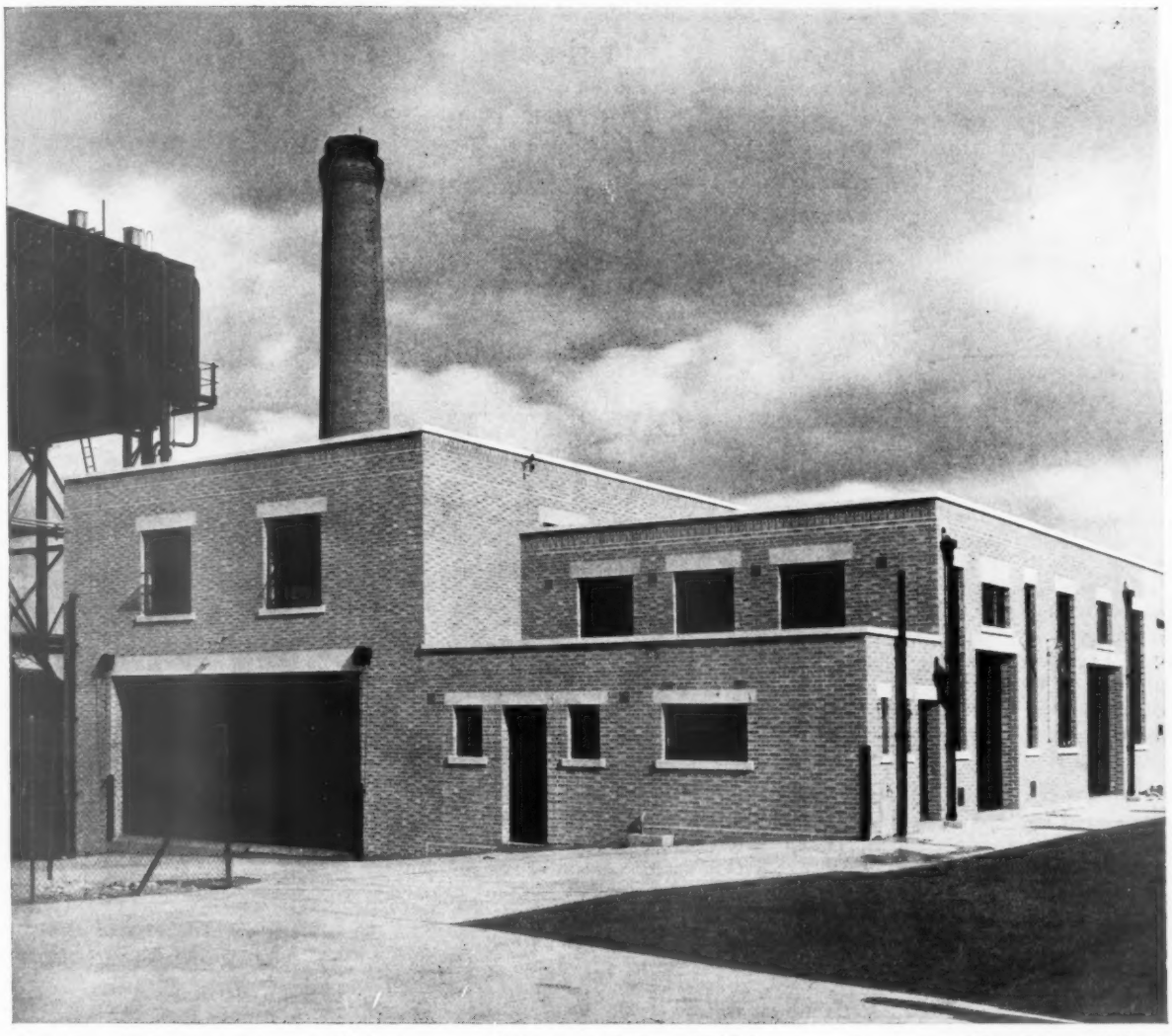

Home Counties Co-operative Laundry, Watford. Architect : L. G. Ekins, F.R.I.B.A. Contractors : Wiggs & Sons, Watford.

THE ARCHITECTS' JOURNAL

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WITH WHICH IS INCORPORATED THE BUILDERS' JOURNAL AND THE ARCHITECTURAL ENGINEER, IS PUBLISHED EVERY THURSDAY BY THE ARCHITECTURAL PRESS (PUBLISHERS OF THE ARCHITECTS' JOURNAL, THE ARCHITECTURAL REVIEW, SPECIFICATION, AND WHO'S WHO IN ARCHITECTURE) FROM 9 QUEEN ANNE'S GATE, WESTMINSTER, S.W.1

*

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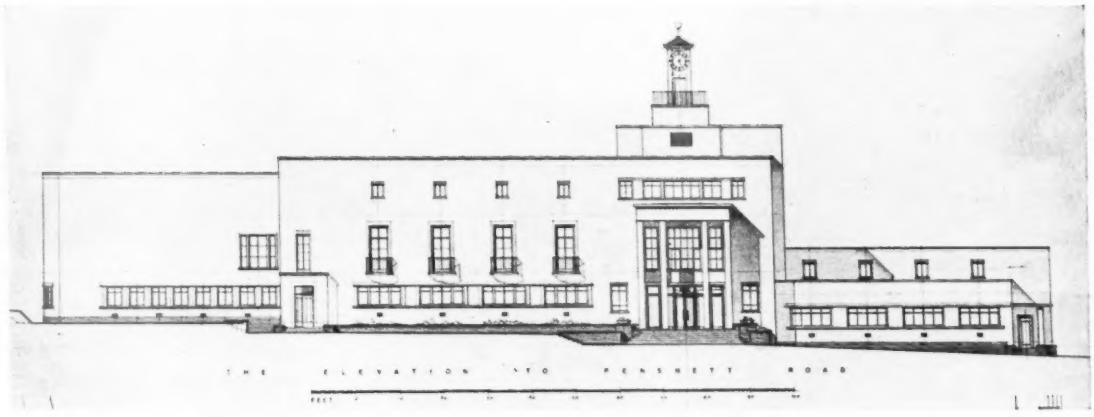
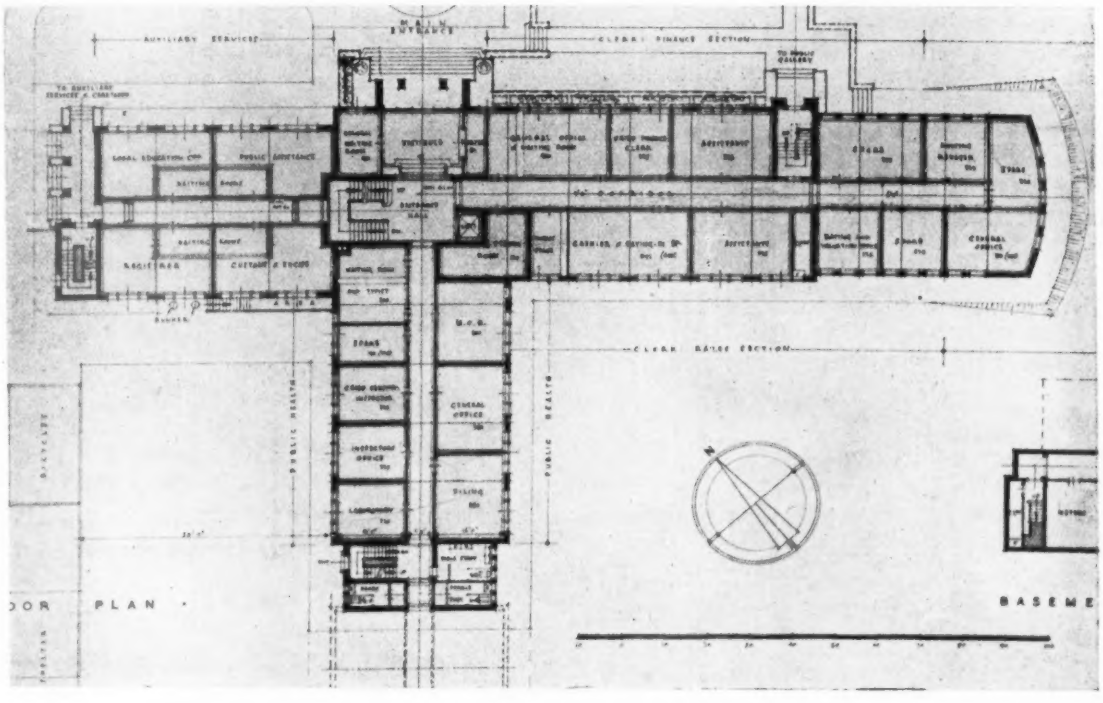
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, DECEMBER 29, 1938. NUMBER 2293 : VOLUME 88

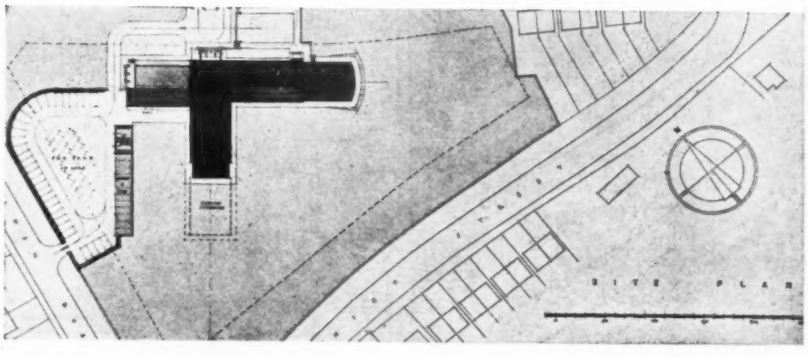
PRINCIPAL CONTENTS

THE BRIERLEY HILL COMPETITION





DESIGN PLACED FIRST: BY HUGH P. CRALLAN

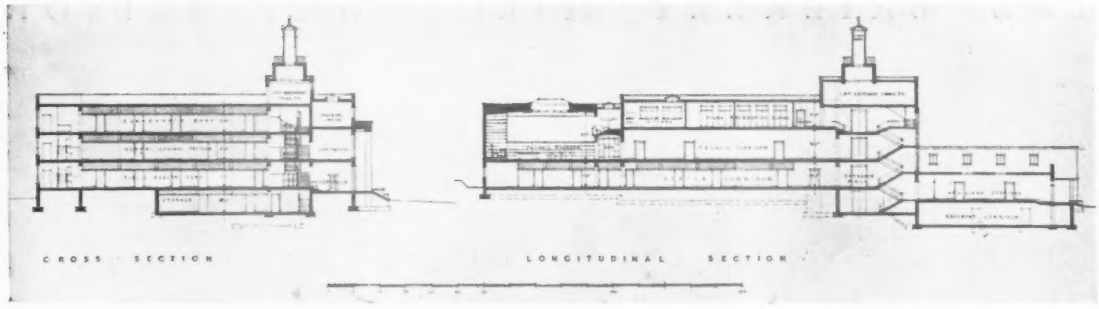


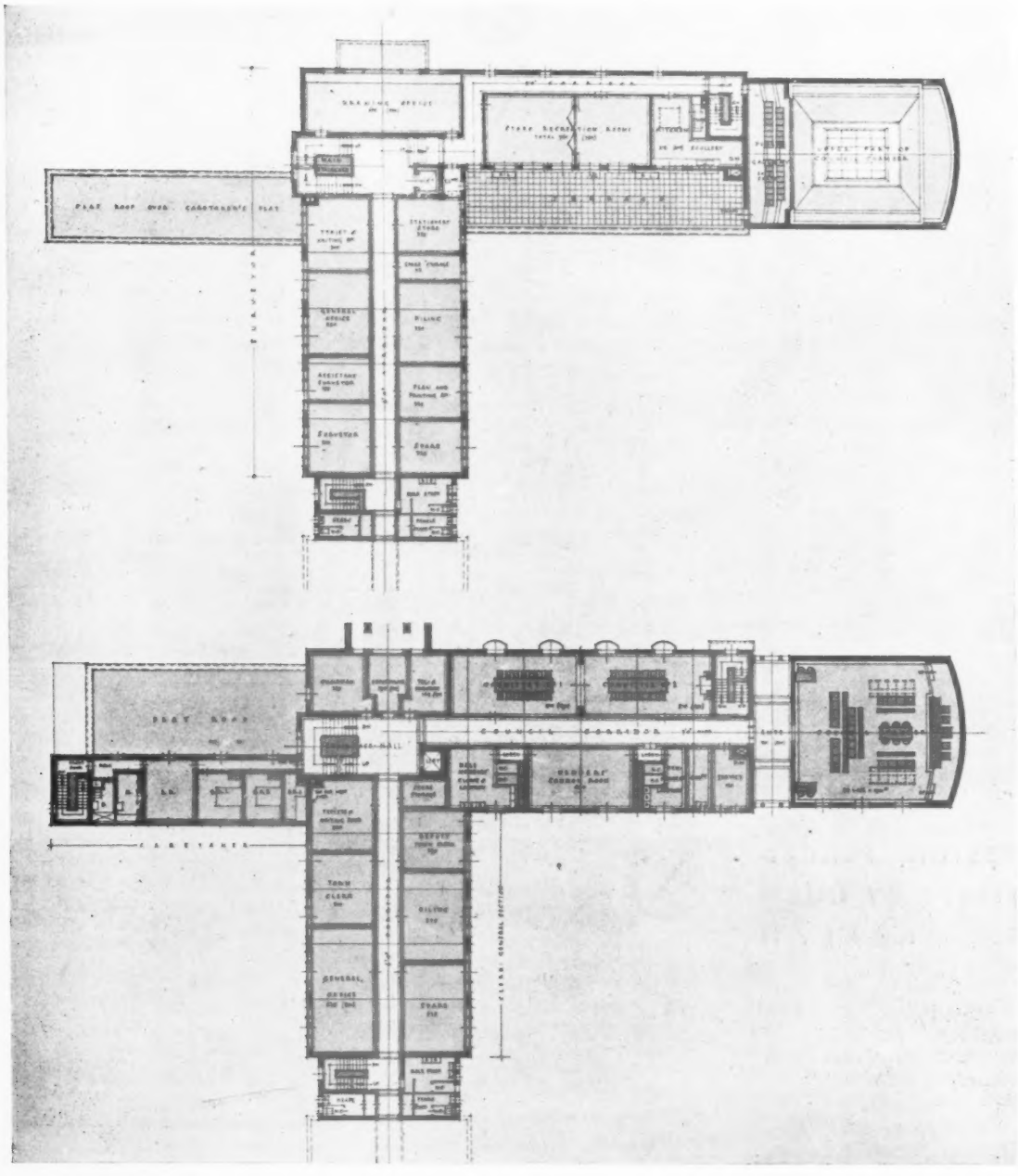
Mr. Verner O. Rees, F.R.I.B.A., the assessor of the competition for new municipal offices, Brierley Hill, has made his award as follows :—

Design placed first (£250), Mr. Hugh P. Crallan, A.R.I.B.A., 46 Kensington Park Gardens, London, W.11.

Design placed second (£150), Mr. Eric G. Broughton, A.R.I.B.A., 10 Peterborough Villas, London, S.W.6.

Design placed third (£100), Messrs. W. F. Granger, F.R.I.B.A., and E. Pearce, 9 Savile Row, London, W.1. Above, main elevation, ground floor plan and site plan.

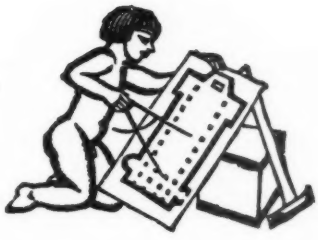




THE BRIERLEY HILL COMPETITION

WINNING DESIGN

Above, sections and first and second floor plans of the design placed first, by Hugh P. Crallan. The assessor, in his report, said: "One hundred and four designs have been submitted. The author of the winning design produced a design of quite exceptional ability. The plan is simply arranged, compact and convenient, and also well placed in relation to the surroundings. Its elevational development has been handled in an imaginative way and promises a building of much distinction."



P.R.A.

THE strongest personality of the world of architecture has been elected to the highest position that the Arts offer in this country. What will be the outcome?

The situation is one of infinite fascination, packed with drama, flavoured with the irony of the Renaissance. There will be joy that Romance in the grand manner can still earn the greatest rewards; there will be irritation that the antithesis of professionalism should for six years be representing in the public mind the profession of architecture.

A lively time may be expected; and architects will watch with amused interest and keen anxiety. Sir Edwin must express his views on art. Equally, even more certainly, he must give his views and exert the very large influence of the President of the Royal Academy, on architecture. And what will those views be like—views that will be certain of the utmost publicity in an England needing a dictator?

Sir Edwin Lutyens is the greatest living British architect; but he has founded no school. He is the last architect of hand-made craftsmanship. He is the highest embodiment of an architect as it glittered in the mind of the pre-War student. Waving aside social developments, modern requirements, techniques and equipment, he produces "personal creations" for those that want them. Lutyens' buildings have no antecedents that have not been transformed by the Lutyens' touch into the unique: they have no descendants, for only the personality of a Lutyens can stand like a rock, uninterested in the rising tide. No quibbles are allowed to Lutyens' clients: they must take it or leave it. They take it.

But this is not the whole story. If it were, architects could sleep more soundly in their beds. Sir Edwin has founded no school in the narrower sense, but his influence is prodigious. It has been a double influence: mark this carefully.

In the 1900's Lutyens taught architects most of what they now know of how to choose and use materials for pattern, form, texture, colour. For this we will be for ever grateful.

But then came the great divide. Requirements changed in buildings; materials changed, and ways of making and using them. The mass of architects tried, slowly and cautiously, to apply the Lutyens sensibility to the new age. They are still trying—but without Lutyens.

The great man went straight on. He became the Imperial Architect, his methods were stretched and stretched to cover schemes of huge romance and Renaissance grandeur; the solid casing of the country house was stretched till it became the stage scenery of genius. Lutyens went on, out of the social background of his age—without the architects.

The new Lutyens is on a far shore from his profession. And here, as we see it, is the danger. For he is no longer the rescuer, or the *enfant terrible;* he is P.R.A., and may lure the rest of the world to his shore and leave the rest of the architects cast away.

The new architecture cannot be written about, much. It is as real as a bath or a Morris 10. For the moment it has only their beauties. But these are not beauties easy to write about, so the middle-aged writers of our age tend to hark back to more rewarding, because more literary, forms. They (very rightly) form the Georgian Group, and (very oddly) attack the new architecture in the pages of the *New Statesman.*

Modern architects—of 1938—are wrestling with the fundamentals: dimensions, temperatures, processes, costs. Form, drama, *certainty*, are not yet developed. The new statesmen are bored by all this and have turned to Lutyens as a child dashes back to the fire.

The President of the Royal Academy is far too clever a man not to know why. He is also too intensely an architect not to know that the modern movement, chilly as are the regions in which it yet moves, has at bottom real architectural heat.

He, too, likes the fire, but he knows that he likes it because it is the fire he likes—not because it is the only fire. He means to keep it burning until he is finished with it. We hope he will.

We hope he will *not*—in the next six years—use his great position to disparage (as he so very wittily can) that other fire. The President of the Royal Academy speaks usually in headlines in this country. Sir Edwin, whether he likes it or not, will always speak in headlines. Nothing would be easier for him, nothing is more expected of him by a lot of people, than to exalt his fire at the expense of the other fire to the applause and laughter of the public.

Because it would be so easy, we hope that the new President will not pour water on the other fire, which is flickering through many storms towards a brightness quite as great, and far more widespread, than the architecture of a Lutyens.

The Architects' Journal
Westminster, S.W.1
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NOTES & TOPICS

SHELTERS

SIR JOHN ANDERSON's statement in the House of Commons on December 21 about the £20,000,000 scheme for air-raid shelters gave an impression, half encouraging, half desolating, of a man being pushed into doing something he considers unnecessary by a lot of fussy people.

*

Encouraging was the announcement of a short-term policy, of a network of trench or prefabricated shelters near places of work and residence, and the conception of communal shelters only for those caught in the streets.

*

Desolating beyond belief were the constant reiteration that employers and those who could afford it must provide their own shelters ; and the idea of strengthening basements on a wide scale as shelters.

*

No one will object to anyone who can afford it *paying* for shelters. That is not the important point. What matters is the preliminary *planning* of shelters, particularly in connection with factories or business premises. No pamphlets or half-hour chats with an A.R.P. officer will get this done efficiently.

*

Every local authority must survey its area, street by street for statistics of day and night populations, and building by building for shelters. When its A.R.P. planners have decided on the best allocation of casualty and other stations and the best distribution of shelters, they must plan the actual position on a given property of all shelters for more than about ten people, decide the materials needed, and make arrangements for their manufacture.

*

Then they can say to each owner : " Here is a plan of the shelters you need, which you will be compelled to have in an Emergency. You can have them built now and kept up by us at a payment of so much in instalments. Or you can have them delivered and built on the 12th to the 16th day after an Emergency is declared at a higher charge of so much, with greater risk to your business. Take your choice."

This is the only way to avoid panic, huge delays, staggering prices and colossal confusion and reduplication of shelters as an Emergency comes near. It is the best of all ways to avoid war. But does Sir John Anderson see it like that ? He does not—yet :

" . . . but we hope that employers are not waiting, and will not wait, for any measure of statutory compulsion. Under modern conditions, it is the duty of the employer to protect his workpeople from these risks, just as it has been his duty hitherto to protect them against dangers of injury or unhealthy conditions of work ; and we are confident that employers generally will accept this new responsibility subject to the necessary guidance being afforded to them. A revised handbook on structural precautions will be issued very soon, and, by the co-operation of the Home Secretary, the services of the factory inspectors will be made available to assist employers."—(*Times* Report.)

FINANCE

The letter to every member of the R.I.B.A., asking for help in reducing the Institute's debt, must have come as an unpleasant surprise.

*

What is more unfortunate, the second appeal must inevitably become tangled in many minds with the President's Appeal for the A.B.S. and give an impression of things being in a bad way all round. Whatever may be thought of the wisdom of two appeals so nearly simultaneous, architects must make an effort to keep the two needs separate : for they are entirely distinct stories.

*

To take the debt first : In the days of the slump the Institute needed new premises badly. It was realized also that if the Institute set the example of courageous building enterprise in a time of depression, the public might follow its lead. But the Institute would certainly not have gone further if the valuation of the Conduit Street premises, by property valuers of the highest standing, had not shown the new building to be on paper a sound financial proposition.

*

In the event the valuers proved to be mistaken. Conduit Street was eventually disposed of at a price more than a third below the estimate.

*

But this does not mean the new building has been a mistake. Far from it. Every member of the Institute has benefited by the conferences, exhibitions and propaganda work which have been possible at Portland Place and would not have been possible at Conduit Street. We have been deceived for our good : there can be no two opinions about that.

*

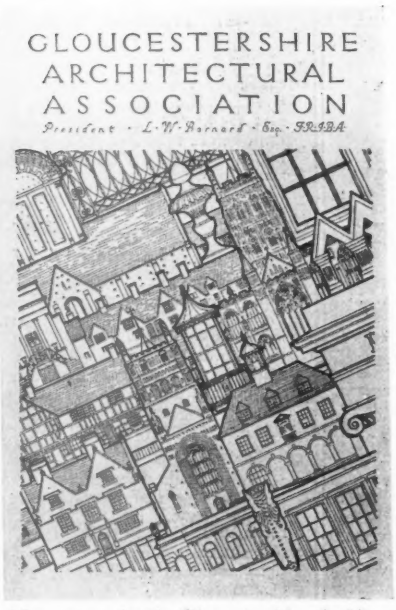
The debt, however, has to be paid off, and the Council has decided to try to obtain the required sum by a voluntary appeal to members.

*

There are objections to this method. The Institute activities benefit all members, and all members should contribute. Voluntary appeals may also breed the unjustified suspicion that those who pay handsomely will be more warmly regarded at headquarters than those—and there may be a few—who simply cannot double their subscriptions without hardship. Also, an unsuccessful appeal creates an undesirable feeling on all sides.

