}$   $m{C}$   $m{K}$   $m{A}$   $m{N}$   $m{D}$   $m{S}$   $m{U}$   $m{T}$   $m{C}$   $m{L}$   $m{I}$   $m{F}$   $m{E}$ 



# T R A D E N O T E S

[EDITED BY PHILIP SCHOLBERG]

Works Visits

URING the last fortnight I have been on two official works visits, and from the questions asked (intelligent and otherwise) I have realized how useful a really well-organized trip round even a small works can be.

The first visit was to the British Oxygen Co.'s sales and technical service department at Cricklewood, where there are demonstration shops, a school for instruction in welding and cutting, a lecture theatre, and showrooms. And incidentally the film I was shown describing the work of the British Oxgen Co. in particular, and welding in general, was a very welcome change from the usual badly lit and obviously amateur work which one so often sees at shows of this kind.

The function of these showrooms is twofold. There is, of course, a full range of welding and cutting equipment on view, and most of it can be seen under actual working conditions, either in the demonstration shop or in the school section: it is, therefore, far easier to choose the right type of apparatus for the particular job in hand, and to get some idea of the cost of a particular process.

The school section provides tuition for customers' operatives, or for anyone else who wants to learn how to weld, and the monthly lectures are open to anybody who cares to attend.

The second visit was to the Ascot Gas Water Heater works, which now seem to be turning out a quite phenomenal number of heaters a day. I have been using an Ascot heater myself for just over two years, and so far it has been a great success, just sitting quietly in the kitchen and heating water without giving any trouble at all.

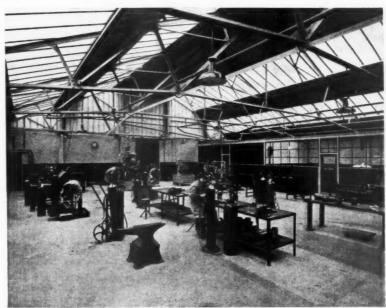
The most interesting discovery I made on this trip was that these heaters now have a bi-metallic control for the main gas valve which shuts off the supply if the small bypass should go out for any reason: this was developed originally for use with slot meters where the supply may fail when the penny or shilling is used up, but it seems to me to be a very reasonable safety measure for use with the ordinary quarterly meter supply.

As a further point, I noticed that, in both these works, the research department is looked upon as an essential part of the works, and is not, as so often used to happen, regarded as a rather unnecessary waste of money and tucked away in some dark cave where nobody can find it. So the standing reproach which could at one time be levelled at nearly all English manufacturers is gradually being swept away, chiefly, I suppose, because research pays.

# Asbestos Cement

An enormous catalogue has just arrived from Turners Asbestos Cement Co., and it contains essential information and proper data set out simply and without any unnecessary trimmings. The headpiece to these notes shows one of the numerous drawings which demonstrate the proper application of the various products, in this case a louvred vent to a corrugated asbestos cement roof.

The catalogue, which has a special loose leaf binding, is well indexed and has properly grouped sections dealing with everything from roofing to draining boards, via flooring, rainwater goods, sheet lathing, and cable ducts.



Welding in progress at the British Oxygen Company's new sales and technical service

# THE BUILDINGS ILLUSTRATED

DE LA WARR PAVILION, BEXHILL (pages 873-885). The consultants were Helsby, Hamann and Samuely, for the steelwork and structure; J. Stinton Jones, for the mechanical services; Frank Birch and Edgar Jackson, for the stage equipment; C. W. Glover and Partners, for acoustics;

Cyril Sweett, quantity surveyor.

The general contractors were Rice and Sons, Ltd. The principal sub-contractors

and suppliers included :

Structure.-Braithwaite Welding and Construction Co., steelwork, etc.; D. Anderson and Son, Ltd., roofing felt; Murex Welding and Son, Ltd., rooting left; Murex Welding Company, welding electrodes; London Brick Company and Forders, Ltd., hollow floor blocks and wall partitions; United Strip and Bar Mills, reinforcing bars; Trussed Concrete Steel Co., Ltd., and Expanded Metal Co., Ltd., suspended ceilings; F. Bradford & Co., Ltd., cast

Finishes.-J. Starkie Gardner, Ltd., ornamental metalwork, wrought iron railings, entrance gates, etc.; George Stephenson & Co., Ltd., cork flooring; Crittall Manufacturing Co., Ltd., metal windows, metal doors, screens, etc.; Clark and Fenn, Ltd., fibrous plaster; Carter & Co., Ltd., terrazzo pavings, tiling; Kalee, Ltd., carpets; C. A. Wright, curtains, etc.; Eric Munday, Ltd., lettering; British Art Tile Co., Cullamix tiles; John Foster and Son, Ltd., materials; Armstrong Cork Co., Ltd., cork.

Equipment.-T. Clarke & Co., Ltd., electrical engineers, floodlighting; G. K. Jensen & Co., Ltd., gear to stage, etc.; Hall Manufacturing Co., Ltd., curtain tracks, etc.; Milner's Safe Co., rolling shutter; Frank Burkitt, Ltd., fire curtain Waygood-Otis, Ltd., lifts; J. W. Gray and Son, Ltd., lightning conductor; Prestcold Refrigerators, Ltd., Prestcold refrigerator; Kelvinator, Ltd., ice-cream conservator; Pel, Ltd., nesting chairs and tables; Finmar, Ltd., bar stools, chairs; Plan, Ltd., tables and armchairs; Lusty and Sons, Ltd., settees, etc.; Cox & Co., tip-up seating, etc.; Deane and Beal, Ltd., ventilation; J. D. Beardmore & Co., Ltd., ironmongery, etc.; P. C. Henderson & Co., Ltd., sliding door track; James Gibbons, Ltd., and Taylor, Pearce & Co., ironmongery; John Bolding and Sons, Ltd., sanitary fit-tings; H. H. Martyn & Co., Ltd., bronze memorial plate; Greenwood's Ventilating Co., louvred vents; Burn Bros., Ltd., bronze trays and frames; Benham and Sons, Ltd., cafeteria equipment, etc.; Educational Supply Association, Ltd., hygienic C.S.H. fittings; Garrard Clocks, Ltd., clocks (electrical); Falk, Stadelmann & Co., electric light fittings; Troughton and Young, Ltd., electric light fittings, door sign; Oswald Hollmann, Best and Lloyd, Ltd., and Ascog, Ltd., electric light fittings; Osler and Faraday, Ltd., electric light fittings, terrace standards; Venreco, Ltd., trunnion irons and end plates to trinity spots; Carter Aynsley, Ltd., gear to adapt trinity spot lights; Standard Electric and Engineering Co., Ltd., music stands; Nettlefold and Sons, Ltd., door closers; Duke. Waring, Crisp & Co., panels, galvanized weaving; Nuway Manufacturing Co., Ltd., mats; Goldstein & Co., Ltd., glaziers; Louis G. Ford, installation of refrigerators; H. Stone, Ltd., easy chairs.



### PARLIAMENT IN

At question-time in the House of Commons last week, Sir Percy Hurd asked the Minister of Health whether he was aware that the demand for more family houses at low rentals would be largely met in many rural centres at a minimum cost to the public if smaller houses suitable for aged couples and the like were included in new housing schemes; and whether he would impress this fact on rural housing authorities following upon the resolution passed at the last annual conference of the Rural District Councils Association of England and Wales.

Sir Kingsley Wood said he would. In a memorandum on the Housing Act, 1935, issued on October 22, the attention of local authorities had once again been drawn to the advantage of including in housing schemes special homes for aged persons.

