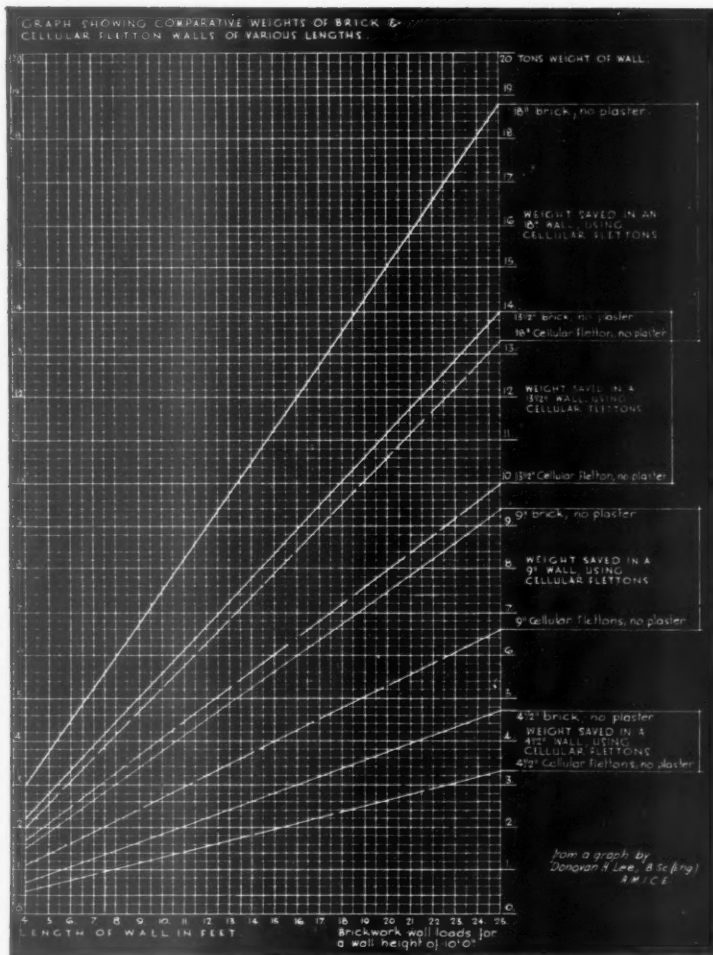


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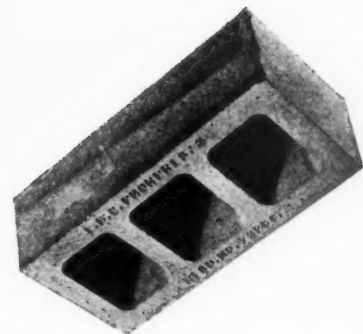
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This graph, reprinted from the "Architects' Journal," illustrates the saving in weight obtained by the use of Cellular bricks in walls of various types.



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THE ARCHITECTS'



JOURNAL

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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, April 1, 1937.

NUMBER 2202 : VOLUME 85

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* The Working Details are temporarily suspended until the conclusion
of this series.

UNDER CONSTRUCTION : WESTMINSTER HOSPITAL



A PROGRESS photograph of the new Westminster Hospital which is now in course of construction on a site in St. John's Gardens, Horseferry Road, Westminster, S.W. The estimated cost of the scheme is £850,000 ; and the architects are Adams, Holden and Pearson.



THREE HUNDREDTH ANNIVERSARY

The entrance to the Almshouses at Moreton-hampstead, which were built in 1637. A proposal was recently made that they should be demolished for road widening purposes.



WIGAN PIER

SLUMS are not even yet very real things to the more prosperous half of England—unemployment still less so. It is not overwhelmingly easy to earn a good livelihood anywhere in modern Britain. And it is a tempting attitude of mind to think that "some" unemployment is unavoidable, even if one avoids the greater and still more comforting temptation of thinking that a "good many" of the unemployed do not really want work. Unemployment has been with us for so long that shuffling on of thinking about it by some form of casuistry has become habitual to politicians and their constituents.

Mr. Orwell* has interrupted this looking the other way. He has done so not by reiteration of the old story that about 5,000,000 people in Britain are wobbling grimly on the edge of starvation—the country has succeeded in not thinking about that—but by careful descriptions of what it means to be one of those 5,000,000. For the moment he has succeeded in inspiring a lot of quite generous people with a real desire, even if it costs them something, to make existence for those 5,000,000 a little less frightful.

The next questions are what can be done and whether, with a rearmament programme working up to full speed, Mr. Orwell is not too late in his prodding of our social conscience.

Even if the whole wealth of the country is made available for a particular productive purpose, the capacity of the country to produce is not capable of being immediately and indefinitely expanded; it can only produce a certain total whilst gradually making ready to produce more. And in the meantime requests to produce more only cause a price boom without measurably greater results.

These somewhat obvious limitations of our powers of production have an immediate bearing on what can now be done to improve the lives of the unemployed and their dependants. During the next two or three years the industry of Britain will, we hope, be called upon to do three principal jobs: to supply the ordinary demands of the population, to supply the demands of the rearmament programme, and to make the surroundings of the less fortunate sections of the population more tolerable.

Those who have been moved by *The Road to Wigan Pier* may see some serious difficulties before industry's performance of its triple function. The building industry is now fairly fully employed on housing the wealthier sections of the population, in extending and replacing industrial, public and commercial buildings and—to a tiny extent—in improving the surroundings of Mr. Orwell's 5,000,000. The industry can only

be expanded slowly (its last experience of expanding to Government order was not a happy one), and in the meantime the dumping of an extra forty millions of defence work each year on what is at present a well-satisfied market for building services can only send prices soaring without either providing good value to the taxpayer or benefiting those who gain a living in the industry. It can only cause the large profits to a few individuals which the Government has stated that it intends to avoid.

The Government's own cure for these problems, however, the Minister for the Co-ordination of Defence, does not seem particularly worried by the strain that is about to be put on the building industry. He intends to stop profiteering by some careful examination of costing. The industry as a whole, being more realist, feels on the other hand that a large amount of work, which must be done at once, cannot be placed on a full market without waste, scrupulously though all costs may be examined.

The solution, until the building industry is much enlarged, would appear to lie in the agreement between the Minister and representatives of the whole building industry as to what work is most urgent and what should for the moment be kept off the market.

Defence works are generally agreed to be urgent. Mr. Orwell's book will perhaps help to make the public convinced that slum-clearance, hospitals, health centres, schools and recreation grounds are no less urgent. Suspension, by agreement, might therefore well begin with all public work other than these: with post offices, exchanges, police courts, Government offices town halls and all public service work not unquestionably urgent.

If the suspension of these works is not enough to prevent a price boom the private field must be entered—with discretion. Those who are in the building industry will not find any difficulty in suggesting types of buildings which might be the better for a few years restriction. Cinemas and other large places of amusement, improvements at seaside resorts, flat blocks for tenants prepared to pay over £300 a year, and the largest office blocks—these building types might all be called upon to give place to the urgencies of defence.

The JOURNAL hopes that if Sir Thomas Inskip decides that in the national interest slum-clearance must be scaled down, the readers of *The Road to Wigan Pier* will impress upon his notice more enlightened ways of co-ordination.

* *The Road to Wigan Pier.* By George Orwell. London: Victor Gollancz. Price 10s. 6d.



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NOTES & TOPICS

MR. RASMUSSEN

MR. RASMUSSEN'S book* has been well reviewed in the general press, but I should like to record my happy memories of this charming and brilliant man. I missed him when he was here last, but years ago I saw some of London with him and later some of Copenhagen.

His next book might well be on his own capital. So far there have, in my estimation, been only two books on London: James Bone's and Cohen-Portheim's, and now there are three. I can hardly say more than that. James Bone was the human and experienced Englishman—London in his very blood; Cohen-Portheim was the great cosmopolitan seeing London against a perspective of European capitals. Rasmussen is the sensitive and understanding artist, knowing his London better than most Londoners, but seeing it, nevertheless, with a detached and unprejudiced eye.

PLANNING SCHOOL

The foreigner's reactions to this great sprawling, blowsy, city are always interesting, whatever his nationality. I have recently been showing an American friend some of our less Baedeker-ed sights. I think he felt a little ashamed of God's Own Country when I took him to hear the impressions that it had made on Mr. Percy Thomas, when the latter was speaking at the A.A. last week.

The only things in Bedford Square in which he seemed really interested were, as was the case with Mr. Rasmussen, the architecture and, to my surprise, the School of National Planning and Development. Schools of Planning, it seems, are not prophets in their own country, and the fame of the Bedford Square one had spread further than I thought.

Columbia University, it seems, has been reshaping its course of town-planning and housing and has taken our

London, *The Unique City*. By Steen Eiler Rasmussen. Jonathan Cape Ltd. Price 15s.

School of Planning as its model, having been filled with inspiration and admiration for its courageous approach to the stupendous problem of planning and zoning, and its method of tackling parkways, lines of transport, land utilization and the rest.

Both Columbia and the Bedford Square schools one hopes have fired arrows that will fall they know not where. It would be a pity if this sort of outlook was ever allowed to degenerate back into the Civic Centre and Garden City stuff of mere "town planning." After all, to plan a city without reference to the country is quite as absurd as planning a civic building without reference to the city.

THE FUTURE OF LANDSCAPE

Anyway, my friend's enthusiasm was such that he accompanied me the next night to hear Mr. Jellicoe on the future of landscape. I think we were both a little disappointed, perhaps because we had expected too much. Mr. Jellicoe talked most admirably of the relationship of the modern building to its surroundings and the ways in which it could harmonize with "nature." But surely that has been the fatal error of our sentimentalists and preservationists, for whom Mr. Jellicoe has a very proper contempt.

Landscape is not natural, it is intensely artificial and the process of its manufacture is likely to remain so. In the past it was manufactured by farmers and Enclosure Acts, by drainage and by deforestation, by the Roman legionaries and the railway companies. This process will be continued by the industrialists and the Ministry of Transport, by the speculative builder and the birth-rate, and the sooner we realize the fact and direct these influences into proper channels the better. There, surely, lies the future of landscape.

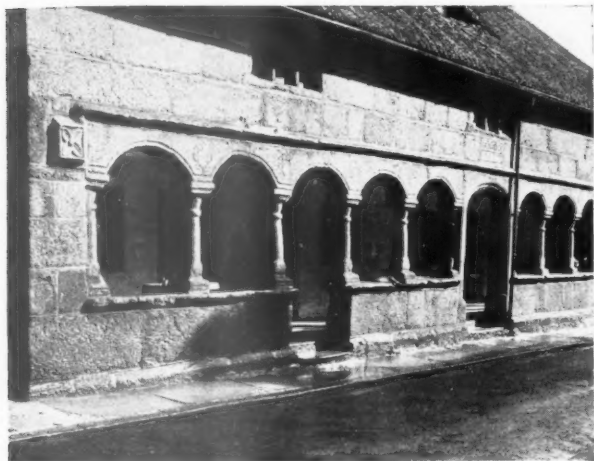
PICCADILLY

As I suspected, the most fantastic—and often exquisite—collection of bibelots and trinkets emerged from the Rothschild mansion last week, but this was not the only mansion at Hyde Park Corner to disgorge its contents.

The vans of what is usually referred to in places where it doesn't advertise as "a well-known West-end store" were drawn up with the usual accompaniment of baize aprons and sacking, outside number one-forty-five. It was a gallant show that was carried down the steps—Indian cabinets and African assegais—presents from a dozen ambassadorial journeys—and other things beside. China shops call them, I believe, the fifth piece. After all, why not? Napoleon realized that such things have their place in the Imperial scheme and had them wrought in gold; George III, on the other hand, had "Boney" painted inside his.

MORE CORONATION

Preparations for May 12 go on and on. There is only one really decent bit of architecture in Piccadilly (*pace* Lutyn's Bank), and that is the gateway to St. James's. Is it really coming down to make room for a couple of dozen seats? It seems to me to be quite incredible. Is it really true that "fork luncheons" are to be eaten off the altars in the Abbey side chapels, and are the cloisters really a mass of w.c.s?



Almshouses at Moreton Hampstead. See page 548.

TITE PRIZE

As I seem to have caused comment here and there by my remarks on this prize, it seems to be only fair both to the A.A. and to Leeds to give the results of the preliminary round the special emphasis of mention in this column. The decision of the former school not to compete is apparently to come into force next year. At any rate the A.A. has two successful candidates out of seven entrants, and Leeds has two out of sixteen. That, I think, is that.

AIR MINISTRY

With all the unhurried stateliness of a Government department, the Air Ministry has written to take me to task for some remarks I made on February 18. And, indeed, not without reason; for I have committed the grave fault of not checking my sources of information.

Basing my views on an extract from the Air Force List, I then said that the only qualified architects working for the Ministry were in very humble places—well below the Stores and Accounts Officer.

The Ministry has now sent me a complete list of the relevant personnel for Works and Buildings, which shows that at least five architects are much higher up, one being as high as fifth in the hierarchy. To the outsider the architects may still appear somewhat swamped by surveyors and engineers—being apparently in the proportion 5:68 on the page before me—but this is no excuse for my making out the situation to be worse than it is. I apologise.

NURSING HOMES

This week I bought the usual pound of grapes, and with a couple of Dorothy Sayers' under my arm paid a visit to a sick friend in Harley Street. I wonder when "paying-wards" of the hospital will finally replace the outrageous anachronism of the private nursing home. There is nothing except habit and snobbery to prevent it. The equipment, service and facilities are obviously better and cheaper in a well-run hospital.

The average "upper-class" nursing home leaves one frantic. It seems to be designed with deliberate cunning so as to be as dark, cheerless and dirty as it can possibly be—those marvellous arrangements of lifts added to stairwells that were originally liftless, those dark corridors, complete

with lincrusta dados, ramped slightly where they go from one converted house to another. The operating theatre in a sort of baroque domed conservatory over the scullery—lots of unhygienic glazing bars but the *only* really light room in the place.

And then, of course, there is the food and there are the nurses and there are bells that ring and ring and ring, and all for twenty guineas per week. There are people, however, who think that they have let their class down in some mysterious way if they pay five or six guineas for a single room in some mere Tait and Lornish show.

BRANCH BANK DESIGN

The March issue of the *Banker* contains a good slashing article by Professor Reilly on the way in which branch banks are often designed. Building inspectors are promoted from a staff with no architectural training; and a few directors from the "Premises Committee," put forward their own proteges for various jobs, never raising any protests at other nominations lest their own may, in turn, be refused.

As Professor Reilly says, "a pretty and thoroughly English picture, with its illogicality, kindness and carelessness for the finer issues of art and taste."

Yet I seem to remember that Lloyds Bank once had the excellent habit of giving every Rome Scholar at least one branch to do. Has this idea been dropped? I remember several of these jobs about 1930 or so, but none seem to have appeared at all during the last few years.

PLANNING WITHOUT TEARS

Miss Elizabeth Denby has been explaining the disadvantages of housing estates to the worthier citizens of Bradford, and pointing out quite conclusively that it is not altogether an improvement to be miles away from anywhere even if your last house *was* in a slum. Knowing Miss Denby, I am quite certain that what she had to say was to the point and clearly stated, yet the local newshawks, searching as always for the "feminine angle," have headed their report "Women feel lonely," in good fat capitals.

Thus is planning made clear to the public.

BOMBS ON QUEEN ANNE?

Air raid precautions are still good for a paragraph or two in the dailies, the latest report being a Commons reply by Mr. Geoffrey Lloyd to the effect that nothing very much was known about how long it would take to decontaminate a large flat block with the usual courtyard.

Queen Anne's Mansions was the example quoted in the question: the owners, of course, can only help by saying that the building can be quickly emptied of tenants, but where are they to go then? A Home Office book has been promised for some months now, but in the meantime nobody seems to have the smallest idea of what to do, where to go, or anything else for that matter.

Incidentally, I see that a Parliamentary Committee has been formed to keep an eye on what is being done and that the good old game of "sub-committees to report back" has been started. Maybe nothing very useful will emerge, but it may hurry up the Home Office.

ASTRAGAL

NEWS

POINTS FROM
THIS ISSUE

- "This country is generating 5,500,000,000 units of electricity" 552
 Prize-winning design in a recent American prefabricated house competition .. 579
 "200,000 dollars in prizes for papers dealing with arc welding as a primary process of manufacture, fabrication or construction" .. 581
 Judge rules that quantity surveyor's fees may be recovered by aircraft firm from their architect whose estimate for a building's cost had proved much too low .. 582

REPLANNING CENTRAL NORWICH

Sir Kingsley Wood, Minister of Health, has approved the plan submitted by the Norwich Corporation under the Housing Act, 1935, for the redevelopment of a central area of the city known as the Peacock Street—Cowgate Redevelopment Area.

This is the second redevelopment plan of its kind, and the second to receive the Minister's approval—the first being the City of Liverpool Plan which was approved last November.

The Norwich area is an island site of about 4½ acres in the centre of the City which at present accommodates industrial and public buildings and a number of working class houses, approximately 70 per cent. of which are considered by the Corporation to be unfit for human habitation. In place of the present haphazard and uneconomic development future development will be carried out on scientific lines and, for this purpose, most of the existing buildings will be cleared away. A site of approximately 2½ acres is earmarked for working-class flats, the remaining two acres being intended for industrial and commercial purposes. The plan also gives the Corporation an opportunity to carry out a much needed improvement of the streets bounding the area, one of which follows the line of the proposed inner circular road.

OPENING OF NEW CHELSEA BRIDGE

The Chairman of the L.C.C. made the following announcement at last week's meeting of the Council:—

"Chelsea Bridge will be ready for use early in May this year, and the General Purposes Committee has decided to arrange a ceremonial opening.

"In view of the presence of Dominion Ministers in London for the Coronation, it was thought particularly appropriate that a Prime Minister of a Dominion should be invited to perform the ceremony. An invitation was accordingly extended to the Right Hon. W. L. Mackenzie King, Prime Minister of Canada, and I have much pleasure in informing the Council

THE
ARCHITECTS'
DIARY

Thursday, April 1

ARCHITECTURAL ASSOCIATION, 36 Bedford Square, W.C.1. Exhibition of linocuts, organized by the A.A. Students' Art Club. Until April 3. IDEAL HOME EXHIBITION. At Olympia. Until April 24.

R.I.B.A. EXHIBITION OF BRITISH ARCHITECTURE. At the Derby Art Gallery. Until April 15.

AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE, 29 Lincoln's Inn Fields, W.C. "The Making of a Connoisseur, 16: the Romance and Realism of Old English Furniture." By H. Morlaunt. 7 p.m.

Monday, April 5

CHARTERED SURVEYORS' INSTITUTION, 61 George Street, S.W. "The Valuation of Life Interests in Real Property and of Reversions." By F. L. Collins. 6.30 p.m.

Tuesday, April 6

LIVERPOOL ARCHITECTURAL SOCIETY. Annual Dinner. At the Adelphi Hotel, Liverpool. INSTITUTE OF BUILDERS. Annual Dinner. At Carpenters' Hall, E.C. 7.15 p.m.

Wednesday, April 7

ARCHITECTS' AND TECHNICIANS' ORGANIZATION. Dance to be held at the Unity Theatre Club, Britannia Street, W.C.1. 7 p.m.

INSTITUTE OF HEATING AND VENTILATING ENGINEERS. At the Institution of Mechanical Engineers, Storey's Gate, S.W. "Problems in the Heating and Ventilating of Glasshouses." By W. F. Bentley and E. S. Shoults.

INSTITUTE OF STRUCTURAL ENGINEERS, Lancashire and Cheshire Branch. At the College of Technology, Manchester. "Architecture." By Erich Mendelsohn. 7 p.m.

that he has accepted. The ceremony will take place on Thursday morning, May 6.

ARCHITECTS' REGISTRATION
COUNCIL

At the fifth annual meeting of the Architects' Registration Council, held recently at the R.I.B.A., Mr. Sydney Tatchell, F.R.I.B.A., was re-elected Chairman of the Council and Mr. T. A. Darcy Braddell, F.R.I.B.A., Vice-chairman in succession to Mr. W. H. Ansell, F.R.I.B.A.

TOWN HALL, HAMMERSMITH

The Minister of Health has given formal consent to the appropriation by the Hammersmith Borough Council of a site between Riverside Gardens and the Regal Cinema for the erection of a new town hall.

The estimated cost of building and furnishing the hall is £200,000.

IDEAL HOME EXHIBITION

The twenty-first annual Ideal Home Exhibition was opened at Olympia on Tuesday last by the Duke and Duchess of Gloucester.

The chief feature of the exhibition is the "Golden Hall of Homage," which has been conceived as a gesture of loyalty to the Throne, in this, the Coronation year.

At the end of the "Hall" is a life-sized statue of H.M. the King, situate under a golden canopy set in relief against a panorama of London's famous buildings. The statue is the work of Sir William Reid Dick, R.A.

THE LATE R. N. BROWN

We regret to record the death of Mr. Robert Neville Brown, A.R.I.B.A., A.M.T.P.I.,

a partner in the firm of Messrs. George R. Smith and Partners, of South Shields.

Mr. Brown, who was 33 years of age, was a lecturer in architecture and town planning at Armstrong College, Newcastle-upon-Tyne.

B.E.D.A.

Sir Thomas Inskip, Minister for the Co-ordination of Defence, speaking at the annual luncheon of the British Electrical Development Association, said that today electricity was having to play a greater part in the manufacture of munitions than was the case at the height of demand during the Great War. Adequate light and power were particularly important at the present time to the Government's programme of rearmament, and electricity was providing this service. He was happy to hear from a reliable authority that inter-communications had been arranged which would make the supply of electricity in war time as safe as the wit and ingenuity of mankind could possibly make it.

Lord Eltisley, President of the Association, stated that ten years ago this country was generating 5,500,000,000 units of electricity; last year they generated over 20,000,000,000—an increase of about 14 per cent. over the previous year's generation. That was a larger proportional increase than any other country in the world could show.

In 1932 there were 4,309,000 houses wired for electricity in this country; in 1936 the total was 6,650,000, an increase of more than 2,300,000 in four years. In our use of electric cookers proportionately to our population we led the world.

The B.E.D.A. had, he said, been closely identified with efforts to sponsor the development of railway electrification and, doubtless could claim some share of the credit for last year's record progress. During the year a total of 380 miles of new railway electrification was in prospect. That was possibly the most impressive figure for a single year. The extensions affected the L.N.E.R., Southern, and London Underground systems, and when completed they would bring the total mileage of electrified track up to 1,047.