*

There may be a widespread and adequate response to this appeal. But if there is not there seems every ground for consolidating and raising all subscriptions. And the



Menu cover for the Gloucestershire Architectural Association's dinner on December 16th. It was designed by Mr. John L. Jones.

needs of the A.B.S.—though a very different matter—may as well be taken in hand at the same time.

*

The R.I.B.A.'s work has almost doubled in the last ten years, and the R.I.B.A. goes on for ever. The average member must contribute both to the Institute and the Registration Council: he ought also to contribute to the A.B.S.

*

There seems therefore a plain case for raising Fellows' subscriptions to 7 guineas, Associates' and Licentiates' to 5 guineas, and Students' to 2 guineas—inclusive of everything—and having done with the whole business of appeals once and for all.

GRIDS—GAS . . . .

Fired, presumably, by the example of the electrical grid, the United Kingdom Gas Corporation, which controls seventy-three gas undertakings in various parts of the country, are making a start with a gas grid in West Yorkshire, linking some twenty towns with an eighteen-inch high pressure main. The official announcement does not suggest that the gas is going to be any cheaper, but that heat and power will be supplied "at minimum cost and with maximum efficiency." Since many of the factories in the area have considerable seasonal variations in demand, the whole idea seems perfectly reasonable. The note I have before me adds that "the full scheme envisaged is a vast national programme . . . to be established by private enterprise or by the Government." For your information I may add that in the words of Sir Andrew Duncan, at an A.A. meeting, the grid was "such a good idea that the money for it was immediately forthcoming from private sources."

. . . . AND ELECTRIC

In my innocence I had thought that the electric grid was to make blackouts impossible over large areas, such as the Kingston affair a fortnight ago. It does, very largely, but not yet completely. If the Kingston fire had been a month later, I am told there would have been hardly any of the borrowing of stoves and buying of candles.

MAGAZINE POST

The title *Decoration* on the cover of a magazine has meant various things in the past few years, and it has now changed its format again, and is to appear as a quarterly under the editorship of John Betjeman.

*

I have received the first number of the new *régime*, which has several good articles, including one by John Piper on "wall objects" (whatever they may be) and the first of what promises to be a good series on architects' own homes, written by Hugh Casson.

*

One fault I cannot resist finding: that in a magazine dealing primarily with the work of professional designers it seems very much less than fair to publish a descriptive article of a charming small house (with illustrations) in which the working out of the design is described in some detail, and to include the sentence: "having laid our ideas before a young and enthusiastic architect, we then sat by . . . etc." without anywhere mentioning the young and enthusiastic architect's name.

*

The initials N.A.S.A. on the cover of another magazine that I have just received stand for the Northern Architectural Students' Association. It is published by students, as its name suggests, under the editorship of Ian Burke, and I can recommend it to those people (there are fewer of them nowadays) who still insist that the student is a person congenitally incapable of being practical in his interests.

*

Its contents include an article on A.R.P., one on the work of MARS. and an appreciation (with illustrations) of Osbert Lancaster's services to architecture in reclassifying stylistic species.

*

Furthermore, the lay-out of this amateur effort is, within its limitations, rather better than that of the professional magazine mentioned above.

NOTHING TO PAY

Altrincham, says the *Manchester Evening Chronicle*, is to have an advisory panel of architects for an experimental period of six months at a cost of £26.

*

There we have it. From now on, hundreds of readers of the *Chronicle* will have the idea that what an architect does to a building is so far removed from real work that in some cases the simple fellows will even do it for nothing.

*

The Briton—let us be frank—judges most things by price. Good work to him costs good money and what does not cost anything is not worth anything. Through the competition system and the advisory panels, both good sources for shorter news items, he has built up his idea of the architect as a kind-hearted simple fellow, doing nothing important, who can usually be persuaded not to charge at all.

*

From this springs directly the acute distress of clients who are asked to pay real money for a few drawings. They simply cannot understand it.

*

The profession will have to explain much more clearly why it gives promoters £10,000 worth of work for £1,000 in a competition and why advisory panels give £1,000 worth for nothing, before it will secure a reasonable income for more than the fortunate few of its members.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

L.C.C. CHIEF ARCHITECT TO RETIRE

Mr. E. P. Wheeler, Chief Architect to the L.C.C., is to retire next April. He has been in the service of the L.C.C. for the past forty years, and it was in 1935 that the General Purposes Committee decided to appoint him to succeed Mr. Topham Forrest as superintendent architect of Metropolitan buildings. His successor will be Mr. F. R. Hiorns, F.R.I.B.A.

ON THE AIR

The B.B.C. announces that on Tuesdays at 7.30 p.m. the second of the series of talks designed to meet the needs of Discussion Groups as well as of the ordinary listener has for its subject "Town and Country."

These talks will deal with the relations between town and country, and will try to interpret the one to the other.

The editor of the series will be Mr. F. G. Thomas, of the University College of the South West, author of *The Changing Village*. On January 10 the speakers will discuss the general theme of the talks; on the 17th, towns, new and old, is the question to be considered; and on January 24, some observations will be made on how country can be absorbed into town; while the last talk of the month, on January 31, has for its title "Confusions and Conflicts."

A NEW COMPETITION

Conditions of the competition for the proposed new Supreme Courts, Lagos, Nigeria, are now obtainable from the Crown Agents for the Colonies, 4 Millbank, London, S.W.1. (Deposit £1 1s.) The assessor is Mr. A. F. B. Anderson, F.R.I.B.A., and the following premiums are offered: £500, £300, and £200.

Designs should be addressed to The Crown Agents for the Colonies at the above address, and endorsed "Design for Proposed New Supreme Courts," not later than June 30, 1939. Questions must be received on or before February 14, 1939. All letters to the Crown Agents should quote reference E.467/7.

The competition is open to architects of British nationality who are resident in Great Britain and Africa, and who are members of the R.I.B.A. or its allied societies.

BORDERS CASE: JUDGMENT POSTPONED

Owing to the mass of evidence and correspondence in the case of the Bradford Third Equitable Building Society *v.* Borders, Mr. Justice Bennett did not pronounce judgment on the last day of term. He will give it early next term, which opens on January 11.

THE ARCHITECTS' DIARY

Thursday, December 29

ROYAL INSTITUTION, 21 *Albemarle Street, W.1. Christmas Lectures to juvenile audience, by Professor James Kendall, on "Young Chemists and Great Discoveries." 3 p.m. Also on December 31 and January 3, 5, 7 and 10, at 3 p.m.*

Friday, December 30

LONDON SOCIETY. *Visit to Titania's Palace, Wickham's Store, 69 Mile End Road, E.1. 3 to 5 p.m.*

R.I.B.A., 66 *Portland Place, W.1. Lecture for Boys and Girls. Also January 2.*

Wednesday, January 4

INSTITUTION OF STRUCTURAL ENGINEERS (LANCASHIRE AND CHESHIRE BRANCH). *At the College of Technology, Manchester. "The Effect of Time on the Erection of Structures." By F. S. Snow. 7 p.m.*

SUFFOLK ASSOCIATION OF ARCHITECTS. *At Limmer's Restaurant, Butter Market, Ipswich. Lecture by Raymond Walker.*

Thursday, January 5

INSTITUTION OF ELECTRICAL ENGINEERS, *Savoy Place, W.C.2. "The Application of Electric Heating to Domestic Hot-Water Supply Systems." By J. I. Bernard. 6 p.m.*

A.A.S.T.A. *At 66 Portland Place, W.1. Annual General Meeting of Insured Members of the Architects' and Surveyors' Approved Society. 6.30 p.m.*

Monday, January 9

R.I.B.A., 66 *Portland Place, W.1. Award of Prizes and Studentships, 1939. Criticism by Howard Robertson. Announcement of the Council's Nomination for the Royal Gold Medal, 1939.*

DEVON AND CORNWALL ARCHITECTURAL SOCIETY. *Exeter Branch. Lecture by Raymond Walker.*

L.C.C. STUDENT WINS PAINT POSTER PRIZE

The Lead Industries Development Council, for its 1939 posters to advertise white lead paint, decided to encourage the development of latent talent amongst poster artists by inviting students of a limited number of art schools to submit designs. In the result a student's design was one of the two finally accepted for exhibition all over the country, and at a party held on December 21 at the Building Centre, London, the winner's and some of the other designs submitted were exhibited.

Mr. Ewart G. Culpin, F.R.I.B.A., on behalf of the Council, then presented the prize of £25 to Mr. Alan Curwell, of the L.C.C. Central School of Arts and Crafts, and a consolation prize of £5 to Mr. Sam Sebba, a student at the same school. Mr. H. A. Thomerson, a student at the L.C.C. School of Photo Engraving, also awarded a consolation prize of £5, was prevented from being present, and his prize was received on his behalf by Mr. S. E. Boxsius, the Principal of his school.

ANNOUNCEMENT

Messrs. Walter Gropius and Marcel Breuer have opened a new office at 1430 Massachusetts Avenue, Cambridge, Massachusetts (Telephone: Kirkland 6088).

CHANGE OF ADDRESS

Mr. A. Graham, A.R.I.B.A., has now moved from 50 Church Crescent, London, N.10, to 70 Manor Green Road, Epsom (Tel. Epsom 2192), where he would be pleased to receive trade catalogues, etc.

FLATS, SLOANE STREET, CHELSEA

We regret that in the list of sub-contractors for the Flats at Sloane Street, Chelsea, we omitted to state that Moler Products, Ltd., supplied the Fosalsil flue bricks for the lining of the central heating flue.

We also regret that in last week's issue we inadvertently omitted to state that the Building and Insulating Material Co., Ltd., were responsible for the Bimol partitions supplied to the same flats.

PRESERVATION OF CHORLEY OLD HALL, CHESHIRE

The Minister of Health has approved an Order made by the Alderley Edge Urban District Council prohibiting the demolition of Chorley Old Hall. The earlier part of the house was built before 1420 and the half-timbered portion added a century later. The building is surrounded by a moat which is now dry. The whole hall is a fine example of an earlier period of Cheshire domestic architecture.

PRESENTATION

The Birmingham and Five Counties Architectural Association recently held a students' evening at the Royal Society of Artists' Galleries in New Street. During the evening Mr. John B. Surman was presented with a silver coffee set from past and present students on his retirement from the staff of the school.

SAFEGUARDING RURAL AND COASTAL AMENITIES

New suggestions for preserving the beauty of the countryside and the coast are made in a circular issued by the Ministry of Health recently.

The circular is based on certain recommendations made to the Minister by the Advisory Committee on Town and Country Planning in its recent Report* and provides planning authorities with the details of a new method of zoning in genuinely rural or agricultural areas which, in the public interest, should be maintained as such.

This zoning encourages the development of the land on normal rural lines and provides for three classes of buildings—

(1) Buildings for agriculture, horticulture, etc., houses for persons engaged in such industries and buildings for small-scale rural industries, are to be freely allowed.

(2) Other buildings, which may be permitted by the authority, but are subject to appeal by third parties against a proposal by the authority to consent to them.

(3) Buildings such as country dwellings with large areas of land attached and those for the large type of rural industry are to be allowed by the authority without third party right of appeal.

Houses for workers in rural industries would be controlled by the authority, as it is desirable that they should be erected, where possible, in village centres.

If this is not practicable they would be allowed in the rural zone.

The Minister considers that ribbon development which has already ruined many miles of beautiful coast land should be checked without delay. While it is expected that the advent of holidays with pay will necessitate the extension of many seaside towns and villages, authorities are advised to exercise control over the location and the type of the necessary new buildings in order to preserve the amenities of the district.

The suggested new rural zone will be applicable to coastal districts with certain modifications. Marine industries, such as fishing and boat building, etc., and any local industry ordinarily carried on near the sea would be allowed, but the buildings would be subject to reasonable control of external appearance and siting.

* "Report on the Preservation of Countryside, 1938." H.M.S.O. Price 6d. net.

LETTERS

Germany Builds

SIR,—It says much for the efficiency of Nazi internal propaganda that Mr. Gloag had his eyes filled with dust during at least one part of his tour in Germany.

I refer to his remarks about labour service, which he tries to justify on the

grounds that it "imparts to future German citizens a practical appreciation of the farmer's life and problems" (A.J., p. 973).

I fail to see how one can begin to understand farming by spending six months in drill and physical exercises, and hard labour consisting of digging canals, reclaiming land, etc. One might as well say that a labourer engaged on concrete mixing must gain a remarkable insight into an architect's constructional difficulties! Or does Mr. Gloag imagine that the conscripts in a labour camp are encouraged to go for nature rambles and to take high tea with the farmer's wife?

His rider that "this protects the countryside from the savagery of city dwelling visitors, from litter, from shoddy building and other by-products of ignorance about the land" would almost justify this (not too gentle) breaking in for the further two years of military service, but even Dr. Goebbels in his most imaginative moments has not yet put forward such wide claims.

J. H. GIFFORD (London)

SIR,—In the second article on Contemporary Architectural Design in Germany which you published last week, you omitted to include the photograph in which I recorded that dramatic gesture by the chauffeur, who, when clapping two cigarette boxes together, asked: "Is this a house?" It would be a pity if this studied insult to my more progressive architectural friends were not given the immortality it deserves in your pages.

JOHN GLOAG

[*See photograph below*]

SIR,—At a meeting of the Architects' Group of the Left Book Club, it was unanimously decided to protest against the publishing in THE ARCHITECTS' JOURNAL of what amounts to a eulogy upon German Fascism. We refer, of course, to the first article of a series by Mr. John Gloag called "Germany Builds."

If Mr. Gloag had been content merely to praise the queer, reactionary architecture of Nazi Germany, no wider issue than the oddness of his taste would have been raised. But by praising National Socialism, he has lent support to the policy of aggression, persecution and tyranny, which has become a danger to world civilization.

The history of the Nazi Party has been one long story of savagery. The world has not yet recovered from its horror at the recent organized pogroms. The thousands of refugees fleeing from the Nazi terror are still an unsolved problem. We regret, sir, that at this time you should have seen fit to publish this article, and we hope that the series will be discontinued.

On behalf of the Architects' Group, The Left Book Club.

A. R. LEGGETT (London)


TUESDAY, DECEMBER 13, 1938

ARCHITECT HITLER

With officials grouped about him, Herr Hitler explains his point of view—not on a question of strategy, but on architecture. This picture, taken at a Munich exhibition, reveals a Hitler that not everyone knows—the Hitler who once considered becoming an architect.

Dr. Goebbels is on right.

We much regret that in the hurry of last week this photograph was thought to be advance publicity for our Christmas present from Mr. Gloag.—Ed. A.J.

GERMANY BUILDS

[By JOHN GLOAG]

This is the third of a series of four articles by Mr. John Gloag, who has just returned from studying the art and architecture of Nazism. The second article appeared in last week's issue.

***The views Mr. Gloag expresses are, needless to say, his own and not those of the* JOURNAL.—Ed., A.J.**

3 : THE PUBLIC BUILDINGS

BERLIN'S skyline at the moment is punctuated with gigantic cranes: nearly every big street has gaps where some familiar building has been torn down to make room for the new creations conceived by the Führer. What Napoleon III did for Paris, Herr Hitler is doing now for Berlin. The city is being granted a new and solemn spaciousness. It will lose some of its French intimacy, and will after a few years cease to be the city of Frederick the Great, bearing the impress of his French taste, and will be essentially German in character, displaying the large and lucid simplicities of the new national idealism.

Hitler's Berlin will be an architectural entity; it will be an authentic expression of a living culture. At the best, Frederick's Berlin was a polite veneer of foreign mannerisms, having as little influence upon national taste and outlook as the monarch's friendship for Voltaire. But although the new Berlin, that is arising with such swiftness, reflects the personal taste of the nation's leader, that leader, more than any man who has been at the head of the German people, is determined that genuine German genius alone shall inspire all creative work. The modern movement has been stopped. Its somewhat disruptive effects are being eradicated; and the new architecture that succeeds it is the architecture of propaganda. The acres of glass that used to open buildings to the blessings of daylight; the disappearance of the solid wall; the horizontal *momentum* (if such a word may be used) of the modern buildings—all these things are now unhallowed memories. The Columbushaus in the Potsdamer Platz, one of Erich Mendelsohn's less happy creations, seems likely to be swept away, together with older but less revolutionary landmarks.

With the new buildings, and in particular the new Chancellery, the wall is firmly re-established as a barrier. It is not now a skin, stretched lightly over steel bones; it has regained a

medieval thickness of cuticle; and although the fenestration in the new Chancellery is admirable, the windows give the impression of being pierced in the wall, as though the building was first conceived as a strong-box without apertures, and then, as an afterthought, or when it was safe to allow contact with the outer world, windows were marked out, the thick stones cut through, the frames inserted, and the architraves with their wide, square-sectioned mouldings applied to variegate the façade. These stone walls ascend to a heavy cornice line, and occasionally they turn a perfectly blank panelled face to the street, where the central block of a building is united with its wings. Externally these buildings have little to say: they are calm, with the empty calmness of puritanism; they are not ill-proportioned; they are not violently exciting; but they are not dull—how can they be when every wall suggests the question: What *is* behind all this?

"The new inspiration of a great people," is the official answer.

Inspiration there certainly is. Nobody can see the Brown House and the Führer House at Munich, where, separated by the colonnaded tombs of the early Nazi martyrs, they face the Koniglichen Platz, without admitting that something more than mere reaction from modernism, something more than a drawing-board itch to create a new "style," gives power and strength and a touch of nobility to this architecture. The columns on those tombs at Munich—where the iron coffins of the sixteen martyrs who form the celestial guard lie, eternally vigilant upon the flanks of the Brown House and the Führer House—are square in section and fluted. They terminate in shallow, square capitals, slightly overlapping the shafts. These columns appear everywhere. They are a new order, expressing strength—perhaps "strength through joy"—and the entablatures they support are meagre, narrow affairs. They disdain the refinement of entasis. They are like muscular legs: sturdy, virile, symbolic perhaps of the ideas of a nation that is giving to the claims of the body so great a share of its regard.

The Reichssportfeld, with the Olympic stadium, are superb examples of this new architecture, and although they were conceived before the present régime, their execution has given them a family likeness to other great public buildings. The remodelling of Berlin has demanded a certain ruthlessness. Some things have had to go; the flower-beds and grass in that pleasant square at the end of Wilhelmstrasse, which has the Kaiserhof Hotel on one side of it, and the Chancellery on another. The square is now paved with stone, and forms an admirable gathering place for enthusiastic crowds, so they can face that balcony on the first floor of the Chancellery where the Führer sometimes appears. It has been said that Herr Hitler is a repressed architect, and that his hostility to gardens, and his preference for paved open spaces are symptoms of an interrupted architectural career. Some architects seem to think that gardening is a matter of crazy paving and stone ornaments, and many of our municipal controllers of architectural amenities delight in geometric compositions of asphalt paths, public lavatories, and bandstands in Birmingham art ironwork. But space, just nice, plain open space, surrounds the great new buildings—or at least it will, when a few more drastic clearances have been effected. Unencumbered space, that affords no cover—I mean no obstacle that will prevent a docile crowd from loyally assembling. Meanwhile, Berlin is losing its landmarks. Its public monuments are being shifted about. The Sieges Allee, for instance, that grave avenue of German monarchs, has gone—it is being re-erected in another part of the Tiergarten. The famous limes of Unter den Linden were cut down, the street widened, and new trees planted.

Elsewhere new public buildings arise at great speed. They are alike in texture, plain, white stone; solid, staunch, and proclaiming their established authority. They are preferable to some of the experiments in texture, of which I suppose the Broadcasting building of Berlin is about the most unhappy, for it displays to the world a façade of vitreous brick and tile that manages to look like hot and not very appetising home-made toffee.

For better or worse, for richer or poorer, the German people of the Third Reich are associated with an architecture that is as static as a soldier standing to attention, and as dumb.

Notes from the Building Research Station on*

NATURAL STONE MASONRY

ITS DECAY, PRESERVATION AND REPAIR

PART I.

NATURAL stone is one of the oldest of building materials, and there are abundant examples of historic buildings which have withstood the ravages of the weather for centuries and suffered no more than a pleasant mellowing. But there are also numerous examples of buildings of more recent date which, within a few years, have developed disfiguring stains and serious erosion or decay.

Today, owing to the cost of natural stone in most districts, its use tends to be reserved for the more important buildings, many of which must have a good expectation of life. The durability of the stone is, therefore, of considerable importance. The desire to preserve works, monumental and otherwise, of historic or artistic interest, brings to the fore also the question of repair and preservation. The present note is intended to explain the factors responsible for the varied behaviour of stone masonry and to indicate what steps should be taken, in the first place to ensure that new work will behave well, and in the second place, what methods should be adopted with old buildings needing repair to ensure that the results, in addition to being æsthetically satisfactory, will also be sound from a structural point of view.

CAUSES OF DECAY

The mistake is often made of adopting a fatalistic attitude to the problem of decay of stonework, as though there were some inherent agent of decay in certain types of stone or certain parts of a building against which nothing can really avail. For example, it has been suggested that decay of stone is largely a kind of disease, due to the action of bacteria or fungi, to which the stone is subject. Certainly such organisms are often found in decaying stone, but they are also frequently present in sound stone and no generally accepted evidence has been adduced to show that they are an important cause of the disintegration which occurs. Much can be done to avoid decay by proper selection of the stone and attention to constructional details.

The following brief summary covers the important causes of decay, so far as they are known today. It must not be regarded as a comprehensive scientific description of the phenomena involved for which reference should be made to a report on "The Weathering of Natural Building Stones," by R. J. Schaffer (149 pp.), published by H.M. Stationery Office, price 4s. 6d. net.

1. *Frost*

The injury of stone by frost is analogous to the bursting of water pipes from the same cause. When water freezes there is an increase in volume of about ten per cent., and it follows that a stone which becomes saturated and is subject to frost action in that condition is liable to be disintegrated sooner or later, unless the ice can be thrust out of the stone during freezing. But whether a particular stone suffers injury from frost depends on various factors, some of which are connected with the properties of the stone while others depend on design and construction. A few of the commonly used building stones readily absorb water to such an extent that all the pores become full or nearly full of water. Freezing can then cause injury. It is, however, only in certain positions on a building that the pores can become filled to a dangerous degree. If the masonry is protected from excessive absorption, no injury will occur. In England damage by frost is rare except in retaining walls, or in unprotected parapets, copings, string courses, and so on. Those stones which, because of their absorptive properties, are liable to frost injury must be suitably protected at the "danger-points."

Other kinds of stone may be regarded as frost resistant. This is mainly because, even if freely exposed, they do not absorb water to such an extent that the pores become filled: there is, therefore, always some room for expansion when ice forms. Portland stone of good quality and many of the sandstones are in this class.

By laboratory tests it is possible to pick out with a fair degree of certainty the stones which are liable to become waterlogged. The problem of selection for full exposure to the weather is complicated somewhat if there is a marked tendency to stratification or lamination, but, broadly speaking, frost action is governed by the above considerations.

2. *Solution*

Building stones differ markedly as regards the action of rain upon them. Sandstones in which the constituent sand grains are bonded with silica are quite insoluble in water and constant washing of water over the surface for centuries produces no noticeable effect. In the soot-laden atmosphere of large towns, stones of this kind become uniformly blackened. On the other hand, limestones, and sandstones in which the grains are bonded with carbonate of lime, are slightly but appreciably soluble in water. The effect of water on the surface is a very slow removal of material without flaking, powdering or similar effects. It will at once be appreciated that this action can only reach serious proportions on certain features of a building and the appropriate protective measures immediately suggest themselves. Incidentally, the stone keeps clean due to constant washing, whereas in more sheltered areas soot and dirt accumulate.

In towns, where the rain water is rendered acid by the products of coal combustion, solution and erosion are accentuated. However, this type of action is relatively unimportant except in its indirect influence on the form of decay due to skin formation described later.