Sir Percy Hurd asked the Minister of Health whether his attention had been called to the anxiety expressed by local authorities in London, suburban and other districts because of the future effect on the rates of the large and increasing number of unoccupied, highly rented flats in their areas; and whether means could be devised to check the speculative building of new luxury flats and encourage the provision of the low-rented houses that were needed. Sir Kingsley Wood said that his attention had not previously been called to this matter, although he had seen references to it in the As regarded the second point, local authorities already possessed under the Town and Country Planning Act, 1932, extensive put of houses for letting at low rents was being, and he trusted would continue to be, increased under the Government's housing

Mr. Day asked the Minister whether he was aware that on many publicly owned blocks of flats and housing estates which had been built at separate times, varying rents were charged by the municipal authorities for similar accommodation; and would he consider introducing legislation that would enable housing authorities in future to amalgamate or pool all such properties which would permit them to charge equal rents for equal accommoda-

Sir Kingsley Wood said that the Housing Act, 1935, which received the Royal Assent in August of this year, gave housing authorities the powers which the hon. member

Mr. Graham White asked the Minister of Health if he could make a statement with regard to the progress made by local authorities in carrying out the survey of conditions of overcrowding under the Housing Act, 1935.

Sir Kingsley Wood said he had fixed April 1, 1936, as the date by which the survey should be completed, and he had every reason to believe that local authorities generally would complete the task in the allotted time. In most areas the survey had already started or would be commenced at an early date.

### R E P O R TL A W

PLANS: WHAT IS APPROVAL?

H. C. Jones & Co. (Surrey), Ltd., v. Surbiton Urban District Council. Before the Lord Chief Justice and Justices Humphreys and Singleton.

THIS was an appeal by the Surbiton Urban District Council from a decision of Surrey Quarter Sessions quashing an order of the Justices sitting at Kingston-on-Thames against Jones & Co. (Surrey), Ltd., builders, of Surbiton.

Montgomery, k.c., for the Council, stated an information was laid at the Petty Sessions by the Clerk to the Council, which alleged that Messrs. Jones had contravened Section 3 of the Public Health (Buildings in Streets) Act 1888, in that between August and October, 1934, they, without the consent of the Council, erected a bungalow, part of which was in front of the front main wall of the adjoining house. appeared that the builders forwarded to the Council a site plan showing the bungalow they proposed to build. From the plan it appeared that part of the building would project beyond the front main wall of the adjoining building to the extent of some 2 ft. 6 ins. The plan was, however, approved, but later it was found that in regard to its position with adjoining buildings, it was incorrect. The result was that when the bungalow was erected it projected 7 ft. 6 ins. in front of the adjoining buildings. The contention of Messrs. Iones was that, as the bungalow had been erected in precisely the position it appeared on the site plan approved by the Council, the written consent of the Council had been obtained.

For the Council it was said that as the site plan was incorrect and misleading as to the extent of the projection, the approval of the plan did not constitute a written consent for the purpose stipulated under

the Act.

The Justices went fully into the matter and came to the conclusion that the written consent as required had not been given under Section 3 and accordingly directed Messrs. Jones to pay a penalty of 17s.

Messrs. Jones appealed to Quarter Sessions and they, in reversing the decision of the Justices, held that no building line having been prescribed and the bungalow having been erected on the precise position shown on the plan as approved by the Council, there had been a written consent and they therefore allowed the appeal.

Mr. Montgomery argued that in circumstances of this case the approval of the plan did not constitute a written consent

by the Council under the Act.

The Court, after hearing Mr. Sydney G. Turner, K.C., for Messrs. Jones, allowed the appeal of the Council and reversed the decision of Quarter Sessions. They held that it was quite plain that the approval of the plan in the present circumstances did not constitute a written consent within the meaning of Section 3 of the Act.

### THE WEEK'S BUILDING NEWS

LONDON & DISTRICTS (15-MILES RADIUS)

CROYDON. Houses, etc. Plans passed by the Corporation: 28 houses, Bennetts Walk. the Corporation: 28 houses, Bennetts Walk, and 53 houses, Temple Avenue, Addington, for Messrs. Bennett, Worskett and Bennett: 27 houses, Carmo Manor Estate, for Mr. R. V. Tutte; 28 flats, Park Lane, for Mr. N. Brettall; alterations and additions, 58-60, Westow Hill, for Mr. P. Pope; two shops and bakery, Norbury Road, for Mr. F. R. Fisher; two houses, Windsor Road, for Mr. G. F. Wilson; two houses, The Glade, for Messrs. J. W. Hall & Co.; 22 houses, Brookside Way, for Messrs Connor & Co.; ice cream factory, Purley Way, for Messrs. Walls and Sons, Ltd.; canopy, & Co.; 22 houses, Brookside Way, for Messrs Connor & Co.; ice cream factory, Purley Way, for Messrs. Walls and Sons, Ltd.; canopy, cinema, London Road, for Associated British Cinemas, Ltd.; shop and café, Featherbed Lane, for Surrey Garden Village Trust, Ltd. CROYDON. Houses, etc. The B.C. has approved plans submitted by Messrs. Bennett, Worksett and Bennett, 73 Gower Street, W.C.I., for the erection of 81 houses and 81 garages, at Bennetts Way, Temple Way and The Grange, Addington.

Addington,
CROYDON. Shops and Bakery. Plans by F. R.
Fisher, for the erection of two shops with living rooms and a bakery at Norbury Road, Thornton

Heath, have been approved by the B.C.

EPSOM. Swimming Baths. The U.D.C. has under consideration the provision of swimming baths on land adjoining the waterworks in East Street. The scheme will probably include dispers baths.

slipper baths.

FELTHAM. Factory. The U.D.C. has approved plans for the erection of a factory at Hatton Cross for the Champion Sparking Plug Co.

FELTHAM. Shops and Houses. Plans approved by U.D.C.: T. Wareham, 18 houses, Hounslow Road, Hanworth; Messrs. Gale Heath and Sneath, five shops, High Street.

HAMPSTEAD. Flats. Mr. A. S. Ash is to erect a block of flats on the site of 99 Haverstock

Hill, Hampstead.

HARROW. Development. The L.C.C. is to pro-HARROW. Development. The L.C.C. is to proceed with the development of m housing estate at Headstone Lane, Harrow.

at Headstone Lane, Harrow.

HAYES. Estate Development. Messrs. George
Wimpey & Co., Ltd., propose to develop land
near Pump Lane by the erection of 304 houses.

HAYES. Houses, etc. Plans passed by U.D.C.:
R. T. Warren, 287 houses, Hayes Gate Estate; Taylor Woodrow Estates, Ltd., 24 houses. Cranford Park Estate; A. W. Burt, 10 houses,

Sipson Lane and Manor Lane, Harlington.

HAYES. Offices, etc. Messrs. Wilson and
Wylie, of Hayes, are to erect offices, showrooms,
store and shops in Station Road, plans for which have now been approved.

HILLINGDON. Houses. The Uxbridge U.D.C. has approved plans submitted by A. E. Green, for the proposed erection of 32 houses at Floriston Avenue.

HILLINGDON. Estate Development. The Ministry of Health has allowed an appeal by Messrs.
Silver Estates, Ltd., in connection with the proposed development of the Hillingdon Place Estate, by the erection of 444 houses.

Estate, by the erection of 444 houses.

MARYLEBONE. Extensions, etc. Plans passed by the B.C.: Extensions, Orchard Street and Somerset Street, for Messrs. Selfridges; block of flats, 2-4 St. John's Wood Road, for Mr. I. Schultz; block of flats, 76-82 Albert Street, for Mr. R. J. H. Minty; block of flats, Barrow Hill Road, for Mr. H. Kempton Dyson; factory extensions, for Compactom, Ltd., Carlisle Street, for Messrs. Wallis Gilbert and Partners; new premises, 22-8 Portland Place, for General new premises, 23-5 Portland Place, for General Nursing Council; flats, Stourcliffe Street and Forset Street, for Mr. W. E. Masters; block of flats, with underground garage, Marylebone Road and High Street, for Mr. B. L. Rhoads: shops and flats, Wellington Road and Eaton Terrace, for Messrs. A. Savill and Sons.