LIVERPOOL ARCHITECTURAL
SOCIETY

Dr. Fritz Curtis, lecturing recently to the University of Liverpool Architectural Society on "Architectural Education in Germany," explained that he was not attempting a comparison with the British system of architectural training, but rather a review of the German system, with which he was in contact until the latter part of 1933.

He commenced with a brief sketch of German history and architecture through the centuries, emphasizing the period of imitation from 1830 to 1900, in which year Carl Schäfer commenced to study architecture in relation to a social and political background, the result being the commencement of modern architecture.

In Germany technical schools were the chief means of architectural education, although the colleges were above the ordinary standard of their type, being equipped for technical research, while in the late nineteenth century they were accorded University status, faculties of science, arts, economics and, in some cases, law, being added. While the technical colleges were actually State Universities, there was naturally a great variety amongst them due to the many States within Germany itself. Each college had its various faculties such as mechanical engineering, electrical engineering, civil engineering, chemistry and architecture (there being no separate town-planning degree), a State training course, including three years in State practice after receiving a Diploma, during

which time administration, legal questions, bye-laws, and regional planning were studied. During the nineteenth century the capitals of States employed their own architects, this having a great influence on the towns in the States themselves. Since nineteen-hundred, architects had been employed by the State, railways, post office, municipalities, industries, etc., the city engineer had gradually become subordinate to the city architect who, previously concerned only with the public buildings under his control, was now fully occupied with the housing problem.

Dr. Curtis then went on to describe the course of study in detail. A college was entered at the age of eighteen, he said, six months being spent in practical work such as bricklaying before the student was accepted. That gave the future student a chance of seeing the growth of a building from the foundations upwards, an acquaintance with professional and technical terms and a knowledge of materials and construction together with matters of organization. In junior years the subjects studied included construction, materials, surveying, mechanics, sanitation, theory of design and history of architecture and arts, the latter two subjects being carried through the school's curriculum, as were life sketching, modelling and freehand drawing. In addition, students were advised to hear lectures on science, languages, literature, etc. Simple working drawings of constructional work in progress in the neighbourhood, with modelling and the use of the school's workshops, formed the constructional element in the curriculum. There was a fund from which poor students received financial help while past students of the school, together with professors and instructors, accommodated all students in their offices for a year's practical work. Returning to the teaching of the students, he said that social science was taught in the schools to provide a social background for the students to work to. Usual lectures were given in theory and practical subjects, steel and reinforced concrete being taught by a resident engineer. It was considered most satisfactory to have a student work under one master for at least two years, and a minimum of four projects (all carried into working drawings with details) had to be submitted, although no time limit was fixed. Measured work was compulsory and partly done in the vacations and partly by excursions into the neighbourhood under the supervision of instructors. During the vacations excursions of two or three weeks' duration—often abroad—were open to all students, again a special fund helping students without sufficient private means. For the final examination a free choice of subject is given as a thesis, and the student allowed three months in which the scheme had to be prepared without help from instructors, after which a written examination of at least ten papers was taken. The staff usually consisted of at least eight professors and eight assistant instructors, each professor in turn being a Dean of the Faculty for two years. Amongst the staff were a painter and a sculptor, while professors from other faculties were responsible for tuition in various subjects.

Professor Budden, in proposing a vote of thanks, contrasted the system of both this country and Germany with the centralization of study in France at the Beaux Arts, which system, he maintained, starved the remainder of the country. He quite agreed with the R.I.B.A. for following the example of the General Medical Council in allowing decentralization in this country. Unfortunately, he said, a professorship here did not blend with private practice, although on the Continent it was a distinction awarded to practising architects as to eminent surgeons, so that the best men were in educative capacities. He appealed to the building trades to co-operate with training students in practical work, as the lecturer had explained was the Continental custom, a course which, he concluded, was ever becoming more apparent as a necessity.



THE HOUSE OF DREAMS

[By John Michael]

THE house that appears in dreams is interpreted by the experts as one of the disguises under which the versatile subconscious introduces its hard-worked theme of Woman. Whether or not the publicity agents for housing estates, hire-purchase merchants and building societies are aware of this authority for their use of the connection, they certainly lean heavily on the association of the house—with the wife—of your dreams. "Come home to your own fireside" and "Tune in for 3s. 6d. down on your own radiogram" are rarely intended to suggest a hearth or relayed crooner shared only with the cat.

Neither psychologists nor salesmen appear to have unfolded the ramifications of this connection. Its final treatment must probably wait until a Teutonic mind produces "Prolegomena to an investigation of the housewoman-relationship." Anthropologists have skirted the threshold of the subject in considering the symbolism of the shapes of primitive dwellings. Architects have sometimes wistfully wondered whether the average man's acute sensibility to the slightest modification of form in one class of objects might not imply a latent capacity for some slight recognition of the grosser degrees of value in other shapes. But a complete investigation is needed.

A lot of light might be shed into any number of obscure corners. The question of why Diogenes chose to live in a barrel would be cleared up at once: linking up probably with a general connection between a certain type of cynicism and house-frustration. Equally elementary are the cases of those who live in towers and windmills. (Not, mark you, that even such apparently simple cases should be interpreted with finality until the whole

investigation is completed.) A rather subtler analysis would have to be made of the fury of feminists at the theory that woman's place is the hearth. This fury is such as to suggest dissatisfaction with the excellent rational arguments against the theory. Strong as the objection may be that, stated in modern terms, "women's place is the ceiling panel heater," nevertheless, the opponents of the theory display a degree of feeling which argues insecurity of logical support and the presence of an uneasy suspicion that behind the outlandish phrases is a ghost of reality not to be laid by the holy drops of economic history. But this is a somewhat collateral topic.

Important sections of the research to be undertaken would deal with:

- (1) The relationship between taste in architecture, conscious and unconscious, and preferred type of woman;
- (2) The effect of the house lived in, particularly in infancy, on married life;
- (3) The effect of the bumps or hormones, or whatever determines mating affinities, on house-attitude. For these purposes would be needed a very thorough classification of dwellings along many lines, apart from mere style in the sense of arcuated, trabeated and Byzanto - Egyptian - Tooting - Bec; though these vital distinctions would no doubt be found fruitful in correlations. On this side of the work, if funds permitted, architects might profitably co-operate.

Here can only be indicated a few of the types that would have to be sorted out. The semi-detached villa would obviously repay considerable attention. It is high time that its origin and its popularity among the backbone of this country were subjected to vigorous examination; however unsavoury the resulting revelations might prove to such minds as are happier when dust is left under the sofa. Then there are, for instance, the attic dwelling and the basement, the bow-windowed, the thickly furnished, the flat, the flatlet and the curious maisonette. The chronic dwellers in apartments, boarding houses, hotels and converted mews would require chapters. Those obsessed with bathrooms, those who continually adjust the Ideal boiler, those who employ an architect, those who grow shrubberies about a winding drive, and those who prefer a wide straight avenue are among the many types who would furnish valuable material, under probing by statistical questionnaire or individual deep analysis.

The more superficial parallels of tests in housing and women are not of great significance. The late Victorian desire for extravagant protuberance in both has as little bearing on the deeper

aspects of the connection as the fashion of the decade not long ended for the skin-and-framework type in the same two fields. The general predominance of voluptuary or ascetic is, of course, of sociological interest. But from our point of view, more fertile questions are such as why the late Victorian liked a steep pitched roof. If we remember that such a feature usually implied a dark, sooty and scarcely accessible space beneath it, we may expect that the answer is more likely to involve his similar preference in other realms for adding outward prominence to regions sharply disconnected and improperly explored in inner life; than to have anything to do with a taste for slope shoulders or other morphological comparisons. And the present trend in design will, we would guess, be found to be healthier at root than those might think who see in it only a form of architectural banting.

The dream experts themselves appear only to have indicated a broad generic relationship, and left it at that. As every architect knows, there are houses and houses. And dreams of a wattle and daub hut on an island of an Irish lough can hardly arise from precisely the same psychic tension as dreams of a block of L.C.C. flats. Analysts who slap any type of domicile into one meagre category without further specification are not worth the money. By specification we mean nothing so detailed as the architect's; but the architects might help in the matter of classification; and certainly among the profession's duties to the public lies that of insisting on this recognition that dream houses are not all one dream house.

Take flats again. Take a single flat (dream of). What does the dream of a single flat portend? We want to know. We need an authoritative pronouncement on what might be a symptom of profound spiritual conflict. And then the semi-detached villa. What appalling moral slough could vent up the Jack o' Lantern vision of this thing; the rosy dream or nightmare of thousands; a dream that leads like true marsh-fire from glowing hope to sticky end. The experts must do some work.

We need their help less in interpreting the dream, if anyone ever dreamed it, of that type of house which composes some Syrian villages, houses made up of varying numbers of a standard mud-brick beehive. There is a clear connection here with some sort of suppressed mormonism.

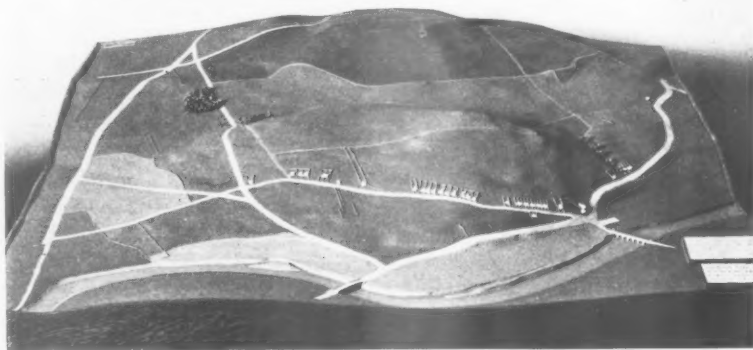
Enough has perhaps been said to indicate the complexity and importance of the subject. Innumerable aspects will suggest themselves to the more casual enquirer. Architects would be interested in the peculiarities of their

own relationship to their houses designed and/or built. Most interesting new classifications of Types of Woman would certainly emerge in the course of the work, but any forecast of their outlines is beyond the scope of this article.

One important appendix, among many, would have to be written on dolls' houses. The appeal of a doll's house is very different from that of dolls and their other accessories. This is not the place to develop the

theme; but that the ordinary reasons for the appeal of the miniature are insufficient to explain the attraction is surely proved by a comparison between the immense popular ardour for the Queen's Dolls' House and the almost complete apathy shown towards, for instance, the model railway system of Lord Westinghouse with its infinitely elaborate detail down to the specially grown currants in the buffet buns.

Another appendix would deal with door-bells.



A photograph of a model of the Kincorth Estate, Aberdeen. A competition, the conditions of which are reviewed below, is being held for the redevelopment of part of this site.

TWO COMPETITIONS ABERDEEN AND BROADSTAIRS

The Conditions Reviewed

IN this unplanned epoch, when land development projects are so rarely put into the hands of qualified planners, a competition for the laying out of a residential development deserves to have a powerful spotlight turned upon it.

The conditions for two such competitions are before me. The larger of the two is for the laying out of 435 acres within the city boundary of Aberdeen—a complete residential development and housing project. The other is for the development as a “high class residential area” of part of Lord Northcliffe's North Foreland estate, an area of some 140 acres, at Broadstairs.

The names of the assessors, Thomas Adams for Aberdeen and T. R. W. Davidge for Broadstairs, are guarantees that the best schemes will win, and if these famed planners can impress upon the promoters the importance of appointing the winners as technical

advisers when the schemes are carried out, both competitions should be good object lessons for other authorities. It is noticeable, though, in both sets of conditions that the authorities involved do not make any definite promises about employing the winner or remunerating him if his scheme is carried out, and what is more ominous they both reserve the right to use any special features which they may fancy in any of the designs submitted. This does not necessarily mean that the Corporation of Aberdeen or the Urban District of Broadstairs is guilty of eclectic motives, but the suggestion of picking and choosing from the various schemes submitted is bound to make competitors feel uneasy, the more so as this jig-saw game was put forward as a serious proposition, in the recent Lumps Fort competition for a sea front development, after the award had been given to an admirably planned scheme.

Councils who hold competitions of this kind sometimes do not realize that a good layout plan is one in which the various elements are carefully inter-related to form a harmonious and workable whole, and that any tampering with "features" is likely to be fatal to the successful working of the plan. It is important, too, to emphasize that the winning competitor cannot be dispensed with as soon as he has received his prize money. There are too many examples of schemes admirably worked out on paper but so loosely interpreted in fact that whatever plan is left appears to have gone very queer. And even when the main lines of a plan are followed, details of the scheme are often so badly worked out that its contemplated beauty and efficiency are both badly impaired. The employment of the designer from beginning to end of the carrying out of the scheme is obviously as essential in a town planning development as it is in a single building. Both layouts and buildings are complete working organisms which require the same precise interpretation of the designer's accepted scheme.

Apart from apprehension on these points, a reading of the conditions gives the impression that in the minds of councillors the town planning idea is at least under way. One obvious and immediate need is a central Territorial Planning Authority to insist on open competitions of this kind, or the employment of recognized experts, to solve all land development problems.

* * *

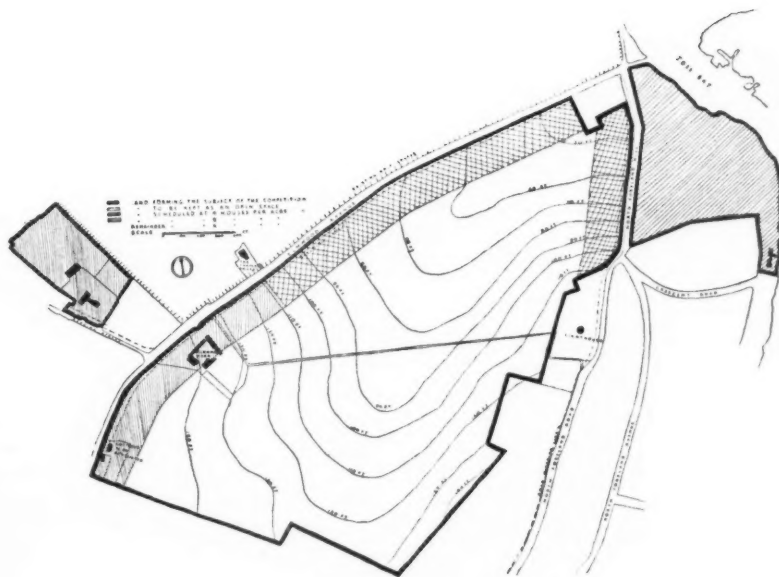
Here are the summarized details of the conditions:—

ABERDEEN

The layout is to provide for a complete residential development including:—

- (a) A municipal housing scheme (286.5 acres).
- (b) A community centre, a branch public library, a public hall, a cinema, churches, maternity and child welfare centres, nursery schools, bus shelters, public conveniences, shopping centres, playgrounds and other appropriate facilities (20 acres).
- (c) Five Primary Schools and two Post-Primary Schools (27.5 acres).
- (d) Private houses (65 acres).
- (e) Industrial development and related business and residential development on an area zoned for this purpose (36.2 acres).

Competitors may also make suggestions for control of development on part of the estate, co-ordination of roads, the layout of landscape features, open spaces and buildings.



The Broadstairs Competition: Site Plan

The 435 acres to be developed from part of the complete estate of 632 acres, the remainder mostly consisting of public open space (rough high ground) and private open space (used as playing fields). There is also a park of 46 acres on the other side of the river.

As will be seen from the photograph of the model (on view in the R.I.B.A. Library and at the premises of the Royal Incorporation of Architects in Edinburgh) the site slopes fairly rapidly up from the river, but most of the land to be developed has a slope of less than 1 in 20. It is protected from the sea by high ridges and appears to have splendid possibilities for residential development. To quote the memorandum which accompanies the conditions, there is "a beautiful open prospect towards the west up the valley of the River Dee, large areas of land on both sides of which are reserved as private open spaces."

The main approach to the new development is to be over a new bridge which it is proposed to build across the Dee. There are two subsidiary flank approaches by road and over the existing Bridge of Dee.

The main layout plan is to be drawn to a scale of 1/2500. Other drawings, not exceeding four in number, "showing such enlargement of features and presentation of the design as the competitor considers will best explain his proposals," may also be submitted.

In addition to the actual conditions, there is a memorandum which gives fairly detailed information about the site and its surroundings and makes a few suggestions; an appendix giving the allocation of land and classification of houses, and plans of typical houses

which the Corporation considers suitable for the estate. These plans are not inspired, but they are a useful guide to what is wanted.

Premiums are £500 for the author of the design placed first, and £350 to be divided between the authors of not more than three designs placed next in order of merit.

The sending-in day is July 31, 1937; and the last day for questions was March 31. Conditions are obtainable from Mr. A. S. Fraser, Town Clerk, Town House, Aberdeen (Deposit, £1-1-0).

BROADSTAIRS

"Inspired hours in the region of unmatched splendour, sunlit sands, silvery seas, nature's beautiful cliffs, health in the air." This is how the local guide book accompanying the conditions describes the surroundings of Broadstairs' new "high-class" development.

The Urban District Council of Broadstairs originally intended to judge the competition themselves, but following representations by the T.P.I. and the R.I.B.A., Mr. Davidge was appointed assessor. Another change since publication of the conditions is the scale to which the main layout plan is to be drawn. Originally it was to be 1/500, which would have produced a drawing 10 ft. by 7 ft. Several competitors complained about this and the scale has now been reduced to 1/1250.

The site is a town-planned area with residential zoning varying from four to eight houses to the acre. The site overlooks Joss Bay, and is bounded on the inland side by a golf course which the Council intends to preserve as an open space. The scheme is to consist mainly

of residential development, isolated as much as possible from the through traffic roads which run parallel with the east and north-west boundaries of the site, but there is to be a spacious car park near the approach to the beach, and part of the site which runs along the cliff edge is to be "artistically laid out with pleasure gardens."

Drawings required are :—

Layout plan to 1/1250.

Longitudinal and cross sections of proposed roads and sewers.

Other drawings (which may include a perspective) not exceeding two in number, showing such details, diagrams and views as the competitor considers "will best explain his design."

Drawings may be rendered "in the manner considered most appropriate." There is to be a short report and the approximate cost of the scheme is to be given.

The premiums, certainly not more than adequate, are £100, £50 and £25.

Sending-in day is May 6, 1937.

The last day for questions was February 20.

Conditions of the competition are obtainable from the Clerk of the Council, Pierremont Hall, Broadstairs (Deposit £1-1-0).

ROBERT GARDNER-MEDWIN

Competitions Open

APRIL 1.—Sending-in Day. Mental Hospital for Mental Defectives, near Ormskirk, Lancs. Assessors: C. E. Elcock, John Kirkland and Professor Abercrombie. Premiums, £500, £400 and £300. Designs to : The Clerk of the Board, County Hall, Preston, Lancs. (The closing date for this competition has been extended to April 1.)

APRIL 20.—Sending-in Day. Central Health Clinic for the Bilston Corporation. (Open to architects in England and Wales.) Assessor : W. T. Benslyn. Premiums : £40, £35 and £25. Conditions are obtainable from the Town Clerk, Town Hall, Bilston. (Deposit £1 is.). The last day for questions was February 27.

APRIL 28.—Sending-in Day. Cottage Hospital, Dawlish, for the Building Committee of the Dawlish Cottage Hospital. (Open to architects of British nationality practising within 200 miles of Dawlish.) Assessor : Leslie T. Moore. Premiums : £100, £75, and £50. The latest date for questions was February 6. Conditions, etc., obtainable from the Honorary Secretary, Dawlish Cottage Hospital, Devon. (Deposit £1 is.).

APRIL 30 — Sending-in Day. Technical College, Commercial College and College of Art and Crafts, Birmingham, for the Corporation of the City of Birmingham. Assessor : James R. Adamson, F.R.I.B.A. Premiums : £750, £500 and £250. The last day for questions was October 19, and

the conditions, etc., are obtainable from the Chief Education Officer, Margaret Street, Birmingham, 3. (Deposit £2 2s.) (The date for sending in designs for this competition has been extended to April 30, 4 p.m.)

MAY 6—Sending-in Day. Designs for the planning of a portion of the late Lord Northcliffe's North Foreland estate for the Broadstairs and St. Peter's U.D.C. Assessor: Professor W. R. Davidge, F.R.I.B.A., P.P.T.P.I. Premiums : £100, £50 and £25. Conditions, etc., are obtainable from the Clerk of the Council, Pierremont Hall, Broadstairs. (Deposit £1 is.). The last day for questions was February 20. (The date for sending in designs has been extended to May 6.)

MAY 7—Sending-in Day. Public Elementary School for the Education Committee of the Borough of Gosport. (Open to architects resident or practising in Gosport and Portsmouth.) Assessor : Geoffrey C. Wilson, F.R.I.B.A. Premiums : £100, £50, and £25. The last day for questions was March 4.

MAY 7—Sending-in Day. (a) A five-apartment cottage, and (b) a flatted block of four four-apartment houses, in connection with the Housing and Health Exhibition, Glasgow. Assessors : John Wilson, F.R.I.B.A., T. G. Gilmour, F.R.I.B.A., and J. H. Ferrie, L.R.I.B.A. Premiums : (a) £70, £40 and £25; (b) £80, £50 and £30. Conditions are obtainable from the Manager, Kelvin Hall, Glasgow.

MAY 14—Sending-in Day. Bandstand enclosure on the sea-front for the Borough of Weymouth and Melcombe Regis. Assessor : Professor H. S. Goodhart-Rendel. Premiums : £150, £100 and £50. The last day for questions was February 19. Conditions, etc., obtainable from Percy Smallman, Town Clerk, Town Clerk's Office, Weymouth. (Deposit £1 is.).

MAY 21—Sending-in Day. Church at Redfield, St. George's, Bristol, for the St. Leonards (City) Vestry. Open to members of the Wessex Society of Architects. Assessors : G. D. Gordon Hake, F.R.I.B.A., H. Stratton Davis, F.R.I.B.A., and the Rev. J. Strancomb and the Rev. I. Page-Wood (to count as one vote). Premiums : £100, £50 and £30. The last day for questions was March 22.

MAY 27—Sending-in Day. Secondary School for Boys, Podsmead, for the Governors of the United Schools, Gloucester. (Open to all registered architects.) Assessor: H. Stratton Davis. Premiums: £200, £100, and £50. Last day for questions: March 20. Conditions of the competition may be obtained on application to Dr. H. J. Larcombe, M.A., Clerk to the Governors, Gloucester United Schools, Belsize House, Brunswick Road, Gloucester. (Deposit £1 is.).