3. *Soluble Salt Action*

Most stones are porous to some extent, the most important exception being granite, and because of the presence of pores they are liable to injury if soluble salts are introduced. The exact mechanism of the effect is not yet understood, but it is known that the salts are continually carried about in the pores of the stone by movement of moisture, alternately crystallizing and dissolving, or, it may be, absorbing moisture from the air and expanding. It seems that the structure of the stone is continually being disturbed by the action so that a slow powdering and disintegration occurs. Some stones are much more seriously injured by this salt action than others, and within the same class of stones, for example limestones, some are more easily injured than others. Even in the same quarry some beds may be resistant and others susceptible, though it may be almost impossible to distinguish them by inspection. Portland stone is a case in point. The reputation of Whitbed stone is due to its higher resistance to crystallization forces. The risk of injury from salt action depends upon the size, shape and amount of pores in the stone and by microscopical examination it is possible to pick out the good from the poorer beds in certain familiar kinds of stone. Laboratory tests are available which enable resistant stones to be identified with considerable confidence. One of these consists simply in reproducing, in an intense degree, the effect of crystallization by introducing into the pores of the stone a concentrated solution of sodium sulphate. Samples that behave well in this test behave well in buildings and *vice versa*.

There are then inherent differences in the susceptibility of types of stone, or individual blocks of stone in a building, to the action of soluble salts, but a weakness from this cause may be much less serious if steps are taken to prevent excessive quantities of salts reaching the stone. Conversely, if contamination by salts is permitted even the resistant stones may suffer rapid decay. Factors external to the stone are involved. Brickwork backings to masonry may be important sources of salts, and to prevent injury from this cause the backs and sides of the blocks of stone should be given a bitumen coating. Figure 1 illustrates an

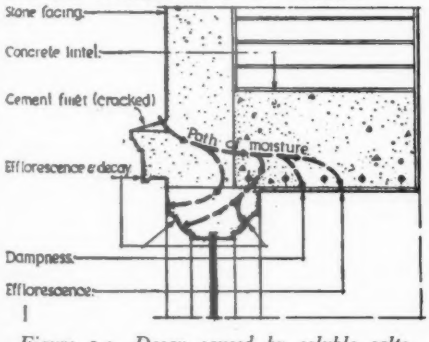
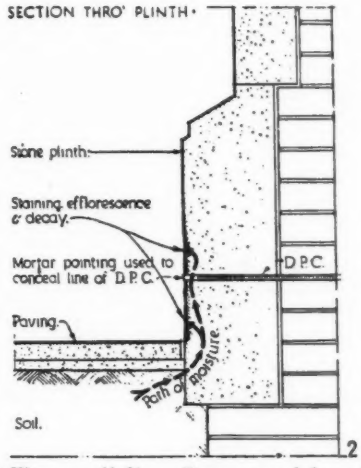


Figure 1 : Decay caused by soluble salts derived from concrete lintel.

unusual but interesting case of soluble salt action in the stone facings of a school building, where the soluble material was derived from concrete behind the masonry.

Damp-proof Courses.—The soil is an inexhaustible source of soluble salts, and any moisture which passes into the fabric of a building due to a defect in the damp-proof course will carry these salts with it. Fortunately the concentration of salts is usually small, but the continuous absorption of small quantities of injurious matter may in a few years bring about serious disfiguration. The presence of clinker filling—often rather rich in salts—in contact with masonry increases the rate and amount of injury from this source. Figure 2 illustrates one case which was investigated of decay and discoloration of Portland stone above the damp-proof course. To mask the dark line of the asphalt damp-course it was set back in the wall an inch or so and finished with cement mortar. After a year or two there were brown stains and salt growths at the positions shown in the diagram and the stone was observed to be pitting. After the mortar pointing had been removed and the stone had been washed a few times at intervals the staining commenced to disappear and the trouble cleared.

Figure 3 illustrates another case where, owing to the paving being laid at a higher level than was expected, the damp-proof course was rendered ineffective as a barrier for soil salts, though it was in fact quite effective in preventing moisture from reaching the inside of the building. The trouble was made worse than usual by the use of clinker as a bedding for the paving stones. Figures 4, 5 and 6 show several alternative methods of introducing the necessary barrier to the entry of soil salts in this case. A variant of one of these methods was adopted and the stone was washed at intervals to remove salts already accumulated above the damp-course and a year or so later an improvement



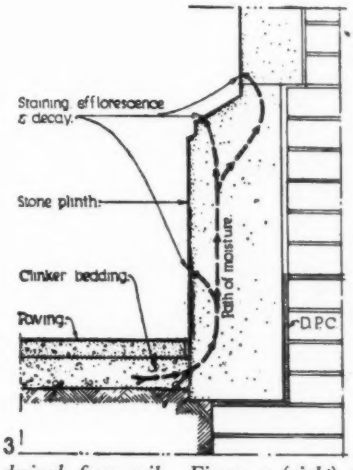
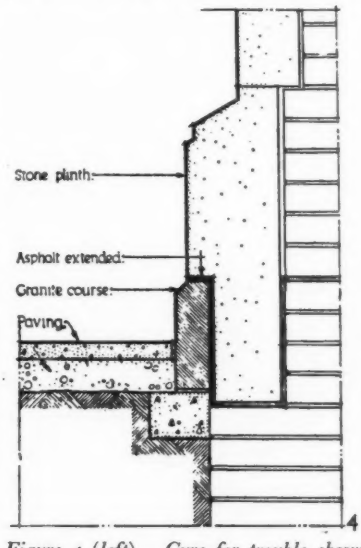


Figure 2 (left) : Decay caused by soluble salts derived from soil. Figure 3 (right) : Decay caused by soluble salts derived from clinker bedding below paving.



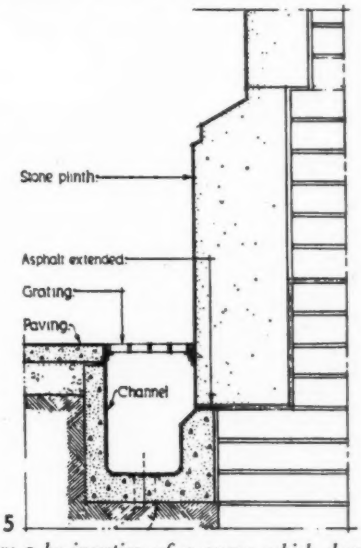


Figure 4 (left). Cure for trouble shown in Figure 3 by insertion of a course which does not absorb moisture from ground or from splashings. Figure 5 (right) : Cure for trouble shown in Figure 3 by insertion of drained channel, thus preventing absorption of moisture from ground and from splashings. This design avoids troubles shown in Figures 2 and 3.

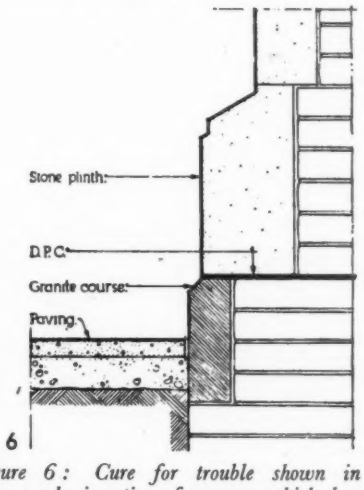


Figure 6 : Cure for trouble shown in Figure 2 by insertion of a course which does not absorb moisture from ground or from splashings. This design avoids troubles shown in Figures 2 and 3.

was noticed, indicating that the source of the trouble had been dealt with.

Figure 7 shows a method of construction which prevents the rise of soil salts from the ground and also obviates contamination and disfigurement by pavement splashings.

Decay due to salt-transfer from stone of one kind to another.—A special case of decay due to salt-transfer may arise when dissimilar stones are used in juxtaposition or under conditions such that salts derived from one kind of stone can be absorbed by another. Decay from this cause is rather rare but cannot be ignored. The use of sandstone and limestone in the same building provides an example.

It has been pointed out that those sandstones which do not contain carbonate of lime are insoluble in water and they rarely suffer from powdering. Most sandstones, however, are susceptible in rather a marked degree to injury by soluble salts. It will readily be appreciated that if sandstone is used in such a position that it receives the washings from limestones, it may be contaminated by salts resulting from the action of the atmospheric acids on the limestone and may then suffer powdering and decay. It may often be more injured than the limestone itself, for some limestones show a superior resistance to salt attack. This illustrates the need for caution in using dissimilar stones in a building. Comparable effects may be observed with other combinations, but they are so rare as not to merit mention here.

4. *Skin Formation*

There is another type of "salt-action" which, instead of producing the powdering and pitting action previously described, causes an unpleasant and most disfiguring flaking of stone. This may be seen in a number of limestones. Sandstones in which the sand grains are bonded with carbonate of lime are also liable to skin formation and flaking.

As has been mentioned, limestones and certain of the sandstones are acted on by rainwater containing sulphurous products of combustion and calcium sulphate is formed. When other salts are also present, such as those derived from the soil, backings, cement, etc., efflorescence and crumbling occur. When, however, calcium sulphate occurs alone, it forms a smooth and not very noticeable skin either on or just beneath the surface. This skin firmly cements soot and dirt to the surface and in time becomes impermeable, thus sealing the stone. Behind the skin, the stone will gradually disintegrate due to moisture entering from the joints and finally flaking will occur.

The more exposed the stone, the less likely it will be to suffer in this way, for the tendency will be for the calcium sulphate to be removed by washing and the effect will be merely a gradual roughening and wearing back of the surface. Different stones will vary according as their structure is such that calcium sulphate is more or less easily removed by washing.

This form of decay is not one which the architect or builder can control by design, except in so far as the entry of soluble salts from the soil, etc., has an influence. The primary cause is the action of polluted, i.e. acid atmospheres upon limestones or stones containing lime. Nor can much be done by selection of particular beds of stone or particular sorts of limestone. Rather it is to be regarded as an intrinsic property of large groups of limestones and is the inevitable result of the exposure of the stone in relatively sheltered positions in atmospheres charged with sulphurous products of combustion when the calcium sulphate produced by reaction between the atmosphere and the stone is allowed to accumulate. There is, however, a remedy. Sufficient time has not yet elapsed to say whether it is completely or only partially successful, but certainly a marked retardation of this type of decay is possible. This remedy consists simply in washing buildings artificially. If a limestone building, before it has had time to get too dirty, is washed down with hoses twice a year, experience shows that this suffices to keep the work as clean as the rain-washed surface would be. The practice of periodic hosing has been adopted at Goldsmiths Hall, Gresham Street, London, which is washed down twice a year. This building, after a century's exposure in a district of high atmospheric pollution, maintains a clean attractive appearance, while other buildings of only half its age in a similar situation are markedly blackened. It may also be mentioned that in order to maintain a good appearance and with the object of preservation, H.M. Office of Works have adopted the practice of regularly washing with water the masonry pedestals of the statues and memorials in their care.

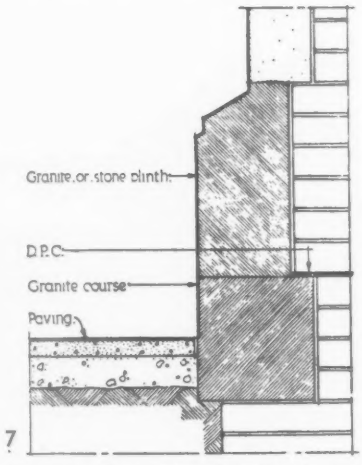


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Figure 7. Design for construction to avoid trouble shown in figures 2 and 3. The non-absorptive course as in figure 6, also acts as part of the D.P.C.

* * *

It will be seen then that stone decay is a phenomenon in which atmospheric pollution, type of stone, and the design of a building all play a part. The first step in guarding against decay is the choice of a stone suited to the exposure and design, and the selection of the most resistant and durable beds. Laboratory tests can afford considerable assistance in these respects and, as a matter of interest, it may be mentioned that the following tests are customarily used :—

Microscopical examination and comparison with type specimens of known properties (as regards weathering).

Measurements of pore space and tendency to saturation in exposed positions.

Crystallization test.

A good stone having been selected there is much that the architect and builder can do to ensure that it attains the maximum life of which it is capable—which is usually very long.

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The second part of the present note will deal with the preservation, cleaning and repair of natural stone masonry and with the selection of mortars for pointing.

EXHIBITIONS

[*By D. COSENS*]

IN aid of Czechoslovakian and Jewish refugees the London Gallery is holding a retrospective exhibition of paintings, drawings and collages by Max Ernst, a painter who, as the founder of the virile dadaist movement from which so much that is revolutionary in contemporary art has sprung, is always interesting. A full appreciation of his work and its significance raises questions beyond the space available here, but this collection, dating from 1919 to 1937, speaks for itself in representing chronologically and by well-chosen examples the different aspects and the development of an exceptionally imaginative and powerful mind. One would perhaps have liked to see more of his collages, for these, with their emphasis on texture rather than linear pattern, have always seemed to express the most important Ernst at his best and most individual.

The translation of one art into another, painting into words or poetry into painting or music, is a task so nearly impossible that it is seldom attempted by any but those of very limited sensibilities. Only when the imagery is of the very simplest can the translation hope to succeed. In his determination to illustrate anything so complex as Baudelaire's "Fleurs du Mal," Mr. Epstein would seem to have attempted the impossible, and one would have thought him a good enough artist to have realized, not only this impossibility, but also the complete inadequacy of his drawings. These are heavy and insensitive, and though they may state accurately Mr. Epstein's pictorial reactions to "Les Fleurs du Mal," they evoke little of Baudelaire's poetry. The best thing to do if one has the misfortune to visit this exhibition is to sit in a comfortable arm-chair and read the extracts from the poems which have thoughtfully been printed in the catalogue.

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At the Stafford Gallery the Society of Wood Engravers are holding their twentieth annual exhibition. Their work is always worth seeing, and this year it is particularly good, both technically and in design. Some of the best engravings are by Diana Gardiner, Gwendolen Raverat, and Clare Leighton. Diana Gardiner's "Steamer" (4) and Gwendolen Raverat's small "Titlepage" (43) being outstanding. There is also excellent work by Diana Vardon, "Cumberland" (24) ; Roderick Mead, "The Pool" (22) ; Hope Bryan, "The Tempest" (16) ; W. T. Rawlinson, "Camaes Bay" (85) ; Dorothy Vanner, "Trees" (100) ; Joan Hassell, "Illustrations" (118), and Gwenda Morgan, "The Kennel Maid." But it seems invidious to name only a few from a collection in which the standard is so high.

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Retrospective Exhibition of Work by Max Ernst. London Gallery, 28 Cork Street. Until January 15.

Drawings for Baudelaire's "Fleurs du Mal," by Epstein. Tooth's Gallery, 155 New Bond Street. Until December 31.

Twentieth Annual Exhibition of the Society of Wood Engravers. Stafford Gallery, 13 St. James's Place. Until January 12.

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Slum Clearance and Re-housing

The most recent figures showing the position of slum clearance and rehousing are summarized below.

Clearance Areas and Orders.—During November local authorities declared areas comprising 2,461 houses representing the displacement of 8,249 persons, as compared with 2,740 houses and a displacement of 7,944 persons in October.

The Orders submitted during November covered 2,368 houses and the displacement of 13,920 persons, as compared with 5,580 houses and the displacement of 17,599 persons in October.

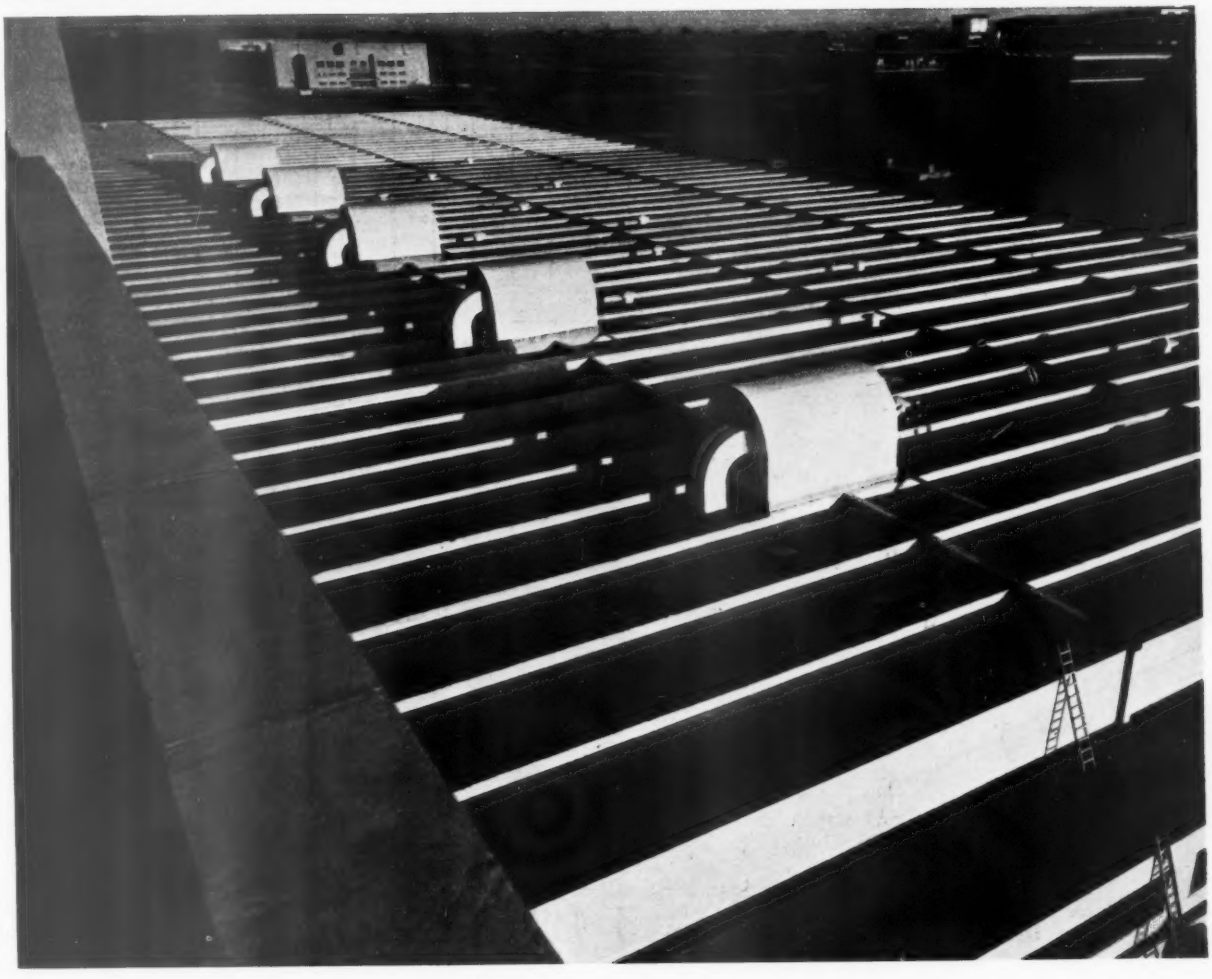
The Orders confirmed during November covered 6,745 houses and 25,170 persons as compared with 6,510 houses and 23,340 persons in October. The total number of houses in confirmed Orders is now 222,405, involving the displacement of 931,492 persons.

Rehousing Progress.—The latest available figures are those for October. At the end of that month there were 72,969 houses under construction, as compared with 77,158 at the end of September and 71,620 at the end of October last year. 8,756 houses were completed during October, as compared with 8,917 during September and 7,347 during October, 1937.

The great majority of these houses are being provided for rehousing persons displaced in connection with slum-clearance schemes.

New houses approved during November numbered 5,462, as compared with 7,557 in October and 7,065 in November of last year.

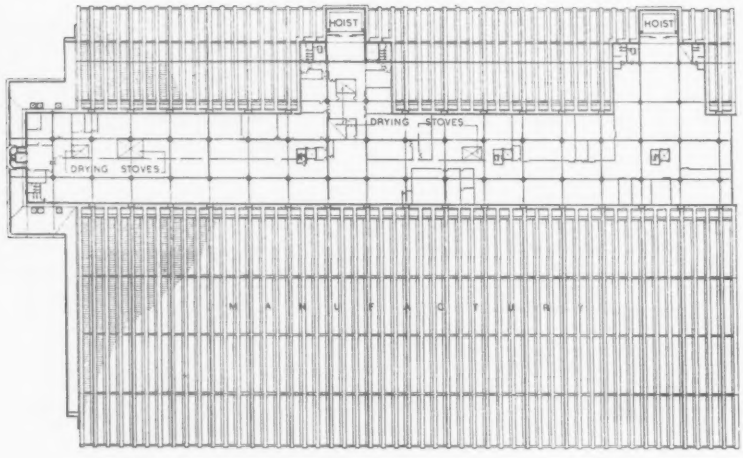
EXTENSIONS: BOOTS FACTORY, BEESTON, NOTTS.



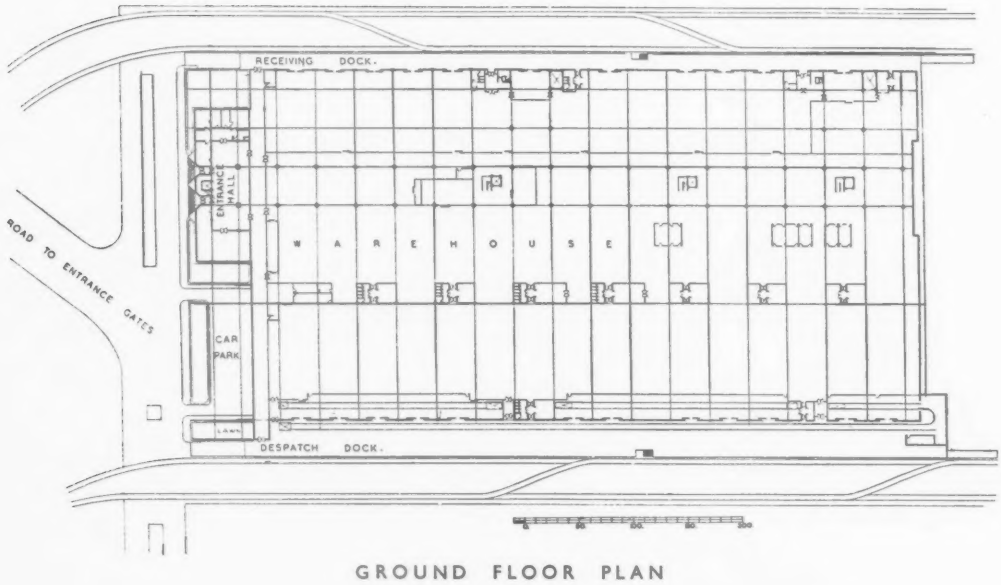
DESIGNED BY SIR E. OWEN WILLIAMS, K.B.E.