MORDEN. Housing Scheme. The L.C.C. is to acquire 185 acres at Morden for another housing scheme and proposes to vote £200,000 for its development.

STAINES. School. The Middlesex County Council has secured a site on the outskirts of Laleham Estate, for a large elementary school.

TWICKENHAM. Flats. Approval has been given to an application by Messrs. Dickinson, Norman and Walls, to the proposed erection of 140 flats and 59 garages on the north side of Cambridge Park.
TWICKENHAM. Flats. Messrs. Moorshead and

Brown have applied for permission to erect 84 flats on each side of Runnymede Road and on the north side of Keswick Road. Approval

has been given by the T.C.

TWICKENHAM. Houses. A site at Meadway, between Crane Park and Chertsey Road is to be developed by Messrs. Wates (Malden), Ltd.,

by the erection of 318 houses.

UXBRIDGE. Power House. The London Passenger Transport Board are to purchase a site of 100 ft. by 100 ft., on the Hillingdon House Farm Estate, adjoining the railway, for the erection of a large electricity sub-station.

WOOD GREEN. Nursery and Clinic. The Corpora-tion has asked the borough engineer to prepare revised plans for the erection of a day nursery and clinic at an estimated cost of £10,000.

woolwich. Flats and Cottages. The B.C. is to erect, by direct labour, further blocks of flats and cottages on the Horn Park estate at a cost

of £65,096.

### SOUTHERN COUNTIES

HORSHAM. Cinema. A super-cinema is to be HORSHAM. Cinema. A super-cinema is to be erected by Odeon Cinemas, Ltd., on a site set well back from North Street, with a one-way semi-circular carriage road leading to a car park. The architect is Mr. G. Coles, F.R.I.B.A., of London. Work, it is expected, will com-mence almost immediately.

HORSHAM. Cinema. A cinema with a seating HORSHAM. Cinema. A cinema with a seating capacity of 1,200, together with a large court-yard and parking accommodation for 150 cars, is to be erected for the Union Cinemas, Ltd., to plans prepared by Messrs. Godman and Kay, of Horsham. The cinema is to be erected in Kings Meadow, fronting North Street. It is expected that work will be commenced at an early date. early date.

LEPE BAY. Houses. The Southern Hampshire Regional Planning Committee has forwarded plans to the New Forrest R.D.C. for a proposed development at Lepe Bay. The scheme provides for 550 houses on 140 acres and provide for a golf course, shops, cinema and tennis courts. MAIDSTONE. Swimming Bath. The governors of Maidstone grammar school are to construct a swimming bath at the school.

SANDWICH. School. The Kent Education Committee is to acquire a site at Sandwich for the erection of a junior school.

WEYBRIDGE. Flats. The U.D.C. has approved plans submitted by C. J. Ingram for a block of 24 flats at Culverden Lodge, Outlands Drive. WHITSTABLE. School. The Kent Education Committee has purchased a site at Swalecliffe, Whitstable, for the erection of an elementary

WINCHESTER. Hospital Extension. The Committee of the Hants County Hospital propose to erect a new nurses' home, an enlarged X-ray department and alteration to the exist buildings. The estimated cost is £30,000. and alteration to the existing

# SOUTH-WESTERN COUNTIES

BARNSTAPLE. Garage, etc. Messrs. Friend and Kelly are the architects in connection with the erection of a large garage and petrol filing station at Landkey Road, for Dunn and James,

Schools. The Devon Education DEVON. Committee propose in a two years' building programme to erect 19 elementary, three secondary schools and the replacement of huts by permanent buildings at eight secondary

### EASTERN COUNTIES

EARLS COLNE. School Enlargement. The Essex Education Committee are to enlarge the Earls Colne Grammar School at an estimated cost of £6,850.

of £,0,850. GRAYS. Houses. The U.D.C. has approved plans by the Surveyor, Mr. H. S. Goodall, for the proposed erection of 88 houses and 12 flats, on the Council's housing estate, at an estimated cost of £30,420.

School. The Chelmsford HUY HARLINGS.

Diocesan Committee is to erect a Church of England senior school at Huy Harlings.

WEST MERSEA. School. The Essex Education Committee has approved plans for the erection of a senior school at West Mersea at a cost of £9,050.

witham. Police Station. Plans are in course of preparation by Mr. J. Stuart, F.R.I.B.A., County Architect, for the proposed erection of a police station on a site adjoining Newland Street.

WITHAM. School. The Essex Education Committee has purchased a site at Witham for the erection of a senior school.

### MIDLAND COUNTIES

STOKE-ON-TRENT. Additions, etc. Plans passed by the Corporation: Additions, Tile Works, Shelton Old Road, for Messrs. Minton Hollins, Ltd.; two houses, London Road, for Mr. Shelton Old Road, Ro. London Road, for Mr. Ltd.; two houses, London Road, for Burslem Co-op. Society, Ltd.; extensions, Spode Works, for Messrs. W. T. Copeland and Sons, Ltd.; 12 houses, Grove Road, for Mr. J. B. Thompson; two houses, Albert Street, for Mayfield Sand and Gravel Co.; warehouse, Parker Street for Messrs. Barker Bros. Barker Street, for Messrs. Barker Bros.

# NORTHERN COUNTIES

BLACKPOOL. Houses. Plans passed by the Corporation: Nine houses, South Park Drive, for Mr. N. Rideout; 18 houses, Devonshire Road, for Mr. H. Grimnaldeston; two houses, Road, for Mr. H. Grimnaldeston; two houses, Newton Drive, for Mr. E. Saville; private hotel and two boarding houses, Park Road, for Messrs. Render and Seddon, Ltd.; two houses, Newton Drive, for Messrs. J. Bain and Co.; six houses, Dunes Avenue, for Mr. A. Turner; 12 houses, Harris Avenue, for Mr. J. Harrison; two houses, Canterbury Avenue, for Messrs. Suthers and Clarkson; 110 houses, Beckway Avenue, for Mr. Wilson; six houses, Kingscote Drive, for Mr. V. Hague: two for Messrs. Suthers and Clarkson; 110 houses, Beckway Avenue, for Mr. Wilson; six houses, Kingscote Drive, for Mr. V. Hague; two houses, Wetherby Avenue, for Mr. T. Foster; two houses, Newhouse Road, for Mr. H. Radcliffe; two houses, Argyle Road, for Messrs. T. Bannister and Sons; six houses, Bloomfield Road, for Mr. S. A. Howard; four houses, Poulton Old Road, for Mr. V. T. Heald; showroom and store, 239 Talbot Road, for Messrs. W. L. Cookson, Ltd. EAST HEDLEY. Colliery Offices. The Hedley Hope Coal Co. are to erect colliery offices in East Hedley, Co. Durham. LEEDS. Police and Fire Station. The Corporation is to erect police and fire stations on the

tion is to erect police and fire stations on the Gipton estate, at a cost of £27,304.

LEEDS. Houses and Flats. The Corporation is

to erect 64 houses and flats on the Hawkswood state, at a cost of £17,000.

salford. Hotel. Threlfalls Brewery Co.,
Ltd., are to erect an hotel in Lancaster Road,

# SCOTLAND

ABERDEEN. Bungalow. John Bisset and Sons, Ltd., propose to erect 86 bungalows on sites in the Black Hilton Road and Cairnery Avenue districts, and 64 at the north of Seafield Road, and the east side of Springfield Road.