MAY 31—Sending-in Day. Central Baths, Clapton Square, Hackney, for the Hackney B.C. Assessor : F. J. Horth. Premiums : £500, £300 and £200. Last day for questions : March 18. Conditions are obtainable from R. H. R. Tee, Town Clerk, Town Hall, Hackney, E.8. (Deposit £1 is.).

JUNE 1 — Sending-in Day. Extension of St. Andrew's Cathedral, George Street, Sydney, for the Authority in the

Diocese of Sydney of the Church of England. (Open to architects who are British subjects, and members of the Royal Australian Institute of Architects, the R.I.B.A., or the Allied and Associated Societies.) Assessors : His Grace the Archbishop of Sydney, Sir Giles Gilbert Scott, R.A., F.R.I.B.A., and Bertrand J. Waterhouse, F.R.I.B.A. Premiums : £500, £300 and £200. The last day for submitting designs (which must be forwarded direct to Sydney) is June 1, 1937. The last day for questions was August 11, 1936.

JUNE 12—Sending-in Day. Nurses' Home for the President and Governors of the Macclesfield General Infirmary. Assessor : Professor R. A. Cordingley, F.R.I.B.A. Premiums : £100, £50 and £25. Conditions are obtainable from Mr. J. N. A. Briscoe, Secretary, Macclesfield General Infirmary. Deposit : £1. The last day for questions is April 17.

JUNE 21—Sending-in Day. Municipal Buildings, Friern Barnet, for the Friern Barnet U.D.C. Assessor : C. Cowles-Voysey, F.R.I.B.A. Premiums : 150 guineas, 100 guineas, and 50 guineas. Applications for the conditions and site plan should be made to Mr. G. T. Fletcher, Clerk of the Council, Council Offices, The Priory, Friern Barnet, N.11. (Deposit £1 is.). The last day for questions was March 22.

JULY 31 — Sending-in Day. Layout of a part of the Kincorth Estate, Aberdeen. Assessor : Dr. Thomas Adams, F.R.I.B.A. Premiums : First, £500; and £300, to be divided between the authors of not more than three designs placed next in order of merit. Conditions of the competition are obtainable from Mr. G. S. Fraser, Town Clerk, Town House, Aberdeen. (Deposit £1 is.). The last day for questions was March 31.

MUNICIPAL BUILDINGS, KIRKCALDY

The Kirkcaldy Town Council has decided to hold a competition, open to architects in Scotland, for the design of municipal buildings. Mr. T. S. Tait has been appointed assessor.

DESIGN OF HOUSES

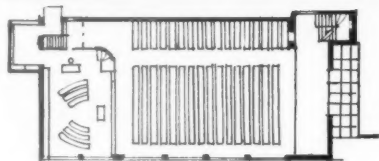
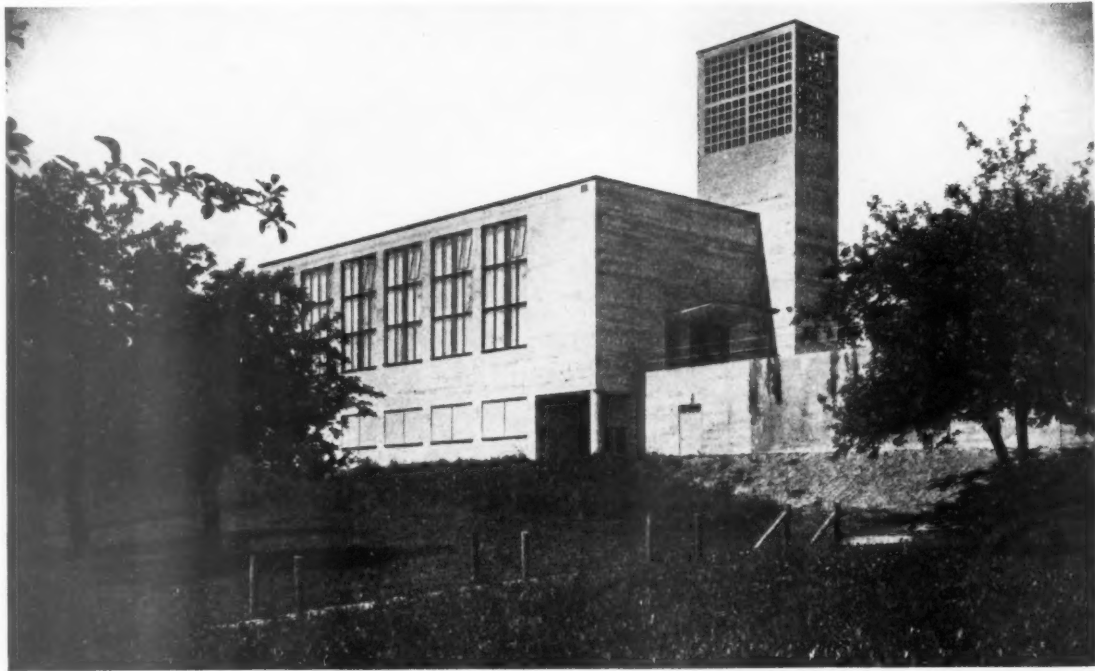
The following notice has been issued by the R.I.B.A. : "The Competitions Committee desires to call the attention of members to the fact that the conditions of the competition for the design of houses for the Honiton B.C. are not in accordance with the regulations of the R.I.B.A. The Competitions Committee is in negotiation with the promoters in the hope of securing an amendment. In the meantime members should not take part in the competition."

Changes of Address

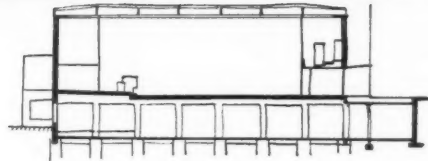
Mr. A. B. Llewelyn Roberts, F.R.I.B.A., has moved his office to 3 Albemarle Street, London, W.1 (Telephone No. : Regent 4342), where Mr. E. A. Ambrose Rowse, A.R.I.B.A., A.M.LSTRUCT.E., is joining him in association.

Mr. Peter Smith, A.R.I.B.A., Chartered and Registered Architect, has moved his office to 10 New Bond Street, W.1. Telephone No. : Regent 6231.

C H U R C H A T L U C E R N E



PLAN



SECTION

The design of this church was the result of a competition, open to Lucerne architects.

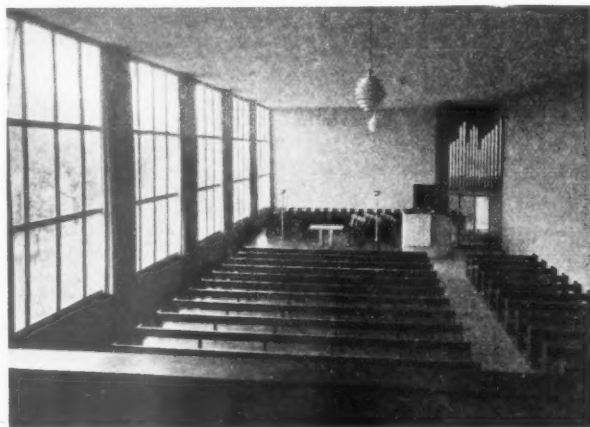
SITE—It stands on the south-east slope of the Gerliswil mountain.

CONSTRUCTION—The church and tower are, with the exception of the church roof, entirely built of reinforced concrete. The surrounding walls, of screened concrete, are insulated on the inside with cork

slabs 2.5 cm. thick, covered with wire netting and plastered. The roof is covered with copper sheet.

COST—The cost of the building, including seating, chancel and communion table, architect's and engineer's fees and excluding bells, organ and retaining walls was 1s. 2d. a foot cube.

The photographs show: two views of the exterior and a view of the interior taken from the choir gallery.



DESIGNED BY A. ZEYER

FLAT IN THE AVENUE KLEBER,

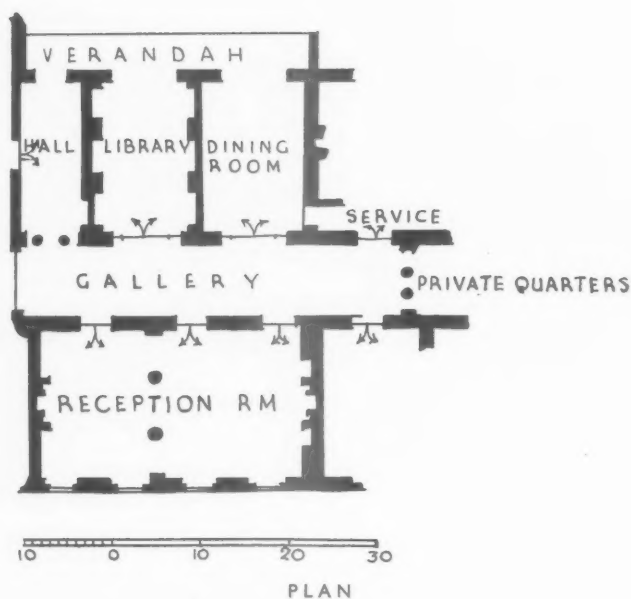


PROBLEM—The alteration of several rooms in an existing flat block into a suite of reception rooms for a wealthy client who asked for comfort and distinction without undue ostentation. In view of the coming Paris Exhibition this suite carried out by a well-known architect and decorator is of interest in its portrayal of current French ideas on decoration.

THE GALLERY (left)—In flat oil-painted plaster, coloured pale green-blue. Close-carpeting in a greyish beige, and lighting fittings in "weathered" bronze.

SALON (centre, and top right on opposite page)—Walls and ceiling in a soft terra cotta; carpet, greyish beige velvet pile; curtains white organdie and ivory velvet; screens of ivory lacquer. Furniture upholstered in natural cow-hide and fire-places of unpolished travertine.

DINING ROOM (bottom)—Walls of green venetian glass squares. Ceiling pale green. Table, white marble with gilded steel legs. Standard lamps also gilded steel.



PARIS: BY NICOLAS DU PLANTIER

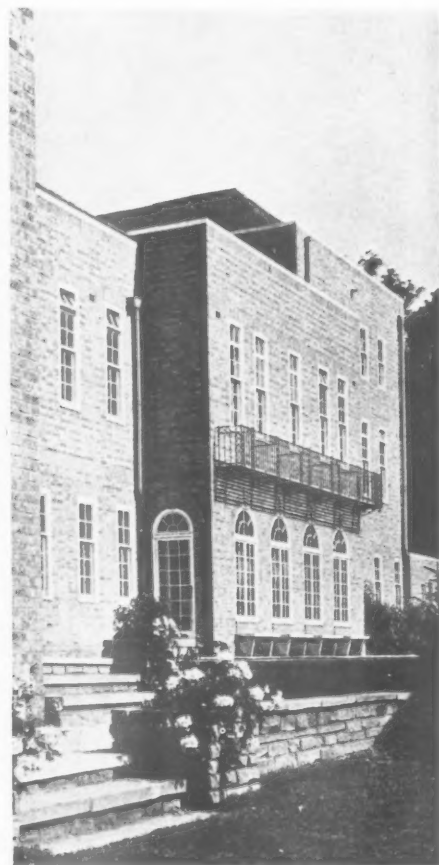
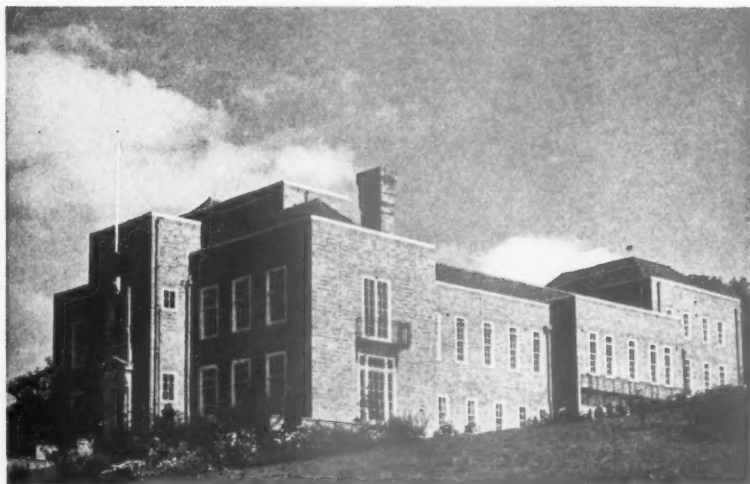


THE LIBRARY (above)—Bookshelves edged with rose-coloured copper and padded with suède. Carpet, walls, ceiling and furniture are as in the salon.

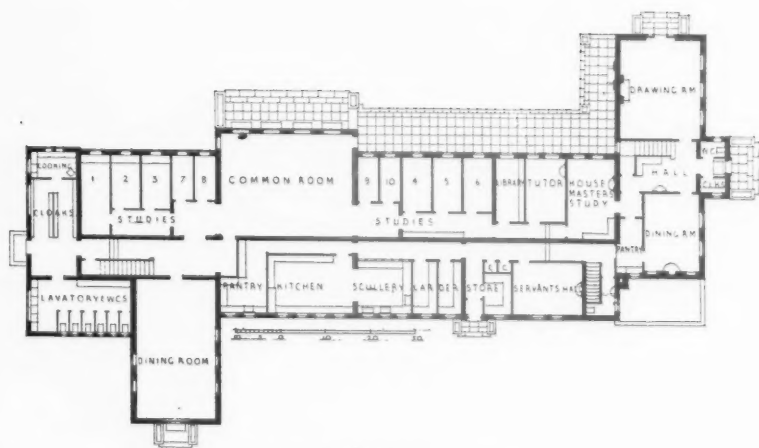
DETAIL OF SALON (right)—A couch and chair in silvered oak, upholstered in rough white wool pinned with gold studs, with panther-skin finishing to couch. The standard lamp is of white marble and the shade of natural parchment. Curtains in ivory velvet and carpet of beige velvet pile.



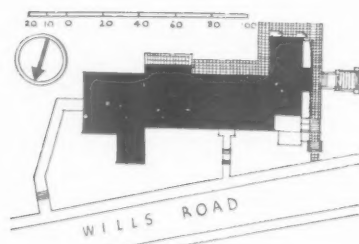
NEW BURTON BANK : BOARDING HOUSE AT



FIRST FLOOR PLAN



GROUND FLOOR PLAN



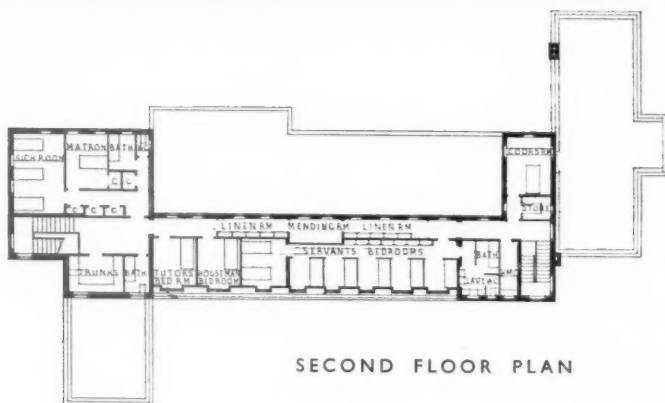
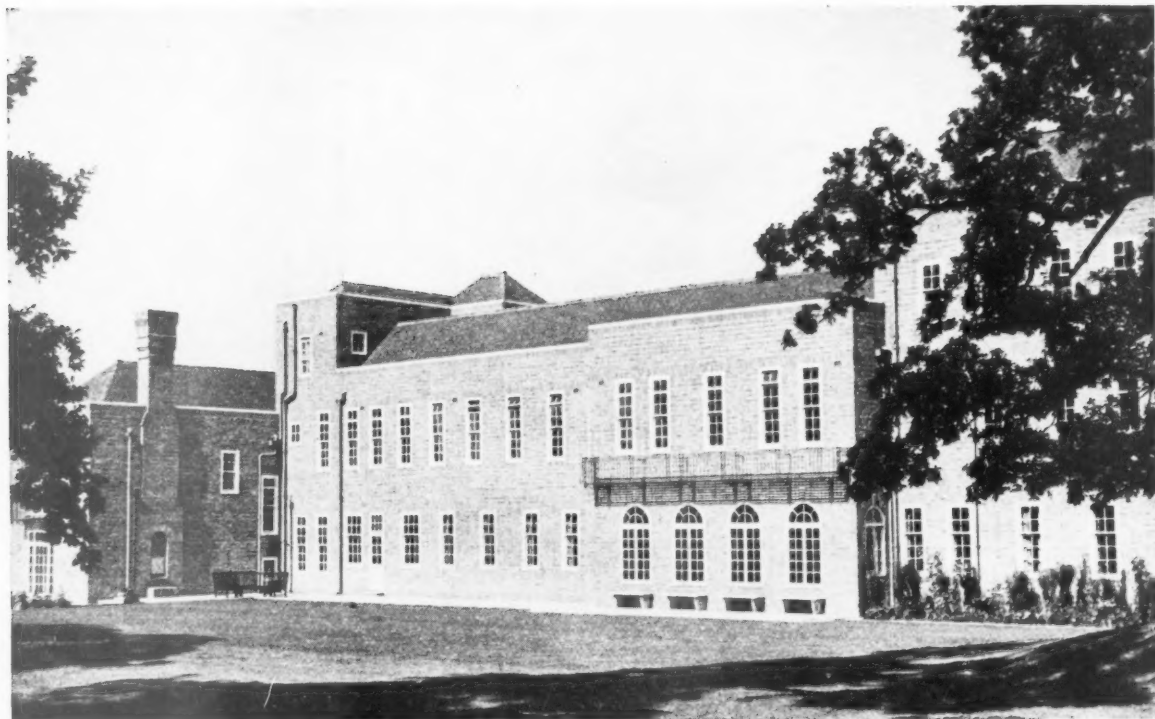
SITE PLAN



SECTION

The photographs show : left, a view from the south-west ; above, the common room end of the south front.

MILL HILL SCHOOL, N.W.: BY STANLEY HAMP



SECOND FLOOR PLAN

GENERAL PROBLEM—A boarding-house for boys, with living accommodation for the house master.

SITE—Falls sharply from east to west. The question of aspect materially affected the shape and lay-out of the building.

PLAN—It was desired to place the studies and the common room on the south side, together with as many of the dormitories as possible. Advantage was taken of the fall in the site to place the heating chamber in the basement below the house master's quarters.

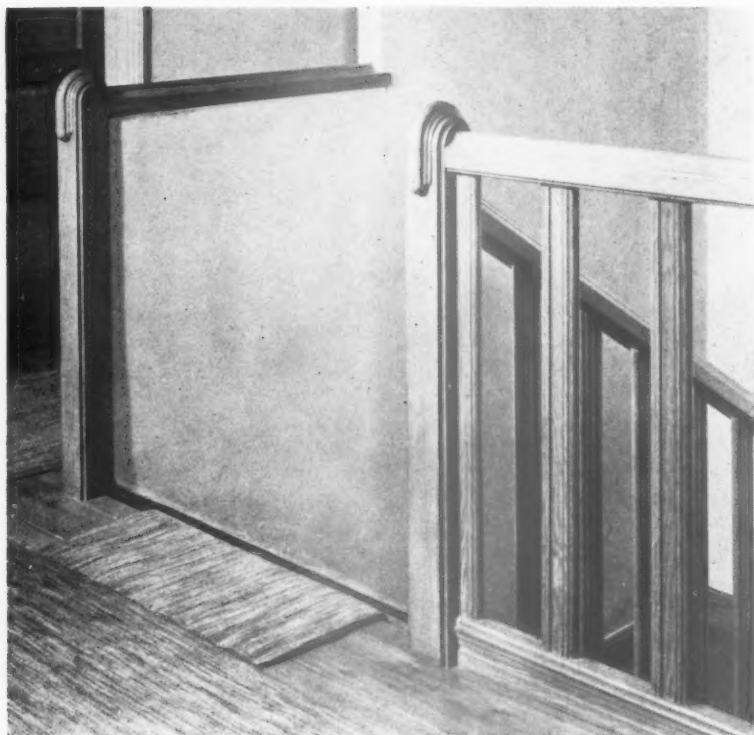
CONSTRUCTION—Solid brick walls; floors, main supports in steel with wood joists; internal walls, brick; stud partitions.

ELEVATIONAL TREATMENT—Elevations are in brick with artificial stone dressings. The main entrance to the house master's quarters is in Portland stone, and all the windows are wood, with the exception of those to the sanitary annexes, which are metal. There are metal grilles to the balconies at first-floor level. The mansard roofs are covered with hand-made tiles and the flat roofs with asphalt.

The photographs show: above, a view from the south-east; right, the entrance to the house master's quarters.



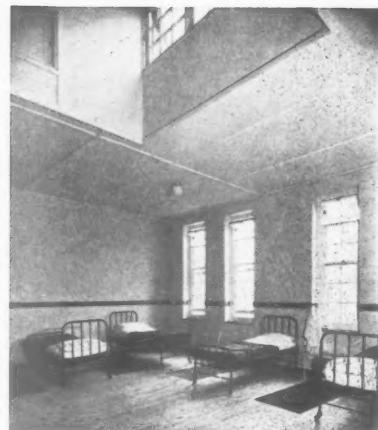
BOARDING HOUSE AT MILL HILL SCHOOL, N.W.



INTERNAL FINISH—Wall finishes are plaster, the ceilings being lined with insulating boarding, finished with cover fillets and distempered. The floors of the studies and the common room are in wood block; those on the upper floors are pine. The walls of the bathrooms and the lavatories are tiled, the staircases in the boarding school are of concrete, finished in granolithic, and the joinery throughout is pine.

SERVICES—Heating is by low-pressure hot water radiators, with a separate system of hot water services to the lavatories and baths. Cooking is by gas. Coal fires are provided only in the house master's quarters.

CONTRACT PRICE £14,600.



D E S I G N E D

B Y

S T A N L E Y H A M P

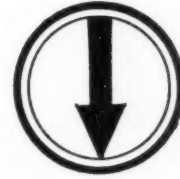
(COLLCUTT AND HAMP)

The photographs show : top, left, staircase detail on first-floor landing in house master's quarters ; top, right, windows and seats in common room ; above, a dormitory ; left, looking along the corridor on the ground floor towards the common room ; and the boys' staircase.

For list of general and sub-contractors see page 582.