GENERAL—*The new buildings comprise "Drys" building, a building for the manufacture of fine chemicals, and a fire station. The photographs are of the "Drys" building, the lower showing the cantilevered roof over the lower portion.*

EXTENSIONS, BOOTS FACTORY, BEESTON



ROOF PLAN



GROUND FLOOR PLAN

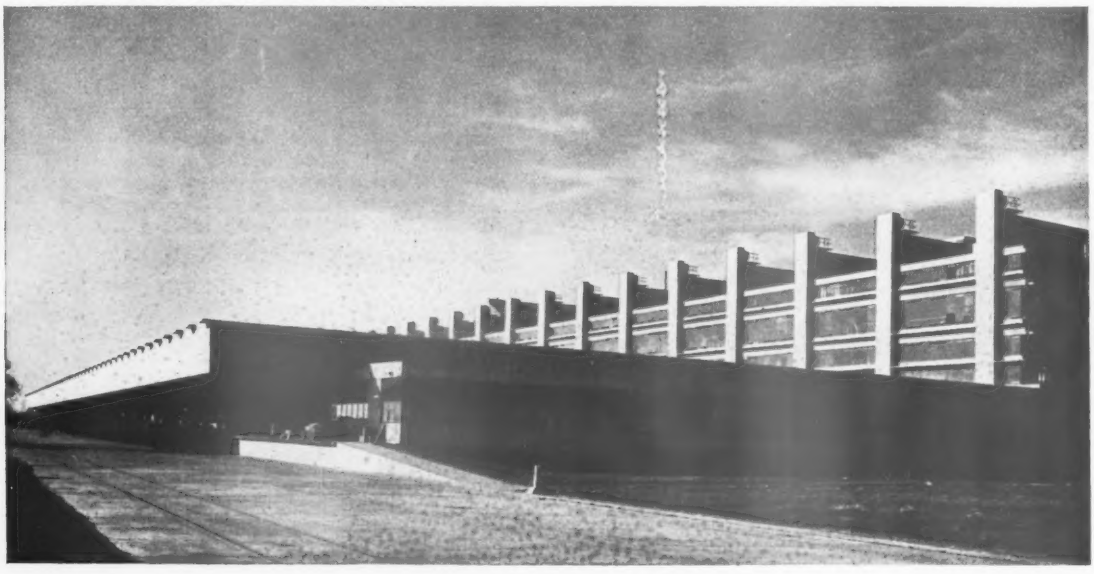
1: "DRYS" BUILDING

CONSTRUCTION — *The structure is in reinforced concrete. The roof of the single-storey building is a combination of 9 ft. deep concrete beams and patent glazing prolonged outwards to overhang the receiving and despatch docks 30 ft. and 48 ft., respectively. The multi-storey floor slabs are designed on a modified mushroom principle, eliminating beams below the soffite and obtaining rigidity from brackets at the heads of the columns. To avoid loss of space on the ground floor, at the head of the packeting tables, immediately below the side wall of the multi-storey building, it was decided to dispense with columns. The end of the single-storey roof and the multi-storey floors, therefore, are suspended up the side of the multi-storey building from the multi-storey roof beams, by which the load is finally transferred to the multi-storey columns. The ground floor is suspended over the whole area and supported on concrete piers at 9 ft. centres both ways, leaving a clear space 4 ft. 3½ in. in height, for pipe work in connection with heating and plant. Internal partitions are brick on edge, rendered in cement mortar and glass framed in metal. With exception of the packeting area the floors are finished in polished adamantine chippings in cement mortar laid in situ in 6 ft. squares. The packeting area is in 1¼ in. Canadian maple wood blocks, laid herring-bone. Heating is by low-pressure hot water, designed to deal only with fabric losses. The building has a total floor area of 450,000 sq. ft., and a cube of 10,000,000 cube ft. The total cost of the building is approximately £340,000.*

BY SIR E. OWEN WILLIAMS, K.B.E.

The loading platform to the "Drys" building.

EXTENSIONS, BOOTS FACTORY, BEESTON



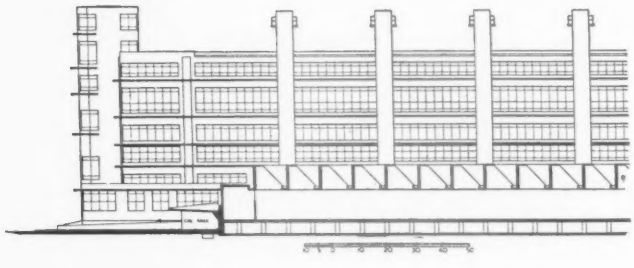
PROBLEM—*The new "Drys" building is for the manufacture, storage and dispatch of dry goods, such as powders, tablets, lozenges, etc. In addition, it provides for the reception and storage of the raw and the packeting materials and for packeting.*

In designing the buildings Sir Owen Williams co-operated with the Works Planning Committee and the Engineering Staff of Messrs. Boots Pure Drug Company under the Company's Chief Engineer, Mr. C. H. Jessop.

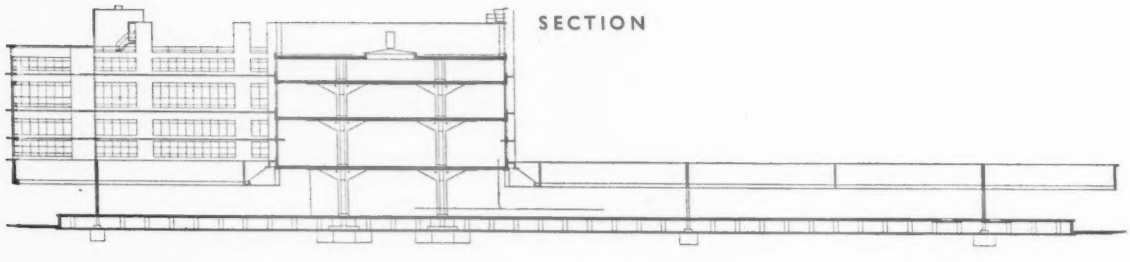
PLAN—*The building comprises a single-storey structure 324 ft. wide, excluding the receiving and dispatch docks, surmounted by a multi-storey structure 84 ft. wide. The multi-storey floors are projected out at right angles to the main section at two points, forming two wings, 84 ft. wide, each connected with the receiving dock and the ground floor by an open hoist well and goods' lift. This arrangement is caused by the gravitational process of the manufacture and the necessity for the manufactured products to converge and meet the packeting materials at the head of the packeting tables. Thus the manufactory is located in the multi-storey section and the packeting materials and the packeting process on the ground floor, the manufactured products being delivered to the ground floor by chutes.*

Above, a general view of the "Drys" building.

1: "DRYS" BUILDING

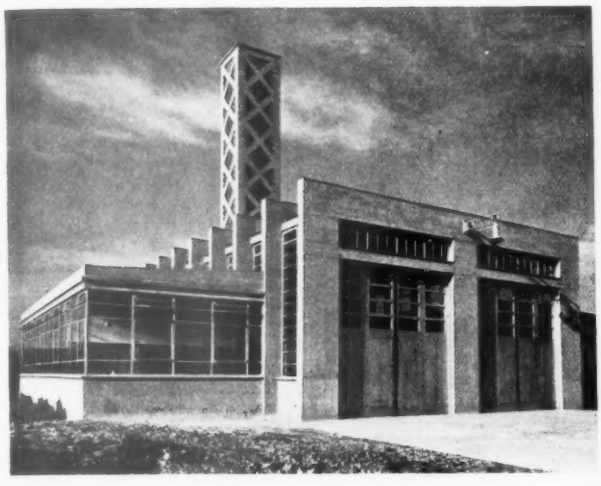


HALF MAIN ELEVATION

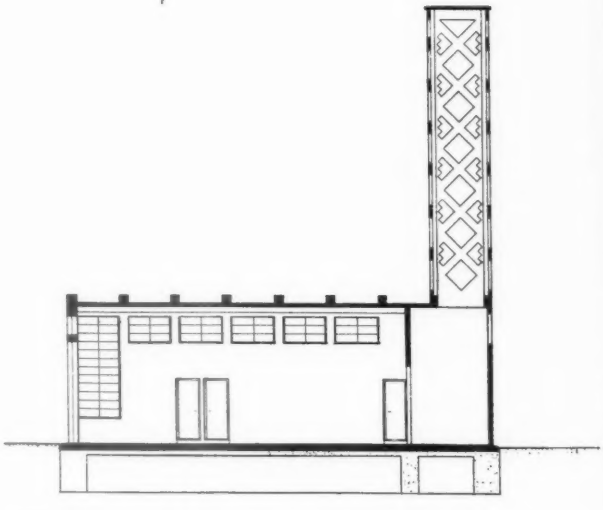


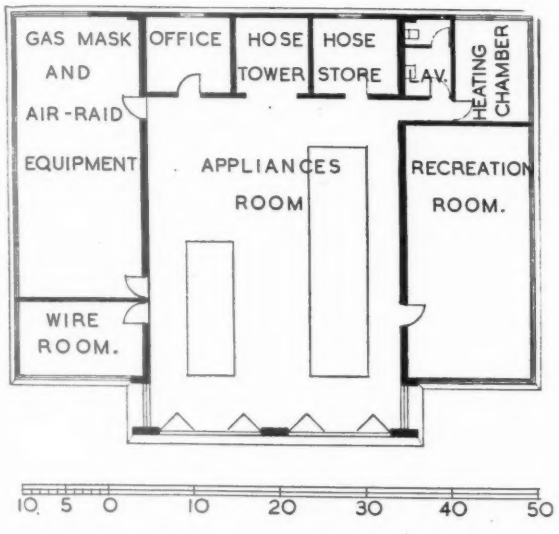
SECTION

BY SIR E. OWEN WILLIAMS, K.B.E.



2 : FIRE STATION

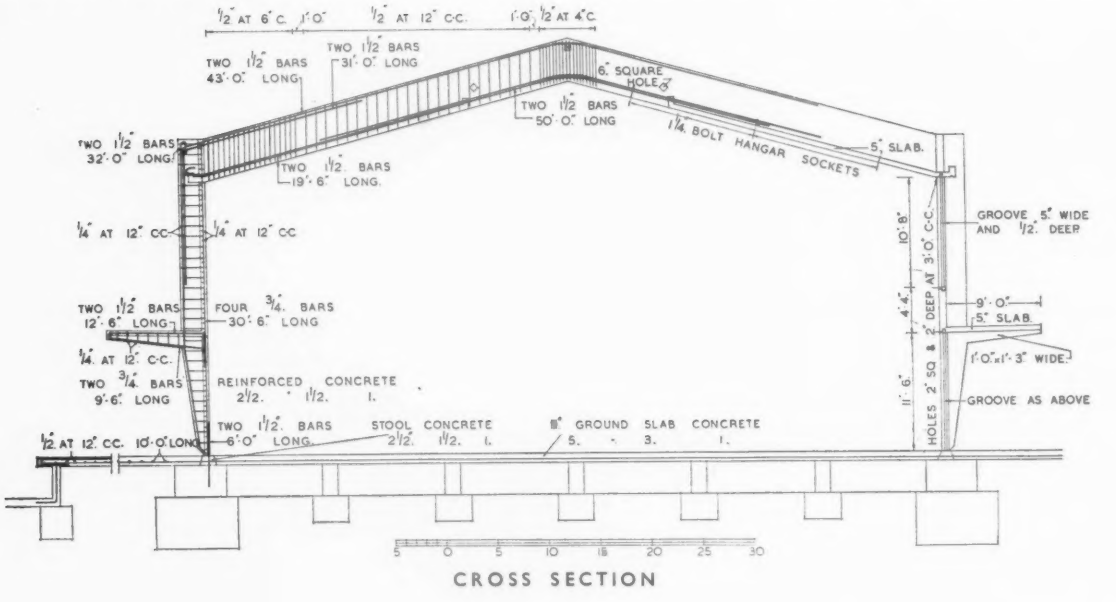




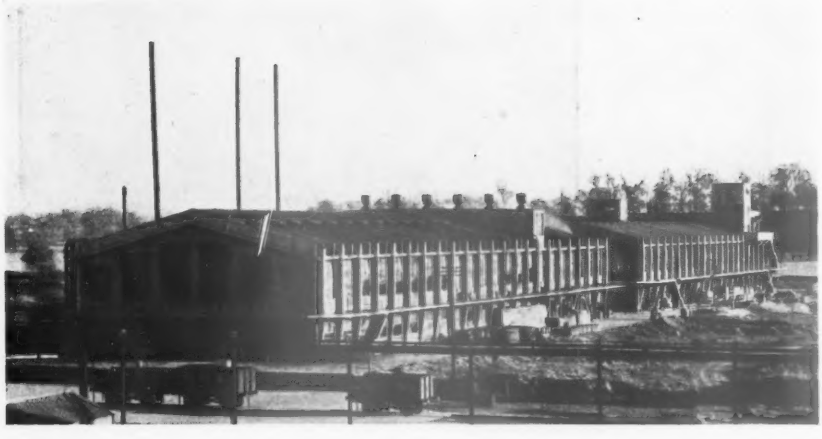
PROBLEM—*The fire station houses the usual mobile appliances and other fire-fighting equipment, and provides accommodation for the latest A.R.P. requisites.*

CONSTRUCTION AND FINISH—*Reinforced concrete. The roof being constructed in a series of continuous beams, at 6 ft. centres, supported on the main internal concrete division walls. Floor finishes are: Appliances room, hose store, hose tower and lavatories, tiles; heating chamber, granolithic; remainder, maple wood blocks. The walls to the appliances room, tower and lavatories are tiled to a height of 6 ft. Above this level (and other wall surfaces and ceilings) are buffed and painted. The hose tower is in glass bricks and reinforced concrete. The glass bricks in each wall are arranged to preserve the diagonal bracing, essential to the stability of the tower. All exterior concrete surfaces are bush hammered. The area of the building is 2,750 sq. ft., and the total cost is approximately £4,000. Above, the entrance front and the hose tower.*

EXTENSIONS, BOOTS FACTORY, BEESTON



CROSS SECTION



3: PROCESS BUILDING FOR MANUFACTURE OF FINE CHEMICALS

DESIGNED BY SIR E. OWEN WILLIAMS, K.B.E.

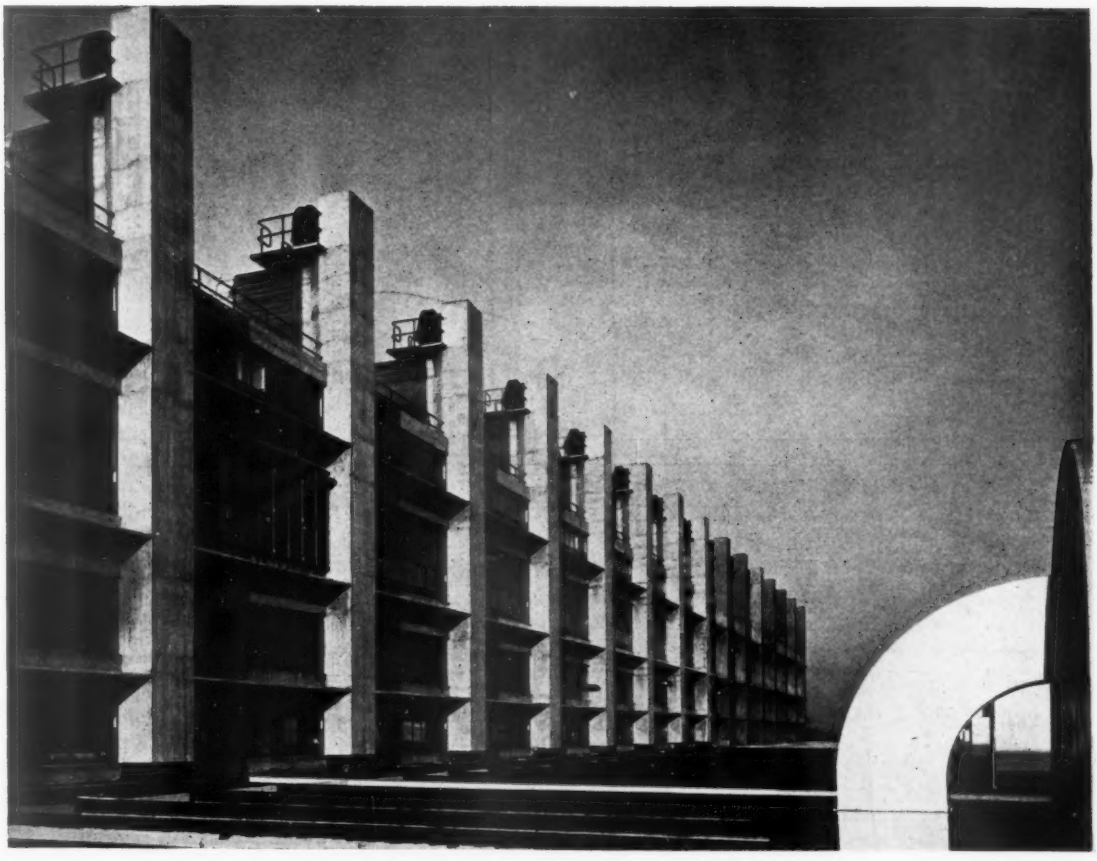
PROBLEM—*In the manufacture of fine chemicals there are varying and constantly changing processes. It was therefore decided to construct the two buildings in skeleton form, consisting of the two sides and the roof, giving a standard cross-section of a shape sufficient to accommodate the known processes with a reasonable margin for future changes or developments. The length of the buildings thus becomes dependent only on the area required. The section is provided with an external canopy on both sides to give protection to processes having to be carried on in the open air, each projecting 9 ft. at a level of 12 ft. above the ground floor. The section is sustained by concrete frames at 12 ft. centres, designed to support, by suspension, an additional floor if required. The length of the buildings in both cases was decided at 22 bays of 12 ft. each.*

CONSTRUCTION—*In both buildings the framework is of reinforced concrete. The framework only was built first of all, provision being made for the erection of reinforced concrete floors as required. These floors would be self-supporting with exception of bearings taken on the skeleton frame in recesses previously provided. Although the processes generally provide for the dilution or neutralization of the acid effluents, as an additional precaution all drainage channels and pipes were acid-resisting. Floor surfaces in certain areas are finished in blue bricks, jointed in acid-resisting mastic. In other areas the floor finish is granolithic laid in 6 ft. squares. The area covered by each of the buildings is 23,500 sq. ft., and the cube 850,000 cu. ft. The total cost of the skeleton framework (i.e. excluding the internal floors) for each building were approximately £13,750.*

The general contractors for the three buildings were Peter Lind & Co., Ltd. For list of sub-contractors see page 1075.

WORKING DETAILS : 711

VENTILATION AND LIGHTING • BOOTS FACTORY, BEESTON, NOTTS • SIR E. OWEN WILLIAMS, K.B.E.



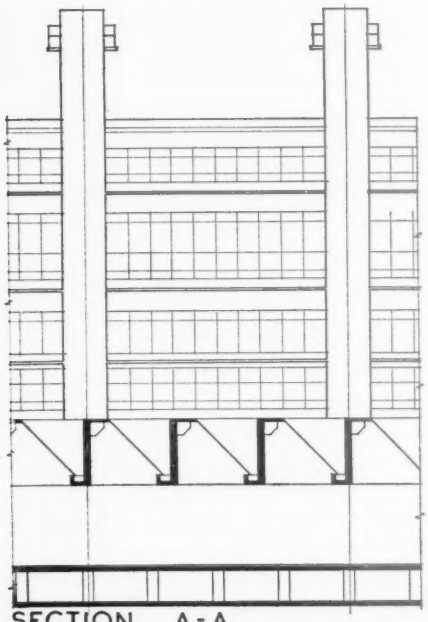
The ventilation and lighting illustrated are in the "Drys" building, which consists of a four-storey building with a large single-storey extension on the ground floor. Owing to the dusty nature of the various products being manufactured, a special system of ventilation was required. Warmed, filtered air is introduced at roof level into the single-storey extension and distributed throughout the building. Open horizontal ducts, as shown in the bottom photograph, run the length of the building at ceiling level, and the dust-laden air is drawn through them to the vertical extract flues. Fan units at the top of each flue forcibly extract the air; these can be seen in the top photograph.

Lighting for the single-storey extension is by means of a series of laylights between reinforced concrete cantilever beams.

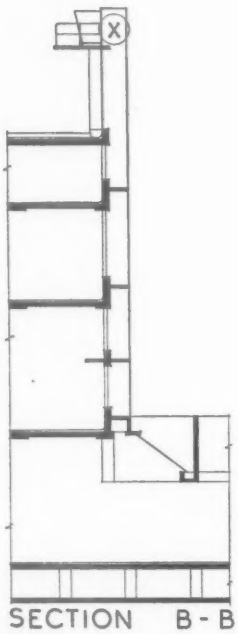
Details are shown overleaf.

WORKING DETAILS : 712

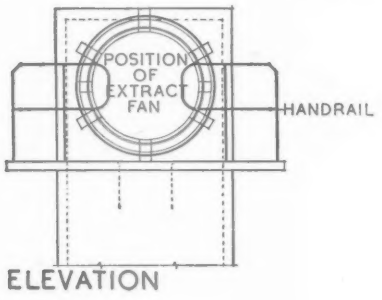
VENTILATION AND LIGHTING • BOOTS FACTORY, BEESTON, NOTTS • SIR E. OWEN WILLIAMS, K.B.E.



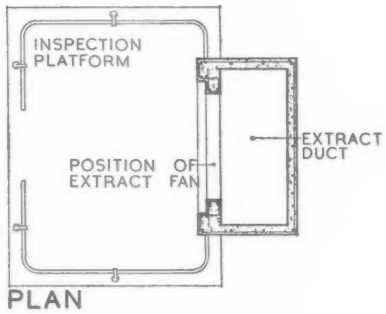
SECTION A-A



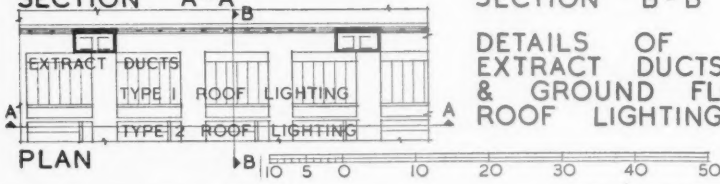
SECTION B-B



ELEVATION



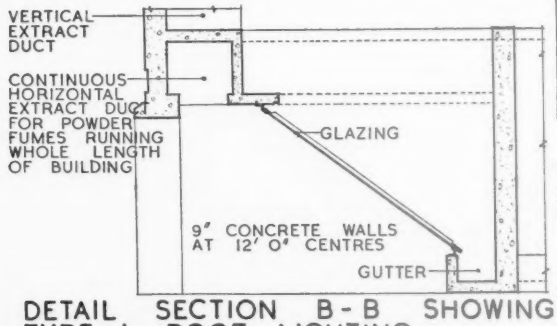
PLAN



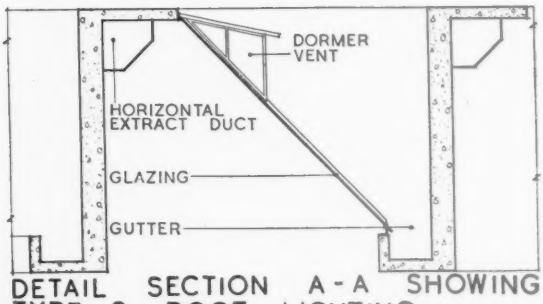
DETAILS OF EXTRACT DUCTS & GROUND FLOOR ROOF LIGHTING

DETAILS OF FAN CHAMBER AT (X)

1 0 1 2 3 4 5 10 FT.

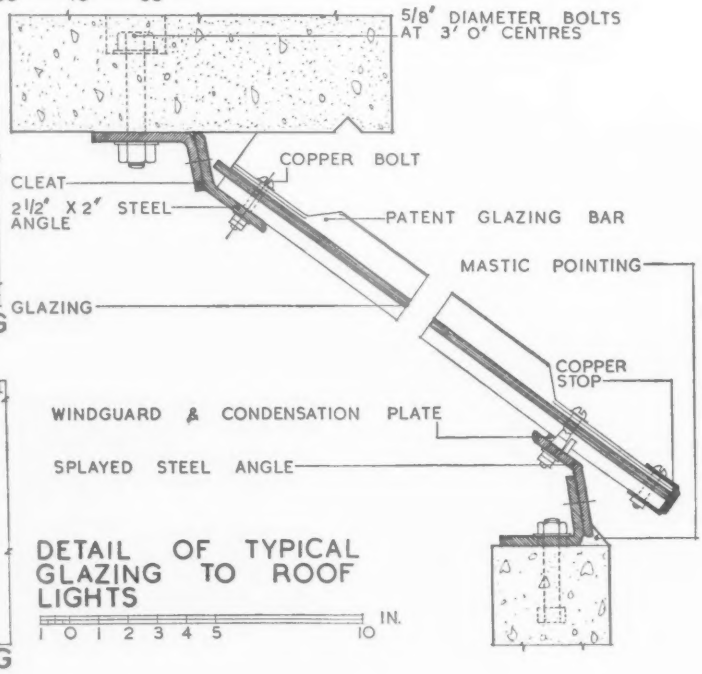


DETAIL SECTION B-B SHOWING TYPE 1 ROOF LIGHTING



DETAIL SECTION A-A SHOWING TYPE 2 ROOF LIGHTING

1 0 1 2 3 4 5 10 15 FT.