ABERDEEN. Houses. The Town Council has decided to erect 66 tenement houses at Hard-

gate, Union Glen and Willowbank Road.
FORT WILLIAM. Factory. The British Oxygen
Co., Ltd., who are to promote the Caledonian

water power scheme, propose to erect a factory at Corpach, near Fort William, for electricchemical purposes.

# RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule.

Column I gives the rates for craftsmen; Column II for labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

	Column 1 gi	ves the rates for	craitsm	nen; Column II	for not if	iciuaea	may be	OL	stained upon	application in	writing	
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A	Carnforth N.V Castleford You	W. Counties 1 6	1 14	li Lewes	S. Counties Mid. Counties	1 21	11	A	Swindon	S.W. Counties	1 41	1 0
A	Chatham S. C.	Counties 1 4	1 01	A Lincoln	Mid. Counties	1 5 1 6	1 02 1 12		T	** *** **		
A	Cheltenham S.W	V. Counties 1 4	1 04	Liverpool	N.W. Counties N.W. Counties	1 5	1 28 1 08	A <sub>1</sub>	Taunton	N.W. Counties S.W. Counties	151	1 11
A	Chester N.V Chesterfield Mid	W. Counties 1 6 I. Counties 1 6	1 14	A Llanelly	S. Wales & M.	1 6	1 14	A	Teesside Dist Teignmouth	N.E. Gounties S.W. Coast	1 5	1 11
$\mathbf{B_{i}}$	Chichester S. C	Counties 1 3	113	London (12-miles Do. (12-15 mil	radius) les radius)	1 74	1 22 1 114	A <sub>B</sub>	Todmorden	Yorkshire	16	1 14
A B	Chorley N.V Circucester S. C	W. Countles 1 6 Countles 1 3	1 14	A Long Eaton	Mid. Countles	1 6	1 14	A <sub>1</sub> B <sub>2</sub>	Torquay	S.W. Counties S.W. Counties	1 5 1	1 11
A	Clitheroe N.V	W. Counties 1 6 tland 1 6	1 14	A. Luton	E. Counties	1 54	1 11	A <sub>3</sub>	Tunbridge	S. Counties	1 44	1 0
A	Coalville Mid	i. Counties 1 6	1 14	A Lytham	N.W. Counties	1 6	1 14	A	Wells Tunstall	Mid. Counties	1 6	1 14
A	Colchester E. Coine N.V	Counties 1 5	1 12	A, MACCLES-	N.W. Counties	1 61	1 11	A	Wells Tunstall Tyne District	N.E. Coast	1 6	1 14
A <sub>0</sub>	Colwyn Bay N.V	W. Counties 1 5 E. Coast 1 5	1 02	FIELD					WAREFIRLD			
A	Conway N.V	W. Countles 1 5	1 11	A <sub>3</sub> Maldstone A <sub>3</sub> Malvern	S. Counties Mid. Counties	1 4 1 1 4 1	1 01	A		Yorkshire Mid. Countles	16	1 11
A A	Coventry Mid	i. Counties 1 6 W. Counties 1 5	1 14	A Manchester	N.W. Counties Mid. Counties	1 6	1 14	A	Warrington	N.W. Counties Mid. Counties	16	1 14
A	Cumberland N.V	W. Counties 1 4	1 0	A Mansfield B <sub>1</sub> Margate	S. Counties	134	112	A <sub>1</sub> A <sub>1</sub>	Wellingborough	Mid. Counties	1 54	1 11
	D			A Matlock A <sub>1</sub> Merthyr	Mid. Counties S. Wales & M.	1 44	1 01	A A <sub>2</sub>	West Bromwich Weston-s,-Mare	Mid. Counties W. Counties	16	1 14
A	DARLINGTON N.I	E. Coast 1 6	1 11	A Middlesbrough	S. Wales & M. N. E. Coast	1 6	1 16	Ag	Whitby	Yorkshire	1 5	1 02
B <sub>1</sub>	Deal S. C.	W. Countles 1 6 Countles 1 3	1 14	A <sub>2</sub> Middlewich B <sub>2</sub> Minehead	N. W. Counties S.W. Counties	1 5	1 02	A	Widnes Wigan	N.W. Counties N.W. Counties	1 6	1 14
A	Denbigh N.V	W. Countles 1 44	1 04	B <sub>2</sub> Minehead B <sub>3</sub> Monmouth & S. and E.	S. Wales & M.	1 3	111	B	Winchester	S. Counties S. Counties	1 4	1 0
AB	Dewsbury You	rkshire 1 6	1 14	Glamorganshire				A <sub>3</sub>	Wolverhampton	Mid. Countie.	16	1 11
A	Doncaster You	Counties 1 4 rkshire 1 6	1 0	A Morecambe	N.W. Counties	1 6	1 11	$A_3$		Mid. Counties Yorkshire	1 5 1 4 4	1 04
$\mathbf{B}_{1}$	Dorchester S.W	V. Counties 1 34	112	A, NANTWICH	N W Commel	1.0	1 1.2	A <sub>1</sub>	Wrexham	N.W. Countles	1 54	1 01
A	Dreitwich Mid	i. Counties 1 5	1 02	A Neath	N.W. Counties S. Wales & M.	1 5	1 14	A	Wycombe	S. Counties	1 41	1 01
A A	Dumfries See	i. Counties 1 6 btland 1 5	1 11	A Nelson A Newcastle	N.W. Counties N.E. Coast	16	1 14	В	YARMOUTH	E. Counties	1.4	10
A	Dundee Soo	tiand 16 E. Coast 16	1 14	A Newport	S. Wales & M.	1 6	1 14	B	20078	S.W. Counties	1 4	10
A	Durnam M.	10	1 1	A Normanton	Yorkshire	1 6	1 11	A	York	Yorkshire	Y 0	1 1

In these areas the rates of wages for certain trades (usually painters and plasterers) vary slightly from those given.

The rates for every trade in any given area will be sent on request.

# CURRENT PRICES

The wakes are the standard Union rates of wages payable in London at the time of publication. The prices given below are for materials of good quality and include delivery to site in Central London area, unless otherwise stated. For delivery outside this area, adjust-

ment should be made for the cost of transport. Though every care has been taken in its compilation, it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry. The whole of the information given is copyright.