INFORMATION SHEET SUPPLEMENT

The Architects' Journal Library of Planned Information



RECENT developments have brought up for reconsideration the question of the looseness of Information Sheets.

When the series was first started, it was felt that readers of the Journal would have some grounds for complaint if in a feature that was clearly meant for it, no facilities for filing were provided: and the Sheets were therefore inserted loose in the paper.

This method has obvious advantages for filing, but it has also obvious disadvantages, which our readers have not been slow to point out.

As a permanent feature, loose inserts are a nuisance in a paper, since they have a way of dropping out in the street or the train, if not before they get into the reader's hands (we have periodical complaints that Information Sheets for such a week have not been delivered with the paper).

Or, what is nearly as bad, they have a way of sticking out slightly, and getting bent or torn.

Furthermore, those architects who collect the sheets, and there are a great many, are often human enough to delay the act of filing for several days after receiving their copies, in which time the sheets again have a good chance to commit literary hara-kiri.

For all these reasons, it has been decided to make an obvious improvement.

By binding in the Information Sheets in the Journal so that they cannot fall out, their powers of self-destruction will be curtailed. And to insure that they can be as readily filed as before, the pages are now being perforated.

INFORMATION SHEETS

490 Flue Linings

491 Approximate Estimating—IX

492 Aluminium



Sheets Issued since Index :

- 401 : Plumbing to Baths
- 402 : Waterproofing
- 403 : Asbestos-aluminium Foil—I
- 404 : Roofing
- 405 : Joinery
- 406 : Asbestos-aluminium Foil—II
- 407 : Roofing
- 408 : Joinery
- 409 : Rubber-faced Building Slabs
- 410 : Places of Public Entertainment—II
- 411 : Electric Switchgear
- 412 : Lead Soakers to Valleys
- 413 : Plumbing in Welded Copper Pipe
- 414 : Electric Switchgear
- 415 : Electric Switchgear
- 416 : Insulating Board
- 417 : Work on Glass
- 418 : Plumbing in Welded Copper Pipe
- 419 : Places of Public Entertainment—III
- 420 : Tentest Metal Cover Strip
- 421 : Wood Preservatives
- 422 : Welding Sheet Copper Work
- 423 : Garages and Drives—II
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- 425 : Places of Public Entertainment—IV
- 426 : Asbestos-cement Roofing Tiles
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- 428 : Welding Sheet Copper Work
- 429 : Flat Roofing
- 430 : Asbestos-cement Roofing Tiles
- 431 : Automatic Boilers
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- 433 : Places of Public Entertainment—V
- 434 : Plumbing
- 435 : Lifts—I
- 436 : Lead Soakers to Hips
- 437 : Coloured Cement Renderings
- 438 : Wallboards
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- 442 : Roofing
- 443 : Wallboards
- 444 : Rainwater Goods and Fittings—I
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- 447 : Bathroom Cabinets
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- 449 : Places of Public Entertainment—VI
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- 471 : Gas Cookers
- 472 : Lead Insulation against X-Rays
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- 474 : Asbestos-Cement Ventilating Ducts
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- 478 : Approximate Estimating—V
- 479 : Roofing
- 480 : Approximate Estimating—VI
- 481 : Lead Flashings
- 482 : Approximate Estimating—VII
- 483 : Flue Linings
- 484 : Plumbing Systems
- 485 : Partition Blocks
- 486 : Elementary Schools—I
- 487 : Plumbing
- 488 : Approximate Estimating—VIII
- 489 : Sliding and Folding Windows

TYPICAL METHODS OF FOSALSIL FLUE CONSTRUCTION FOR VERTICAL AND HORIZONTAL FLUES.

A Construction of stack built in 9" common brick with 4½" Fosalsil lining.

Chimney stack may be built entirely independent of the structure of the building and floors trimmed on all four sides.

Wood skirting.

Wood scotia.

Weight of stack supported on concrete foundations, footings etc.

Earth.

Concrete footings.

14" x 14" Flue. VERTICAL TYPE FLUES.

Floor area of stack: 11.6 sq. feet.

Weight of stack per foot run: 1085 lbs.

R. Concrete floor.

BOILER HOUSE.

Boiler.

Fosalsil concrete.

14" x 14" Flue.

Floor trimmers built into stack to support 4½" common brick outer lining with 4½" Fosalsil brick lining bonded thereto.

Plaster wall finish.

Weight of Fosalsil flue lining is approximately 1/3 firebrick. Base of flue may terminate with R.C. bulkhead carried by floor above.

Concrete floor.

Hardcore base.

B Construction of stack built in 4½" common brick with 4½" Fosalsil bonded lining.

Floor area of stack: 7 sq. feet.

Weight of stack per foot run: 516 lbs.

Cement skirting.

BOILER HOUSE.

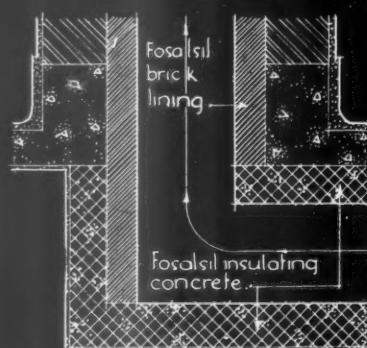
Boiler.

Fosalsil concrete.

In rectangular shaped flues the proportion of length to breadth should not exceed 2 to 1.

Note: The Fosalsil inner linings are continuous and not supported at floor levels.

HORIZONTAL FLUE CONSTRUCTION: (Using Fosalsil flue bricks in conjunction with fosalsil insulating concrete. Crushing strength of fosalsil insulating concrete: 2360 lbs per sq in.)



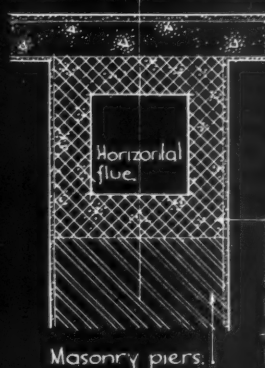
Termination of vertical stack showing commencement of horizontal run.

THE METHODS OF SUPPORTING HORIZONTAL RUNS OF FOSALSIL FLUES.

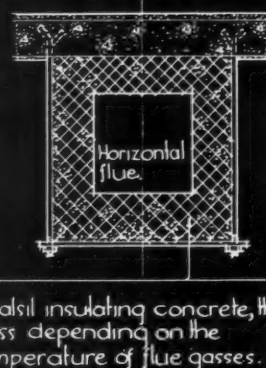
1. Masonry piers.

2. W. Strap hangers.

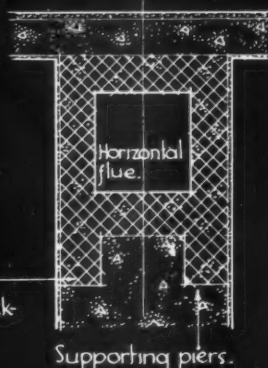
3. Fosalsil concrete T-beam



Masonry piers.



Fosalsil insulating concrete, thickness depending on the temperature of flue gases.



Supporting piers.

Information from Moler Products Ltd.

INFORMATION SHEET: FOSALSIL INSULATED FLUE CONSTRUCTION No 2
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1

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INFORMATION SHEET

• 490 •

FLUE LININGS

Products : Fosalsil Flue Lining Bricks and
Fosalsil Insulating Concrete

General :

This Sheet is preceded by another on Fosalsil flue lining bricks (No. 483), and should be read in conjunction with it, as the properties of the bricks were fully dealt with on the first Sheet.

This Sheet, generally, deals with the use of heat insulating linings of flues, two mediums being shown : 1, by means of Fosalsil flue lining bricks, and 2, by means of Fosalsil insulating concrete. Owing to the low co-efficient of expansion of these products, no cavity is necessary to allow for expansion of the lining.

Fosalsil Construction :

As Fosalsil flue lining bricks are comparatively light (one-third the weight of firebricks), they are easily supported. By using a lining of these bricks, a saving in floor space is effected. This lining is bonded into the outer structural brickwork of the chimney with headers all of which must be Fosalsil lining bricks. The stack may be supported at each floor, or built entirely independently, but in each case the lining is not supported at floors, but is continuous throughout.

Jointing Mortar :

Mortar of similar insulating value and characteristics to the insulating bricks should always be used to achieve a homogeneous insulating structure. The similarity of material and bond reduces to a minimum the possibility of cracking, shrinkage or disintegration, and the mortar recommended is made from Fosalsil No. 6F powder, mixed with Portland cement in the proportion of four to one by volume (it must be emphasized that no sand is to be added to the mix).

Fosalsil Insulating Concrete Construction :

This concrete is composed of Fosalsil No. 1 insulating aggregate and Portland cement, in the proportion of four to one. Forty pounds of Fosalsil No. 1 aggregate are required per cubic foot of finished concrete. The required amount of aggregate should be saturated with water over night. When the cement has been added, and the materials thoroughly mixed to a crumbly consistency, it should be poured and well rammed. The concrete should then be covered for 48 hours and kept damp to facilitate slow curing. Methods of using Fosalsil insulating concrete for construction of horizontal flues, have been shown on the other side of this sheet. The concrete has a high standard of heat insulation and a crushing strength of 2,360 lbs. per sq. in.

Non-Conduction of Heat :

Owing to the low thermal conductivity of Fosalsil lining bricks and Fosalsil insulating concrete, the temperature on the outside of the flue will not be more than a few degrees above that of the atmosphere.

Manufacturers : Moler Products, Ltd.
Address : 103 Kingsway, London, W.C.2
Telephone : Holborn 2961/2

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APPROXIMATE ESTIMATING:

WINDOWS.

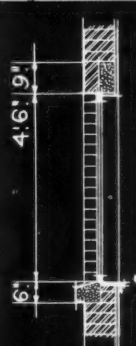
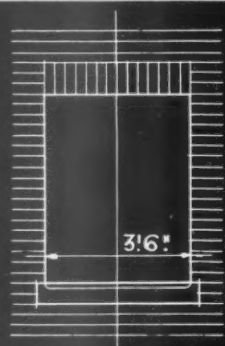
PRICES ARE THOSE
CURRENT DURING
JANUARY, 1937.

The following are approximate prices for windows and window openings exclusive of deductions of walling and finish. Prices are for a medium sized job in the London area and include for overhead charges and profit.

WINDOW OPENINGS.

TYPE A:

51/3. EACH.



Concrete
lintol.

The price in-
cludes fixing,
but not pur-
chase, of the
sash.

Deal win-
dow board.

WINDOW OPENING SIZE 3'6" x 4'6" FOR METAL WINDOW, INCLUDING BRICK FLAT ARCH AND CONCRETE LINTOL, FINISHES TO REVEALS, ARTIFICIAL STONE SILL, DEAL WINDOW BOARD, AND FIXING ONLY FOR METAL WINDOW, IN 9" WALL.

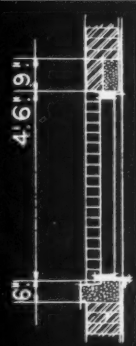
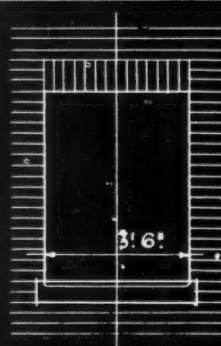


TO TYPE A, ADD FOR:

	each.
Opening in 11" wall	17/6
ditto in 13 1/2" wall	7/3 1/2
ditto in 18" wall	14/7
Each 12" increase in width in 9" wall	8/8
ditto in 11" wall	10/8
ditto in 13 1/2" wall	9/10 1/2
ditto in 18" wall	11/1
Each 12" increase in height in 9" wall	2/3
ditto in 11" wall	3/11
ditto in 13 1/2" wall	2/8 1/2
ditto in 18" wall	3/2

TYPE B:

58/8. EACH.



Concrete
lintol.

The price in-
cludes bedding,
but not pur-
chase, of the
frame & sash.

Deal win-
dow board.

WINDOW OPENING SIZE 3'6" x 4'6" FOR WINDOW WITH WOOD FRAME, INCLUDING BRICK FLAT ARCH AND CONCRETE LINTOL, FINISHES TO REVEALS, ARTIFICIAL STONE SILL, DEAL WINDOW BOARD, AND BEDDING AND POINTING WOOD FRAME, IN 9" WALL.



TO TYPE B, ADD FOR:

	each.
Opening in 11" wall	17/6
ditto in 13 1/2" wall	7/3 1/2
ditto in 18" wall	14/7
Each 12" increase in width in 9" wall	10/1
ditto in 11" wall	12/1
ditto in 13 1/2" wall	11/3 1/2
ditto in 18" wall	12/6
Each 12" increase in height in 9" wall	2/7
ditto in 11" wall	4/3
ditto in 13 1/2" wall	3/0 1/2
ditto in 18" wall	3/6

WINDOWS.

THE FOLLOWING PRICES ARE FOR WINDOWS OF NORMAL SIZE. PRICES FOR CASEMENTS INCLUDE FOR MULLIONS AND TRANSOMES, AND ALL PRICES INCLUDE FOR SUITABLE IRONMONGERY, GLAZING WITH 26. OZ. CLEAR SHEET GLASS AND PAINTING.



Standard metal casements with fixed lights	2/4
ditto with 50% opening lights	3/6
Standard metal casements in wood frames with fixed lights	3/7
ditto with 50% opening lights	4/6

Standard industrial type metal sashes with fixed lights	1/10
ditto with 33 1/3% opening lights	2/9
Solid deal frames and 1 1/2" deal casements	5/4
Deal cased frames and double hung sashes	4/6

The above prices for windows are measured per foot super.

Figures by Davis and Belfield, R.P.A.S.I., Chartered Quantity Surveyors.

INFORMATION SHEET: UNIT SYSTEM FOR APPROXIMATE ESTIMATING: 9
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. *Oliver & Ray*

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 491 •

APPROXIMATE
ESTIMATING—IXSubject : Unit System for Approximate
Estimating

This series of Sheets, taken as a whole, forms a complete system for the preparation of detailed estimates. Alternatively, less detailed estimates can rapidly be made, merely by multiplying the areas of quantities of the different component parts of the building by the appropriate unit prices, varied by judgment alone.

For all normal estimates, and whenever time permits, account should be taken of the difference in cost of the various types of finish, etc., shown with each typical form of construction. These have been kept to a minimum for the sake of simplicity, but other materials, if the prices are known, may easily be compared.

The system is not intended to replace the complicated pricing data necessary for a very close estimate, but it should, in all cases, prove more accurate than cubing, and it should be found particularly useful in alteration work, or work where the price per foot cube is not well established. An additional advantage is that firm estimates obtained for lifts, plumbing

or other services, fittings, etc., can be used in conjunction with this system much more readily than with the cubing method.

This Sheet deals with typical examples of metal and wood windows and openings, including arches and lintols, sills and window boards, and finishes to reveals, etc. The deduction of walls for window openings (measured between reveals and from top of stone sill to underside of lintol), should have been taken into account when dealing with the walls themselves.

It has been assumed that the window frame is $4\frac{1}{2}$ ins. from the external face of the wall. The work externally to the reveals and arch, being only-extra labour and pointing, will not be affected by a variation in the cost of facing bricks. Similarly, the finish to the internal reveals being in narrow widths, is largely a labour item (for ordinary finishes) and the cost will not be greatly affected by the type of plaster used.

The cost of a standard metal casement, with wood frame and 50 per cent. opening lights, in an 11 in. hollow wall, opening size 4 ft. 6 in. by 5 ft. 6 in., would be worked out as follows :

	s.	d.
Cost of Type B	2	18 8
Add for opening in 11 in. hollow wall	17	6
" 12 in. increase in width ...	12	1
" 12 in. " height ...	4	3
24 $\frac{3}{4}$ ft. sup. standard metal window including wood frame and 50 per cent. opening lights ...at 4/6	5	11 5
	10	3 11

Sheets Nos. I to VII dealt with ground floors, upper floors, roofs, parapets and eaves, foundations, external and internal walls, partitions and doors, and future Sheets will show the cost analysis of staircases, services, etc.

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ALUMINIUM SHEET & PLATE FOR GENERAL ARCHITECTURAL APPLICATION.

The tables below set out the manufacturing limits for two types of aluminium sheets designated by the symbols NA.2S. and NA.3S. For the meaning of the symbols and a complete list and description of the various types of alloy see the reverse side of this sheet.

(A) MANUFACTURING LIMITS FOR NA.2S. AND NA.3S. FLAT SHEET ALUMINIUM

THICKNESS, Inches.	GAUGE, S.W.G. APPROX.	APPROX WEIGHT, Lbs. per sq. ft.	WIDTH, Inches.	LENGTH, Feet.	DIAM. OF CIRCLE, ins.
.160 to .250	8 to 3	2.253 to 3.521	78, 72.	8 & 17 _w	78.
.128 to .159	10 to 9	1.803 to 2.240	78, 72.	8 & 17 _w	78.
.048 to .063	18 to 17	.6760 to .8873	72, 54.	14 & 17 _w	72.
.036 to .047	20 to 19	.5070 to .6629	60, 48, 36.	8, 14 & 17 _w	60.
.022 to .035	24 to 21	.3098 to .4830	48, 42.	8 & 14.	48.
.015 to .021	28 to 25	.2112 to .2958	42, 36.	8 & 14.	42.

+ Soft to ½ hard tempers only.

† Soft to ¾ hard tempers only.

NOTE: For harder tempers special quotations should be obtained.

w Maximum length in soft temper 14 feet.

NOTE: (Flatness). All sheets up to 17'0" long and 72" wide are stretched flat. Sheets above these limits are supplied as flat as can be obtained from the rolls.

Other sizes available down to a minimum of .070 lbs. per sq. ft. (.005" to .009" thickness 18" wide, 8'0" long & circle diam 18")

(B) MANUFACTURING LIMITS FOR NA.2S. AND NA.3S. PLATE ALUMINIUM

THICK- NESS.	LENGTH IN FEET AT GIVEN WIDTH.								DIAM. of circle. Inches.	TEMPERS.
	WIDTH IN INCHES.									
Inches.	78	72	60	48	36	24	18 or less.			
1.	9	9	10 (5)	13 (7)	17 (9)	16 (14)	17 (17)	40	As rolled + Soft, (Max. length 14 ft) 1/4 hard, 1/2 hard.	
7/8	9	10	12 (6)	15 (8)	20 (10)	19 (16)	20 (20)	40		
3/4	11	12 (6)	14 (7)	17 (9)	23 (12)	21 (19)	23 (23)	40		
5/8	13 (6)	14 (7)	17 (9)	21 (11)	29 (15)	25 (23)	28 (28)	40		
1/2	16 (8)	17 (9)	21 (11)	26 (14)	35 (19)	31 (28)	34 (34)	40		
3/8	21 (11)	23 (12)	29 (15)	35 (19)	40 (26)	40 (38)	40 (40)	72		
1/4	32 (17)	35 (19)	40 (23)	40 (29)	40 (38)	40 (40)	40 (40)	72		

Figures in parenthesis indicate maximum commercial size.
Other figures indicate maximum special sizes.

Plates or circles over 2" up to 4" thick can be supplied in soft temper only. (Max. individual weight 750 lbs.)

FLATNESS: As for sheet. (Up to 1/2" thick.)

+ The tensile strength of plates "as rolled" in thicknesses up to about 5/8" is approx. that of 1/4 hard temper (1/4 H.) As the thickness increases, properties approach those of the soft temper.

• Maximum semicircle diameter = 96 inches.

Figures in parenthesis indicate maximum commercial size.

Other figures indicate maximum special sizes.

Plates or circles over 2" up to 4" thick can be supplied in soft temper only. (Max. individual weight 750 lbs.)

FLATNESS As for sheet. (Up to ½" thick.)

+ The tensile strength of plates "as rolled" in thicknesses up to about 5/8" is approx. that of 1/4 hard temper (1/4 H). As the thickness increases, properties approach those of the soft temper.

• Maximum semicircle diameter = 86 inches.

Thicknesses up to 2" are obtainable. The available length and width decreases as the thickness increases.

Although the available tempers of the gauges of other aluminium alloys vary slightly, the manufacturing limits closely approximate the sizes shown in the above examples.

(C) MANUFACTURING LIMITS FOR NA.2S. AND NA.3S. ALUMINIUM IN COILS

THICKNESS, in Inches.	GAUGE, S.W.G. (Approximate)	WIDTH, in Inches.	APPROX. LENGTH of standard coil, Feet.	WEIGHT PER COIL.
.048 — .063	18 — 17	½ — 22	90	The weight of a standard coil 12" wide or wider in 2S. and 3S. is 60 to 70 pounds.
.036 — .047	20 — 19	½ — 20	120	
.028 — .035	22 — 21	½ — 20	150	The weight of narrower standard coils is:— 3" wide... 1/4 of the above weight. 4" wide... 1/3 of the above weight, etc.
.022 — .027	24 — 23	½ — 20	200	
.018 — .021	26 — 25	½ — 20	250	2S. and 3S. can be supplied in 100-120 lb coils by special request.
.015 — .017	28 — 27	½ — 18	300	

NOTE: Larger sizes are available up to 104" — 125" thick, (S.W.G. 12-10), 4' — 28" wide and 40'0" long; and smaller sizes down to .005" — .007" thick, ½" — 14" wide & 700'0" long.

Information from the Northern Aluminium Company Limited.

INFORMATION SHEET: ALUMINIUM, No 1: SHEET, PLATE & COIL SIZE
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Oscar A. Baynes

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INFORMATION SHEET

• 492 •

ALUMINIUM

General :

This is the first of a series of Sheets dealing with the architectural uses of aluminium, and sets out the manufacturing limits of the sheet and plate form of two of the more common wrought alloys, namely, commercially pure aluminium, and aluminium-manganese alloy. It should be noted that the sizes given for these alloys do not apply exactly to the other widely used compositions, but are intended as an approximate guide for the softer alloys only. It may be taken as a general rule that the manufacturing limits of other sheet and plate aluminium alloys decrease slightly with increased hardness.

Alloy and Temper :

In order to distinguish between the various alloys of aluminium and to indicate briefly the temper or heat-treated condition in which they are supplied, the following system of designation has been adopted.

The forms in which aluminium and its alloys are supplied may be divided into the two main classes, wrought products and castings.