DETAIL OF TYPICAL GLAZING TO ROOF LIGHTS

1 0 1 2 3 4 5 10 IN.

Details of the ventilation and lighting illustrated overleaf.

The Architects' Journal Library of Planned Information

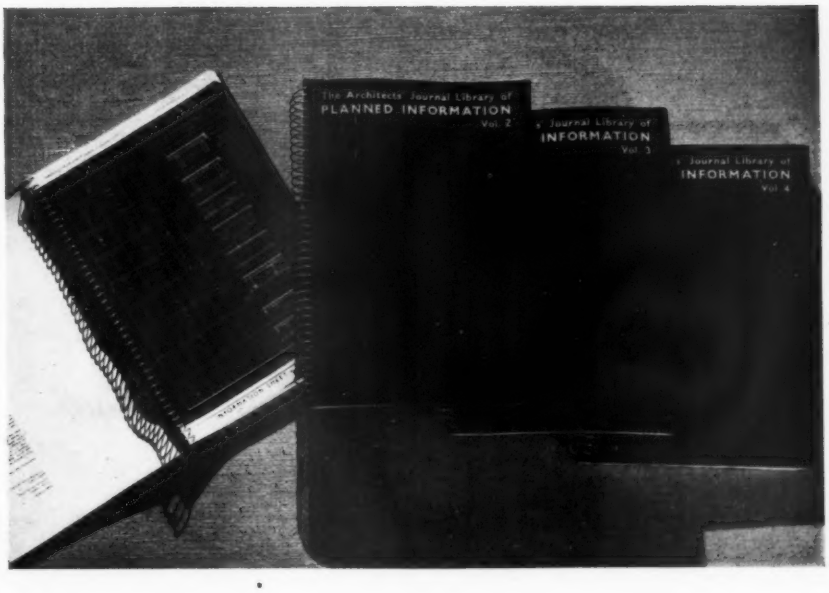
INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

691 Fuel Storage

662 Bricks (Standard Specials)



All the Information Sheets published in The Architects' Journal Library of Planned Information since the inception of the series to the end of 1937, have been reprinted and are available in the four volumes illustrated here. Price 21s. each.

Sheets issued since index :

601 : Sanitary Equipment
602 : Enamel Paints
603 : Hot Water Boilers—III
604 : Gas Cookers
605 : Insulation and Protection of Buildings
606 : Heating Equipment
607 : The Equipment of Buildings
608 : Water Heating
609 : Fireplaces
610 : Weatherings—I
611 : Fire Protection and Insulation
612 : Glass Masonry
613 : Roofing
614 : Central Heating
615 : Heating : Open Fires
616 : External Renderings
617 : Kitchen Equipment
618 : Roof and Pavement Lights
619 : Glass Walls, Windows, Screens, and Partitions
620 : Weatherings—II
621 : Sanitary Equipment
622 : The Insulation of Boiler Bases
623 : Brickwork
624 : Metal Trim
625 : Kitchen Equipment
626 : Weatherings—III
627 : Sound Insulation
628 : Fireclay Sinks
629 : Plumbing
630 : Central Heating
631 : Kitchen Equipment
632 : Doors and Door Gear
633 : Sanitary Equipment
634 : Weatherings—IV
635 : Kitchen Equipment
636 : Doors and Door Gear
637 : Electrical Equipment, Lighting
638 : Elementary Schools—VII
639 : Electrical Equipment, Lighting
640 : Roofing
641 : Sliding Gear
642 : Glazing
643 : Glazing
644 : Elementary Schools—VIII
645 : Metal Curtain Rails
646 : Plumbing
647 : Veneers
648 : U.S.A. Plumbing—V
649 : U.S.A. Plumbing—VI
650 : Ventilation of Factories and Workshops—I
651 : School Cloakrooms (Boys)
652 : U.S.A. Plumbing—VII
653 : Plumbing
654 : U.S.A. Plumbing—VIII
655 : School Cloakrooms (Girls)
656 : Ventilation of Factories and Workshops—II
657 : Floor Construction
658 : Partitions
659 : Equipment
660 : Asbestos-Cement Decorated Sheets
661 : Aluminium
662 : Sound Resistance
663 : Adjustable Steel Shelving
664 : Sheet Lead Work
665 : Adjustable Steel Shelving
666 : Sound Insulation
667 : A.R.P.
668 : Aerodromes
669 : Aluminium
670 : Metal Trim
671 : Rainwater Gutters
672 : Waterproofing
673 : Aluminium
674 : Roof Insulation
675 : Furniture
676 : Ventilation of Factories and Workshops—III
677 : Oil Paint
678 : Ventilation of Factories and Workshops—IV
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681 : Corded Curtain Rails
682 : Sound Insulation
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684 : Sheet Metals
685 : Partitions
686 : Aluminium
687 : Plumbing
688 (81 revised) : Bricks (Standard Specials)
689 : Suspended Ceilings
690 : Acoustics

831

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

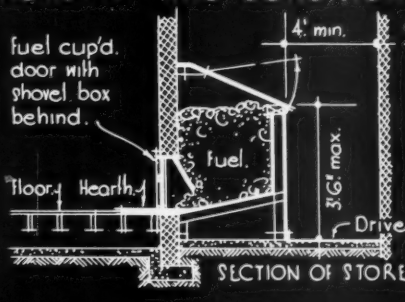
ARRANGEMENT OF FUEL STORES TO SUIT LOCAL REQUIREMENTS AND CONDITIONS:

(A) OUTSIDE FUEL STORE WITH ACCESS FROM INTERIOR OF HOUSE.

DELIVERY: Fuel is fed into the store by means of a hinged lid on the exterior.

REMOVAL: Fuel is removed by means of a shovel opening behind the fuel access door, protected by a sloping hood inside the store.

EXTERIOR VIEW OF FUEL STORE.

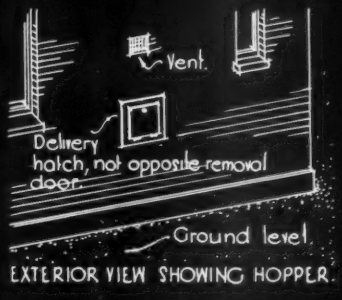


SECTION OF STORE.

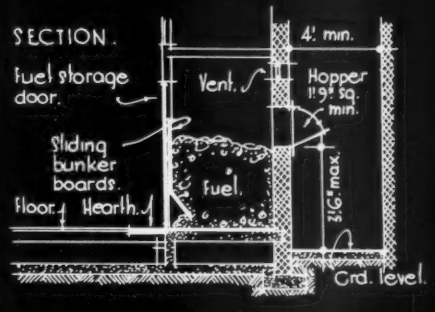
(B) INTERNAL FUEL STORE WITH FLOOR AT GROUND FLOOR LEVEL.

DELIVERY: Hopper should open to an angle of 90° and may be higher (for deeper fuel storage) if outside steps, etc. are provided.

REMOVAL: Horizontal coal boards (4' high) are removed in large stores when necessary to reach fuel beyond shovel range.



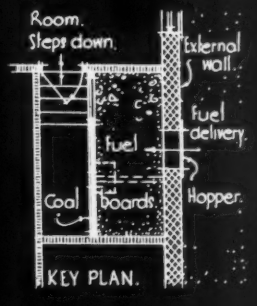
EXTERIOR VIEW SHOWING HOPPER.

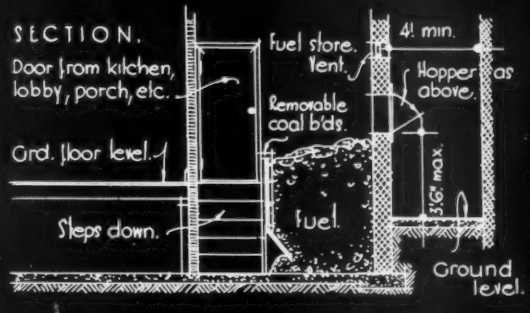


(C) INTERNAL FUEL STORE WITH FLOOR BELOW GROUND FLOOR LEVEL.

DELIVERY: As for B above. Two hoppers are necessary if two kinds of fuel are used, separated by a low wall & removable bunker boards.

REMOVAL: Access to store through door from convenient room, with steps down to fuel store level.



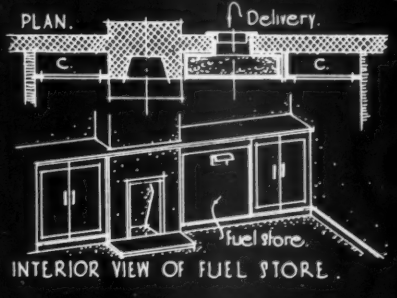


(D) SMALL FUEL STORE BUILT-IN BESIDE OPEN FIREPLACE.

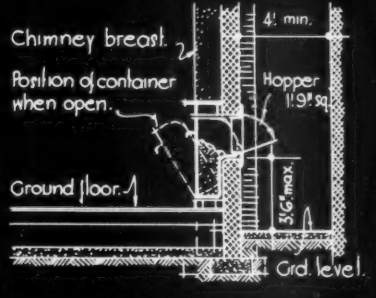
DELIVERY: As for store B above.

REMOVAL: The hinged fuel container is designed for refuelling from a separate main fuel storage.

It swings forward and downward through a set distance, and fuel is removed with tongs or shovel.



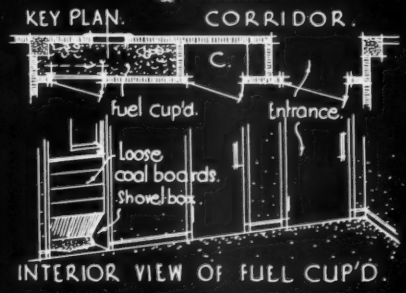
INTERIOR VIEW OF FUEL STORE.



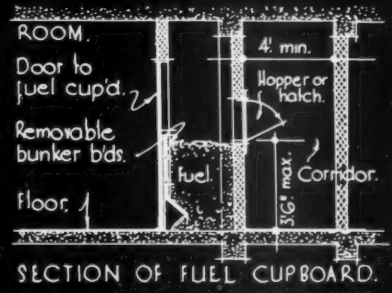
(E) FUEL STORE CUPBOARD AGAINST CORRIDOR TO SMALL FLAT.

DELIVERY: Individual flat delivery through hopper or hatch as B above.

REMOVAL: Coal boards behind ordinary cup'd. door are fitted with removable shovel box. Wooden cup'd. should be lined with sheet iron, & have partition to separate two kinds of fuel if required.



INTERIOR VIEW OF FUEL CUP'D.



SECTION OF FUEL CUPBOARD.

Information from the Coal Utilisation Council.

INFORMATION SHEET: FUEL STORES FOR SMALL & MEDIUM SIZED HOUSES.1.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Oscar A. Bayne.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 691 •

FUEL STORAGE

Subject : Domestic Coal and Coke Bins

General :

This Sheet sets out a number of different arrangements of fuel bins for domestic purposes and for buildings where only small quantities of fuel are required.

Capacity of Bins :

There is no limit to the amount of fuel storage which *may* be required by particular building owners, but in general it should be assumed that in the average small house storage will be required for at least one ton of each fuel because fuel must be purchased in at least one ton lots to obtain *full* advantage of seasonal price reductions. Space is usually required for both coke and coal. The volume of space required is :—

Coal ... ... 45 cubic feet per ton.
Coke ... ... 80 cubic feet per ton.

The following internal dimensions give approximately 45 cubic feet (1 ton of coal) :—

2′ 0″ × 2′ 0″ × 11′ 0″ (44)
2′ 6″ × 2′ 0″ × 9′ 0″ (45)
2′ 6″ × 2′ 6″ × 7′ 6″ (46)
3′ 0″ × 2′ 6″ × 6′ 0″ (45)
3′ 0″ × 3′ 0″ × 5′ 0″ (45)
3′ 6″ × 3′ 0″ × 4′ 3″ (45)
3′ 6″ × 3′ 6″ × 3′ 9″ (45)

The following internal dimensions give approximately 80 cubic feet (1 ton of coke) :—

3′ 0″ × 2′ 0″ × 13′ 6″ (81)
3′ 0″ × 2′ 6″ × 10′ 9″ (80)
3′ 0″ × 3′ 0″ × 9′ 0″ (81)
3′ 6″ × 3′ 0″ × 7′ 6″ (79)
3′ 6″ × 3′ 6″ × 6′ 6″ (79)
4′ 0″ × 3′ 6″ × 5′ 9″ (82)
4′ 0″ × 4′ 0″ × 5′ 0″ (80)
4′ 6″ × 4′ 0″ × 4′ 6″ (81)

It should be noted that the effective height of the storage space is measured from the floor of the bin to the level of the *cill* of the delivery hatch.

Design of Bins :

Certain general requirements of supply, storage and removal govern the design of bins and they may be summarized as follows :—

(a) *Supply hatch : height.*—Since domestic fuel stores are not usually large, they are usually filled with supplies delivered in sacks—the supply hatch should be therefore large enough to take a sack and high enough to receive the bottom of the sack from a man's back. Generally, the higher the hatch the greater will be the storage capacity obtained, but it is not advisable for the cill to be more than 3′ 6″ from the pavement level. If the cill is higher than 3′ 6″, then a small platform should be provided from which delivery can be made.

(b) *Supply hatch : hopper.*—If the hatch is fitted with an open-out hopper into which the fuel is to be tipped, the opening should be not less than 1′ 9″ × 1′ 9″, and the hopper must be strongly constructed to take the weight of a sack dumped on it, and must have solid cheeks to prevent fuel escaping. The hopper must be provided with strong stops, stays or chains to prevent it opening lower than about 20 deg. to the horizontal.

(c) *Supply hatch : door.*—If the hatch is fitted with a side-hung door it may open in or out, but the frame should be fitted with a strong wide cill on which the sacks can be dumped. The opening then should be 1′ 6″ to 1′ 9″ wide, and not less than 2′ 6″ high to allow the sacks to be stood upon the cill and the coal allowed to fall into the bin.

(d) *Floor.*—The floor of the bin should have a hard surface, preferably jointless, as shovelling the fuel is much easier if the shovel can be pushed along the floor *under* the fuel instead of *into* the fuel.

The floor may be sloped towards the removal hatch, but the shovelling area around the hatch should be horizontal.

(e) *Removal hatch.*—Small fuel bins require only a small removal hatch, if the fuel is within easy reach when the bin is nearly empty.

Larger bins require a removable front in which a hatch can be fitted. Fuel is then removed through the hatch until the bin becomes nearly empty. The front can then be removed entirely to obtain access to all parts of the bin.

The removal hatch should usually be approximately 2′ 0″ wide and 15″ high, and should be fitted with a hood on the bin side to relieve the weight over the fuel being shovelled.

(f) *Removable bin fronts.*—Bin fronts are usually formed of loose boarding (approximately 6″ × 1″) run horizontally with the ends sliding in vertical grooves in the studs for easy removal.

(g) *Ventilation.*—If bins are built with walls on all sides carried up to the ceiling, the enclosed space should be ventilated, preferably with two vents arranged to give cross ventilation.

Construction :

External bins should be weather-proof and capable of resisting the pressure of the fuel when full and of the dumping of fuel during deliveries. Internal bins are usually formed against a solid wall or walls ; the remaining enclosing walls may be of brick, concrete or any of the heavier type of partition block materials, but they are most commonly framed up in timber and boarding. This boarding, if not to be removable, may be lined with sheet metal to prevent fuel dust escaping.

Types shown :

The first three types illustrated on this Sheet are A external, B internal, and C internal sunk bins suitable for general domestic storage.

The first (external) is a type mainly used as an addition to existing buildings.

The second (internal) is the commonest type, and if the adjoining floor is not of hard finish, it should be provided with a small shovelling "hearth" either raised or flush around the removal hatch.

The third type has the advantage of giving greater depth of storage space than either of the other two and can frequently be conveniently arranged when the boiler room is below the general ground floor level.

The fourth (D) type is a small storage bin intended to serve one fire only, and to be refilled from the general storage bin as required.

The fifth is a small bin suitable for small flats. Such bins are not usually intended to store more than 5 cwts. of one fuel or 3 cwts. each of two fuels, the main storage being arranged elsewhere on the ground or basement level.

Details :

Further details of fuel bins are given in the next Sheet in this series.

Fuels for Domestic Purposes :

To get the full efficiency out of an appliance, it is essential that the fuel should be suitable for the particular appliance in which it is burned.

The following fuels are recommended for various appliances :—

Open Fires.—Bituminous house coal of good quality and of "large" or cobble size ; low temperature fuel ; or, in specially adapted grates, free-burning low volatile coals and graded gas coke or furnace coke.

Continuous-burning Stoves (according to design). Anthracite or low volatile coals of appropriate size, low temperature fuel ; gas or furnace coke of nut size ; hard kitchen nuts ; or a mixture of kitchen nuts and coke nuts.

Cookers (according to design).—Kitchen nuts or cobbles ; anthracite ; low volatile coals ; gas coke or furnace coke.

Hot-water Boilers (according to design).—Anthracite boiler nuts ; low volatile coals of nut size ; graded gas coke or furnace coke.

These recommendations are necessarily general, but the Council's engineers will give more precise information at any time on request on the most suitable fuel for any job.

Technical Service :

The British coal industry, through the engineers of the Coal Utilisation Council, provides technical service to architects and to the public generally on all problems relating to the use of coal and its derivatives for all purposes.

In addition to the staff at the head office, an engineer is attached to each branch at the addresses given below. Additional general information is also available in various technical bulletins issued free by the Council.

Previous Sheets :

This Sheet is the sixth of a series issued by the Coal Utilisation Council, the first, second, third, fourth, and fifth Sheets being Nos. 571 (fuel storage), 582 (heating stoves), 603 (hot water boilers), 614 (radiators) and 630 (central heating).

Issued by : The Coal Utilisation Council

Head Office and Southern Branch :
Grosvenor Gardens House, Victoria, London S.W.1
Telephone : Victoria 4366

Midland Branch :
Somerset House, 37 Temple Street, Birmingham, 2
Telephone : Midland 3736

Eastern Branch :
Alliance Chambers, 19 Horsefair Street, Leicester
Telephone : Leicester 65011

North-Eastern Branch :
38-39 Pearl Chambers, East Parade, Leeds 1
Telephone : Leeds 23616

North-Western Branch :
38 Deansgate, Manchester, 3
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Telephone : Central 3552

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United Kingdom Provident Buildings, 14-16 Baldwin Street, Bristol, 1
Telephone : Bristol 24797

841.

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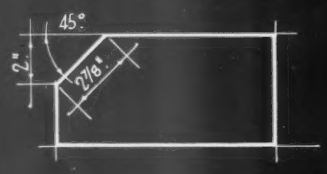
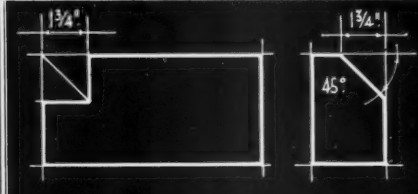
NOTE - All specials are made in 3" & 2⅜" sizes, & where not otherwise shown, conform to the R.I.B.A. standard sizes.

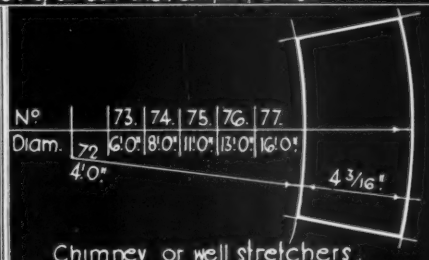
The numbers given below are the reference numbers of London Brick Company Limited.



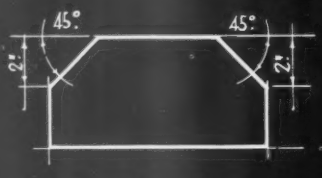
42. Cant brick.



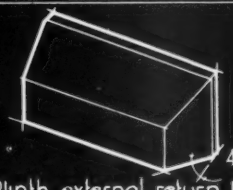
50. Plinth internal return, Right hand.
51. ditto, Left hand.



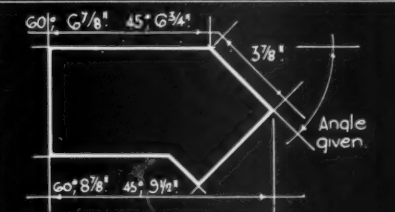
Chimney or well stretchers.



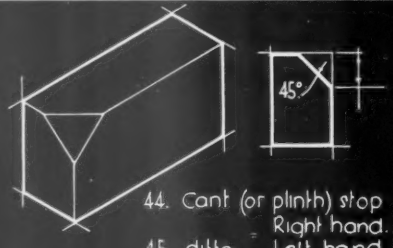
43. Double cant brick.



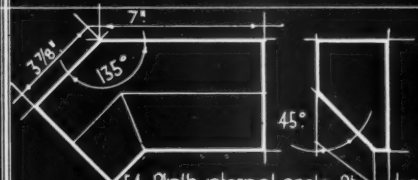
52. Plinth external return, Right hand.
53. ditto, Left hand.



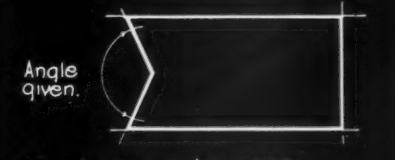
78. Angle brick, 60°
79. ditto, 45°



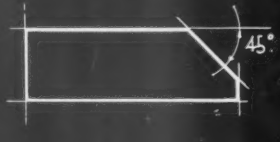
44. Cant (or plinth) stop Right hand.
45. ditto, Left hand.



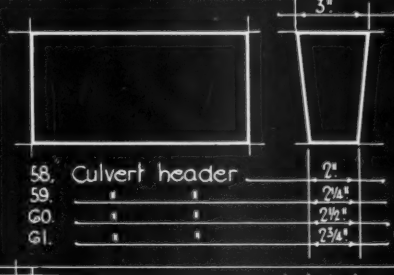
54. Plinth internal angle, Rt. hand.
55. ditto, Left hand.
56. Plinth external angle, Right hand.
57. ditto, Left hand.

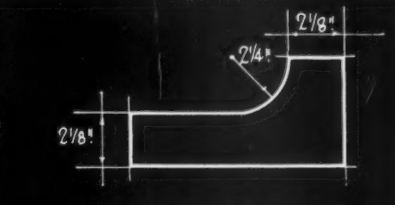


80. Birdsmouth, 150°
81. ditto, 130°

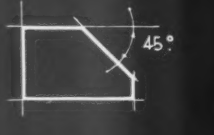


46. Plinth header.

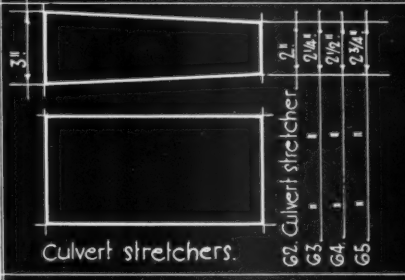




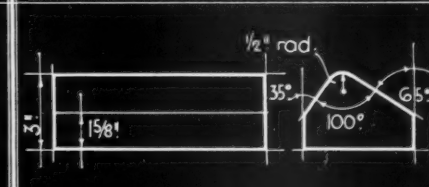
82. Pistol brick (Circular corner).



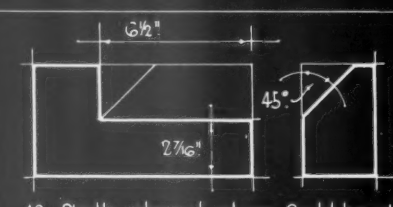
47. Plinth stretcher.