WAGES	SLATER AND TILER	SMITH AND FOUNDER—continued. s. d.
s. d.	First quality Bangor or Portmadoc slates	Rolled steel joists cut to length cwt. 13
Bricklayer	d/d F.O.R. London station	" " 10 9
Toiner	24"×12" Duchesses per M. 28 17 6 22"×12" Marchionesses	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Mason (Banker)	20" V TO" Countesses	" " 9 6
Plumber	18" x 10" Viscountesses , 15 10 0 18" x 0" Ladies , 13 17 6 Westmorland green (random sizes) . per ton 8 10 0	710
Painter	Westmorland green (random sizes) . per ton 8 10 0 Old Delabole slates d/d in full truck loads to	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,
Glavier I 7	Nine Elms Station :	Cast-iron rain-water pipes of s. d. s. d. ordinary thickness metal . F.R. 8
Slater	20"×10" medium grey per 1,000 (actual) 21 11 6	Shoes each s o s o
Timberman	Best machine roofing tiles 4 10 0	Boots 3 0 4 0
General Labourer	Hips and valleys each 9	Bends 2 7 8 9 with access door 4 6 5 9
Lorryman	,, hand-made	
Watchman per week 2 to 0	., copper 1 6	Plinth bends, 41 to 6" 3 9 5 3
MATERIALS		Half-round rain-water gutters of ordinary thickness metal. F.R. 5
EXCAVATOR AND CONCRETOR	CARPENTER AND JOINER	Stop ends each 6 6
Grey Stone Lime per ton 2 2 0	s. d.	Obtuse angles , s o s 6
Blue Lias Lime	Good carcassing timber . F.C. 2 2 Birch	Outlets ,, I 9 2 9
Hydrated Lime	Deal, Joiner's , , 5	PLUMBER Lead, milled sheets cwt. 26 3
Portland Cement, in 4 ton lots (d/d site, including Paper Bags) Rapid Hardening Cement, in 4-ton lots	Mahogany, Honduras	, drawn pipes , , 26 3
(d/d site, including Paper Bags) . ,, 2 0	,, African ,, ,, I I Cuban ,, ,, 2 6	,, soil pipe ,, 26 3 ,, scrap , 18 0
White Portland Cement, in I-ton lots , 8 15 0 Thames Ballast per Y.C. 6 3	Oak, plain American ,, ,, I o	Solder, plumbers'
Building Sand	" plain Japanese " " I s	Copper, sheet 8
Washed Sand	" Figured " " " I 5 " Austrian wainscot " " I 6	L.C.C. soil and waste pipes: 3° 4° 6°
A" IO 3	, English , , , 1 11	Plain cast . F.R. 1 0 1 8 8 6 Coated , 1 1 1 3 2 8
Pan Breeze	,, Oregon , , , , 4	Galvanized ,, 2 0 2 6 4 6
	,, British Columbian , , , 4 Teak, Moulmein , , , , , , , , , , , , , , , , ,	Bends , 3 9 5 3 10 3
DRAINLAYER BEST STONEWARE DRAIN PIPES AND FITTINGS	Burma , , , I s	Shoes , 2 to 4 4 9 6 Heads , 4 8 8 5 18 9
4°. 6°.	Prench , , , 2 3	PLASTERER & a. d.
Straight Pipes per F.R. 0 9 I I	Deal floorings, to Sq. 18 6	Lime, chalk per ton 2 5 0
Bends each 1 9 2 6 Taper Bends , 3 6 5 3	, I , I I 6	, fine 4 15 0
Rest Bends 4 3 6 3	" II " I 5 0	Hydrated lime , 3 0 9 Sirapite , 3 6 0
Double 4 9 6 6	Deal matchings , 14 0	Keene's cement 5 0 0
Straight channels per F.R. I 6 2 6 4 Channel bends each 2 9 4 0	,, I,	Pioneer Plaster 3 6 6
Channel junctions 4 6 6 6	Rough boarding 1	Thistle plaster
Yard gullies , 6 9 8 9	Plywood, per ft. sup.	Hair lb. 6 Laths, sawn bundle 2 4
IRON DRAINS:		", rent
Iron drain pipe per F.R. 1 6 2 6 Bends each 5 0 10 6	Qualities . A B BB A B BB A B BB A B BB d.	GLAZIER s d. s. d.
Inspection bends , 9 0 15 0	Birch	Sheet glass, 21 oz., squares n/e 2 ft. s. F.S.
Double junctions Is 6 30 0	Cheap Alder - 2 11 - 31 2	Flemish, Arctic, Figures (white)* . ,,
Lead Wool lb. 6 — Gaskin	Gaboon	Blazoned glasses. , , s 6 Reeded; Cross Reeded . , , II
BRICKLAYER	Mahogany 4 3t - 5 4t - 7 6t - 8 7 - Figured Oak 6t 5 - 7t 5t - 10 8 0 1/- 9 -	Cathedral glass, white, double-rolled,
£ s. d.	d.	plain,hammered,rimpled,waterwite ,, 6 Crown sheet glass (n/e 12 in. x 10 in.) ,, 3 o
Flettons	Scotch glue lb. 8	Flashed opals (white and coloured) ,, I and 2 an
Phorpres bricks , 2 15 0		wired cast; wired rolled ,, 92
Stocks, 1st quality 4 II o	CASTES AND EQUIPMEN	Polished plate, n/e I ft tro to II I
Blue Bricks, Pressed , 8 17 6	SMITH AND FOUNDER Tubes and Fittings:	, , , 2 , †I 2 ., ;I 4 †2 3 ., ;I 4 †2 3 ., ;I 3 6 †3 9
, Wirecuts , 7 17 6 Brindles , 7 0 2	(The following are the standard list prices, from which	, , 8 , †a 9 , 13 a
Bullnose ,, 9 0 0	should be deducted the various percentages as set forth below.)	
Red Rubbers for Arches , 12 0 0	Tubes, 2'-14' long, per ft. run 4 5\frac{1}{2} 9\frac{1}{2} 1/1 1/10	Vita glass, sheet, n/e r ft
Multicoloured Facings , 7 10 0 Luton Facings , 7 10 0		,, ,, ,, over 2 ft, I 9
Phorpres White Facings ,, 3 17 3	, 3°-11½° long , 7 9 1/3 1/8 3/- Long screws, 12°-23½° long , 11 1/3 2/2 2/10 5/3 , 3°M-½° long , 8 10 1/5 1/11 3/6	,, plate, n/e I ft I 6
Midhurst White Facings 5 0 0	Dends	n n n 5 ft n 4 •
Glazed Bricks, Ivory, White or Salt glazed, 1st quality:	Springs not socketed . ,, 5 7 1/1 1/11 3/11	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,
Stretchers , 2I 0 0 Headers , 20 10 0	Elbows, square 10 1/1 1/6 2/2 4/3	"Calorex" sheet 21 oz., and 32 oz 2 6 and 3 6
Bullnose ,, 27 10 0	Tees	Putty, linseed oil ib. 3
Double Headers	Plain sockets and nipples 3 4 6 8 1/3 Diminished sockets 3 4 6 9 1/- 2/-	* Colours, rd. F.S. extra.
Glazed Second Quality, Less	Flanges , 9 1/- 1/4 1/9 2/9	† Ordinary glazing quality. ‡ Selected glazing quality.
", Other Colours , 5 10 0  "Breeze Partition Blocks per Y.S. 1 7	Backnuts , 2 3 5 6 1/1	PAINTER White lead in 1 cwt. casks cwt. 2 8 6
21 ,, ,, ,, ,, ,, ,,	Iron main cocks . ,, 1/6 2/3 4/2 5/4 11/6 ,, with brass plugs ,, -4/- 7/6 10/- 21/-	Linseed oil gall. 2 3 Boiled oil
3 ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,		Turpentine 4 12
MASON	Discounts: TUBES.  Per cent.  Per cent.	Patent knotting
The following d/d F.O.R. at Nine Elms: s. d.	Gas 65 Galvanized gas . 52	Whitening
Fortland stone, Whitbed . F.C. 4 41	Water 611 , water 471 Steam 572 , steam 421	Size, double hrkin 3 •
Bath stone 2 10	Ripprince	Flat varnish ,, 14 0
" Sawn templates 7 6	Gas 57 Galvanized gas . 47	White enamel II5 0
Paving, 2 F.S. 1 8	Water	Ready mixed paint

### MEASURED CURRENT PRICES FOR WORK

average size, executed under normal conditions in the tion, no responsibility can be accepted for the accuracy of London area. They include establishment charges and the list. The whole of the information given is copyright.