Wrought Products Alloy Symbols :

The symbols indicating the compositions of the alloys in which sheet, plate, and circles, wire rod, and bar, extruded sections and tubing are supplied, are the numbers 2 to 99 inclusive, prefixed by the letters "NA." In the case of all wrought products the letter "S" follows the alloy designation number. For the sake of uniformity the symbol NA.2S is chosen to represent wrought aluminium of commercial purity and the numbers NA.3S to NA.99S represent various wrought alloys. The complete series of numbers has not yet been used and gaps occur which will be filled as new wrought alloys are developed.

The wrought alloys are divided into two distinct classes.

(a) Work-hardened alloys which depend on strain-hardening or cold working for their harder tempers and the properties of which are not improved by heat treatment. Commercially pure wrought aluminium may be classed under this heading.

(b) Heat treated alloys which attain their maximum mechanical properties after suitable heat treatment.

The following are the most widely used among these alloys.

Work-hardened Alloys :

- NA.2S. Commercially pure aluminium. (General Sheet metal work.)
 NA.3S. Aluminium-Manganese Alloy. (Harder than NA.2S : panelling and various architectural applications.)
 NA.4S. Aluminium - Manganese - Magnesium Alloy. (Harder than NA.3S : severe service usages.)
 NA.35S. Aluminium - Silicon Alloy. (Naval work.)
 NA.57S. Aluminium-Magnesium Alloy. (Severe industrial and marine atmospheres.)

Heat-treated Alloys :

- NA.17S. Aluminium - Copper - Magnesium - Manganese Alloy. (Structural work in aircraft and transport.)
 NA.22S. As NA.17S, but with higher silicon content. (Aircraft.)
 NA.24S. As NA.17S, but with higher magnesium content. (Aircraft.)
 NA.51S. Aluminium - Silicon - Magnesium Alloy. (Slightly less strength than NA.17S : Architectural and Transport work.)
 NA.55S. Aluminium - Magnesium - Silicon Alloy. (Uses as NA.51S.)
 Alclad Alloys. NA.17S, NA.22S, NA.24S, with high purity aluminium coating. (Aircraft.)

Temper Symbols for Wrought Alloys :

The wrought products are available in a wide range of tempers or heat treatments and the symbols representing them are explained below, extruded sections being covered by a separate classification. (See future Information Sheets.)

Temper Symbols for Work-hardened Alloys :

The tempers of the work-hardened alloys depend on the amount of cold working or strain-hardening given the metal during fabrication and range from the annealed or soft condition, represented by the letter O, to the full hard condition represented by the letter H. Intermediate tempers, quarter hard, half hard, and three-quarter hard are indicated by fractions preceding the letter H. The temper designation symbols follow those of the alloy thus :— NA.2S½H, NA.3SH, NA.4SO.

The strength of these alloys increases with increased cold work, but the elongation and workability are decreased. The five tempers O, ½H, ¾H, ¾H and H provide a range of mechanical properties which meet most requirements and it is recommended that tempers represented by intermediate fractions such as ¾H should not be specified.

Temper Symbols for Heat-treated Alloys :

The tempers of the heat-treated alloys are annealed "O," quenched or solution heat-treated "W" and fully heat-treated "T."

In certain cases sheet can be supplied in the hard rolled condition without heat treatment when the letter "H" is used as with the work-hardened alloys. In all cases this letter follows the alloy designation symbol.

The full heat treatment comprises both solution and precipitation heat treatments. The solution heat treatment consists in raising the metal to a high temperature and then quenching, generally in cold water. In the quenched state the metal has reasonable ductility and can be readily formed. Certain alloys notably NA.17S and NA.24S if left in this condition at room temperature will be found to age harden spontaneously, attaining their

maximum mechanical properties after about five days. They are then represented by NA.17ST and NA.24ST.

Other alloys such as NA.22S and NA.51S have a stable quenched condition NA.22SW and NA.51SW in which certain forming operations can be carried out at any time. To attain the maximum properties subsequent heating at a low temperature is required. This precipitation heat treatment is sometimes known as artificial ageing. After this treatment the metal is in the fully heat-treated condition and is represented by NA.22ST and NA.51ST.

Selection of Alloy :

Various considerations influence the selection of the proper wrought aluminium alloy for sheet metal work. Where its properties are adequate, NA.3S is most commonly chosen for architectural applications. It is stronger than NA.2S, particularly in the harder tempers, and, in its softer tempers, can be formed with almost the same ease as NA.2S.

The alloys NA.4S and NA.57S provide materials with higher mechanical properties, NA.57S being slightly harder and possessing better forming qualities than NA.4S. NA.57S alloy also gives exceptionally good corrosion resistance to industrial and marine atmospheres.

These alloys are not so easily worked as NA.2S and NA.3S, but even in the half-hard tempers (NA.4S½H, NA.57S½H) they can be bent and formed, provided radii that are not too sharp are used in the heavier gauges.

In the hard tempers (NA.4SH, NA.57SH) the yield strength is comparable to that of NA.17ST, but in these tempers practically no forming can be done in the heavier gauges.

Where maximum strength is required NA.17S alloy is used, this alloy being exactly the same in composition and physical properties as "Duralumin." It is generally used in the fully heat-treated condition NA.17ST.

In choosing the temper of an alloy, it is customary to select the hardest temper that can be used and still permit the necessary forming operations.

Weight :

Aluminium has a specific gravity of 2.7 or approximately .1 pound per cubic inch, that is about one-third as much as other commonly used metals.

Strength :

The following table sets out the range of properties afforded by some of the present commercial aluminium alloys available in the form of castings, sheets, forgings and structural shapes. Two values for cast iron and structural steel are included to give a rough comparison :—

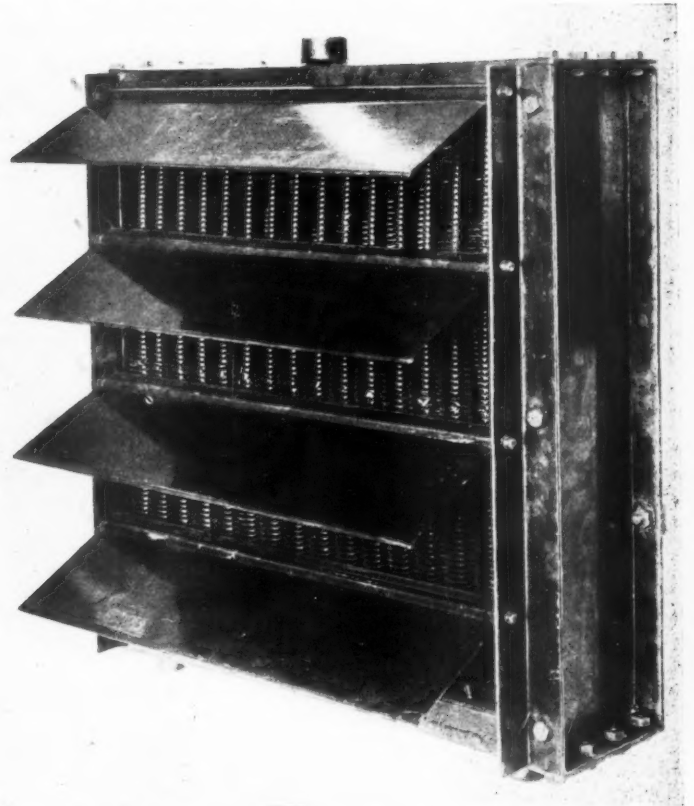
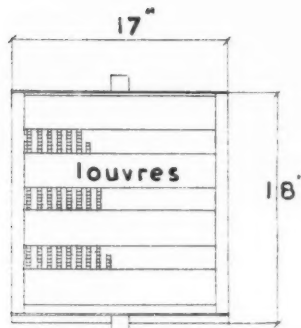
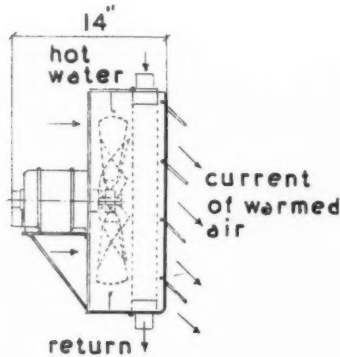
	TYPICAL VALUES		
	Tensile Strength tons/sq. in.	Elongation per cent. on 2 ins.	Brinell Hardness Number
1. Commercially pure aluminium sheet annealed (NA.2SO)	6	35	23
2. Aluminium alloy containing 1½ per cent. manganese half-hard sheet (NA.3S½H)	10	6	40
3. Aluminium alloy containing magnesium, silicon and chromium, extruded and solution heat-treated (NA.55SQ)	16	29	70
4. Aluminium alloy containing magnesium and chromium, three-quarter hard sheet (NA.57S¾H)	18	7	85
5. Aluminium alloy containing silicon and magnesium, extruded and fully heat-treated (NA.51SQA)	20	15	90
6. Aluminium alloy containing copper, magnesium and manganese, extruded and fully heat-treated (NA.17ST)	27	20	100
7. Structural steel.	28	25	120
8. Aluminium alloy containing 5 per cent. silicon as cast (NA.123)	9	5	45
9. Aluminium alloy containing 12 per cent. silicon as cast (NA.160)	12	8	55
10. Aluminium alloy containing magnesium and silicon as cast and fully heat-treated (NA.30S-T90)	16	5	80
11. Aluminium alloy containing 4½ per cent. copper as cast and fully heat-treated (NA.226-T92)	22	7	95
12. Grey cast iron	12	—	150

Information from : The Northern Aluminium Co., Ltd.

Address : Bush House, Aldwych, London, W.C.2
 Telephone : Temple Bar 8844

SHOPS**Heating and Other Services**

[By Bryan Westwood and Norman Westwood]



A front view of a typical small unit heater. The fan is concealed behind. It is important, when installing units of this type, that sufficient space is allowed for free entry of air at the back. When the unit is placed against a wall the air is best taken through an opening at the top but could be arranged at either side. The louvres at the front direct the warm air stream where desired.

Heating

AS the small shop does not present any particularly unusual heating problems, our remarks on this subject will be confined to brief notes on the various types of heating available, and suitable positions for the units.

It is a statutory necessity, under the Shops Act, 1934, to have a shop "reasonably" warm, but there is no doubt that a comfortable temperature is a help to "casual" sales. The large store is generally central heated, but the small shop often depends on gas or electric units placed in positions where they are best suited to neutralize the effect of draughts. Such units have the advantage that they can easily be moved if the lay-out of the shop is to be altered. In grocers' and other food shops, heating can be local, and thus not damage perishable goods.

These advantages, with the exception of flexibility, are common to systems using hot water and column radiators, but not to panel heating. This system of heating from the ceiling is not likely to be used in small shops except when they occur in the lower part of

larger buildings. Since the whole of the interior is evenly heated, in effect the greatest flexibility is attained, and the source of heat does not occupy space which could otherwise be used.

Column radiators can be placed behind the fixtures with a grille in the skirting and at the top to allow free circulation of warmed air. This is not only a good way of concealing the radiators, but also avoids damage to stock by penetration of damp in the many cases where party or external walls are liable to be moist, and in the ordinary way do not get a chance to dry behind fixtures.

Where it is not possible to conceal radiators, "Rayrads" present a flat surface which can easily be kept clean, and are more likely to harmonize with the general scheme than the usual column radiator.

Another type of radiator is known as a "Unit Heater." This consists of a honeycomb similar to a car radiator with a fan driven by a small electric motor. This can be connected to the usual hot-water system or be incorporated with an electric heater. A stream of warm air is thrown out in the desired direction, and marks

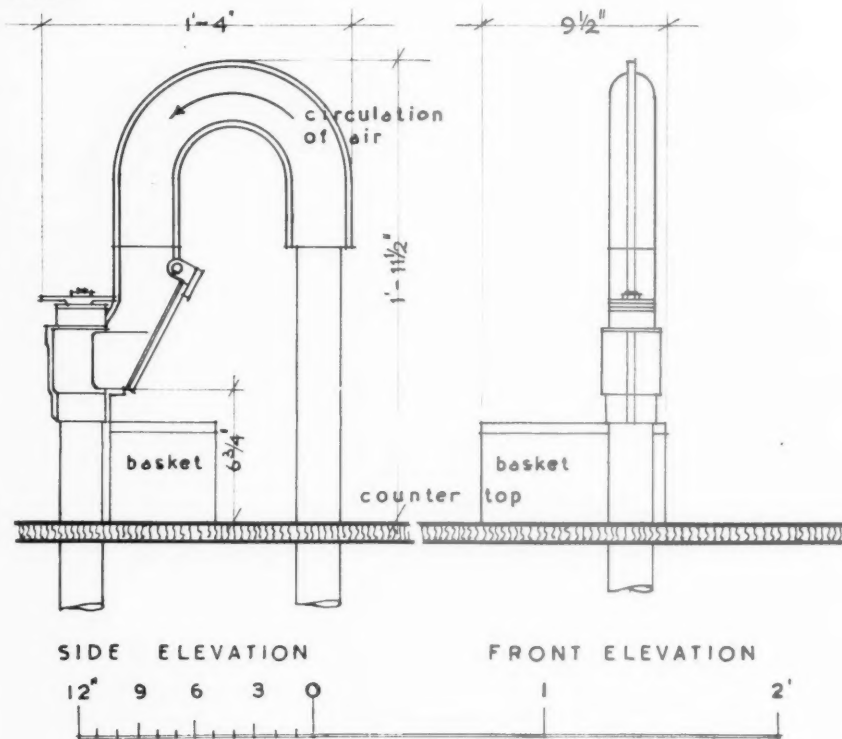


DIAGRAM A

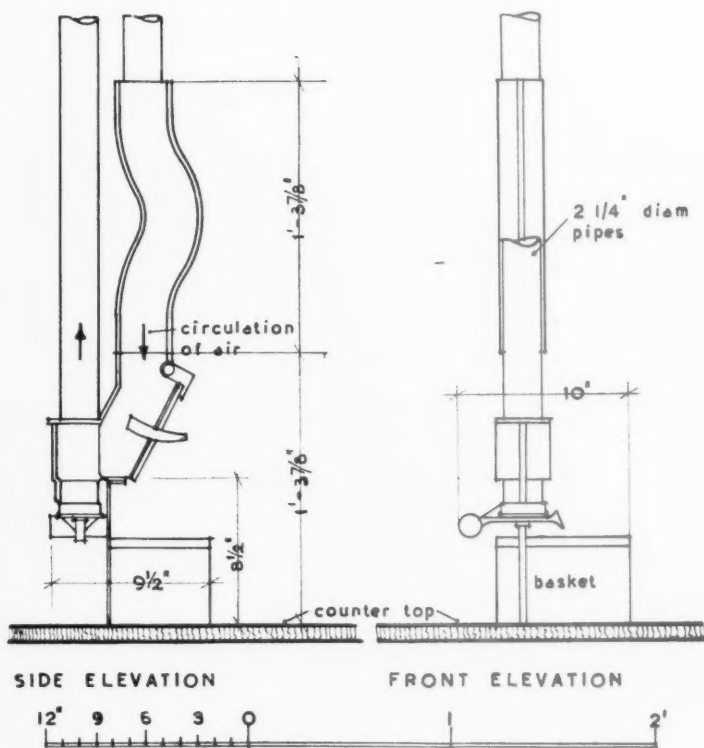


DIAGRAM B

These diagrams show details of the two types of dispatch station mentioned in the text. Note the method of arranging the circulation of air upon which the system depends.

on the walls are avoided as dirt from the air current need not come into contact with walls or ceilings. Units can be placed above the fixtures with the heat beam directed downwards, thus saving floor space.

The various types of gas and electric heaters are too familiar to need further description here, except to note that the "Rod" type of electric heater is unobtrusive and easily incorporated with fittings or fixtures.

Where none of these services is available, the shopkeeper is left with no alternative except the oil stove, unless he has room for an ordinary open fireplace. This probably gives the greatest sense of luxury, and might well be considered more often in the planning of shops of the highest class. Even the humble oil stove hints that the customers' welfare has been considered, and is far better than nothing at all.

SHOPS

Ventilation

It is often necessary to provide some kind of artificial ventilation to the small shop in view of the comparatively large number of persons who frequent it, but it is seldom necessary to instal a complete plenum system. Hairdressing shops are one of the few instances where such a system might be justified, but we know of no examples where it has actually been carried out.

Small fans installed behind suitable grilles over the entrance door, or above the transome, are usually quite sufficient. The bakelite types are good in appearance, and are easily kept clean. The ordinary portable fan does not do much to ventilate the shop, but does keep the air moving, and gives an appearance of coolness which is of value on hot days.

Unit heaters described above, can be connected to a duct so that pure air is drawn through the radiator, and so ventilate as well as heat. This system has been successfully applied, even in shops as crowded as Woolworth's, and Marks and Spencer's.

Lamson Pneumatic Cash System

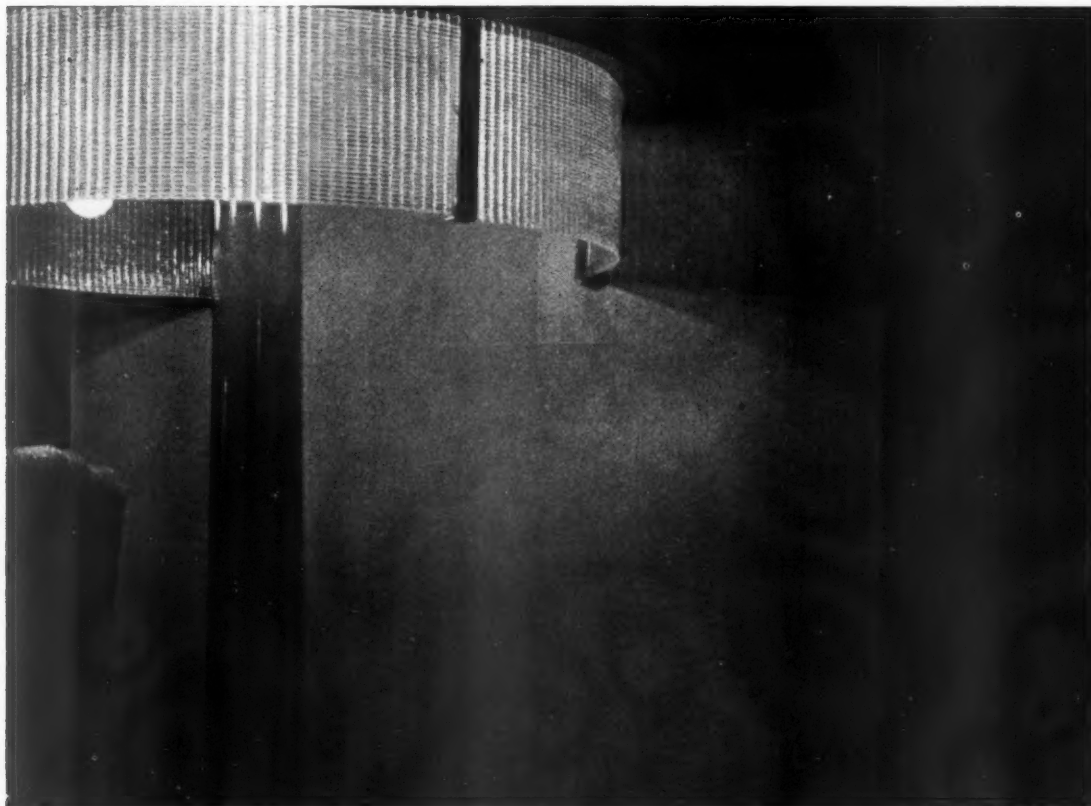
The desirability of installing a cash system of this kind has already been discussed, so we will confine our present remarks to a general

description of the system, and diagrams showing minimum curves, etc.

Briefly, the system which depends on a circulation of air, consists of an electrically-driven pump, which provides the energy to convey the cash containers to and from various points in the shop to a cash desk which may be situated anywhere in the building. There is air pressure behind the carrier, and a partial vacuum in front of it, and as it fits the tube fairly closely, it is moved at high speed.

A small office, say 8 ft. \times 6 ft., is sufficient for the cash desk for a medium-sized installation, and can be worked by one cashier. In a large installation the carriers arriving at the cash desk are discharged onto running belts, and the number received by each cashier can be controlled by doors over the belt. Carriers are returned by similar belts to a dispatch bench, and thence travel to their various destinations in the shop.

The teak cash desk is generally constructed by the builder to details supplied by the Lamson engineers. Each unit consists of a cash drawer with a slideaway top fitted with a lock. If stools are used, the height is 3 ft., but in the small installation with only one cashier, it is better to make it 2 ft. 6 in., so that she can operate at chair height, and carry on other clerical work.



Maximum daylight glass used as a skirting to hide the lamps. Lamps of this kind, if kept low, are not dazzling and are efficient. The top is lined with asbestos to prevent overheating of the wood above.

For small shops having two floors, a push-button system was introduced a few years ago, whereby the cashier has complete control over one floor, and there is a single Lamson station on the other. The current is only switched on when a button is pressed, and is cut off again automatically when the carrier reaches the cash bench. In our experience this has proved satisfactory, and is a means whereby the advantages of the system, with its double check on receipts, can be applied to quite a small shop without undue cost.

The electric pump requires a space about 5 ft. \times 2 ft. 6 in., placed at a distance from the cashier's room, but must be connected by means of a 6 in. pipe. Special precautions are necessary to damp the noise of the motor, which is particularly noticeable because it is intermittent.

The standard pipes are 2½ in. diameter. Bends can be as small as 6 in. radius, but such small radii cause a drag on the system, and special inspection covers should be fitted. Radii of about 2 ft. 6 in. are generally desirable, if the system is to be efficient and cheap. Bases of fittings, etc., must be designed for accommodating such curves.

In buildings with concrete floors, the pipes are

best laid direct on the concrete, and small joists and boarding used as a floor finish. This gives plenty of room for all the other services as well as the Lamson tubes.