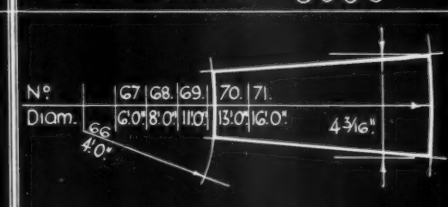
Culvert stretchers.



83. Girder skewback.



48. Plinth internal return, Right hand.
49. ditto, Left hand.



Chimney or well headers.

NOTE:
The designation of handed bricks is based upon the function of the brick in the work.

Information from London Brick Company Limited.

INFORMATION SHEET: PHORPRES BRICKS: STANDARD SPECIALS. 2.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oliver A. Bayne.

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INFORMATION SHEET

• 692 (84 revised) •

BRICKS

(STANDARD SPECIALS)

Product : " Phorpres "

Type Illustrated : Standard Specials, 2

Schedule of Special Bricks :

Makers' Number

42. Cant
43. Double Cant
44. Cant (or Plinth) Stop Right Hand
45. Cant (or Plinth) Stop Left Hand
46. Plinth Header
47. „ Stretcher
48. Plinth Internal Return Right Hand .. 6½"
49. „ „ „ Left Hand .. 6½"
50. „ „ „ Right Hand .. 1½"
51. „ „ „ Left Hand .. 1½"
52. „ External Return Right Hand
53. „ „ „ Left Hand
54. „ Internal Angle Right Hand 45°
55. „ „ „ Left Hand 45°
56. „ External Angle Right Hand 45°
57. „ „ „ Left Hand 45
58. Culvert Header 3" to 2"
59. „ „ 3" to 2¼"
60. „ „ 3" to 2½"
61. „ „ 3" to 2¾"
62. „ Stretcher 3" to 2"
63. „ „ 3" to 2¼"
64. „ „ 3" to 2½"
65. „ „ 3" to 2¾"
66. Chimney (or Well) Header for 4' inside diameter
67. „ „ „ „ 6' outside „
68. „ „ „ „ 8' „ „
69. „ „ „ „ 11' „ „
70. „ „ „ „ 13' „ „
71. „ „ „ „ 16' „ „
72. „ „ Stretcher „ 4' inside „
73. „ „ „ „ 6' outside „
74. „ „ „ „ 8' „ „
75. „ „ „ „ 11' „ „
76. „ „ „ „ 13' „ „
77. „ „ „ „ 16' „ „
78. Angle Brick 60°
79. „ „ 45°
80. Birdsmouth 150°
81. „ 130°
82. Pistol Brick
83. Girder Skewback

The quotation of the numbers is sufficient indication of the type required.

Only some of the special bricks made by the Company are illustrated, for further and fuller details refer to the schedule of special bricks above.

The Company's process permits the manufacture of special shapes, other than those shown, which may be required for particular purposes.

Blue prints giving all measurements and angles of the special bricks illustrated can be obtained from the Head Office. The Cellular brick is not manufactured in special shapes.

Measurements throughout this Sheet are nominal, the dimensions of bricks being within the limits of the R.I.B.A. Standard of 1904, amended 1919.

Special shapes can be supplied rusticated or sandfaced.

Previous Sheet :

The first Sheet dealing with standard specials is No. 81.

Manufacturers : London Brick Company Ltd.

Address : Africa House, Kingsway, London, W.C.2

Telephone : Holborn 8282

FLATS IN LADBROKE GROVE, W.

DESIGNED BY E. MAXWELL FRY

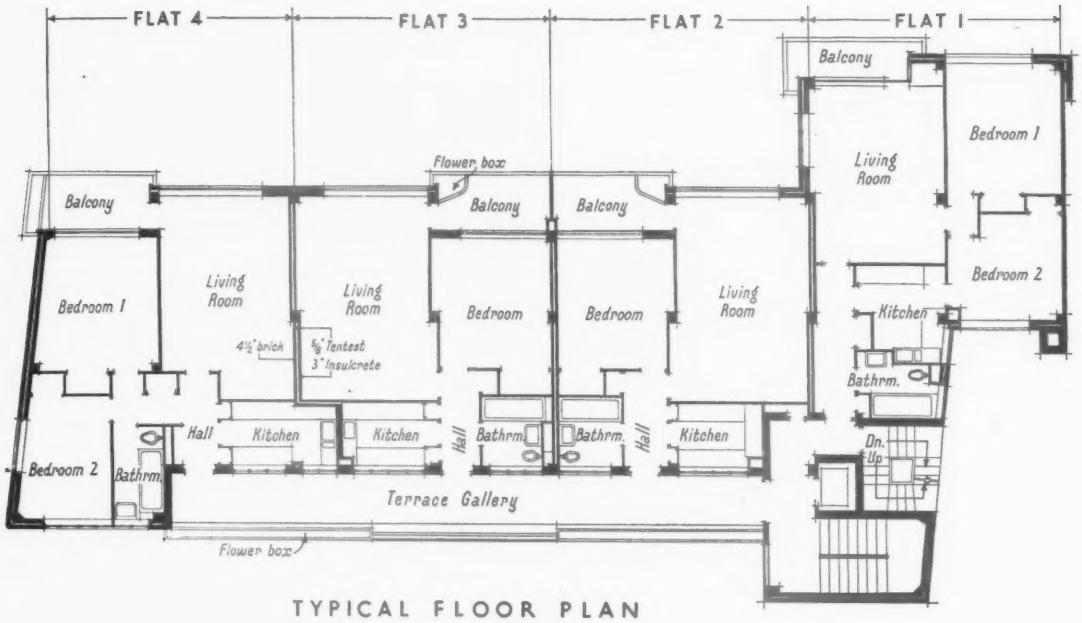
PROBLEM—*Block of small flats overlooking a good-sized garden to the south-west.*

PLAN—*Gallery access enabled the whole width of the site to be used for living and bed rooms. Only kitchens and bathrooms overlook the wide gallery. Sixteen flats, a caretaker's flat and a penthouse are provided. The penthouse was designed by R. Myerscough-Walker.*

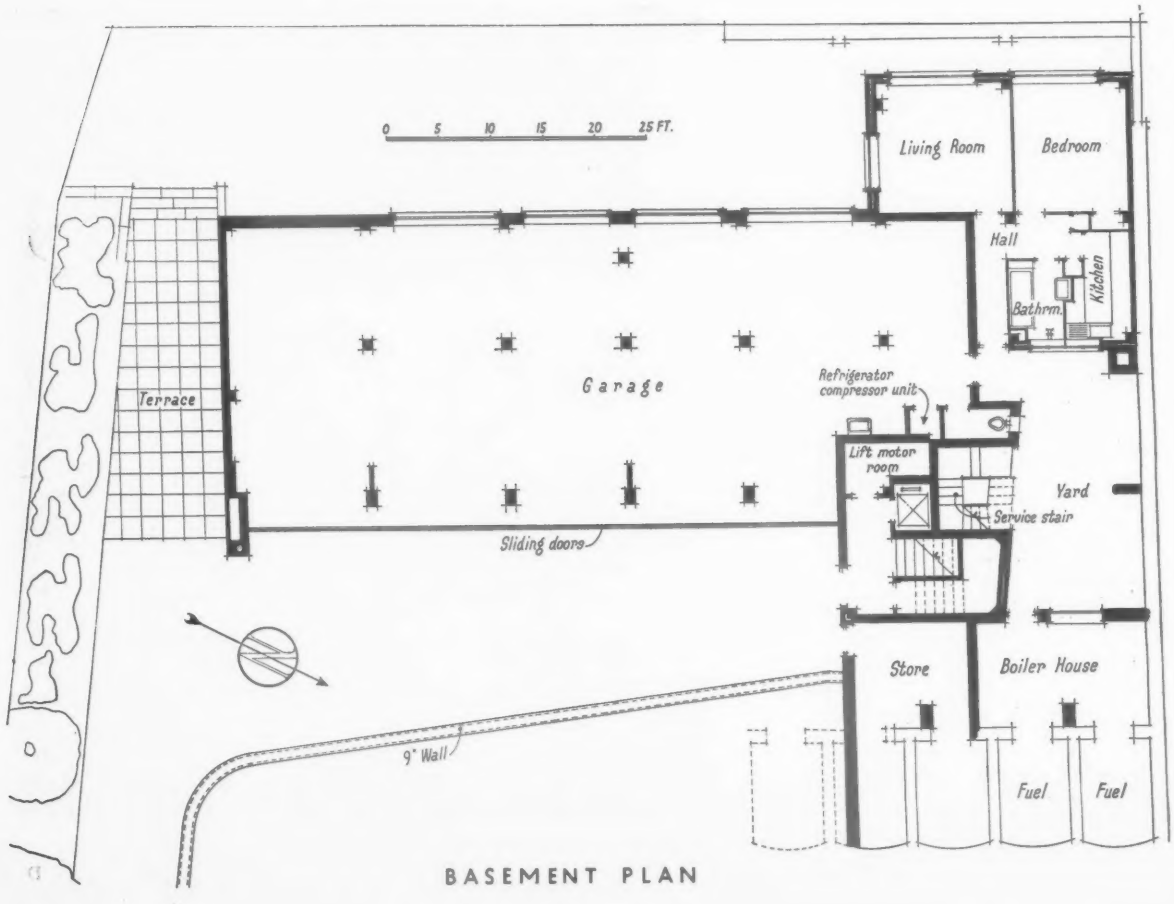
CONSTRUCTION—*R.C. frame and 11 in. cavity infilling. Floors are insulated with $\frac{3}{8}$" fibreboard. Wall facings are of vitreous tiles and flint bricks. Window boxes and hoods are of reinforced concrete finished with a proprietary paint.*

Above, the entrance elevation. Right, one of the access galleries.

FLATS IN LADBROKE GROVE, W.11



TYPICAL FLOOR PLAN



BASEMENT PLAN

DESIGNED BY E. MAXWELL FRY

EXTERNAL FINISHES—*Flint bricks, steel casement windows, tubular steel and wire mesh handrails. Wall adjoining gallery is of pale blue tiles and roof balustrade is of wired glass. Garage doors are deep blue.*

Above, elevation to Ladbroke Grove. Right, garden front of flats.

FLATS IN LADBROKE GROVE, W.

DESIGNED BY E. MAXWELL FRY

Left, detail of ground floor corridors adjoining the main stair. Right, the balconies overlooking the garden.

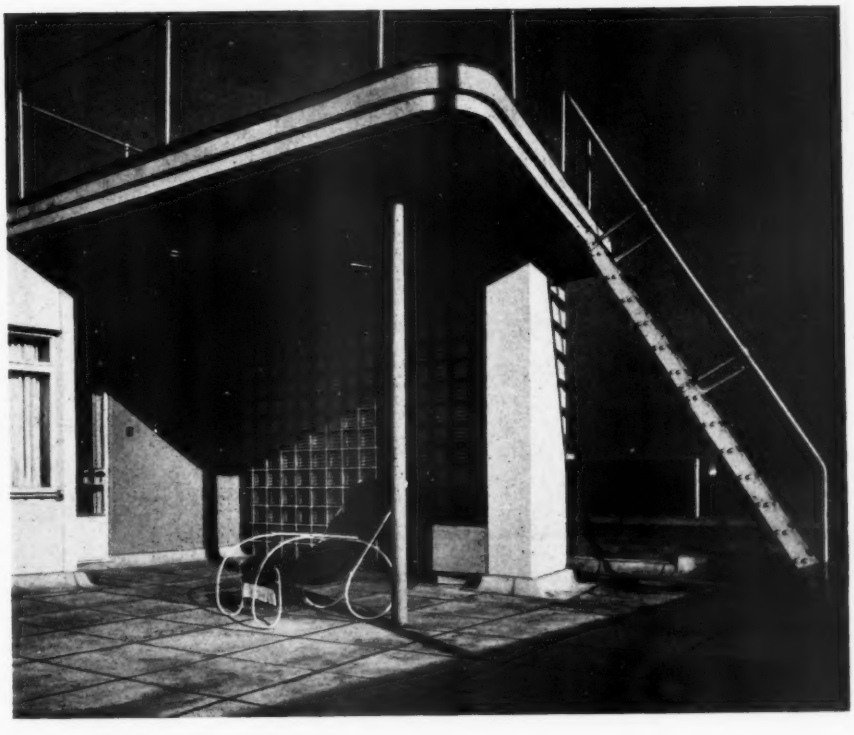
PENTHOUSE, FLATS IN LADBROKE GROVE, W.

The roof garden adjoining the penthouse.

DESIGNED BY R. MYERSCOUGH-WALKER

PENTHOUSE, FLATS IN LADBROKE GROVE, W.

DESIGNED BY R. MYERSCOUGH-WALKER



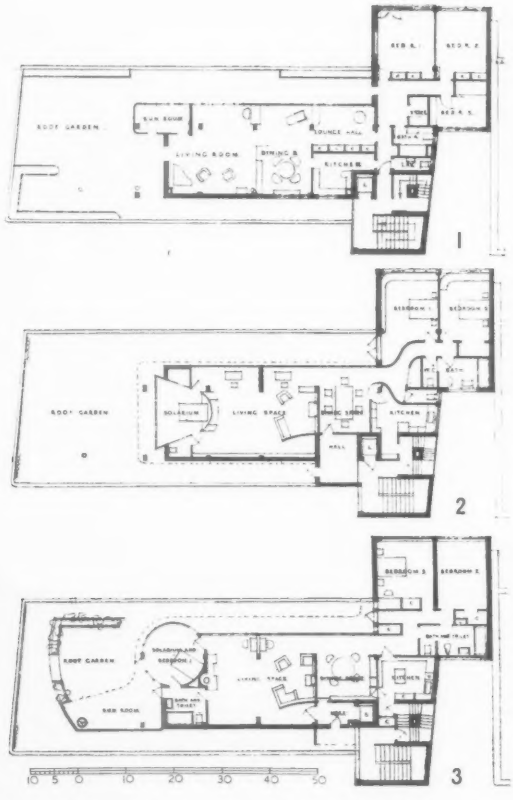
CONSTRUCTION AND FINISHES — *R.C. frame with brick, glass and breeze infillings. Walls are plastered. Main floor is of Gurjun, and linoleum has been used in some of the bedrooms. The fireplace is of brick with metal sidescreens which can be moved back to throw fire open when flue is heated. Furniture generally is in Cuban mahogany designed in collaboration with George Churchill.*

Above, the living room.

Right, the glass-concrete screen on the roof.

PENTHOUSE, FLATS IN LADBROKE GROVE, W.

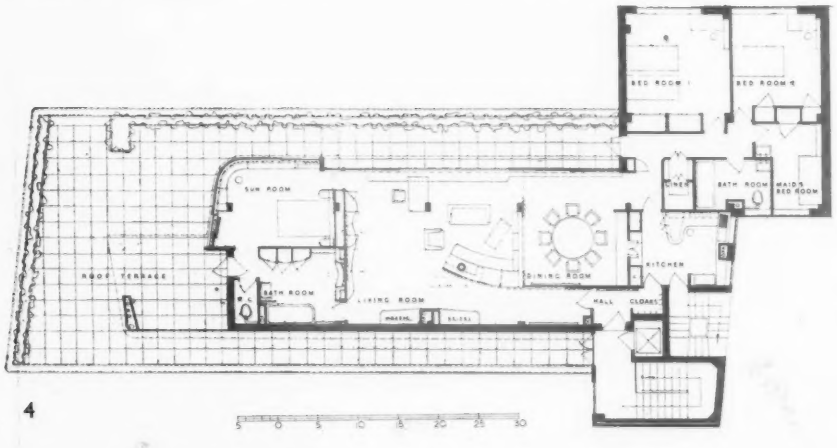
DESIGNED BY MYERSCOUGH-WALKER



The photographs show two views of the dining-room; the upper photograph, looking towards the living-room; the lower, taken from the hall.

The main points of the plan were determined by the design of the flats underneath, and such services as plumbing, lighting, lifts, heating, and so on, were determined by the ducts which had to be carried from the foundations of the building to the roof. A further limitation was the area that the L.C.C. would allow the penthouse to be built to and a rough outline of the limits to which the structural walls could project was determined at the beginning of the job. The first space was on the lines of plan 1. The main objection to this solution was that the living space, which included a dining-room and lounge hall, was not of a sufficiently interesting shape to separate the different functions of a hall and dining-room and living-room. An attempt, therefore, was made to bring kitchen quarters over on to the staircase, and with the space left, the idea of a solarium (see plan 2) came into being as a room which could be used for sleeping, with access to the roof terrace. With the introduction of this solarium came the suggestion that if it were to be used as a bedroom by the owner, a toilet and dressing-room should adjoin it, to make it self-contained and to separate it from the bedrooms and bathroom contained in the kitchen wing. (See plan 3.) This scheme, however, was abandoned owing to L.C.C. requirements of lobbies between bathrooms and living-rooms.

The layout adopted is shown in plan 4.



TRADE NOTES

[*By PHILIP SCHOLBERG*]

Electric Current in the Country

IN spite of the Central Electricity Board and the grid there still remain country districts where no electricity supply is available, and the architect often has to think out alternative schemes involving bottled gas or oil lamps and a coal cooker. To make, with a private plant, enough current for cooking and heating as well as lighting, is probably uneconomic, for the load is heavy and intermittent, and capital costs are therefore disproportionately large. It may be assumed that a country house, permanently lived in, will have a staff of servants able to deal with coal heating and cooking, but there is always the week-end cottage, often run without any staff at all. On a job like this, urban amenities such as electric light become quite important, but it is a nuisance for the owner to have to start a petrol-driven charging set as soon as he arrives, and the inevitable noise is no help on a Saturday afternoon. If the owner arrives late on Friday night the problem is still worse. On these grounds there is something to be said for a small wind-driven dynamo which will get on with the job of charging batteries while the owner is away during the week, and which will make no noise at any time.

●

This habit is apparently quite popular in America, and an English firm has now taken over the agency for a unit known in America as the Wincharger. The sketch at the head of these notes shows one of these units mounted on a short tower, though there is no reason why it should not be mounted on the roof of an outbuilding, or the house itself. Several models are available, from 6 volt 120 watts, to 110 volt 1,000 watts, the 120 watt unit being suggested as suitable for running "lights, radio, and occasional small appliances." Charging starts automatically when the wind speed reaches six or seven miles an hour, about Force 2 to 3 on Admiral Beaufort's scale. The propellers are from six to eleven feet in diameter, according to the size of the unit, and the small vanes shown in the sketch act as governors and keep the charging rate constant when the wind speed gets over twenty miles an hour. The size of unit to be installed depends on several factors. The most important is obviously the amount of current required, but there is the more difficult problem of the amount of wind during the summer months. Most districts will probably be all right, but if there is any doubt about it the Air Ministry should be able to produce figures. From the user's point of view there is much to be said for having a plant which is entirely automatic and which involves next to nothing in running costs. Accumulators will need a certain amount of attention, and here the nickel iron types will probably save money in the long run compared with the more ordinary lead accumulator. Certainly they stand up better to neglect and misuse.

●

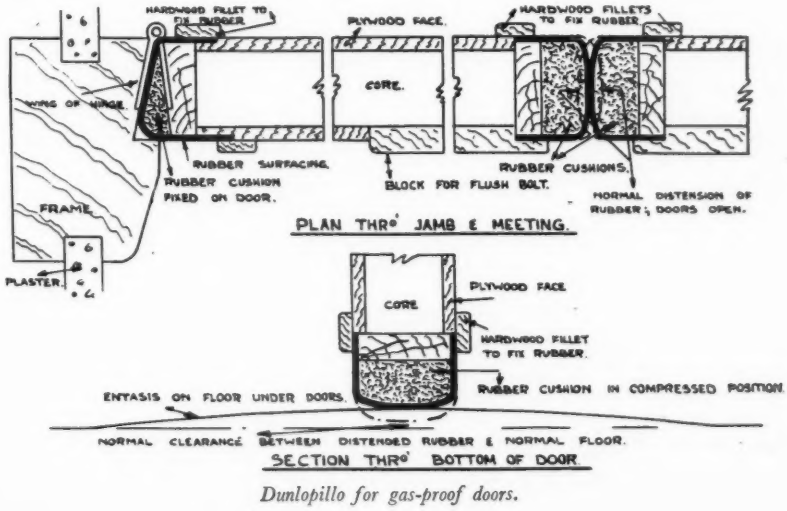
The price of these units varies from £9 18s. to £72 12s.; fairly high in the larger sizes when one remembers that to this figure must be added the cost of accumulators. For the week-end cottage, however, one of the smaller units would probably be large enough, if used in conjunction with a fairly large battery, for there would be five days a week on which the unit would be charging and no current being used. Six and twelve volt supplies are not very satisfactory if the cable runs are at all long, but on the average job this should not make much difference unless the generator has to be placed some way away from the house. Wireless sets and vacuum cleaners are sold for these voltages as standard, but it would probably be better to have an oil-operated refrigerator unless the installation were fairly large. It is no doubt possible to get refrigerators wound for low voltage supplies, but there would almost certainly be a flicker in the lights when the motor was cut in by the thermostat. At any rate this nearly always happens when float-operated electric pumps are used to keep the supply tank filled with water, and this with quite large plants.

●

If it should occur to anyone that the complete solution of the problem is to buy an existing windmill and have a young power station the answer is that it almost certainly isn't. I forget just how many windmills are still in use, but I doubt if the number gets into double figures. Any mill for sale as a dwelling-house will be sure to have sails in such bad condition that it would cost a fortune to repair them. These little units seem a pretty sensible way out of the difficulty.—(*Gordon Equipments, Ltd., 25 Milton Street, London, E.C.2.*)

Dunlopillo and A.R.P.

Everybody knows Dunlopillo for mattresses and general upholstery, but as a draught



Dunlopillo for gas-proof doors.

excluder or as a means of gas proofing it is fairly new. Two or three years ago I referred in these notes to a pair of swing doors on the *Queen Mary* which had been fitted with thick strips of Dunlopillo down the meeting styles so that draughts were excluded, while at the same time passengers did not get their fingers broken if the doors swung to on them. This idea has now been extended, and a number of sections are available, from simple circular beads to the more elaborate cushioning for gas proofing the hanging styles of doors. The drawing at the foot of page 1073 shows the application of various sections to gas-lock doors in a public institution. Prices run from 2d. a foot for small rectangular sections to 3s. for the swing-door nosing, which measures an inch and an eighth by two and has a firm outer surfacing a sixteenth thick. Sections can also be made to special designs.