The following prices are for work to new buildings of profit. While every care has been taken in its compila-

s. d. I 91 I II}

1 9

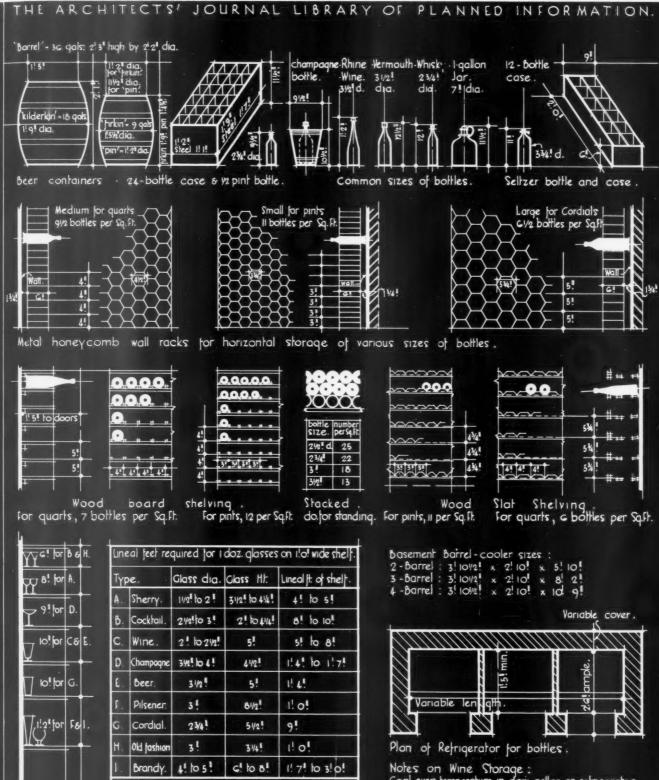
£ s. d. Per cwt. 16 6

4. d.

5 6 9

	London area. They	inciud	c cous	CATTORITATE.	acas.	CAAGO	800		164	the late vinoic of the information given is copyright.	
	EXCAVATOR AND CONCRETOR					82 C		9.		CARPENTER AND JOINER—continued	
	Digging over surface n/e 12" deep and ct to reduce levels n/e 5' o" deep a to form basement n/e 5' o" and ca ''' ''' 15' o" deep a'' ''' 15' o" deep a''	nd cart	away		*	Y.S. Y.C.			9	1½" deal moulded sashes of average size F.S.	
	to form basement n/e 5' o" and ca	art away and cart	away		*	22		9	6	11 deal cased frames double hung of 6" x 3" oak sills, 11" pulley stiles, 12" heads. 1" inside and outside linings, 8" parting beads, and with brass faced axle pulleys, etc., fixed complete	
	" 15' o" deep a	and cart	away		add	**	1	0	0	and with brass faced axle pulleys, etc., fixed complete	
	If in stiff clay	ntion			11	F.S.		4 I	0	Extra only for moulded horns	
	Planking and strutting to sides of excave to pier holes.  """ to trenches extra, only if lef	ation		*		r.o.		I.	5	deal tour-panel square, both sides, door F.S.	*
	to trenches . extra, only if lef	t in				11			5	11 but moulded both sides . "	
	Hardcore, filled in and rammed . Portland cement concrete in foundation	9 (6-Y)				Y.C.	1	6	0	4" × 3" deal, rebated and moulded frames F'R	
	Portland cement concrete in loandarion					22	I	12	6	1 A deal tongued and moulded window board, on and including deal bearers	
	Finishing surface of concrete, space face	under	pinning			Y.S.	1 1	10	7	It" deal treads, I" risers in staircases, and tongued and grooved	
										together on and including strong fir carriages	
						4"			6"	ry outer strings Ends of treads and risers housed to string	c la
	DRAINLAYER Stoneware drains, laid complete (digging	g and co	ncrete				1.		d.	3" × 2" deal moulded handrail F.I	R.
			: :	F.R. Each		1 6		3	3	14" × 14"	
	to be priced separately)  Extra, only for bends , junctions Gullies and gratings			22		3 9 16 6		4	6	Extra only for newel caps	
	Cast iron drains, and laying and jointing	g .		F.R.		4 9		6	9	Do., pendants	
	Extra, only for bends			Each		10 6		15	6	SMITH AND FOUNDER	
										Rolled steel joists, cut to length, and hoisting and fixing in	
	BRICKLAYER Brickwork, Flettons in lime mortar .				. P	er Rod		9.	d.	position Per Riveted plate or compound girders, and hoisting and fixing in position	CWI
	, in cement					2.2	27	12	6	Do., stanchions with riveted caps and bases and do.	
	Blues in cement	:	: :	:		**		0	0	Mild steel bar reinforcement, ½ and up, bent and fixed complete "Corrugated iron sheeting fixed to wood framing, including all	
	Water only for circular on plan					22	2	0	0	poits and nuts 20 g	
	backing to masonry . raising on old walls .					2.2		0	0	Wrot-iron caulked and cambered chimney bars Per c	wt.
	Fair Face and pointing internally					F.S.	5	10	11	PLUMBER	
	Batra over fletton brickwork for picked s	k facing	s and p	ointing		9.0			8	Milled lead and labour in flats	
	,, blue bri	ck facin	gs and	pointing		2.3		3	6	Do. in covering to turrets Do. in soakers	
	Tuck pointing			· postanta,		9.6		3	71	Labour to welted edge	.5
	Weather pointing in cement	:				22			3	Open copper nailing	
	Vertical dampcourse	*				22		I	I	* * * * * * * * * * * * * * * * * * *	2"
										fixing with pipe	d.
	ASPHALTER  We Horizontal dampcourse					Y.S.			d. 6	hooks F.R. 10 1 0 1 3 2 0 2 Do. soil pipe and	10
	Vertical dampeourse					22		6	9	fixing with cast lead	
	paving or flat					22		5	6	Extra, only to bends Each 2	0
	1" paving or flat 1" x 6" skirting Angle fillet					F.R.		I	0	Do. to stop ends . ,, 64 8 9 II I	0
	Rounded angle					11			2	unions	-
	Cesspools					Each		5	0	Screw down bib	,
	MASON							s.	A	Do. stop cocks 7 0 0 6 12 6 -	_
	Portland stone, including all labours, ho	oisting,	âxing ac	d clean	ing	D.C				4" east-iron 1-rd. gutter and fixing F.R Extra, only stop ends Each	
	down, complete					F.C.		17	9	Do. angles Do. outlets	
	Artificial stone and do	:			:	99. 33		13	6	4" dia. cast-iron rain-water pipe and fixing with ears cast on Extra, only for shoes Eac	
	,, thresholds			•		22	1	3	6	Do. for plain heads	n
	es 21113 · · · ·				^	#.B		U	0	DI ACTEDED AND MILENO	
	SLATER AND TILER								d	PLASTERER AND TILING Expanded metal lathing, small mesh Y.S.	
	Slating. Bangor or equal, laid to a a" la	p, and	fixing w	rith com	po	•	£ 1		d.	Do. in n/w to beams, stanchions, etc.  Lathing with sawn laths to ceilings	
	nails, 20" × 10"	:				Sqr.	3 1	7	0	Lathing with sawn laths to ceilings  if screeding in Portland cement and sand or tiling, wood block floor, etc.  Do. vertical	
	Do., 24" × 12". Westmorland slating, laid with diminish	ned cour				12	3 1	7	0	Do. vertical	
	Tiling, best hand-made sand-faced, laid	to a 4" g	auge, na	alled eve	ery	2.5				Render, float and set in lime and hair	
	fourth course  Do., all as last, but of machine-made til					22		6	0	Render and set in Sirapite	
	20" × 10" medium Old Delabole slating,	laid to a	3° lap	(green)		22	4 1		0	Extra, only if on lathing	
,						**		2	-	Keene's cement, angle and arris Arris Panded angle angle	
	CARPENTER AND JOINER						6	B.	d.	Rounded angle, small Plain cornices in plaster, including dubbing out, per i' girth	
	Flat boarded centering to concrete floor. Shuttering to sides and soffits of beams	s, includ	ling all		g.	Sqr. F.S.		2	6	T" granolithic navings	
	, to stanchions					22			7 7	6" × 6" white glazed wall tiling and fixing on prepared screed . "	
	Fir and fixing in wall plates, lintols, etc.					F.C.		3	6	6 × 6 white glazed wall tiling and fixing on prepared screed " 5 × 3 white glazed wall tiling and fixing on prepared screed " 6 × 3 F.R.  Extra, only for small quadrant angle "F.R.	
	Fir framed in floors					22		4	6	GLAZIER	
	,, trusses					22		7	6	21 oz. sheet glass and glazing with putty	
	I' deal sawn boarding and fixing to jois					Sqr.	1 1	8	6	26 oz. do. and do	
	1° " " " " " " " " " " " " " " " " " " "	:		:		22		7	6	Claring only British polished plate	
	** x 2" for battening for Countess slating					2.5		9	0	Extra, only if in beads	
	Do. for 4" gauge tiling					F.R.		2	41	Washleather	
	Patent inodorous felt, r ply					Y.S.		2	3	PAINTER	
						F.R.		3	3	Clearcolle and whiten ceilings Y.S.	
	Stout herringbone strutting to of joists								2	Do with washable distamper	
	Stout herringbone strutting to 9" joists	:				F.S.				What stan prime and point four costs of all colours - 1-i-	
	Stout herringbone strutting to 9" joists 1" deal gutter boards and bearers 12" deal wrought rounded roll								6	Knot, stop, prime and paint four coats of oil colour on plain surfaces ,, Do. on woodwork .	
	Stout herringbone strutting to 9" joists 1" deal gutter boards and bearers 12 deal wrought rounded roll 1" deal grooved and tongued flooring, cleaning off				ng	F.S. F.R.		I	8	Knot, stop, prime and paint four coats of oil colour on plain surfaces ,, Do. on woodwork .	
	Stout herringbone strutting to 9" joists 1" deal gutter boards and bearers 12 deal wrought rounded roll 1" deal grooved and tongued flooring, cleaning off			includi	ng	F.S. F.R. Sqr.	2 2 1	I	6 8 0	Knot, stop, prime and paint four coats of oil colour on plain surfaces Do. on woodwork Do. on steelwork Do. and brush grain and twice varnish Stain and twice varnish woodwork	
	Stout herringbone struting to 9" joists 1" deal gutter boards and bearers 12" a" deal wrought rounded roll " deal grooved and tongued flooring, cleaning off 12" do.  14" do.  14" do.  14" deal moulded skirting, fixed on, and is 7" deal		ground	is plugge	ng ed	F.S. F.R. Sqr.	2 2 I 2 I	107	6 8 0 0 0	Knot, stop, prime and paint four coats of oil colour on plain surfaces Do. on woodwork Do. on steelwork Do. and brush grain and twice varnish Stain and twice varnish woodwork Stain and wax-nolish woodwork	
	Stout herringbone struting to 9" joists 1" deal gutter boards and bearers 12 deal "wrought rounded roll 1" deal grooved and tongued flooring, cleaning off 14" do.		ground	is plugge	ng ed	F.S. F.R. Sqr.	2 2 I 2 I	107	6 8 0	Knot, stop, prime and paint four coats of oil colour on plain surfaces Do. on woodwork Do. on steelwork Do. and brush grain and twice varnish Stain and twice varnish woodwork Stain and wax-noilsh woodwork	