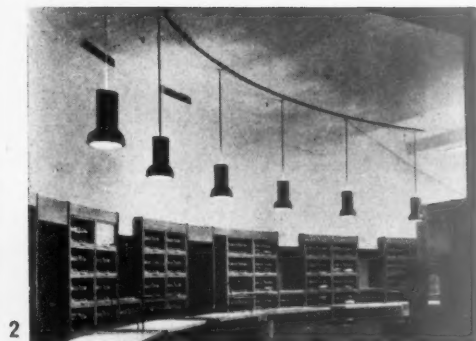
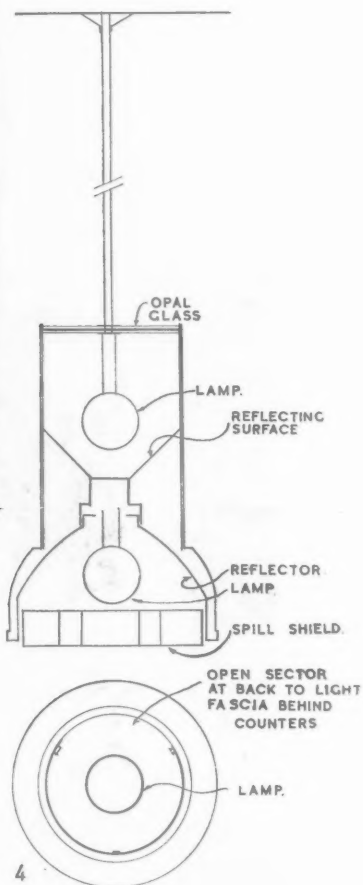
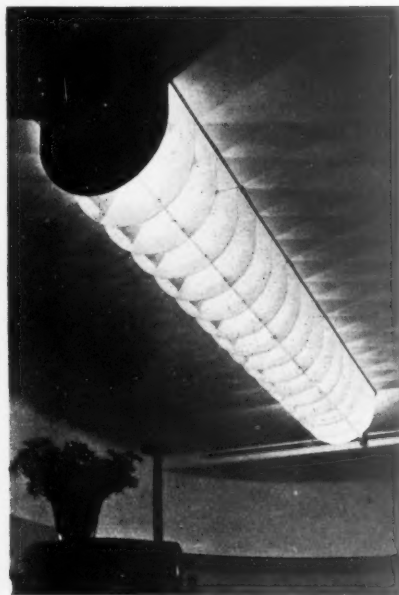
There are two types of despatch stations: (a) for pipes coming from below, and (b) for pipes overhead. Ample clearances must be given all round for cleaning; the dimensions given are minimum.

Vacuum Cleaning Plants

Very few shops have a fitted vacuum system, most rely on electric plugs and portable cleaners, but a shop other than a food store would be considered unfurnished without one or the other.

The size of pipes in the fitted system vary according to requirement, but about 2 in.-2½ in. can be taken as the average. In the majority of cases the cleaning is done out of shop hours, and need not be running in the interim, but where a barber's shop is included, a separate run of pipe will enable this section to be run throughout the day.

In both cases, the points should be placed about 15 ft.-20 ft. apart, and in the skirting. The benefit of the fitted system is the central collection of dust and more efficient cleaning because of the greater vacuum.



Simpson's, Piccadilly: designed by Joseph Emberton.

(1) Light fitting in the gift department. The department is small, and this fitting occupies the centre of the ceiling.

(2, 3 and 4) Light fitting used throughout the ground floor. This fitting was specially designed to combine the advantages of direct and indirect lighting. As can be seen from the photograph, the lamps cast practically no shadow. This is because there is a 100-watt bulb in the upper part of the lamp which reflects upwards and backwards on to the ceiling and walls through two concealed glass panels.

IN THAT CONTINGENCY

The following abstracts of inquiries represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for general application to all similar problems. [Crown Copyright Reserved.]

Cracking and Staining of Chimney Stack

Q AN inquiry was received regarding faults which had recently become apparent in a chimney stack of a house about 3½ years old. The stack contained one 9-in. by 9-in. flue from a small domestic boiler, and was built in brickwork with lime mortar joints and a cement rendering externally. The flue was parged in the usual way. Serious cracking had occurred in the walls of the stack, near the top; the parging had disintegrated and loosened in places; and brown stains had appeared on the wall and ceiling of the upper-floor room adjacent to the stack.

The boiler was kept alight both day and night. A small amount of household refuse was burned in the boiler, and it had been suggested that this was the cause of the troubles reported. The inquirer wished to have the views of the Station on the point, and to have advice on the remedial measures necessary to prevent further trouble if the stack were rebuilt.

Numerous cases of difficulty have been reported to the Station in connection with brick chimney stacks serving domestic boilers and other slow combustion stoves and ranges, and the occurrence of one or more of the following defects has been reported in each instance.

- (1) The formation of a black tarry deposit which flows down the flue to the stove.
- (2) The staining of plaster and roughcast in contact with the flue brickwork.
- (3) The disintegration of parging and jointing mortar.
- (4) Disintegration of the bricks.

Generally the stained and disintegrated plaster and mortar have an offensive smell.

Often the disintegration of the mortar joints has been accompanied by expansion, resulting in cracking of flues or of brickwork and in failure of renderings. An instance of this kind was described in a former Note (March, 1935).

The staining is often more noticeable near the roof and may, therefore, be thought to be the result of moisture penetration from the exterior, either through the brickwork or through defective flashings.

It has also been held that certain types of fuel are responsible for troubles of this kind. A review of the cases reported to the Station shows, however, that one or other of the defects may occur with any slow combustion stove—without regard to the type of fuel used—whilst the burning of household refuse may aggravate the troubles. Certain fuels should not, however, result in the formation of tarry deposits, though other defects may still occur.

Examination of examples of stained and disintegrated plaster has shown that the staining is caused by various substances produced by incomplete combustion of the fuel, and that disintegration of mortar is the result of sulphate attack. When any coal fuel is burned, water, tar, vapours and acid gases are formed. If house refuse, which may contain much moisture, is added to the fire, the amount of water vapour is increased, and fats may also be discharged into the flue.

In the case of an open fire, the combustion proceeds rapidly and a relatively high proportion of heat passes up the flue. Thus, the flue walls are generally warmed throughout their length and practically all water vapour and gases are discharged in the open air. The efficiency of slow combustion stoves is, however, often such that the temperature of the flue gases is but little higher than that of the air, and the flues, which are often exposed to the weather, remain cold for much of their length. Damping down the fires at night results in a further lowering of the flue temperature. In such cases condensation of tarry and fatty matter and of water vapour occurs on the inside of the flues, and the water dissolves the acid gases and other products of combustion. The porous parging and mortar joints absorb the discoloured acid-laden moisture, which readily attacks and disintegrates lime and cement mortar and stains plaster, bricks and other porous materials. The residue of the flue deposit flows down the flue walls. The salts formed by the attack on the mortar and bricks may crystallize in the bricks which then disintegrate.

The most serious effects of acid attack on mortar occur when hydraulic lime or Portland cement is present. Then the action of the sulphur acids on the cement or hydraulic lime can produce gross expansion of the mortar and serious cracking of the brickwork and applied renderings. (See previous Note.)

Disintegration of the mortar and failure of the brickwork may result in moisture penetration and an intensification of the trouble.

In designing new buildings it is suggested that flues serving slow combustion stoves should be lined with an impervious material. Second quality stoneware pipes are considered suitable and are not unduly expensive, but the cement mortar joints should be fine and dense, to reduce the risk of acid attack. Provision should be made for the collection and removal of the tarry deposit at the base of the flue.

In existing structures where severe expansion and cracking have occurred, reconstruction of the flue on the lines suggested above is the only method of repair which can be regarded as having any degree of permanence. It might, however, be possible in

the case of a straight flue, to lower a length of flue piping from the top and to make the necessary connections without complete demolition of the stack. Such a method would no doubt protect the brickwork from further damage for some years, and could be easily renewed when necessary. If this procedure were adopted, it would be necessary to avoid forming cavities in which soot could collect.

When staining only has occurred, and there are no indications of severe damage to the parging or brickwork, it may be sufficient to re-plaster out of contact with the flue brickwork and to take precautions against the formation of condensation.

In the latter connection it will be beneficial to burn dry fuel only, to avoid placing any damp or fatty refuse on the fire, and to avoid damping down for long periods. Any increase in thermal insulation which can reasonably be added to the brickwork surrounding the flue will also decrease the risk of condensation in the flue.

Trowelling a Granolithic Floor

Q AN architect commented on the fact that granolithic floor finishes are sometimes laid by means of screeds and striking board, and then left for a period varying from six to twenty-four hours before finishing with the trowel. The inquirer pointed out that the trowelling must take place a considerable time after the set of the cement, and requested an opinion as to the effect of this practice on the ultimate quality of the floor.

The proper time for trowelling a granite concrete floor depends upon a number of factors, such as the suction of the sub-floor, temperature, humidity, proportion of fines in the aggregate, and proportion of water used.

As far as is known, the best method of laying a granolithic floor on a structural floor which has hardened, is to use a fairly stiff mix after previously grouting the structural floor with cement or cement-sand. If a fairly stiff mix is used, and the aggregate is clean, the floor can be trowelled and finished within a few hours. The fact that night temperatures are lower than day often makes it possible with a floor laid towards evening to finish next day in the early morning. If a lapse of more than 18 hours is found necessary, excepting from cold weather, which actually should be avoided for such work, it may indicate that dusty aggregate or an excess of water has been used. When such a floor is finally trowelled a large amount of laitance is worked to the surface, and the finished floor shows inferior wearing properties, being prone to dusting. Specially bad effects are produced by the practice of sprinkling dry cement to mop up pools of water on the setting floor which are taking too long to dry.

It is true that trowelling is generally done after the initial set of the cement has taken place, but this does not seriously affect the strength of the concrete provided the action has not gone too far, and the dangers of an excessive period elapsing before finishing will generally be obviated by the use of clean well graded aggregate and not too much mixing water. In all cases excessive trowelling

should be avoided as tending to increase the liability to dusting.

Efflorescence on Brickwork

Numerous inquiries reach the Building Research Station each spring concerning the treatment of existing buildings defaced by efflorescence.

When walls saturated with the winter's rain begin to dry out in the spring, it is generally found that "salting" or efflorescence troubles tend to increase. A conspicuous form of efflorescence is the white deposit which appears on the external surface of brickwork, more particularly recently constructed brickwork.

Previous notes in this series have described precautions which may be taken to reduce the risk of efflorescence in a new building; in brief, these have been that bricks of low soluble salt content should be used, and a fairly open-textured lime-cement-sand mortar employed in preference to a rich cement mix. With existing buildings, no method is known of preventing its occurrence other than by suitable choice of materials as suggested above. The treatment to apply (if no damage has been caused to the bricks by the efflorescence) is to brush the surface clean after a dry spell when the deposit is at a maximum. This treatment must be repeated periodically, as further salts are brought to the surface, and in time the trouble will disappear. Exposure to rain or washing with water will have the effect of bringing out the salts more quickly, and the latter treatment may be usefully alternated with brushing.

Planning for Quiet

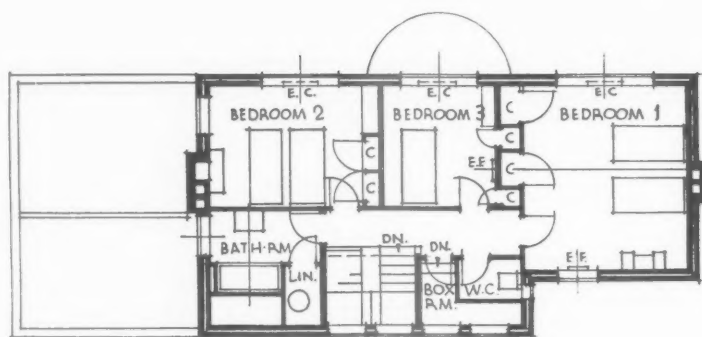
Mr. J. C. Morreau of the Building Research Station, in the course of a lecture at the Science and Building Exhibition at the Building Centre, said there was no doubt that, in the majority of cases, an adequate standard of quiet could be satisfactorily obtained only in conjunction with good planning. With faulty planning, it was likely that, at best, very expensive construction would be necessary to obtain the desired results, and it might well be that even the most effective structural methods known at present would prove inadequate. In fact, the prevention of transmission of noise by structural design was so difficult that that should at present be regarded as a last resort to be considered only after every other possible precaution had been taken. The architect should give consideration at the early stages to the possibility of disposing the buildings on the site, of arranging the parts of a building in relation to one another and of placing mechanical equipment and services so that those rooms where quiet was particularly needed were as remote as possible from inevitable sources of noise which existed in or about nearly every building.

Against external noise, the only satisfactory structural defence was the provision of fixed double windows and special ventilation. Therefore, every care was necessary to avoid bedrooms, classrooms, sickrooms, council chambers, etc., overlooking directly a noisy street or playground. Such rooms should be placed on a quiet side, or buildings should be set well back from the road. Setting back reduces inter-reflection between opposite sides of a narrow street.

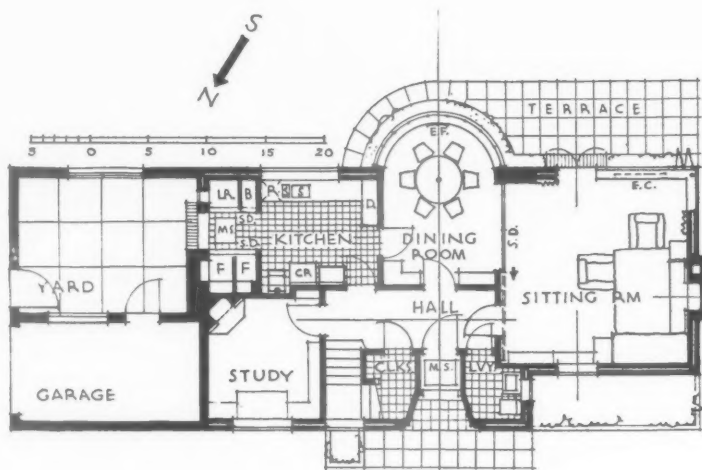
HOUSE AT CUFFLEY, HERTS.:



The main front.



FIRST FLOOR PLAN



GROUND FLOOR PLAN

BY CLIFFORD E. CULPIN (CULPIN AND SON)



REFERENCES

- B. Brooms.
- D. Dresser.
- E.C. Electrical Convecter.
- E.F. Electric Fire.
- F. Fuel Stores.
- M.S. Mat Sinking.
- R. Refrigerator under.
- S.D. Sliding Doors.

PROBLEM—A house as modern in feeling as possible within the restrictions of the pitched roof compulsory on the estate.

PLAN—Traffic is increasing on the access road, and rooms were therefore kept as much as possible to the south and west.

CONSTRUCTION—Cavity walls with steel joists and columns to the living room. Roof is of brown hand-made tiles; walls are of cement washed rustic flintons, with ivory finish. Windows are standard steel casements; and one sliding and folding.

FINISHES—Ceilings and walls in living rooms are distempred plaster, and furniture, doors and floors are of waxed oak.

Kitchen is buff quarry-tiled with painted walls, built-in fittings and stainless steel sink and board. The tiled bathroom has a semi-sunk bath. Fireplaces are marble with stainless steel rim.

SERVICES—Independent boiler and electric heaters under window boards.

COST—Contract price, £1,270 inclusive. Price per cubic foot, 1s. 1d.

The photographs show the garden front and the dining room as seen from the sitting room. For a list of general and sub-contractors see page 583.

THE ANGEL HOTEL, WOOLHAMPTON



DESIGNED

BY

BIRDWOOD

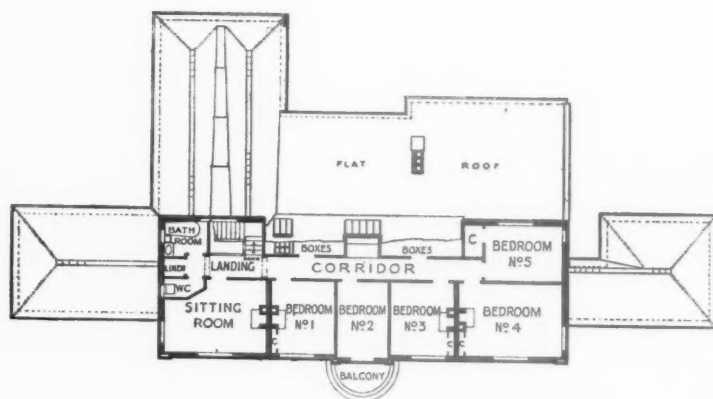
WILLCOCKS

SITE—At Woolhampton, Berkshire.

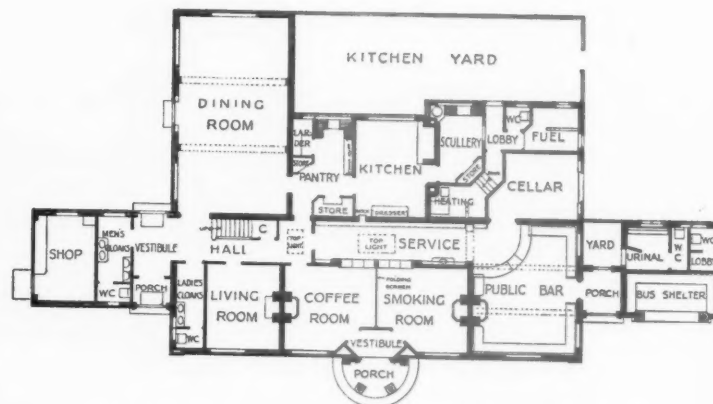
CONSTRUCTION—External walls are faced with sand-faced, hand-made multi-coloured bricks; and the columns, architrave, frieze and cornice to the main porch and the dressings to the three entrances on the principal front are in artificial stone. Roofs are covered with old tiles, and windows are steel.

INTERNAL FINISH—The floors of the principal rooms are finished with wood blocks, and the walls of the public bar, smoking room, coffee room and service have panelled wood dadoes. Internal woodwork is stained dark brown.

The photographs show: above, the entrance front; below, dining-room and public bar. For list of general and sub-contractors see page 583.

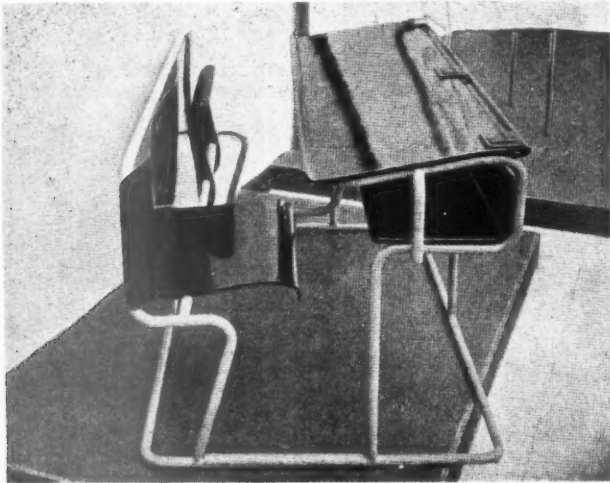


FIRST FLOOR PLAN



GROUND FLOOR PLAN





A two-seater school desk designed by André Lurçat: made entirely of metal, and finished in blue and black lacquer. (From the "American Architect.")

PERIODICALS FEBRUARY ANTHOLOGY

ARGENTINE

Revista de Arquitectura

(Monthly, \$15 per annum. Lavalle 310, Buenos Aires)

JANUARY. A small private house by Alberto Prebitsch (see illustration overleaf). The ground floor consists only of a small hall, staircase and tradesmen's entrance, the rest of the plan above being normal, save that the maids' bedroom, bathroom, and w.c. all open directly off the kitchen. Eight pages are devoted to Mendelsohn and Chermayeff's house at Chalfont St. Giles.

AMERICA

American Architect

(Monthly, \$1.00. 572 Madison Avenue, New York)

February. A portfolio of English architecture—work by Tecton, Mendelsohn and Chermayeff, Maxwell Fry, Connell, Ward and Lucas, Oliver Hill, Frederick Gibberd, Marshall Sisson and others, with a foreword

by B. Lubetkin; the second instalment of Sir Raymond Unwin's articles on Housing and Planning; the planning and essential dimensions of staircases. Unqualified approval of Dr. Gropius's Harvard appointment.

Architectural Forum

(Monthly, \$1.00. 135 East 42nd Street, New York)

February. The first of a series on planning, this one dealing quite fully with petrol stations. The results of a competition for a pre-fabricated house for a working-class family. Plastics in architecture, and the continuation of Albert Mayer's articles on the planning of green belts.

Architectural Record

(Monthly, 50 cents. 115 West 40th Street, New York)

February. Cinemas, an excellent article by Ben Schlanger, with useful data on sight lines and their influence on seat arrangement. Current architecture, including a New York house by William Lescaze. Technical news and an article

on industrial building by Stamo Papadaki, well illustrated, but not enough plans.

Pencil Points

(Monthly, 50 cents. 330 West 42nd Street, New York)

February. The work of Royal Barry Wills, a "small house" architect who designs mainly in the traditional manner, but with a good deal of sympathy for his material. The comparative details series deals with porches and there are also the usual notes on sketching and rendering.

FRANCE

L'Architecture

(Monthly, 8 frs. 51 Rue des Ecoles, Paris 5^e)

February. Designs for the pavilions at the 1937 Paris Exhibition, including those for the regional pavilions of France, peculiarly local and sometimes unsuccessful.

La Technique des Travaux

(Monthly, 10 frs. 54 Rue de Clichy, Paris 9^e)

February. A new school at Zürich by Roland Rohn, the Broadcasting Building at Brussels by J. Diongrie, an open-air swimming pool and the Triborough Bridge crossing in New York, a modified clover-leaf design for a T-junction.

GERMANY

Der Baumeister

(Monthly, 3m. Georg Callwey, Munich)

February. A well laid out housing scheme in Augsburg by the borough architect, traditional country houses by Sep Ruf.

Baukunst und Städtebau

(Monthly, 1m. 90. Bauwelt Verlag, Berlin, S.W.68)

February. Two country houses by Hans Köhler, traditional elevations with strong eaves projections; good plans. Two flat blocks by Hans Schumacher.

Bauwelt

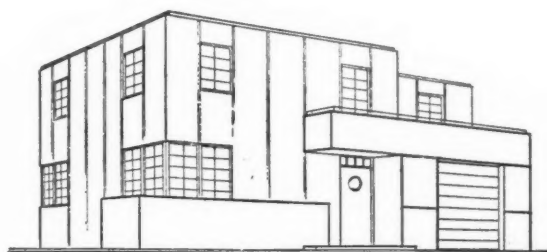
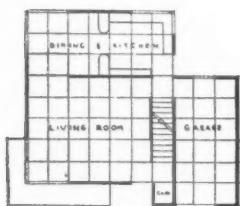
(Weekly, 90 pf. Ullstein Verlag, Berlin, S.W.68)

February 4. Two timber houses, one by Georg Holzbauer.

February 11. Two small houses of no particular merit.