•

The sections can, if necessary, be stuck to strips of wood or fibre-board with Seccotine, aero glue or fish glue, or they can be fitted in special grooves or channels. It is perhaps worth adding that if rubber tiling is used for A.R.P. work a wax coating will increase its resistance to gas attack and also make decontamination easier afterwards. The wax coating can easily be cleaned off with a petrol solvent and a fresh coating applied. —(*The Dunlop Rubber Co., Ltd., Rubber House, Brookes' Market, London, E.C.1.*)

Hotel Furniture

For years people have been grumbling about English country hotels, but the grumbles have been mainly about the service and the food, for the travellers who write indignant letters to the press don't seem to mind very much about the furniture, or perhaps they assume that there is nothing to be done about it. The small pub quite often manages to produce a very friendly atmosphere with a miscellaneous collection of furniture of all styles and periods, some of it often bought when the local mansion is sold up. But an all-world low is reached by the flash *moderne* with its nonsensical fabrics and meaningless inlaid floor patterns and vulgar etched mirrors; this is worse than horsehair and hermetically sealed windows. Even brewers' Tudorbethan is almost better, though I have been told of an ever so genteel example with a sign saying "LADYES." I am sorry I have forgotten where this is to be found. After a collection of horrors, it is a relief to look at Gordon Russell's new booklet of recent hotel interiors, which are plain and simple. Much of the work shown has been designed by architects, but this firm has a very good range of standard designs and are just as good if left to themselves. Or nearly so. This booklet is worth looking at if you are depressed about English hotels, for it shows that there are still some which are fit to stay in. Prices are not too low, but Russell's stuff is strongly made of good materials. Hotel furniture generally gets pretty rough treatment, and it is more probable that extra money spent in first cost may come back in the long run. At any rate the brewery firms seem quite prepared to spend money on heavy weatherproofings and flashings, so they presumably think first cost less important than low upkeep.—(*Gordon Russell, Ltd., Broadway, Worcestershire.*)

Protective Paints for Factories

The average paint catalogue is generally rather dull, though doubtless full of interesting information. Colour samples are all right, but the schedules of what to use where and how are generally so much dreary-looking type. Wailes Dove Bitumastic have tackled this problem from a different angle and done almost the whole thing in one large illustration. This firm makes protective coatings of all kinds, and for their illustration they have naturally chosen a factory building, which is shown in part section. Read with the reference key round the edge, this drawing will therefore show you exactly what type of coating to use for a particular job, though if you can't find quite what you want there is an alphabetical list on the back. As a result of this method, there is no need to plod through pages of data, for the whole story is told on one double page and its back. Since this firm makes no less than twelve different types of coating, not counting those which are available in a range of colours, it is something of an achievement to give all the necessary information in such a small space. Other manufacturers, please copy.—(*Wailes Dove Bitumastic, Ltd., Newcastle-upon-Tyne, 1.*)

LAW REPORTS

PRESERVING THE AMENITIES OF AN ESTATE

Curtis v. *Buchanan-Wollaston and Others.—Chancery Division. Before Mr. Justice Farwell*

THIS was a summons to decide a point which arose under the Law of Property Act, 1925, section 36. The plaintiff, Mr. Frank Percy Curtis, claimed a declaration that certain land at Pakefield, near Lowestoft, was not subject to restrictions against building, notwithstanding a deed agreed between Mr. Curtis and Mr. Buchanan-Wollaston and others, imposing certain restrictions made in 1928. Mr. Curtis further sought a declaration that the land was vested in him and the first defendant upon a statutory trust for sale and the division of the net proceeds in certain proportions.

It appeared that the land was purchased to improve the amenities of certain properties. Two of those who had purchased had died, and the third had assigned her interest to the plaintiff. Since the purchase of the land the circumstances had changed, and the only one residing in the locality was Mr. Buchanan-Wollaston. It was now desired, if possible, to develop the land. Mr. Buchanan-Wollaston objected to the sale of the land, as he had now an unobstructed view over the sea.

Mr. Buchanan-Wollaston raised a number of defences, disputing the validity of the transfer of certain of the land to plaintiff, and contending that the restrictions against the sale of the land were still binding on all the parties. His submission was that the sale of the land would be prejudicial to his property, and would seriously affect the amenities. If all the parties consented to the sale of the land, it could be carried through, but as there was no unanimity, there could be no sale.

His lordship, in giving judgment, said the case was one of some difficulty. Here all the parties interested in the land had arrived at one time at an agreement, and the question now was whether the Court could assist the plaintiff to do an act which in fact he had contracted with the other parties that he would not do. The land was not to be dealt with except with the consent of all the other parties. That was plain from the facts of the case. In spite of that, the plaintiff now came before the Court and sought a sale of the land. His lordship thought in so doing plaintiff was seeking to avoid his obligations under the deed. In his judgment the Court could not lend itself to such a result and therefore the summons would be dismissed with costs.

CONSTRUCTION OF NO-ROAD LEGAL CHARGES OR INCIDENTAL EXPENSES

Menon v. *New Ideal Homesteads, Ltd.—Court of Appeal. Before Lords Justices Slesser, Clauson and Goddard.*

THIS appeal raised an important point as to the construction to be placed on the term "No road, legal or incidental expenses" as stated in a brochure issued by builders to persons who purchase houses.

The appeal was by the New Ideal Homesteads, Ltd., against a decision of his honour Judge Hurst, sitting at the Dartford County Court, in favour of Mr. T. M. Menon, in respect of a claim by him for the sum of £3, which he had paid the local authority, as their extra charge for making a drive-in across the footpath for a run-in to a motor garage.

Mr. Menon, in 1932, purchased a house from the company at Hurst Road, Montrose Park Estate, Sidcup, for £695, with space for a garage. He entered into possession in January, 1933. His case was that he purchased on the representation that there were to be "no road, legal or incidental expenses." In due course the road was made up. Though Mr. Menon didn't possess a car, he thought it would be an advantage to have the footpath made for a car to run. The local authority's charge was £3. He applied to the company to pay that sum. They denied liability and the company sued him for the amount. Judge Hurst found that the charge was payable by the company, and gave judgment for the plaintiff.

Mr. Milmo appeared for the appellants and said his contention was that this charge was not one for which the company was responsible. It was true that there was a space for a garage, but he submitted that the local authority were not entitled to provide for a run in.

The Court, without calling upon Mr. James to argue for the respondent, dismissed the appeal with costs.

Lord Justice Slesser said the company plainly undertook to pay all paving and road and incidental charges. It was unarguable that this charge was not one of the matters which the appellants had agreed to pay as part of the purchase of the house and land. He was surprised that the company had contested the claim.

Lords Justices Clauson & Goddard concurred.

ALLEGED NUISANCE FROM CHALK DUST

The Attorney-General, at the Relation of the Orpington U.D.C. v. *Lennard.—Chancery Division. Before Mr. Justice Simonds*

THIS was a motion by the Attorney-General at the relation of the Orpington Urban District Council against Mr. A. G. Lennard, to restrain him from using his lime works at Westerham Road, Leaves Green, Kent, in such a way as to be a public nuisance or injurious to health.

Mr. Romer, K.C., for the plaintiffs, said the defendant was carrying on at his works at Leaves Green a process for drying chalk for agricultural purposes. There were a number of houses in the neighbourhood, and

the complaint was of a nuisance from chalk dust and fumes. The Council had received a petition from 40 residents. The matter was considered by the Council, and the sanitary inspector had looked into the matter. Defendant had adopted certain methods, but it had not remedied the matter, and the Council now asked for an injunction.

Affidavits by the sanitary inspector and the medical officer of health and others were read in support of the motion.

Mr. Romer said the complaint was that the dust came over in clouds and settled on the trees and in the gardens, and that it got into the houses and settled on the food. There was also a question of noise from machinery and also complaints of the machinery working at night.

Mr. Milner Holland, for the defendant, said his client had taken every possible step to abate what was complained of. They were making every effort to remedy the dust escaping and in a few days hoped to be successful in stopping any escape of dust. He would give an undertaking to that effect. Council hoped that no injunction would be granted against working at night, as every effort was made to prevent any noise at night.

Affidavit was given in support of defendant's case.

His lordship said, on the defendant's undertaking, until the trial of the action, not to carry on business in such a way as to be a nuisance by chalk dust, there would be no order on the motion, except that the costs of the motion would be costs in the action.

THE BUILDINGS ILLUSTRATED

NEW "DRYS" BUILDING, BEESTON, NOTTS (pages 1053-1056). Designer: Sir E. Owen Williams, K.B.E. General contractors, Peter Lind & Co., Ltd. The sub-contractors and suppliers included: General Asphalte Co., asphalt roofing; Golding and Truelove, barriers and handrailings, and collapsible gates; Armstrong Cork Co., Ltd., cork flooring; Pilkington Bros., glass; Brightside Foundry and Engineering Co., Ltd., heating and ventilating; Herbert Morris, Ltd., goods lifts; Marryat and Scott, Ltd., passenger lifts; Boots Pure Drug Co., Ltd., lighting and painting; Richard Whittington & Co., Ltd., plumbing; Mellowes & Co., Ltd., roof glazing and lights; Davis, Bennett & Co., Ltd., sanitary fittings; Atlas Sprinkler Co., Ltd., sprinklers; B. and B. Plastering, Ltd., suspended ceiling; Hollis Bros. & Co., Ltd., wood block flooring; Carter & Co. (London), Ltd., tiling; Crittall Manufacturing Co., Ltd., windows and glazed partitions.

FIRE STATION, BEESTON (page 1057). Designer: Sir E. Owen Williams, K.B.E. General contractors, Peter Lind & Co., Ltd. The sub-contractors and suppliers included: General Asphalte Co., Ltd., asphalt; Nettlefold and Sons, Ltd., door fittings; George M. Hammer & Co., Ltd., entrance doors; Pilkington Bros., Ltd., glass and glass bricks; Boots Pure Drug Co., Ltd., heating and ventilating, lighting and painting; Merryweather and Sons, hose and appliances; E. Potty, plumbing and sanitary fittings; Carter & Co (London), Ltd., tiling; Crittall Manufacturing Co., Ltd., windows; Hollis Bros. & Co., Ltd., wood block flooring.

PROCESS BUILDINGS, BEESTON (page 1058). Designer: Sir E. Owen Williams, K.B.E. General contractors, Peter Lind & Co., Ltd. The sub-contractors and suppliers included: Golding and Truelove, barriers and handrailings; Pilkington Bros., glass; Herbert Morris, Ltd., lift; Crittall Manufacturing Co., Ltd., patent glazing, windows and internal glass partitions; Richard Whittington & Co., Ltd., plumbing; Davis, Bennett & Co., Ltd., sanitary fittings.

FLATS AT 65 LADBROKE GROVE, W.11 (pages 1067-1070). Architect: E. Maxwell Fry. General contractors, C. F. Kearley, Ltd. W. A. Mee, heating engineer. The sub-contractors and suppliers included: Hunziker (Great Britain), Ltd., bricks; A. J. Tatham, Ltd., tiles; Douglas R. Smart & Son, Ltd., asphalt tiles; Frazzi, Ltd., Paropa roofing; Colchester Steel Construction Co., metal windows; Lenscrete, Ltd., glass bricks; Marryat and Scott, Ltd., lift; C. A. and A. W. Harward, metalwork; Jackson and Boyce, Ltd., electrical work; Holroyd (Glassware and Lighting), Ltd., electric light fittings; Art Pavements and Decorations, Ltd., terrazzo; Shanks & Co., Ltd., sanitary fittings; Benham and Sons, Ltd., stainless steel sinks; Frigidaire, Ltd., refrigerators and central compressor; Taylor, Pearse & Co., door furniture; P. C. Henderson, Ltd., sliding track to garages; Wm. Whiteley, Ltd., show flat furniture; Bath Cabinet Makers Co., Ltd., carpet to main stairs; Daymonds, Ltd., lettering to flats; Nash and Hull, Ltd., lettering to main entrance; Accordo Blinds, Ltd., window blinds; United Paint Co., Ltd., concrete paint; Radio Furniture and Fittings, Ltd., wireless aerial and wiring layout.

PENTHOUSE, 65 LADBROKE GROVE, W.11 (pages 1070-1072). Architect: R. Myerscough-Walker. General contractors were C. F. Kearley, Ltd., who were also responsible for the built-in fittings and fitments. Christopher Tunnard, A.I.L.A., garden architect. The sub-contractors and suppliers included: London Design Centre, colour schemes and fabrics; George Churchill, cabinet work and furniture; John Lewis & Co., carpets, curtains, etc.; John Barker & Co., cork carpet; Lenscrete, Ltd., glass bricks; Ideal Boilers and Radiators, Ltd., sanitary fittings; Radio Furniture and Fittings, Ltd., wireless installation; J. Avery & Co., blinds; Turpins Parquet Flooring Co., parquet flooring; British Vitrolite Co., Vitrolite; Decorstone, Ltd., jointless window boards; Tucker and Edgar, Ltd., electric light fittings and clocks; Troughton and Young, Ltd., electric light fittings; Lazlo Hoenig, fabrics and dining chairs; L. R. Russell, Ltd., tropical plants; Bratt Colbran, Ltd., fireplace.

Manufacturers' Items

As cable makers Henley's are well known, but the surprisingly comprehensive nature of their manufactures and supplies may not be realized unless one has at hand a copy of their recently issued Folder No. 436. Alphabetically arranged in four sections—Wires, Cables and Flexible Cords; Electrical Distribution Equipment; Jointing Materials; and Overhead Line Materials—this folder refers to more than 175 items, ranging from aerial cables to E.H.T. cables; bonding clamps to underground disconnecting boxes; anti-sulphuric enamel to vulcanizing rubber strip; and aerial fuses to turnbuckles. A widespread distribution of this folder reference has just been made, but Henley's will post a copy to anyone interested who has not yet received one.

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Messrs. Banister, Walton & Co., Ltd., constructional engineers, of Manchester, have declared an interim dividend for the year ending March 31, 1939, of 6d. per 5s. ordinary share, equivalent to 10 per cent. per annum, less income tax at the rate of 5s. 6d. in the £. Dividend warrants will be posted on November 28.

●

Following is a list of orders received by the Helical Bar and Engineering Co., Ltd., during October and November. October: Floors, roofs, etc., alterations to V.D. clinic, Borough Sanatorium, Southend-on-Sea (R. G. Baxter, Borough Engineer); flats, Clarendon Road, Kensington (E. J. Messent, A.M.I.C.E., Borough Engineer); and home for girls, Walcot, Bath (Rolfe and Peto). November: Floors, etc., Bricklayers Arms, Cambridge Road, E. (Gray, Robins and Crump); police station, Poole, Dorset (H. E. Matthews, A.R.I.B.A.); research station, Compton, Berks (H.M.O.W.); The Half-way House, Mortlake (Noel Parr and Son, L.R.I.B.A.); flats, Blythe Mansions, Islington (E. C. P. Monson, F.R.I.B.A.); and shops, Station Road, West Croydon (H.M.O.W.).

●

Ketton cement was used extensively on the new Leicester Municipal Offices, comprising offices for the treasurer's, electricity and housing departments of the Corporation situated on a new road running parallel with the main street of Leicester. The sole sales distribution of Ketton Portland Cement Co., Ltd. products are Messrs. Thos W. Ward, Ltd., of Sheffield. The architects for these buildings were Messrs. Barnish and Silcock, F./A.R.I.B.A., and the general contractors were Messrs. J. Chapman and Sons, Ltd., Knighton Junction, Leicester.

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Messrs. Higgs and Hill, Ltd., announce that Mr. Wallace Herries Kirkpatrick, who has been with the company for 38 years, has been appointed a director. Mr. Alfred Frederick Parker, Chief Surveyor to the company, has also been elected to the board. Mr. Albert Henry Wardle has been appointed Secretary in place of Mr. W. H. Kirkpatrick.

●

Mr. W. F. Knight, who for many years has been associated with Messrs. Bull Motors, Ipswich, and The Rheostatic Co. Ltd., Slough, is relinquishing his position with Messrs. Bull Motors having joined the Board of The Rheostatic Co., Ltd., as Sales Director. Arrangements are being made to relieve Mr. Knight of his duties with Messrs. Bull Motors as soon as conveniently possible.

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Mr. H. Richardson, A.M.I.E.E. has been appointed as Senior Sales Engineer on the London Staff of Messrs. Bull Motors.

Diaries for 1939

Messrs. Collins, of London and Glasgow, have just published their Architects' and Builders' Diary for 1939 (prices range from 1s. 3d. to 7s.). This diary presents, in a simple practical form, the generally accepted principles of design as applied to buildings. Recognized standards for the building trades, plasterers, plumbers, glaziers, etc., have been followed in the compilation of each section. An index is incorporated which enables the user to obtain quick reference to any given subject.

The 1939 Architects' and Surveyors' Pocket Diary is obtainable from the Secretary of the A.A.S.T.A., 113 High Holborn, W.C.1. Price 2s. 6d. The new edition has been considerably revised and improved and the technical data logically arranged, by a Committee of the A.A.S.T.A., under the chairmanship of Mr. A. H. Russell. A Diary eminently suitable for the architect and surveyor.

Francis Polden & Co., Ltd., electrical and mechanical engineers, of 56 Cannon Street, E.C.4, have sent us a copy of their new diary. It measures 4¼ in. by 3¼ in., and is extremely well bound. A small but useful diary.

Obituary

We regret to record the death of Mr. S. W. Farmer, founder and principal of S. W. Farmer and Son, Ltd. He died following an operation at the Southend General Hospital. The operation was a success, but an unexpected relapse occurred resulting in his death.

Mr. S. W. Farmer founded the business in November, 1898, and last November was the 40th anniversary of the establishment of the firm.

The business was started from small beginnings and now has 200 employees, with a main factory at Stairway House and branches at Ladywell Bridge and Myron Place—all at Lewisham.

The business will now continue under the direction of Mr. Norman W. Farmer, who is well known throughout the trade and has already conducted the business for many years in conjunction with the late Mr. S. W. Farmer.

PRICES

On the following pages appears Prices for Measured Work—Part I, with prices last published on December 1, brought up to date.

FLUSH DOORS

[*BY T. J. COPELAND*]

IT has become a maxim in the door trade that the greatest disaster that ever happened to it was the sudden popularity of flush doors. The panel door trade was difficult enough by itself, but the addition of an ever-increasingly popular flush door multiplied those difficulties a hundred times. Flush doors, as such, are by no means a new idea, but it is only within the last six years that they have become popular in the true sense of the word. On the surface it may seem hard to understand how the popularity of a new type of door can be called a disaster, but the reasons are not hard to find. In the first place, the growing demand for flush doors did not increase the total demand for doors as a whole, but only transferred the sales from one type to another. This had an adverse effect on the sales of panel doors, with the result that buying became more and more difficult. This was a minor trouble compared with what was to follow. As the demand for flush doors increased, so they began to be manufactured on mass-production lines. When flush doors were a "special" job they were manufactured with the greatest care and gave very little trouble. In the early days of mass-production of flush doors, however, there was, in a number of cases, less supervision over the materials used and in the actual process of manufacture. The consequence was that merchants began to have complaints about quality. Manufacturers who had gambled on the market and laid down new and expensive plant realized at once that if flush doors were to get a bad name they would stand to lose very heavily, so they decided to guarantee the doors. How much the guarantee was worth in actual practice cannot be developed here, but it did have the double effect of making them more careful in the manufacture of the doors, and of inspiring the buyers with a certain amount of confidence, the previous lack of which had threatened to destroy the trade in its infancy. In spite of this a proportion of the new mass-produced doors continued to give trouble, and merchants found their warehouses cluttered up with "damaged" doors that had been returned from various jobs under the terms of the guarantee. This was an experience both new and unpleasant for the merchant who had been accustomed to selling panel doors that had no specified guarantee and yet which gave practically no trouble. It must be added at once that not all the flush doors that were produced gave trouble. One or two of the older firms refused to drop their quality, with the result that their products remained on the highest possible level, although their prices were proportionately high.

The troubles that occurred in the early days took many and various forms. The most general was that of blistering on the plywood faces. In a number of cases this was not the manufacturer's fault at all; unused to handling this type of door, workmen on a job would lean them up against wet plaster and the damp would seep through the ply, which would eventually either peel off or blister, or the doors would become splashed with wet plaster, and where it had fallen a blister would appear sooner or later. Again, they would store them in an open shed where they would become saturated with water. In a number of cases even, where blistering occurred, it was found that though the doors had been treated carefully on a job, they had been delivered in wet weather and had become wet whilst being carried from the delivering lorry to the house. In such cases it was extremely hard to prove that the fault lay with the contractor and not the supplier, and it generally ended up with the merchant replacing the doors. Another frequent cause of complaint was that the doors twisted after they had been hung. The fault here lay with the material used in the internal framing and in no way was it possible to blame the builder. The result, however, was the same—more damaged doors piled up in the merchants' warehouses.

Oak flush doors suffered from an additional complaint peculiar to themselves. It was found that a door, apparently perfect when hung, would develop violent black streaks and patches after two or three months. For a long time this defeated the trade. It was impossible to tell by looking at a door when it was new whether it would give trouble in this way or not, and it remained for a long time a rather unpleasant type of gamble. All sorts of dodges were tried to obliterate the dark patches when they appeared, such as bleaching them out with oxalic acid, or rubbing the door down with fine glass-paper, but none of them was really effective. It was finally established that the trouble lay in the glue used in the plywood, but in the meantime many harsh words had been exchanged between manufacturers, merchants and users.

All this experience had been dearly bought—the cost can still be seen in the "Damaged Goods" bays of the various merchants and manufacturers throughout the country—but now at last it seems that most of the teething troubles of the trade are over.

There is still, however, one great cause for complaint, and this lies in the thickness of the plywood used on the cheaper type of door. The original doors had surfaces each of $\frac{1}{4}$-in. ply, but, as competition increased, a number of firms started to use 6 mm. ply instead. This made a difference in the cost without an obvious alteration in appearance. However, having reduced the thickness of the ply by 1 mm. with no ill-effect, it was decided to try a further reduction and soon doors appeared on the market with 4 mm. and even 3 mm. ply faces. At first sight they seemed every bit as good as those with the thicker faces, but after the doors had been hung and painted (particularly where a high gloss paint had been used) it was found that in certain lights it was possible to see the outline of the internal framing showing through the ply faces. The reason of this is obscure, but it probably lies either in the pressing or sanding processes through which the doors go before they are finished. This "phantom frame" business, as it has been called, caused a great deal of trouble between users and sellers, but in this case the argument lay in favour of the manufacturers. They sold a cheap flush door and it was unreasonable for a buyer to expect it to be every bit as good as an expensive one. Had the buyer specified that the internal core should be solid instead of framed the "phantom" would not have been noticeable, or, again, if cheapness were the only object, then he had no cause for complaint.

However, today both manufacturers and contractors are wise to the pitfalls that may be met with in the flush door business and merchants have fewer complaints in six months now than they had in a week four years ago. Very much more trouble is taken in the selection of the plywood used, a great deal of care has been bestowed

on the question of what glues to use and the best way of using them. Most factories have the latest presses and sanding machines and, perhaps most important of all, almost all of them have their own kiln drying plant. This is an extremely important innovation. Anybody buying a flush door today from a reputable merchant can be certain that the internal core, be it solid or framed, is made from kiln-dried wood. It is also possible for an architect to specify to what moisture content the core shall be dried, and when the whole question of moisture content is a little more widely known this should prove extremely useful. Again, most cores today are made from Western Red Cedar, which is a great advance from the days of air-dried deal.

And now as to future prices. During the last five or six years a reasonable quality flush door for painting (alder or beech or birch) has dropped from about 17s. to the neighbourhood of 12s. 6d. in the size 2 ft. 6 in. by 6 ft. 6 in. by 2 in. Is it possible for it to fall any further? ' At first sight the answer would definitely be " No," but in view of what can happen in the panel door business the " No " has to be supplanted by a " Perhaps." In actual fact, it seems impossible to gauge the market in this instance. The usual reply to the question as to what is the future of flush door prices is " In that trade anything may happen." In October a number of manufacturers suddenly advanced their prices by as much as 15 per cent., in some cases with no warning at all. It is quite likely that they will drop them again in the near future with as little warning. A great deal, of course, depends on the plywood trade, and at the moment there seems to be no particular reason to expect any great fluctuations in that quarter. The argument that if panel door selling-prices need bear no relation to production costs, why should not the same apply to flush doors, is not really sound. Unlike the panel door trade, the vast majority of flush doors are made in this country, and foreign competition is not keen enough to have a serious effect on home prices. What competition there is, is primarily internal, and it is not unreasonable to suppose that if price cutting were to reach unhealthily low limits the English manufacturers would be able to come to some agreement. It must be remembered that a national agreement is much easier to come by than an international one. So far, however, there seems to be no move in this direction, and provided profits can still be made the trade is better off without agreements.

As a general line, however, it is probably correct to say that no very big variations need be expected in prices for some time to come, everything depending on the question of supply and demand. The demand has dropped off badly during the last three months owing to the state of the building trade, but most people are expecting a slight revival next spring. If this happens, it will help to counter-balance the slackness now and tend to keep prices constant. If, however, there is not a revival, flush door prices undoubtedly will fall. The expensive machinery that has been installed into the flush door factories must be kept running, even if it means reducing the profit per door to a few pence.