Glass storage.

1. Brandy. 4! to 5! c! to 8! 1! 7! to 3! 0!

Note: The above are average sizes and allowances. No exact standards exist.

Notes on Wine Storage:

Cool even temperature in dark cellar or retrigerator.

Temperature control equipment is necessary as majority of beverages are permanently harmed by treezing or excessive warmth. 58° f. is recommend-

ority of beverages are permanently harmed by treezing or excessive warmth. 58° f. is recommended. All wines, except sweet varieties, should be stored horizontally. Sweet wines should be stored upright before service to allow settlement of sediment. White wines are served at 45° to 50° f, & may be separately stored prior to service.

INFORMATION SHEET: HOTELS: STORAGE FOR BOTTLES AND GLASSES STATE STORAGE FOR BOTTLES AND GLASSES AND G

## INFORMATION SHEET

• 287 •

# BOTTLE RACKS AND STORAGE

THIS Sheet shows the general arrangement of storage racks in wood and metal for various types of bottle, and the overall heights of the different sizes of glass usually employed in the fully-equipped bar.

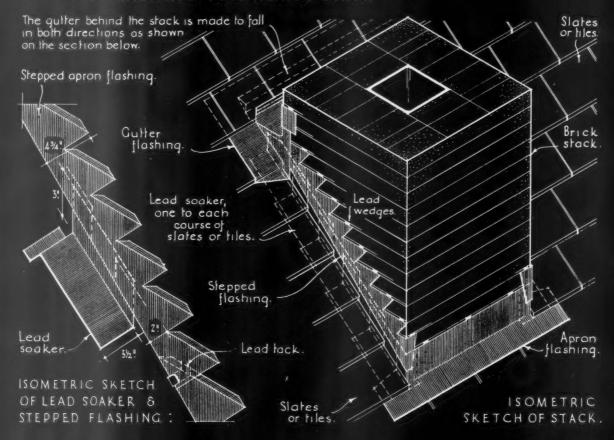
There is some prejudice against the use of metal racks for storage, as the danger of breakage is greater than with wood, but, so far as can be ascertained this difficulty does

far as can be ascertained, this difficulty does not often arise in practice.

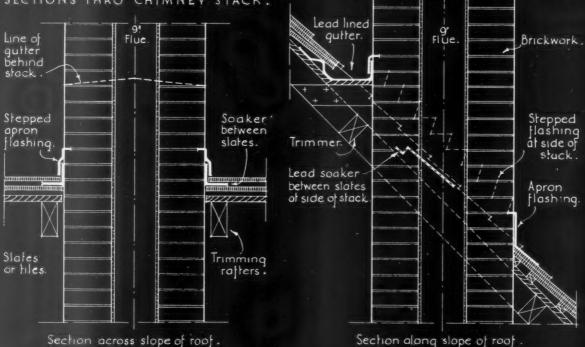




### STEPPED FLASHING TO CHIMNEY STACK :



#### SECTIONS THRO' CHIMNEY STACK:



Information from the Lead Sheet & Pipe Development Council.

INFORMATION SHEET: THE USES OF LEADIN BUILDING CONSTRUCTION . 14. SIR JOHN BURNET TAIT AND LURNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON W. C.I. Chan. R. Physic

# INFORMATION SHEET • 288 •

# FLASHINGS TO CHIMNEYS

Product :

Lead Flashings

This is the second of two Sheets on flashings to chimneys and shows the usual English method; Sheet No. 283 showed a method of secret flashing in which no leadwork was exposed to view.

The method of flashing shown on this Sheet consists of a series of lead soakers, one to each tile course, which are bedded in between the tiles and then turned up the brickwork. These soakers are then covered, where exposed, by a lead apron cut from a strip of lead to the shape shown, so that, when in position, the lower edge of the lead follows the pitch of the roof, and the upper edges turn into the brickwork, where they are wedged up with lead wedges and pointed up.

The lower side of the chimney is flashed with a plain lead apron, which is carried down on to the tiles.

The upper side of the chimney is formed in the manner of a small parapet gutter, with a lead apron turned into the brickwork.

The lead must be carefully worked over the ends of the gutter and down on to the tiles as shown to a close fit.