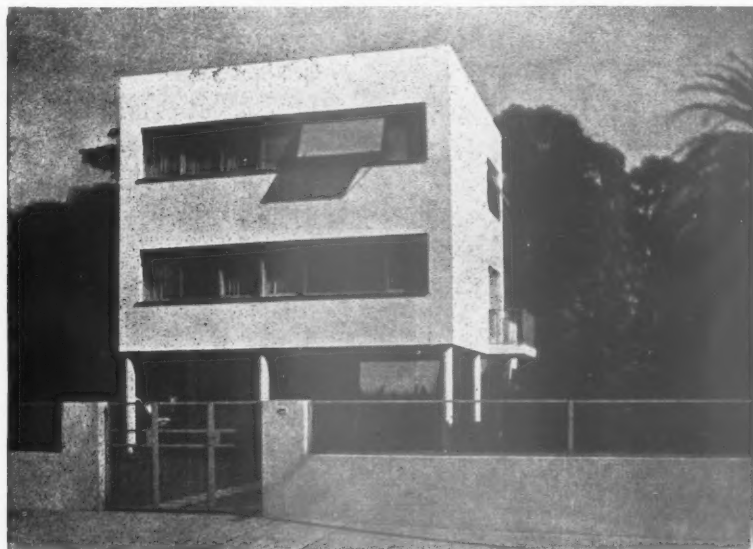
February 18. The work of Paul Baumgarten; competition results for a Munich street layout.

February 25. Leipzig Fair review and the new Air Ministry building in Berlin.



The prize-winning design, by Charles Henry and Arthur Henry Schreiber, in a recent American pre-fabricated house competition. The garage on the right of the plan, and

the bedroom over it, are intended as additions to be made when necessary, the standard plan having only two bedrooms on the first floor. (From the "Architectural Forum.")



*A private house in Buenos Aires. Architect: Alberto Prebitsch.
(From "Revista de Arquitectura.")*

Deutsche Bauzeitung

(Weekly, 3 m. 40 per month. Beuthstrasse 6-8, Berlin, S.W.19)

February 3. An eight-page illustrated article on lighting by Max Müller, with some useful tables. Recent work in Oslo and its suburbs, including an excellent week-end house in timber by Esben Poulsen.

February 10. A new school by Ernst Schwaderer, built near a new housing scheme: ground-floor plan only shown.

February 17. The planning of office blocks and open spaces for trams, buses, etc., an article by Georg Müller.

February 24. New methods of construction and equipment shown at the Leipzig Fair. Current work in Finland.

Innen-Dekoration

(Monthly, 2 m. 50. Alexander Koch, Neckarstrasse 121, Stuttgart)

February. A country house by J. Groag (no plans) and recent interior decoration, including some light fittings and pottery.

Moderne Bauformen

(Monthly, 3 m. Julius Hoffmann, Stuttgart)

February. The second instalment of an article on the planning and planting of gardens: three houses in Stuttgart by Hans Eitel.

HOLLAND

Bouwkundig Weekblad Architectura

(Weekly, 15 florins per annum. Weteringshaas 102, Amsterdam)

February 6. A regional plan for Amsterdam.

February 13. A large hangar and workshop for the Royal Dutch Air Lines at the Schiphol, by P. C. Tirion.

February 20. School work by students, various schemes for an hotel.

February 27. "What is the Amenities Commission doing?" a plaint that the Dutch version of our C.P.R.E. is not as active as it might be.

de 8 en opbouw

(Fortnightly, 30 cents. Amstel 22, Amsterdam C.)

No. 3. The lighting of fairs and towns for public celebrations.

No. 4. Some comments, not all favourable, on the Haarlem Town Hall design.

ITALY

Architettura

(Monthly, 18 lire. Via Palermo 10, Milan)

February. A villa in Naples, interior work at the Milan Exhibition, an airport project and various competition results.

SWEDEN

Boet

(Monthly, 1 kr. 75. Kristinelundsgatan 11, Gothenburg)

February. Beds and bedrooms, by Hans Rabén.

Form

(Ten issues for 10 kronor per annum. Nybrogatan 7, Stockholm)

No. 2. The Milan Exhibition, current French glass design and an article on Design in England by Alec Davis.

SWITZERLAND

Schweizerische Bauzeitung

(Weekly, 1 fr. Dianastrasse 5, Zürich)

February 6. Mainly civil engineering.

February 13. Exhibition design, some historical notes leading up to the Zürich Exhibition of 1939.

February 20. Mainly civil engineering.

February 27. Competition results and the Triborough Bridge crossing, New York.

Werk

(Monthly, 3 frs. 50. Mühlebachstrasse 54, Zürich)

February. Almost entirely paintings, woodcuts and reproductions of engravings.

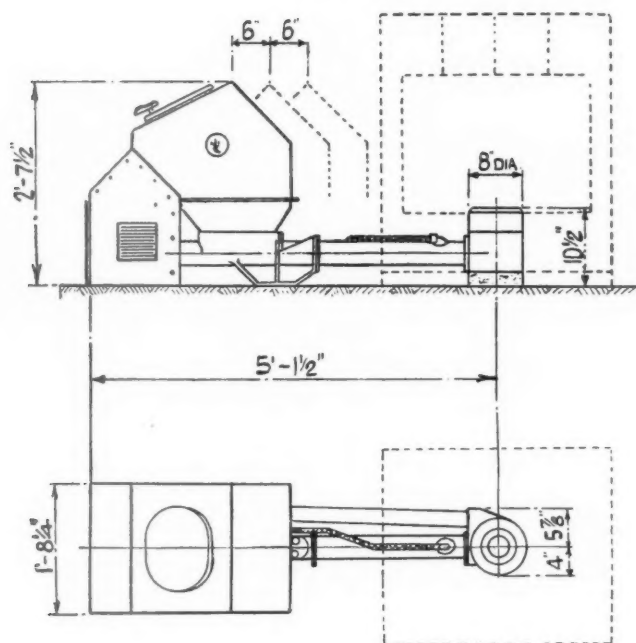
Brick Industry

In an address which he gave at a luncheon of the South-Eastern Federation of the Building and Engineering Brick Trade of England and Wales at the Holborn Restaurant, Mr. T. P. Bennett, F.R.I.B.A., made one or two important suggestions for the consideration of the brickmaking industry.

He said that his first difficulty in using bricks, and he had taken a very great interest in using them, was to find out what those bricks were going to look like when put into the work. He was usually presented with eight or ten bricks which had been scraped and cleaned up and which did not look at all like the bricks he afterwards received. It was impossible for a busy man to travel long distances to look at buildings to see particular kinds of bricks, and he suggested that if the individuality of brick-makers were sunk to a very large extent and they could find some area where they could build a reasonably sized piece of wall, it would enable people like himself to see the effect of brickwork as brickwork. He tried to use different bricks in different buildings and in different localities. The present system of producing samples was not a good method of marketing.

The brickmaking industry in this country had a serious competitor in Holland. It was useless to say "Buy British" if there was a commodity on the market which was just as good. Dutch bricks in many cases were irreproachable as to quality and colour, while the deliveries were good, and they managed to sell appreciably below that of a comparable English facing brick. As a layman, he felt that in some of the smaller brickfields the difference in cost could easily be recovered by more efficient organization. To get the price right was important. Artificial stone was supplied in a big range of prices. They were also competing to some extent with glazed terra cotta and with concrete bricks and other materials which could be used for facing. Brickwork in the British climate had enormous advantages. It looked well when the weather had got at it, and it looked well in London and other big cities where it was extremely difficult to maintain the texture of the building in a heavily smoke-laden atmosphere and all the bad agents which tended to make buildings look dull and uninteresting. The bricks stood up against those conditions almost better than any other material. He also suggested that the use of different kinds of pointing was a matter which the brickmaker might study to a greater extent than he did.

A vote of thanks was passed to the speaker on the proposition of Mr. Horace Boot (London), who said that brickmakers in this country would undoubtedly compete more against the Dutch if there was a sufficient demand for that type of bricks. Conditions of labour, social welfare schemes and taxation made it very difficult in this country to compete successfully against the foreigner in the matter of price, and if the duties on imported bricks were reintroduced they would be able to compete very much more easily.



from April 12 to April 17. The exhibits will include examples of current designs for wireless cabinets, electrical equipment, jewellery, toys and other subjects, all chosen to show the ways in which America uses bakelite and the other synthetic resins in the production of articles for everyday use.

Admission is by invitation only, but tickets will be sent on application to Messrs. Synplas, whose address is given at the end of these notes.

Welding Experts, Forward!

In order to stimulate an interest in welding, the James F. Lincoln Arc Welding Foundation of America, who are allied with the Lincoln Electric Company of Welwyn, are offering no fewer than \$200,000 in prizes for papers "dealing with arc welding as a primary process of manufacture, fabrication or construction in eleven major divisions of industry." The "major divisions" of most interest to readers of this paper are probably "Structural" and "Furniture and Fittings." In these two fields the prize money adds up to the respectable total of \$24,700, with the additional possibility of winning the principal prize for the whole competition—\$13,700. The principles on which all the prizes are to be awarded cannot be fully set out here, but for those who always fear the worst, it is perhaps worth adding that there are 178 "honourable mention" prizes of \$100 each.

So if any of our more enterprising structural engineers or furniture designers feel that their talents are being hidden under a bushel, they might do a lot worse than think about this competition. There is plenty of time, for papers have got to be in by June 1, 1938. Conditions are obtainable from the Foundation's Secretary, Mr. A. F. Davis, whose address is given at the end of these notes. I have six quarto pages of information about the competition in front of me, and copies are probably obtainable from the Lincoln Electric at Welwyn if anybody wants a little more information before writing to America for a full set of conditions. So far as I can discover, there is no deposit to be paid.

Brass Pressings

From the Copper Development Association comes a new booklet on brass pressings—not, at first glance, a really entrancing subject for the architect who, when he uses pressings at all, generally accepts them ready-made as part of some larger unit. But there is plenty of interesting information in it for anyone who wants to design even so simple a thing as an ash tray, and plenty of illustrations to show the sort of thing that can be pressed from brass and how.

That the booklet is well-produced goes without saying, for, ever since they started in 1933, the C.D.A. have been publishing booklets (this, I see, is number 26) which tell a straightforward story in an honest sort of way. Perhaps *because* they've got a good-sized trumpet to blow, they seem prepared to blow it fairly *piano*; it may be a libellous statement, but I believe that Mr. Neave and his colleagues could be made to admit that there are purposes for which

TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

Small Automatic Stokers

MESSRS. Ashwell and Nesbit have just introduced a new small automatic stoker under the name of "Baby Fireman." Designed mainly for small houses, the new model is exactly the same in principle as the larger machines which this firm has made for some time, save that the heat output is 90,000 B.T.U., and the coal consumption only 12 lb. an hour as a maximum. Running costs, fuel included, are round about 1d. an hour with a bituminous coal at 30s. a ton.

The layout is quite straightforward, with the usual worm feed for the coal and a duct for the air supply at the side, the fan being driven direct by an extension of the motor spindle, while the gear-box drive is by belt. Overall dimensions, as can be seen from the diagram at the head of these notes, have been kept reasonably small for a stoker of this particular type, and the hopper capacity is 150 lb., so that refuelling should only be necessary twice in 24 hours at the very worst, quite possibly only once in the same period during the summer.

The price is £57 10s. with controls, or £67 supplied and fixed.

The Fly Nuisance

I have not the faintest idea whether or not American flies are any bigger or fiercer than they are in Europe, but none the less, flies seem to be accepted as one of the less pleasant forms of rural life, and the advertisements of window manufacturers and woven wire merchants make a far greater fuss about them than they ever do over here.

Last month's *Architectural Record*, however describes the high water-mark of efficient fly destruction, for the National Screen Company of Chicago have produced an electrified screen which does the job quite automatically, and with a minimum of current consumption.

This device was apparently produced for a Government-run electrified farm, and consists of a screen of parallel wires about half-an-inch apart, and insulated from the window or door frame. Every other wire is connected to a small transformer which steps the voltage up to 1,450, at the same time keeping the current down to a maximum of a few milliamperes. There is, therefore, always a considerable potential between adjacent wires, and the unsuspecting fly breaks down the air resistance between them and—fizz—"the insect is thus burned by the electric arc and drops into a receptacle." No statistics are given on the slaughter carried out by this remarkable piece of ingenuity, or on the capacity of the receptacle, but the results should compare well with even the most vice-regal battue.

As the amount of current is kept low, the screens are not a danger to human beings, though they may cause slight burns: the report adds that they should be placed out of reach of children.

An Exhibition of Plastics

Synplas, Ltd., a firm of plastic moulding specialists, are organising an exhibition of typical American plastic mouldings, and these will be on show at Dorland House

copper is definitely *not* suitable. A definite break with the old traditions of advertising, but a break which leads, I am convinced, to the only sort of information bureau worth something to the architect.

Addresses:

Ashwell and Nesbit, Ltd., Barkby Road, Leicester, and 12 Great James Street, London, W.C.1.

Synplas, Ltd., Minerva Road, London, N.W.10.

A. F. Davis, The James F. Lincoln Arc Welding Foundation, P.O. Box 5728, Cleveland, Ohio, U.S.A.

The Copper Development Association, Thames House, Millbank, London, S.W.1.

LAW REPORT

QUANTITY SURVEYOR'S CLAIM

Hale v. Wiltshire School of Flying, Ltd.—Botham and Brown, third parties—King's Bench Division. Before Mr. Justice Atkinson.

THIS was an action by Mr. Harry Barnes Hale, a quantity surveyor, carrying on business as Hale and Son at 6 Queen Anne's Gate, Westminster, S.W.1, to recover from the defendants, the Wiltshire School of Flying, Ltd., of High Post Aerodrome, Middle Woodford, near Salisbury, £139 odd for professional services rendered and money expended on defendants' behalf as their quantity surveyor.

The defendants denied liability, and brought in as third parties, Botham and Brown, architects, of Chipper Lane, Salisbury.

The case for the defendants was that they had purchased land, and were minded to erect an hotel upon it to accommodate people flying over the district, and that in September, 1935, they instructed Botham and Brown to prepare, and they did prepare, plans, working drawings and specifications for the building, and that it was an express term and condition of the agreement that the architects should design a building which could be erected at a cost not exceeding £3,500, and that in the event of their failing to design such a building, defendants should incur no liability by reason of any action taken or work done by the said architects in connection with the proposed building. In or about the month of October, 1935, the architects, by telephone, asked defendants for authority to employ the plaintiff, Mr. Hale, as quantity surveyor, to prepare bills of quantities in connection with the building, and thereupon Mr. James Edward Doran-Webb, the managing director of the defendant company, acting on their behalf, telephoned the architects to employ the plaintiff, which authority the defendants alleged was given, subject to the condition that the building designed by the architect would be built at a cost not exceeding £3,500. Save in that way, the architects were never authorized by defendants to employ the plaintiff, and they had never authorized or requested the plaintiff to render any service or expend money on their behalf.

They said that the architects had failed to design a building which could be built for £3,500, or at any price nearly so small; the lowest tender obtained for the building designed by the architects was £4,959, and accordingly, defendants, by a letter dated January 27, 1936, as they alleged they were entitled to do, rejected the architects' plans. In these circumstances

the defendants denied that they were indebted to the plaintiff in any sum. In the alternative, defendants pleaded that, if contrary to that contention it was held that they were indebted to the plaintiff for services rendered or for money expended on their behalf, they would allege that bills of charges for preparing the bills of quantities were excessive and unreasonable, and/or that the sum due to the plaintiff should be calculated on the sum of £3,500, and no more.

As against the third parties, Botham and Brown, the defendants said that they, by making the request in October, 1935, for authority to employ the plaintiff to prepare the bills of quantities, had implied by warranty that the building could be built at a cost of £3,500, and defendants, relying on and induced by that implied warranty, authorized the architects to employ the plaintiff. Further, defendants alleged that it was the duty of the architects before instructing the plaintiff to prepare the bills of quantities to have informed him of the conditions of the agreement between themselves and the defendants, and that when they requested defendants to give the authority, they knew or should have known that the proposed building could not be built except at a cost exceeding £3,500. In these circumstances the defendants alleged that the architects had committed a breach of their duty, and that if it were held that the plaintiff was entitled to succeed on his claim, defendants were entitled to recover any sum found to be due to the plaintiff from the architects, together with costs.

Botham and Brown challenged this, and pleaded that there was no limit to price, and no such agreement as alleged, and they counter-claimed for £196 fees alleged to be due to them.

Messrs. Brown and Botham further denied that it was a condition of the agreement between themselves and defendants that they should design a building which could be built at a cost not exceeding £3,500, or that in the event of their failing to design such a building, the defendants should incur no liability. Their case was that they were to make an approximate estimate of the cost of the building, and in the event of the design being accepted, that they should prepare plans, working drawings, etc., and that they should be engaged as the architects and paid fees according to the R.I.B.A. scale and rules. They alleged that the preliminary designs were accepted and that they were instructed to prepare plans and bills of quantities, etc. They pleaded that the building designed by them could be erected for £3,500, and that the increased cost was caused solely by alterations and additions made by defendants, after the preliminary design had been accepted.

Judgment

His lordship, in giving judgment, reviewed at length the facts of the case. He said it appeared that the defendants told Mr. Brown, of Botham and Brown, that they wanted the building as cheaply as possible, and Mr. Brown drew up plans. After that, it was necessary to employ a quantity surveyor, and this was mentioned to Mr. Doran-Webb. Mr. Webb agreed, and Mr. Hale was duly instructed, and he was given the working drawings. He had been told that the price was to be £3,000 to £3,500, and Mr. Hale immediately realized that that price was too low, and Mr. Hale had said that he told Mr. Brown that it was an

under-estimate. Mr. Brown then had fair warning that the estimate was too low.

When Mr. Hale got out the quantities he became more and more uneasy, and he was satisfied that it was a very very serious under-estimate of the cost of the building, and he warned Mr. Brown again. Then, by pure chance, Mr. Hale met Mr. Webb, and he gave him the same warning as he had given Mr. Brown. There were discussions and certain alterations were made in the plans. After the question of the site had been discussed and changed, tenders were obtained. The lowest tender was £5,533, the four others being more, the highest being £5,995. The lowest tender was some £2,000 more than Mr. Brown's maximum figure. Mr. Webb wanted the estimate got down to £4,000, saying he thought that might be all right. Variations were again made, and tenders were again called for. Eventually there was a tender for £4,959. Later, the company decided that they could not continue the matter, as the estimate was too high. Finally, there was a declaration that the matter was off.

Proceeding, his lordship said Mr. Brown could only be entitled to his fees if the building could be erected for £3,500. It could not be. His lordship was satisfied that the estimate of Mr. Brown was clearly wrong. The building to be erected was of an unusual character. His lordship thought that Mr. Brown priced the building on a wrong basis in his estimate, and he was satisfied that there was a error both in cubing and taking it at one shilling instead of at a higher figure. The estimate was a neglectful and unskilful one, and never ought to have been given. Mr. Brown never gave warning to Mr. Webb, and under all the circumstances of the case, his lordship held that Mr. Brown was not entitled to his fees. Mr. Hale was entitled to recover his fees from the defendants. Mr. Hale was entitled to judgment for £139, and defendants were entitled to recover that money and the costs they would have to pay Mr. Hale from Mr. Brown. Defendants would also be entitled to their costs from Mr. Brown. The defendants would also be entitled to judgment against Mr. Brown for £139 and costs. Judgment would be entered for the defendants on Mr. Brown's counter-claim with costs.

THE BUILDINGS ILLUSTRATED

NEW BURTON BANK, MILL HILL SCHOOL, N.W. (pages 560-562). The general contractors were Godson and Son, who were also responsible for the glass, gas-fitting, plaster, joinery and tiling. The principal sub-contractors and suppliers included: Ruberoid Co., dampcourses; Limmer and Trinidad Asphalt Co., asphalt and special roofings; Northwick Brick Co., bricks and roof tiles; Portland Stone, stone; Cowley Concrete Co., artificial stone; Dawnays, Ltd., structural steel; Helical Bar and Engineering Co., fireproof construction; Hollis Brothers, woodblock flooring; G. N. Haden, central heating and boilers; H. A. Oakeshott, stoves, grates, gas fixtures and mantels; Benham and Sons, cooking apparatus; Duncan Watson & Co., electric wiring and bells; Troughton and Young, electric light fixtures; Scull & Co., plumbing; Doulton & Co., sanitary fittings; Yannedis, Ltd., door

furniture fitting; metal work

HOUSE generators; printing; rustic; Lamb; lux; boiler; and; electr; fires; Ltd.; Ltd.

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LONDON

BERRY is to on the BETHE Green Street CAM erect at a ISLIN B.C. archi tion Grov LAM obta exten NOR enar Hospi POP tricu in G POR tene at a SHO is to obta sou Sou £54 Com

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furniture, window furniture and cloakroom fittings; Crittall Manufacturing Co., casements (metal); Adrian Stokes & Co., metalwork; Frank Mortimer, Ltd., stonework; P. G. Bentham, stonework carver.

HOUSE AT CUFFLEY (pages 576-577). The general contractor was T. Fawcett and the principal sub-contractors and suppliers included: London Brick Co., Phorpres and rustic Flettons; Mathew T. Shaw, structural steel (for corner window); W. T. Lamb and Sons, tiles and grates; Electrolux, refrigerator; National Radiator Co., boilers; Flay, electric wiring; Troughton and Young, and Hailwood and Ackroyd, electric light fixtures; Bratt Colbran & Co., fires; Thermidair, convectors; Adamasz, Ltd., sanitary fittings; James Gibbons, Ltd., door furniture; Crittall Manufacturing

Co., Ltd., casements; Venesta, flush doors; Fenning & Co., fireplaces; Parkinsons (Wall Tiling), Ltd., tiling; Carter & Co., tiles in bathroom.

THE ANGEL HOTEL, WOOLHAMPTON, BERKSHIRE (page 578). The general contractors were Cooke Brothers and the principal contractors and suppliers included: W. W. Hall, facing bricks; Strenic Construction Co., artificial stonework; Stourbridge Glazed Brick and Fireclay Co., Ltd., and Joyes, Ltd., sanitary fittings; Bratt Colbran & Co. and Elliott's West Howe Pottery, fireplaces; Callas Sons and May, heating installation; May, Hutt and Hobbs, electric light installation; Tuke and Bell, Ltd., septic tank installation; Henry Hope and Sons, Ltd., steel casements; J. Girdler, balcony railing.