Lastly, a tendency has been noticed lately to drift away from flush doors as such in certain more expensive types of work. A number of people have undoubtedly grown tired of their austerity and are looking for something with a little more variation. This has taken various forms, such as beading planted on the plain surface, or one large raised panel, or even two raised panels. Merchants are watching this tendency very closely, as it may mean the death knell of the flush door as it exists today, and the birth of a new type that will mean more experiment and fresh anxiety.

The complete series of prices consists of four sections, one section being published each week in the following order :—

1. Current Market Prices of Materials, Part I.
2. Current Market Prices of Materials, Part II.
3. Current Prices for Measured Work, Part I.
4. A.—Current Prices for Measured Work, Part II.

   B.—Prices for Approximate Estimates.

PART 3

CURRENT PRICES FOR MEASURED WORK—I

BY DAVIS AND BELFIELD

● *Prices are for work executed complete and are for an average job in the London Area ; all prices include for overhead charges and profit for the general contractor.*

PRELIMINARIES

Water for the works		1½%
Third party and other insurances to persons and property, employer's liability, unemployment and Public Health insurances, and fire insurances (based on value of contract) ..		
Single scaffolding	per yard super	2/–
Independent scaffolding ..	per yard super	2/8

EXCAVATOR

		Ordinary Ground	Clay
Surface digging average 9″ deep and wheeling and depositing on spoil heap, not exceeding two runs	per yard super	–/9	1/1

EXCAVATOR—(*continued*)

		Ordinary Ground	Clay
Excavating not exceeding 5′ 0″ deep to form basement and getting out	per yard cube	1/11	2/10½
Ditto, exceeding 5′ 0″ deep and not exceeding 10′ 0″ deep	per yard cube	2/5	3/6
Excavating not exceeding 5′ 0″ deep to form surface trenches and getting out	per yard cube	2/7	3/10
Ditto, exceeding 5′ 0″ deep and not exceeding 10′ 0″ deep	per yard cube	3/7	5/0
Ditto, not exceeding 5′ 0″ deep to form basement trench excavation commencing 10′ 0″ deep, and getting out	per yard cube	3/4½	4/6
Returning, filling in and ramming around foundations	per yard cube	1/1	1/5

CURRENT PRICES

BY DAVIS AND BELFIELD

EXCAVATOR, CONCRETOR AND BRICKLAYER

EXCAVATOR—(*continued*)

		Ordinary Ground	Clay
Filling barrows and wheeling and depositing excavated soil not exceeding two runs	per yard cube	1/1	1/5
Spreading and levelling from excavated heaps in layers not exceeding 12″	per yard cube	–/9	1/–
Filling into carts or lorries and carting away	per yard cube	4/6	4/10
Planking and strutting to sides of basement, excavation, including strutting	per foot super	1/–	–/9
Planking and strutting to surface trenches (both sides measured)	per foot super	–/4½	–/3
Hardcore, broken brick, filled in under floors and well rammed and consolidated	per yard cube	6/6	
Hardcore, broken brick, deposited, spread and levelled, and rammed to a true surface 6″ thick	per yard super	1/4	

CONCRETOR

Foundations and Mass Concrete

✱Portland cement concrete 1 : 6 with unscreened ballast, in foundations and masses exceeding 12″ thick	per yard cube	20/2
✱Ditto, 1 : 3 : 6, with one part of cement and three parts of sand and six parts of clean gravel	per yard cube	20/9
✱Ditto, 1 : 2 : 4 with one part of cement, two parts of sand and four parts of ¾″ crushed graded shingle	per yard cube	25/7
Add if mixed by hand labour ..	per yard cube	2/–
Add if in foundations not exceeding 12″ thick	per yard cube	2/3
Add for mechanical hoisting	per yard cube	1/6
Add for hand hoisting per 10 feet ..	per yard cube	2/3

Surface Beds

✱Portland cement concrete 1 : 6, bed 6″ thick, spread and levelled	per yard super	3/10
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/5¾
Add for surface finished with spade face	per yard super	–/3½
Add if laid in two layers with fabric reinforcement (measured separately)	per yard super	–/3½

Upper Floors and Flats

✱Portland cement concrete 1 : 2 : 4 as before described, 6″ thick, packed around fabric reinforcement (measured separately) finished with spade face	per yard super	5/3
Add or deduct for each inch over or under 6″ in thickness	per yard super	–/7½

Casings

Portland cement concrete 1 : 2 : 4 as before, in encasing to steel joists	per foot cube	1/3
Ditto, packed around rods (measured separately) in lintols, sectional area not exceeding 36 inches	per foot cube	1/5½
Ditto, ditto, over 36 inches and not exceeding 72 inches sectional area	per foot cube	1/4½
Ditto, ditto, over 72 inches and not exceeding 144 inches sectional area	per foot cube	1/3½
Ditto, ditto, over 144 inches sectional area	per foot cube	1/2½

Walls in Situ

✱Portland cement concrete 1 : 6 with unscreened ballast in 9″ walls packed around rods (m/s)	per yard super	6/6
✱Ditto, in 12″ walls ditto ..	per yard super	7/11

Reinforcement

½″ diameter and upwards mild steel rod reinforcement, cut to lengths, including bends and hooked ends and embedding in concrete lintols	per cwt.	21/6
Under ½″ diameter, ditto	per cwt.	23/–

Formwork

Close boarded formwork to soffites of floors and strutting up	per yard super	3/9
Vertical formwork to sides of concrete walls, including struts, etc. (both sides measured)	per yard super	3/–
Formwork to sides and soffites of concrete lintols and beams	per foot super	–/6
Wrot ditto	per foot super	–/7

BRICKLAYER

		Flettons £ s. d.	Second Stocks £ s. d.	Blue Staffordshire Wirecuts £ s. d.
✱Reduced brickwork in lime mortar 1 : 3 with ½″ joints	per rod	22 19 9	31 18 8	
✱Ditto, ⅜″ joints ..	per rod	22 12 7	30 17 2	
✱Reduced brickwork in cement mortar 1 : 3 with ½″ joints	per rod	24 14 9	33 13 2	50 13 2
✱Ditto with ⅜″ joints ..	per rod	24 13 3	32 16 11	49 4 9
Add if lime mortar hand mixed	per rod	5/8	5/8	
Ditto cement mortar ..	per rod	12/9	12/9	9/–
Half brick walls in lime mortar 1 : 3 ½″ joints	per yard super	5/1	7/–	
Ditto in cement mortar 1 : 3	per yard super	5/5½	7/5	✱11/1
Labour forming 2″ cavity to hollow walls including wall ties, etc.	per yard super			9d.

	£ s. d.
Add to the price of reduced brickwork for brickwork in underpinning .. ..per rod	4 0 0
Ditto, for brickwork circular on plan to flat sweep per rod	5 0 0
Ditto, ditto, to quick sweep .. .. ..per rod	10 0 0
Extra for Internal fairface and flush jointing per yard super	1/1½
Extra for grooved bricks as key for plaster per yard super	3d.
Raking out joints ditto .. .. per yard super	4½d.
Hacking concrete ditto .. .. per yard super	6d.
Horizontal double slate damp-proof course 4½″ wide bedded in cement mortar .. .. per foot run	4d.
Ditto exceeding 4½″ in width .. per foot super	10d.
Vertical ditto .. .. per foot super	1/–
" Ledkore " (Grade B) D.P.C. .. per foot super	9d.
Plumbing angles .. .. per foot run	1d.
Rake out joints and point to lead flashings per foot run	2d.
Ditto stepped .. .. per foot run	3d.
Bedding door frames .. .. .. per foot run	1d.
Ditto and pointing one side .. .. per foot run	2d.
Ditto and pointing both sides .. .. per foot run	3d.
Parge and core flues .. .. each	4/–
Set and flaunch only chimney pots .. .. each	5/–
Hoisting and fixing metal windows size 3′ 6″ × 4′ including cutting and pinning lugs to brickwork and bedding frames in cement mortar and pointing in mastic on one side .. .. each	5/–
Ditto, including screwing to wood frame (measured separately) .. .. each	3/–

		9″ × 3″	9″ × 6″
Form opening for air brick including slate lintol and render around in cement and sand to 13½″ wall and build in Terra Cotta air brick	each	2/6	3/3
Galvanized cast iron School Board pattern air bricks and building in	each	9d.	1/3
Fixing only fireplace simple interior and surround	each	27/6	

Partitions

		2″	2½″	3″	4″
Breeze set in cement mortar	per yard super	2/11	3/5	4/1½	5/1½
Clay tile ditto ..	per yard super	4/5	4/11	5/8	6/4½
Pumice ditto ..	per yard super	4/6	5/2½	6/3	7/2
Plaster ditto ..	per yard super	4/–	4/11	6/–	7/2
White glazed both sides best quality bricks, set in cement mortar and pointed in Parian cement	per yard super ..	42/5			

Facings

Prices are extra over Fletton brickwork and are for raking out joints and pointing with a neat struck weathered ½″ joint in cement mortar. For raking joints and pointing in white cement add an extra 11d. per yard super to the following prices.

		Flemish Bond	English Bond	Stretcher Bond
Stock facings p.c. 93/– ..	per yard super	4/11	5/4	4/1
Rustic Flettons p.c.70/6 ..	per yard super	3/4	3/6	2/11
Blue pressed p.c. 180/– ..	per yard super	11/7	12/11	9/1
Sand faced hand made reds p.c. 120/–	per yard super	8/–	8/7	6/4
White glazed headers p.c. 470/– and stretchers 480/– ..	per yard super	32/–	36/–	24/8
For a variation of 10/– per M. in p.c. of facing bricks size 8¼″ × 2⅝″ on face with ½″ joints add or deduct	per yard super	9d.	10d.	6½d.

✱ Items marked thus have fallen since December 1st.

CURRENT PRICES

BY DAVIS AND BELFIELD

BRICKLAYER, DRAINLAYER, ASPHALTER AND PAVIOR

BRICKLAYER—(*continued*)

Facings—(continued)

	Rustic Flettons	Stock Facings	Sand Faced Hand Made Reds
Half brick wall stretcher bond in cement mortar built fair and joints raked out and pointed in cement mortar on one side .. .. per yard super	8/7½	9/9½	12/–
Ditto and pointed both sides per yd. super	10/6	11/8	13/10
One brick wall in cement mortar built fair and joints raked out and pointed in cement mortar on one side per yard super	15/5	17/8½	22/1
Ditto and pointed both sides per yd. super	17/3	19/6½	23/10
Half brick wall built in best quality white glazed one side bricks, stretcher bond, in cement mortar built fair and pointed in parian cement .. .. per yard super			31/–
Ditto white glazed both sides and pointed both sides per yard super			41/9
Labour and material in hand made sand faced red brick on end window head and pointing to face and 4½″ soffite per foot run			1/3
Hand made, sand faced brick on edge coping including double course of tile creasing with two cement angle fillets to one brick wall .. .. .. per foot run			2/3

DRAINLAYER

Excavate to form drain trenches for 4″ pipes and get out, including planking and strutting, filling in and ramming, and wheeling and spreading surplus.

Prices per 12″ average depth per foot run :	Ordinary ground	Clay
Trenches not exceeding 3′ 0″ deep	–/2½	–/3
Ditto, exceeding 3′ 0″ and not exceeding 5′ 0″ ..	–/5½	–/7
Ditto, exceeding 5′ 0″ and not exceeding 10′ 0″ ..	–/8½	–/9½

	4″ pipes	6″ pipes	9″ pipes
6″ thick Portland cement concrete bed 6 : 1, 12″ wider than diameter of pipe, and flaunched halfway up sides of pipe .. per foot run	–/8½	–/10	
6″ ditto, and completely encasing per foot run	1/7	1/11	

	2″	3″	4″	6″
Agricultural land drain pipes, laid complete with butted joints, exclusive of digging .. .. .. per yard run	–/4	–/6	–/8	1/1

British Standard Quality Salt Glazed Socketed Stoneware Drainpipes and Fittings

	4″ pipes Over 2-ton lots	4″ pipes Under 2 tons, 100 pieces upwards	6″ pipes Over 2-ton lots	6″ pipes Under 2 tons, 100 pieces upwards	9″ pipes Over 2-ton lots	9″ pipes Under 2 tons, 100 pieces upwards
Pipes jointed in 1:1 cement and sand per foot run	1/1	1/3	1/7	1/10	2/8½	3/4
Extra for bends .. each	1/4	1/7	2/–	2/4	3/6	4/–
Ditto, single junction each	1/10	2/2	2/–	2/4	3/6	4/–
Trapped yard gulleys with galvanized iron gratings, and setting in concrete and jointing to drain each	9/–	11/6	13/–	14/–	19/–	22/–
Ditto, with horizontal back inlet .. .. each	10/6	13/3	14/6	15/9	20/6	23/9
Ditto, with vertical back inlet .. .. each	11/3	14/–	15/3	16/9	21/3	24/9
Intercepting trap with Stanford stopper and setting in manhole and making good .. each	20/6	24/–	25/6	29/–	—	—

Coated Cast Iron Socketed Drain Pipes

	4″	6″	9″
Pipes in 9′ 0″ lengths and laying in trench, including caulked lead joints per foot run	3/6	5/3	9/3
Cutting and waste .. .. each	1/9	3/6	—
Extra for bends, including extra joints and cutting and waste on pipe each	10/10	20/9	59/5
Ditto, junction ditto .. .. each	17/5	32/6	99/5
Intercepting trap .. .. each	49/–	79/4	183/4

DRAINLAYER—(*continued*)

	4″	6″	9″
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet	45/5	79/6	—
H.M.O.W. gulley trap with 9″ inlet with high invert outlet for use with raising pieces	33/5	48/–	—
4″ inspection chamber with one 4″ branch .. .. each		66/–	
4″ ditto with two 4″ branches one side .. each		99/–	
6″ ditto with one 4″ branch .. .. each		95/3	
6″ ditto with two 6″ branches one side .. each		140/–	
9″ ditto with one 9″ branch .. .. each		212/6	
9″ ditto with two 9″ branches one side .. each		326/–	

	White glazed	Salt glazed
4″ half-round straight main channel 24″ long each	5/10	2/1
Ditto, channel bends (ordinary) .. .. each	8/6	3/–
4″ Three-quarter round branch bends (short) each	8/6	6/9
Fixing only, manhole covers and frames, including bedding in grease and setting in cement mortar .. .. each	4/–	

ASPHALTER

Various qualities of asphalte are marketed by different firms. The term "Best" is intended to imply the best quality produced by a single representative firm, and not necessarily the best or most expensive asphalte obtainable.

	Natural Rock Asphalte Best Quality	Natural Rock Asphalte Second Quality
Basement (Tanking).		
1½″ horizontal d.p.c. in three layers on concrete per yard super	8/5	6/10
¾″ vertical ditto in three coats on brickwork or concrete .. .. .. per yard super	11/6½	10/–
Double angle fillet .. .. .. per foot run	–/6½	–/5½
Hard Graded Paving.		
1″ thick .. .. per yard super	7/4	6/8½
¾″ thick .. .. per yard super	6/3½	5/8½
½″ dampcourse finish, with smooth surface to receive lino or other floor covering	5/3	4/8½
Roofing (Flat).		
¾″ thick in 2 layers .. .. per yard super	6/3½	5/3
1″ ditto .. .. per yard super	7/4	6/3½
Extras.		
Felt supplied and fixed .. per yard super	–/6½	—
Expanded metal reinforcement ditto per yard super	1/0½	—
6″ skirting and fillet on brickwork .. per foot run	1/0½	–/11½
6″ ditto on wood (reinforced) .. .. per foot run	1/2½	1/1½
Nosing at eaves on lead apron (measured separately) .. .. per foot run	–/3½	–/3½
Parapet outlets .. .. each	4/2½	3/8

PAVIOR

	1″	1½″	2″
Granolithic paving .. per yard super	2/7½	3/6	4/7
Add for dusting with carborundum powder per yard super			–/9
Cement and sand paving (1 : 3) per yard super	1/10	2/4½	—
½″ Jointless flooring, red, buff or brown, finished to a smooth trowelled surface, on concrete sub floors per yard super			5/3
¾″ Ditto, in two coats on spade faced concrete or wood sub floors			6/7
⅝″ thick ditto, reinforced with laths and galvanised wire netting .. .. .. per yard super			6/0½
Add for polishing .. .. per yard super			–/6½
Terrazzo paving, white chips set in white cement, panelled into squares with 1¼″ × ¼″ deep ebonite strips, on and including cement and sand screed. Total thickness 1¼″ per yard super			19/5
Ditto, but white chips set in grey Portland cement per yard super			17/4
Terrazzo tiles, white chips set in white cement :—			
Size 9″ × 9″ × ¾″ .. .. .. per yard super			20/6
Size 12″ × 12″ × 1″ .. .. per yard super			18/8
Ditto, but white chips set in grey Portland cement :—			
Size 9″ × 9″ × ¾″ .. .. .. per yard super			18/11
Size 12″ × 12″ × 1″ .. .. per yard super			17/1

		1/4″	3/16″	1/8″
Sheet rubber	per yard super	11/7	14/8	17/10
Rubber tiles	per yard super	13/8	16/10	19/11
		9/16″	3/8″	1/4″
Cork tiles, polished ..	per yard super	12/10½	11/–	10/–

CURRENT PRICES

BY DAVIS AND BELFIELD

MASON, SLATER, TILER AND ROOFER, AND CARPENTER

PAVIOR—(*continued*)

Hard red paving bricks laid flat (9″ × 4½″ × 2⅝″)	per yard super	9/–
Ditto, laid on edge	per yard super	11/9
	⅝″ thick	¾″ thick
6″ × 6″ best quality red quarry tiles	per yard super	10/– 11/–
6″ × 6″ best quality buff quarry tiles	per yard super	10/6 11/6
2″ Yorkshire stone paving, square joints and bedding	per yard super	22/–
2″ Finished path of coarse gravel finished with good binding gravel to slight camber	per yard super	1/7½
3½″ Path of clean hard clinker and 1½″ gravel finished to slight camber	per yard super	2/3
7½″ Carriage drive of 3″ clinker, 3″ coarse gravel and 1½″ binding gravel finished to slight camber	per yard super	3/9
2½″ Tar paving in two layers finished with Derbyshire spar	per yard super	4/9

MASON

		Bath	Portland
Stone and all labours of usual character, covering 7″ on bed, roughly squared at back, fixed and cleaned down complete	per foot cube	11/–	16/–

Yorkstone

		Thickness 3″	4″	6″
Templates tooled on exposed faces, sawn beds and joints, and set in cement mortar :—				
Size 9″ × 9″	each	1/8	2/3	3/4½
„ 14″ × 9″	each	2/7½	3/6	5/3
„ 18″ × 14″	each	5/3	7/–	10/6
„ 22½″ × 14″	each	6/6	8/8	13/–
„ 27″ × 14″	each	7/10½	10/6	15/9

Artificial Stone

In steps, copings, band courses, etc., per foot cube, from		9/–

Reconstructed Stone

In steps, dressings, band courses, etc., per foot cube		12/6

Slate

		1″	1¼″	1½″
Slate slabs, sawn to size, not exceeding 10 ft. sup. and planed, with rubbed face and fixing as shelving, etc.	per foot super	4/6	5/–	6/–
Ditto, not exceeding 20 ft. sup.	per foot super	5/4	5/10	7/–
Rubbed edges	per foot run	–/4½	–/4½	–/4½

SLATER, TILER AND ROOFER

Bangor and Portmadoc Slates

	20″ × 10″	16″ × 8″	24″ × 12″
Slates laid to a 3″ lap and fixed with zinc nails per square	79/–	77/–	80/–

Old Delabole Slates

		20″ × 12″	16″ × 10″
Grey medium gradings	per square	86/–	84/6
Unselected greens (V.M.S.) (weathering greens and grey greens mixed)	per square	96/6	94/6

Randoms		No. 1 Gradings 24″/22″ to 12″/10″
Ordinary grey greens	per square	91/3
Weathering grey greens (V.M.S.)	per square	101/9

		No. 2 Gradings 24″/22″ to 12″/10″
Weathering greens (V.M.S.)	per square	107/–

Westmorland Green Slates

Randoms		Bests 24″ to 12″ long proportionate widths
No. 1 Buttermere, fine light green	per square	122/9
No. 2 Buttermere, light green (coarse grained)	per square	120/9
No. 5 Buttermere, olive green (coarse grained)	per square	117/6

SLATER, TILER AND ROOFER—(*continued*)

Tiles

Hand made sand faced 10½″ × 6½″ laid to 4″ gauge, fourth course nailed with galvanized nails	per square	65/–
Machine made ditto	per square	56/7

Pantiles

Berkshire hand made surface red laid dry,	per square	65/–
Bridgewater hand made red laid dry	per square	65/–
Bridgewater double Roman laid dry	per square	48/3

Sundries

Stripping, slating down to and including, 18″ × 9″	per square	4/6
Ditto smaller sizes	per square	6/–
Add for carrying down and stacking	per square	1/8
Ditto stripping battens down to and including 18″ × 9″	per square	1/4½
Ditto, ditto, smaller sizes	per square	2/3

Cedarwood Tiles

Canadian Cedarwood shingles laid to 5″ gauge	per square	47/4

Asbestos

Russet brown asbestos cement roofing tiles 15¾″ × 15¾″ laid diagonally with 2¾″ lap,	per square	38/–

CARPENTER

Centering

Turning piece to flat soffites 4½″ wide (For Formwork see "Concretor.")	per foot run	–/4

Fir Sawn and Fixed

Plates, dragon ties, sleeper joists and lintols, ground floor (4″ × 2″ and 4″ × 3″)	per foot cube	3/8
Floor joists (7″ × 2″)	per foot cube	4/1
Partitions (stud) (4″ × 2″ and 4″ × 3″)	per foot cube	4/11
Rafters and ceiling joists (4″ × 2″ and 4″ × 3″)	per foot cube	4/8
Purlins (6″ × 4″)	per foot cube	5/3
Hand labour wrot face	per foot super	–/2
Machine ditto	per foot super	–/1
Rebates, grooves, beads, chamfers and splays, per foot run		–/1
1½″ × 9″ ridge	per foot run	–/6¾
1½″ × 11″ hips or valleys, including cutting ends of rafters against same	per foot run	–/8¼
Extra labour trimming 6″ × 2″ floor joists around fireplace, including notching ends of joists at 14″ centres to trimmer joist 7′ 0″ long and two tusk tenons	each	6/–
Boring small hole per inch of depth	per doz.	–/6
Ditto large	per doz.	1/–

Deal Battening for Slates and Tiles

*2″ × 1″ spaced for Countess (20″ × 10″) slates to 3″ lap	per square	10/3
*2″ × 1″ ditto for Ladies (16″ × 8″)	per square	13/6
*2″ × 1″ ditto for Duchess (24″ × 12″) ditto	per square	8/5
*2″ × 1″ ditto for randoms 24″/22″ to 12″/10″	per square	11/6
*1½″ × ¾″ ditto for plain tiles (10½″ × 6½″) to a 4″ gauge	per square	13/7
1½″ × 1″ ditto for pantiles to approximately 11¼″ gauge	per square	6/7

Roof Boarding

		¾″	1″
*Deal roof boarding in batten widths close jointed	per square	27/8	32/6
*Ditto, prepared for patent flat roofing and including firrings to falls	per square	38/1	42/2
Small tilting fillet	per foot run		–/2
Large ditto	per foot run		–/4

Felt

Sarking or slaters felt, fixed with 2″ side laps and 6″ end laps	per yard super	–/10½
Roofing felt ditto	per yard super	1/1
Bituminous hair felt ditto	per yard super	2/–

Weather Boarding

*Rough deal feather edge boarding in batten widths ½″ average with 1¼″ laps	per square	29/–
*Western Red Cedar ditto	per square	31/9

Fascia and Soffite Boards

1″ × 6″ deal splayed fascia fixed to rafter feet	per foot run	–/4½
1″ × 9″ deal soffite tongued both edges, including grooves	per foot run	–/7½

(*To be continued in next Issue*)

* Items marked thus have risen since December 1.