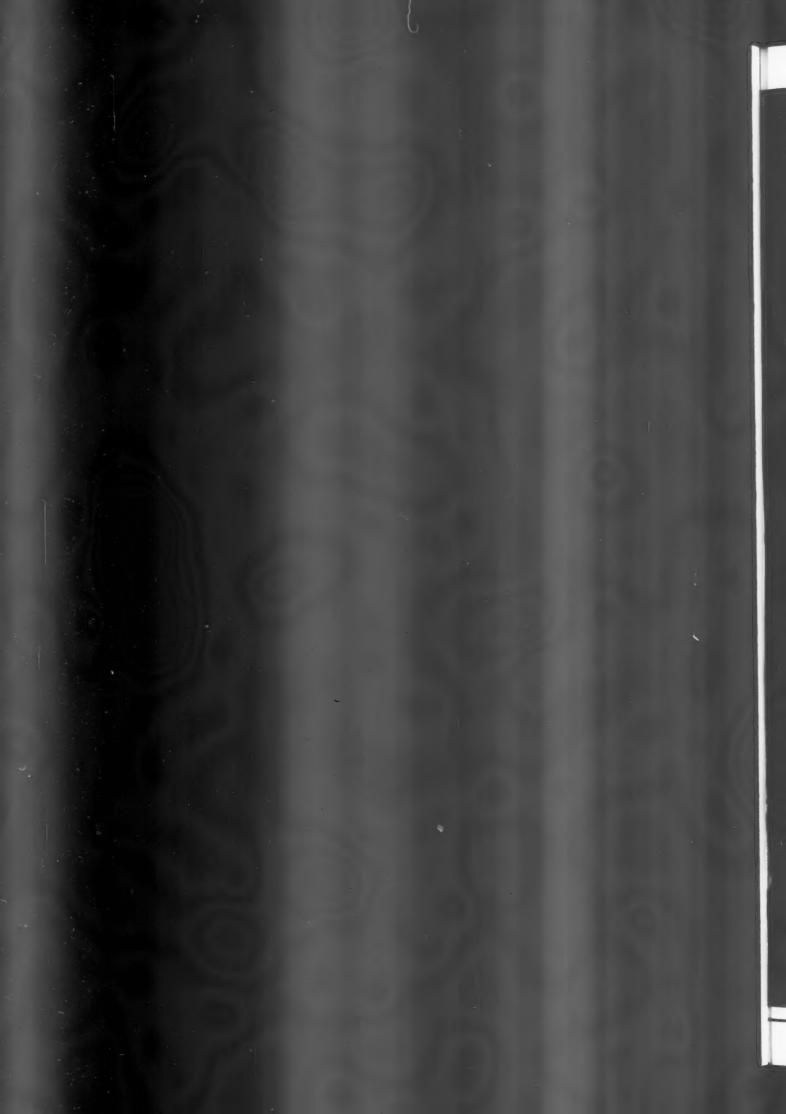
In the drawing on this Sheet, the space between tiles has been exaggerated to allow the lead soakers to be clearly shown; in practice, 3 lbs. lead is used for this purpose and the consequent displacement of the upper tile is negligible.

Manufacturers: The Lead Sheet and Pipe Development Council

Address: Golden Cross House, Duncannon Street, W.C.2

Telephone: Whitehall 3715





#### MOMENT OF RESISTANCE

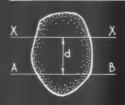


1.xx =  $\frac{1}{2}$  where 1.xx is moment of inertial about axis X-X  $\frac{1}{2}$  xx =  $\frac{1}{4}$  or  $\frac{1}{4}$  where Z.xx is section modulus about axis X-X

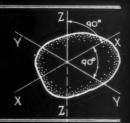
In beams subject to bending, if X-X is the neutral axis then RESISTING MOMENT of cross section of beam =  $\frac{f.1}{4_1}$  or  $\frac{f.1}{4_2}$  = f.Z where f = allowable stress on extreme fibres

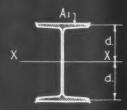
Txx =  $\sqrt{\frac{1.xx}{A}}$  where Txx is radius of qyration about axis X-X

where A is area of cross section



 $I.AB = I.xx + Ad^2$ where A is area of cross section I.zz = I.xx + Iyy = polar moment of inertia

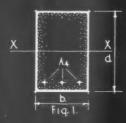




Approximate value for I section about neutral axis l. approximate =  $2. Ai.x.d^2$  where Ai = area of flange Z = 2. Ai.d.

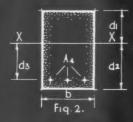
Resisting moment, approximate 2.f. Ai.d. where f = allowable stress on extreme fibres

MOMENT OF INERTIA OF RECTANGULAR REINFORCED CONCRETE SECTION

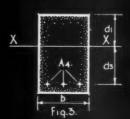


1. Neglecting reinforcement, 1.xx = bd3

2. Whole section including reinforcement  $1.xx = \frac{bd^3}{3} + \frac{bd^3}{3} + (m-1)A_4.d_3^2$ , where  $A_4$  area of reinforcement where m = modular ratio



3. Neglecting area of concrete in tension  $1.xx = \frac{bd^3}{3} + m.A_4.d_3^2$  where  $A_4 *$  area of reinforcement where m \* modular ratio



Information from W.E. J. Budgen, B.Sc., A.M. Inst. C.E.,

INFORMATION SHEET: MOMENTS OF INERTIA

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## MOMENTS OF INERTIA

Notes on Moment of Inertia, Neutral Axis, Section Modulus, Radius of Gyration.

THESE terms, as used in structural design, refer to mathematical properties of the cross-sectional areas of beams, columns, etc. Mathematical properties of homogeneous sections are independent of the material of which the sections are composed, e.g., the section moduli of rectangular baulks of timber and steel of the same size are equal.

With non-homogeneous sections, such as reinforced concrete beams, this statement needs qualifying (see below). The terms moment of inertia and radius of gyration have been introduced into structural design from other branches of mechanics, and are actually misnomers, since an area can have no inertia.

The definitions of the terms are as follows:

Moment of Inertia (I) (or second moment) about an axis is the sum of the products of the area of each elementary part of the section and the square of its distance from the axis.

Neutral axis of a beam is the line in which the neutral surface (i.e., the surface on which there is neither tensile or compressive stress) cuts a cross-section of the beam.

Radius of gyration (r) about any axis

=  $\sqrt{\frac{\text{Moment of Inertia of section about the axis}}{\text{Area of section}}}$ 

The radius of gyration is used in finding the safe loads on various sections as columns, the allowable stress depending on the ratio of unsupported length of the column to the minimum radius of gyration.

Section Modulus about neutral axis

Moment of Inertia of section about neutral axis
 Distance from neutral axis to extreme taper bottom of section

(where the section is not symmetrical about the neutral axis there are two values for the section modulus).

Moment of Inertia of non-homogeneous sections.

With non-homogeneous sections the term moment of inertia is even more misused, and with reinforced concrete sections there is no universally recognised definition or method of calculating this property.

method of calculating this property.

Since however the moment of inertia is chiefly used in comparing the relative stiffnesses of various members the actual value is unimportant provided the same method of calculation is used for all the members concerned.

(The stiffness of a member is defined as the value obtained by dividing its moment of inertia by its length.)

The Code of Practice for Reinforced Concrete, Clause 506 (Estimation of the Stiffness of a Member) reads as follows:

"For the purpose of estimating the stiffness of a reinforced concrete member the moment of inertia may be calculated using its whole section. Allowance for the reinforcement may be made using the appropriate modular ratio. In the case of a beam the breadth of the compression slab shall be taken in accordance with clause 60 g (for T beams and L beams). The method employed in estimating the moments of inertia shall be the same for all members considered in any one calculation."