WARWICK. Extensions. The Warwickshire C.C. recommends the erection of new buildings in the neighbourhood of Rugby to replace the accommodation for 100 beds in the existing infirmary and to accommodate in addition 80 male and female aged and infirm cases, with a nurses' home, officers' and administrative quarters, at a cost of about £135,000.

WARWICK. Inn. Atkinson's Brewery Ltd., are to erect a new inn to be named "The Three Maypoles" at Dickens Heath Road, Shirley, Warwickshire.

WOLVERHAMPTON. Mortuary, etc. The Wolverhampton Corporation is to prepare plans for a new mortuary and extensions of the operating theatre department at the institution.

NORTHERN COUNTIES

NORTH RIDING. Elementary School. The North Riding Education Committee is to provide a new senior public elementary school in the parish of Scalby, for 320 children.

REDCAR. Houses, etc. Plans passed by the Redcar Corporation: Eight houses, Richmond Road, Mr. T. Young; six houses, Raby Road, Messrs. G. Darcy and Son; eight houses, Sandringham Road, Mr. F. Bainbridge; 42 houses, Broadway East, Sandsend Road, Kettlewell Avenue, Mr. R. Cowe.

SHIPLEY. Houses. Plans passed by the Shipley U.D.C.: 36 houses, Gaisby Lane, Mr. A. Greenwood; 30 houses, Low Ash Drive, Low Ash Grove, Low Ash Estate Co.

SHIPLEY. Houses, etc. The Shipley U.D.C. is to obtain tenders for the erection of 80 houses and 24 bungalows at the Crag End Estate and 50 houses at the West Royds Estate.

TODMORDEN. School. The Todmorden Education Committee has obtained land at Walsden for the erection of an elementary school.

TYNEMOUTH. Library. The Tynemouth Corporation is to prepare a scheme for the erection of a new public library.

WALLASEY. Hospital. The Wallasey Corporation has obtained sanction to borrow £17,200, for the erection of the new maternity hospital at Mill Lane.

YORK. Social Hall. The York Corporation has asked the City engineer to prepare a plan of a social hall for the Water Lane Estate.

YORK. Swimming Pool, etc. The York Corporation recommends a scheme, prepared by the City engineer, for the provision of a swimming pool, and two Zotofoam baths, at an estimated cost of £61,000, at Skeldergate.

WALES

CARDIFF. Houses, etc. Plans passed by the Cardiff Corporation: Block of flats, Penhill and Llandaff Roads, Mr. Charles Hoare; 20 houses, Insole Grove East, Mr. J. H. Ferry.

PENRITH. Houses. The Penrith U.D.C. has approved plans by the surveyor for the erection of 34 houses.

SWANSEA. Houses. Plans passed by the Swansea Corporation: Seven houses, Pentremalwed Road and Morfydd Street, Messrs. Walters and Johns; cinema, High Street, Messrs. J. Owen Bond and Son; 16 houses, St. Donat's Avenue, Messrs. T. and G. Spragg; school, Heol-y-gors, Education Committee; four houses, Pentregethin Road, Messrs. S. Weaver and Son; four houses, Cwmbach Road, Cockett, Mr. Wm. Evans.

SWANSEA. Swimming Baths. The Swansea Corporation has approved plans by the Borough architect for the construction of two swimming baths (one covered and the other open-air) on a site adjoining St. Matthew's Church, at an estimated cost of £22,700.

SWANSEA. Hospital. The Swansea Corporation has included the sum of £240,000 for the provision of a general hospital, in which will be included a maternity hospital, in the capital expenditure programme for the next five years.

SWANSEA. Houses, etc. Plans passed by the Swansea Corporation: 23 houses, St. Donat's Avenue, Glangyrafon Road, Messrs. T. and G. Spragg; 12 houses, Mansel Road, Messrs. Jones and Evans; 18 houses, Mynydd-newydd Road, Mr. H. Wyman.

SWANSEA. Houses. The Swansea Corporation is, by direct labour, to erect 198 houses on the Townhill estate at a cost of £68,515, and 160 on the Gelligrafog estate at a cost of £59,034.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICT (15 MILES RADIUS)

BERMONDSEY. Flats, etc. The Bermondsey B.C. is to erect 67 flats, four shops and five cottages on the Kipling Street area, at a cost of £51,111.

BETHNAL GREEN. Tenements. The Bethnal Green B.C. is to erect tenements on the Delta Street area, at a cost of £22,000.

CAMBERWELL. Tenements. The L.C.C. is to erect 75 tenements on the Rill Street area, at a cost of £44,150.

ISLINGTON. Electricity Depot. The Islington B.C. has appointed Mr. E. C. P. Monson as architect for the provision of works accommodation for the electricity department in Eden Grove, at an estimated cost of £4,590.

LAMBETH. Extensions. The Lambeth B.C. has obtained sanction to borrow £83,400 for extensions at the town hall at Brixton.

NORWOOD. Extensions. The governors are to enlarge the Norwood and District Cottage Hospital, Hermitage Road.

POPLAR. Extensions. The Poplar B.C. Electricity Committee is to extend the switch house in Glaucus Street, at a cost of £52,241.

POPLAR. Tenements. The L.C.C. is to erect tenements on the Dock Cottage area, Poplar, at a cost of £63,440.

SHOREDITCH. Extensions. The Shoreditch B.C. is to enlarge the town hall, sanction having been obtained to borrow £36,927 for this purpose.

SOUTHWARK. Clearance and Re-housing. The Southwark B.C. has obtained sanction to borrow £54,277 for clearing and rehousing on the Comus Place area.

SOUTHERN COUNTIES

COULSDON. Houses. Plans passed by the Coulsdon U.D.C.: 11 houses, Meadow, for Messrs. P. D. Sullivan; 16 houses, Chaldon Way, for Mr. J. Coleman; eight houses, Chaldon Way, for Mr. W. Ingram; eight houses, Lyndhurst Road, for Mr. W. H. Gorham.

DOVER. Housing Scheme. The Dover Corporation has purchased land in Noah's Ark Road, for a housing scheme.

HASTINGS. Model Yacht Lake. The Hastings Corporation is to consider the provision of a model yacht lake.

KENT. Elementary School. The Kent Education Committee has purchased a site at Leigh for the erection of an elementary school.

KENT. Central School. The Kent Education Committee has purchased a site at Meopham for a central school.

KENT. Operating Theatre. The Kent C.C. is to provide a new operating theatre unit at the County Hospital, Pembury, at a cost of £5,500.

KENT. Reconductions. The Kent C.C. is to reconductions wards at the County Hospital, Sheppey, at a cost of £6,000.

KENT. School. The Kent Education Committee has purchased land in Warren Road, Orpington, for the erection of a school.

SURREY. Secondary School. The Surrey Education Committee is to obtain a site for a secondary school at Malden and Coombe.

SOUTH-WESTERN COUNTIES

EXETER. Civic Hall, etc. The Exeter Corporation recommends proposals by Messrs. Bradshaw Gass and Hope, for the lay-out of the proposed area at the rear of the Guildhall and in Queen Street, and the design of the new Civic Hall, police headquarters and Court House accommodation. The scheme includes the assembly hall, at a cost of £157,070, shops and offices at £109,290, and police and sessions court at £106,935.

PAIGNTON. Houses, etc. Plans passed by the Paignton U.D.C.: Four houses, Shorton Valley Road, for Messrs. W. H. Wills and Sons; eight houses, Marlton Road, for Mr. P. F. Oddie; 12 flats, Preston Down Road, for Mr. P. N. Hooper.

PLYMOUTH. Reconstruction. The Plymouth Corporation has approved revised plans by the city architect for the reconstruction of the City Hospital.

PLYMOUTH. Cinema. The Plymouth Corporation reports that Odeon Theatres, Ltd., have agreed to the conditions regarding the approval of plans for the erection of a cinema in Union Terrace.

MIDLAND COUNTIES

ATHERSTONE. Reconstruction. The Governors of Atherstone Grammar School are to reconstruct the premises at a cost of £18,825.

BILLINGHAM. Houses. The Billingham U.D.C. is to erect 32 houses at Port Clarence.

EASINGTON. Houses. The North Eastern Housing Association, Ltd., are to erect 13 houses in Seaside Lane, Easington, and 15 houses on the Horden Park estate.

MANSFIELD. Houses. The Mansfield Corporation is, by direct labour, to erect 133 houses on the clearance areas at a cost of about £43,000.

ROTHERHAM. Houses. Plans passed by the Rotherham Corporation: 12 houses, Grange Lane, for Mr. F. G. Kaye; 10 houses, Wortley Road, for Mr. A. Watson.

STOKE-ON-TRENT. Houses, etc. Plans passed by the Stoke-on-Trent Corporation: 12 houses off Blurton Road, Fenton, for Mr. J. Bould; public-house off Sandon Road, Meir, for Parkers (Burslem) Brewery, Ltd.; 15 houses, Water Street, Boothton, for Messrs. W. Brammar & Co.; 14 houses, Weston Coyney Road, Longton, for Messrs. Holloway & Co.; public-house, Station Road, Meir, for Messrs. J. Joule and Sons, Ltd.; nine houses, Hillside estate, Normacot, for Messrs. Barlow Bros.; 16 houses off Meir Road, Normacot, for Messrs. David & Co.; 36 houses, Bright Street, Meir, for Mr. F. Gibson.

STOKE-ON-TRENT. Central Library, etc. The Stoke-on-Trent Corporation is to consider alternative sites at Hanley for the erection of a central library, central museum and art gallery.

STOKE-ON-TRENT. Tuberculosis Sanatorium. The Stoke-on-Trent Corporation has purchased land at Hanchurch for the erection of a tuberculosis sanatorium.

CURRENT PRICES

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

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

WAGES

	per hour	s.	d.
Bricklayer	"	1	8
Carpenter	"	1	8
Joiner	"	1	8
Machinist	"	1	9
Mason (Banker)	"	1	8
(Fixer)	"	1	4
Plumber	"	1	7
Painter	"	1	7
Paperhanger	"	1	7
Glazier	"	1	8
Slater	"	1	8
Scaffolder	"	1	4
Timberman	"	1	3
Navy	"	1	3
General Labourer	"	1	3
Lorryman	"	1	6
Crane Driver	"	1	7
Watchman	per week	2	10

MATERIALS

EXCAVATOR AND CONCRETOR

	per ton	£	s.	d.
Grey Stone Lime	"	2	2	0
Blue Lias Lime	"	1	18	6
Hydrated Lime	"	2	5	0
Portland Cement, in 4-ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	"	2	5	0
White Portland Cement, in 1-ton lots	"	8	15	0
Thames Ballast	per Y.C.	6	6	6
Crushed Ballast	"	7	0	0
Building Sand	"	7	6	0
Washed Sand	"	8	6	0
2" Broken Brick	"	8	0	0
"	"	10	3	0
Pan Breeze	"	8	6	6
Coke Breeze	"	8	9	0

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS			
	per F.R.	s.	d.
Straight Pipes	"	9	1
Bends	each	1	2
Taper Bends	"	3	6
Rest Bends	"	4	3
Single Junctions	"	3	6
Double	"	4	9
Straight channels	per F.R.	1	6
1" Channel bends	each	2	9
Channel junctions	"	4	6
Channel tapers	"	2	9
Yard gullies	"	6	9
Interceptors	"	16	0
IRON DRAINS:			
Iron drain pipe	per F.R.	1	6
Bends	each	5	0
Inspection bends	"	9	0
Single junctions	"	8	9
Double junctions	"	13	6
Lead Wool	lb.	6	—
Gaskin	"	5	—

BRICKLAYER

	per M.	£	s.	d.
Flettons	"	2	12	0
Grooved do.	"	2	14	0
Phorpres bricks	"	2	15	0
" Cellular bricks	"	2	15	0
Stocks, 1st quality	"	4	11	0
2nd	"	4	2	6
Blue Bricks, Pressed	"	8	14	0
" Wirecuts	"	7	12	0
" Brindles	"	7	0	0
" Bullnose	"	9	0	0
Red Sand-faced Facings	"	6	18	0
Red Rubbers for Arches	"	12	0	0
Multicoloured Facings	"	7	10	0
Luton Facings	"	7	10	0
Phorpres White Facings	"	3	17	3
" Rustic Facings	"	3	12	3
Midhurst White Facings	"	5	0	0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality:				
Stretchers	"	21	0	0
Headers	"	20	10	0
Bullnose	"	27	10	0
Double Stretchers	"	29	10	0
Double Headers	"	26	10	0
Glazed Second Quality, Less	"	1	0	0
" Buffs and Creams, Add.	"	2	0	0
" Other Colours	"	5	10	0
2" Breeze Partition Blocks	per Y.S.	1	7	0
2 1/2" " " "	"	1	10	0
3" " " "	"	2	1	0
4" " " "	"	2	6	0

MASON

The following d/d F.O.R. at Nine Elms:			
	F.C.	s.	d.
Portland stone, Whitbed	"	4	4
" Basebed	"	4	7
Bath stone	"	2	10
York stone	"	6	6
" Sawn templates	"	7	6
" Paving, 2"	F.S.	1	8
" " 3"	"	2	6

SLATER AND TILER

First quality Bangor or Portmadoc slates			
d/d F.O.R. London station :			
		£	s. d.
24" x 12" Duchesses	per M.	28	17 6
22" x 12" Marchionesses	"	24	10 0
20" x 10" Countesse	"	19	5 0
18" x 10" Viscountesses	"	15	10 0
18" x 9" Ladies	"	13	17 6
Westmorland green (random sizes)	per ton	8	10 0
Old Delabole slates d/d in full truck loads to			
Nine Elms Station :			
20" x 10" medium grey per 1,000 (actual)		21	11 6
" " " green	"	24	7 4
Best machine roofing tiles	"	4	5 0
Best hand-made do.	"	4	17 6
Hips and valleys	each	9	9
" hand-made	"	9	9
Nails, compo	lb.	1	4
" cooper	"	1	6

CARPENTER AND JOINER

	per sq.	£	s.	d.
Good carcassing timber	"	2	0	0
Birch	as 1" F.S.	2	0	0
Deal, Joiner's	"	3		
" 2nds	"	4		
Mahogany, Honduras	"	1	3	
" African	"	1	1	
" Cuban	"	2	6	
Oak, plain American	"	1	0	
" Figured	"	1	3	
" plain Japanese	"	1	5	
" Figured	"	1	5	
" Austrian wainscot	"	1	6	
" English	"	1	11	
Pine, Yellow	"	1	0	
" Oregon	"	4		
" British Columbian	"	4		
Teak, Moulmein	"	1	3	
" Burma	"	1	2	
Walnut, American	"	2	3	
" French	"	2	3	
Whitewood, American	"	1	1	
Deal floorings	Sq.	18	6	
" 1 1/2"	"	1	1	
" 1 3/4"	"	1	2	
" 2"	"	1	5	
" 2 1/2"	"	1	10	
Deal matchings	"	14	0	
" 1 1/2"	"	15	6	
" 1 3/4"	"	1	4	
" 2"	"	16	0	
" 2 1/2"	"	18	0	
Rough boarding	"	1	6	
" 1 1/2"	"	1	6	
" 1 3/4"	"	1	6	
" 2"	"	1	6	
" 2 1/2"	"	1	6	
Plywood, per ft. sup.				
Thickness	A B BB	A B BB	A B BB	A B BB
Qualities	d. d. d.	d. d. d.	d. d. d.	d. d. d.
Birch 60 x 48	4 2 2	5 3 2	7 5 4	8 6 5
Cheap Alder	2 1 1	3 2 2	4 3 1	5 4 1
Oregon Pine	2 1 1	3 2 2	4 3 1	5 4 1
Gaboon	4 3 1	5 4 1	7 6 1	8 7 1
Mahogany	6 1 5	7 1 5	10 8	11 9
Figured Oak	6 1 5	7 1 5	10 8	11 9
Scotch glue	"	"	lb.	8

SMITH AND FOUNDER

Tubes and Fittings
(The following are the standard list prices from which should be deducted the various percentages as set forth below.)

	per ft.	£	s.	d.
Tubes 2"-14" long per ft. run	"	4	5 1/2	9 1/2
Pieces, 12"-23" long each	"	10	1/11	1/11
" 3"-11 1/2" long	"	7	9	1/3
Long screws, 12"-23 1/2" long	"	11	1/3	2/2
" 3" M-1/2" long	"	8	10	1/5
Bends	"	8	11	1/7 1/2
Springs not socketed	"	5	7	1/11 1/2
Socket unions	"	2/3	5/6	6/9
Elbows, square	"	10	1/11	1/6
Tees	"	1/1	1/3	1/10
Crosses	"	2/2	2/9	4/1
Plain sockets and nipples	"	3	4	6
Diminished sockets	"	4	6	9
Flanges	"	9	1/1	1/4
Caps	"	3 1/2	5	8
Backnuts	"	2	3	5
Iron main cocks	"	1/6	2/3	4/2
" with brass plugs	"	—	4/-	7/6

DISCOUNTS

	Per cent.	Galvanized gas	Per cent.
Gas	68 1/2	"	61 1/2
Water	66 1/2	"	55
Steam	63 1/2	"	50

FITTINGS

	per ft.	£	s.	d.
Gas	"	61 1/2		
Water	"	58 1/2		
Steam	"	53 1/2		
Galvanized gas	"	55 1/2		
" water	"	50		
" steam	"	46 1/2		
Rolled steel joists cut to length	per cwt.	14	6	
Mild steel reinforcing rods, 1"	"	10	3	
" 1 1/4"	"	10	0	
" 1 1/2"	"	10	0	
" 2"	"	10	0	

SMITH AND FOUNDER—continued

	per cwt.	£	s.	d.
Mild steel reinforcing rods, 1"	"	9	6	
" 1 1/4"	"	9	6	
" 1 1/2"	"	9	6	
" 2"	"	9	6	
Cast-iron rain-water pipes of ordinary thickness metal	F.R.	3	0	
Shoes	each	2	0	
Anti-splash shoes	"	4	6	
Boots	"	3	0	
Bends	"	2	7	
" with access door	"	—	6	
Heads	"	4	0	
Swan-necks up to 9" offsets	"	3	9	
Plinth bends, 1 1/2" to 6"	"	3	9	
Half-round rain-water gutters of ordinary thickness metal	F.R.	5	6	
Stop ends	each	3	6	
Angles	"	1	7	
Obtuse angles	"	2	0	
Outlets	"	1	9	

PLUMBER

	per cwt.	£	s.	d.
Lead, milled sheets	"	44	6	
" drawn pipes	"	42	6	
" soil pipes	"	45	6	
" scrap	"	32	0	
Solder, plumbers'	lb.	9		
" fine do.	"	1	0	
Copper, sheet	"	1	2	
" tubes	"	1	4	
L.C.C. soil and waste pipes:				
Plain cast	F.R.	1	0	
Coated	"	1	1	
Galvanized	"	2	0	
Holderbats	each	3	10	
Bends	"	3	9	
Shoes	"	2	10	
Heads	"	4	8	

PLASTERER

	per ton	£	s.	d.
Lime, chalk	"	2	0	
Plaster, coarse	"	2	15	
" fine	"	4	7	
Hydrated lime	"	3	0	
Sirapite	"	3	6	
Keene's cement	"	5	0	
Gothite plaster	"	3	6	
Pioneer plaster	"	3	6	
Thistle plaster	"	3	6	
Sand, washed	Y.C.	11	6	
Hair	lb.	2	4	
Laths, sawn	bundle	3	9	
" rent	"	3	9	
Lath nails	lb.	3	9	

GLAZIER

	per sq. ft.	£	s.	d.
Sheet glass, 24 oz., squares n/e 2 ft. s. F.S.	"	2	1	
" 26 oz.	"	3	1	
Flemish, Arctic, Figures (white)	"	7	1	
Blazoned glasses	"	2	6	
Reeded: Cross Reeded	"	11		
Cathedral glass, white, double-rolled	"	6		
plain, hammered, rimpled, waterwite	"	2	0	
Crown sheet glass (n/e 12" x 10")	"	1	0	
Flashed opals (white and coloured)	"	2	0	
1/2" rough cast; rolled plate	"	10	1	
1/2" wired cast; wired rolled	"	10	1	
1/2" Georgian wired cast	"	11	1	
1/2" Polished plate, n/e 1 ft.	"	11	10	
" " 2	"	12	3	
" " 4	"	12	9	
" " 8	"	13	2	
" " 20	"	13	1	
" " 45	"	13	3	
" " 100	"	14	0	
Vita glass, sheet, n/e 1 ft.	"	1	0	
" " 2 ft.	"	1	0	
" " over 2 ft.	"	1	0	
" " plate, n/e 1 ft.	"	1	0	
" " 2 ft.	"	3	0	
" " 5 ft.	"	4	0	
" " 7 ft.	"	5	0	
" " 15 ft.	"	7	6	
" " over 15 ft.	"	7	6	
" Calorex" sheet 21 oz., and 32 oz.	"	2	6	
" rough cast 1/2" and 1"	"	2	1	
Putty, linseed oil	lb.	3		

† Ordinary glazing quality. ‡ Selected glazing quality.

PAINTER

White lead in 1 cwt. casks	cwt.	3	9	
Linseed oil	gall.	3	0	
Boiled oil	"	3	3	
Turpentine	"	3	9	
Patent knotting	"	14	0	
Distemper washable	cwt.	2	6	
ordinary.	"	2	0	
Whitening	"	4	0	
Size, double	firkin	3	0	
Copal varnish	gall.	13	0	
Flat varnish	"	14	0	
Outside varnish	"	16	0	
White enamel	"	15	0	
Ready mixed paint	"	13	6	
Brunswick black	"	7	0	

PAINTER		Y.S.	S.
Clearcolle and whiten ceilings	" " " " " "	" "	"
Do. and distemper walls	" " " " " "	" "	"
Do. with washable distemper	" " " " " "	" "	"
Knot, stop, prime and paint four coats of oil colour on plain surfaces	" " " " " "	" "	"
Do. on woodwork	" " " " " "	" "	"
Do. on steelwork	" " " " " "	" "	"
Do. and brush grain and twice varnish	" " " " " "	" "	"
Stain and twice varnish woodwork	" " " " " "	" "	"
Stain and wax polish woodwork	" " " " " "	" "	"
French polish	" " " " " "	" "	"
Stripping of old paper	" " " " " "	" "	"
Hanging ordinary paper	" " " " " "	" "	"
		from	35.