TELEVISION BEGINS

THE B.B.C. STATION AT ALEXANDRA PALACE

THIS week television broadcasts will be made to visitors to Radiolympia from the B.B.C. station at Alexandra Palace. The short waves used need an aerial as tall as possible. In this photograph the 220-ft. mast surmounts the 80-ft. existing tower, the total height being 600 ft. above sea level. The upper aerial is for vision, the lower for sound.

THE ELEVENTH MODERN OLYMPIAD

An aerial view of the Olympic village near Berlin, which was built to accommodate the competitors in the games held from August 1–16. The efficiency, completeness and sustained high standard of design of the architectural setting competed with the number of world records broken as the chief distinction of the games of 1936.

THE END OF AUGUST

AUGUST, even an August which ends a depressed summer with days of moderate visibility surrounding local showers, is still the especial month of holidays.

An advance guard, irresponsibly free from the limitations of school holidays, ranging foreign parts and reckless of jaded outlooks in September, may have pranced luckily away in June. But the remainder, a great and philosophical majority, have left their day-to-day affairs in August; and now, a trifle grimly evasive about the weather they have met with (save for the few who, more grimly still, plosh through a *rechauffé* of their past endurance), they are returning to take them up again.

Holidays are great levellers, for all save the unduly rich or the unduly free. Members of Parliament and makers of perambulators, brass-founders and anæsthetists, all must bear with crowded roads or crowded stations; and all in the British Isles must suffer wind and rain and hear stories of sunshine as best they can.

A return, accomplished or impending, from so many mixed sensations tends to bring with it mixed reflections. Correspondence stacked and waiting or so oddly tangled by the hands of others, has lain unattended before the most easy-going of those who dwell in cities; whilst comparisons and questionings defeat the shrugging of shoulders and the most determined settling down.

The lines of a diesel-engined barge as it twisted and wriggled past East Anglia; the smell of myrtle and heather as sheep passed through them from the moors on their way to be counted over—both return with startling reality amongst desks and drawing boards. And with both memories there is likely to be something of a query—of a wondering whether those who spend the most of their days in offices have, after all, the best of the bargain. The most staid and responsible man who ever read *The Times* at his club and grudged paying fifteen guineas to hear a fellow-member snorting in his sleep, can find himself oddly wondering whether £500 a year and a mixed dairy and sheep farm on the Border (say 600 acres and a little timber) would not prove a better life in the end. And, of course, the Dutch are said to do very well with their motor barges.

A week or so of air and exercise in a country where the passing of a single car is listened to with malevolence till distance blankets it, can produce fancies like these in everyone. Levelled like the majority to the ranks of August holiday makers, the architect does not escape. In truth, with the imagination and sympathetic knowledge of other people's work and surroundings which his affairs demand, these post-holiday ponderings can for him be specially acute. For surely, whatever may be the ultimate end of man, it cannot be to spend his days bent over a drawing board in an atmosphere stuffy or sooty. And to say that architects do not so spend all their days is no answer to a man determined, at the kalends of September, to be as morbid as he wants.

And something of a case, indeed, can be made for architects' greater misery, even relative to others who work in towns. What architect in private practice, for instance, can watch his stockbroker, or, more frequently, someone else's stockbroker, at work without a truly poignant sense of the world's injustice? The broker must know his trade; he must cultivate his client: true, but so must the architect. But when that client decides to act, a dozen words and a form or so filled in and the broker's work is done. What bliss could such a world hold out to the architect?

And yet, strangely enough, stockbrokers consider that their livelihood has limitations. More strangely still, an authoritative book about the London Stock Exchange has an introduction in which the author states these limitations, regretting that the satisfaction of seeing work realized in concrete form, as architects are fortunate enough to do, can never be felt by the broker. Is it possible that the architect is not so miserable in state as September makes him feel?

The first week of return to work, the memory of a more reasonable living amongst surroundings achieved by men who lived reasonably without the blessings of mass-production and cheap transport, can make the most progressive architect feel that the answer is : possible but unlikely.

With the second week such a resolutely gloomy summary of existence begins to seem more questionable. And however much the architect may reject such backslidings as being only a poor-spirited creature making the best of it, he is at last compelled to admit that the livelihood with which he is entangled has its bright side.

In the world of professions his work alone has results more satisfying than words and figures spoken or on paper; he alone can escape into the satisfyingly solid. The broker's career may end with figures in a pass-book; the doctor may survey five thousand examples of the inevitable postponed; the journalist in his bitterness may murmur of ten thousand leaders —only the architect can know the relief of seeing a theory, however modified, being put to the convincing test of concrete realization. How many decimal places in a pass-book, how many weary discussions and disappointments this solace is worth must rest as a private decision. But surely where plenty so often means the quick and slick and vulgar, it is worth a lot.

And, this September, there is one further justification for optimism. Western civilization, and Britain amongst it, has only been able to get things easily, cheaply and in masses for quite a short time. Overwhelmed with satisfaction at its own success it has in consequence used that plenty in almost childish clusters of the inharmonious. Now, grown more level-headed, it is beginning to become aware of its mistakes.

In this slow-spreading reasonableness architects can find some justification for a careful optimism.

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Westminster, S.W.1
Telephones: Whitehall
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Telegrams
Buildable
Paul
London

NOTES & TOPICS

RECOVERY

EACH year B.I.N.C. tells us about the position in the Building Industry. This year their statement shows a better state of affairs than for many years.

*

House building, confounding the prophets, continues almost unabated. Unemployment is less than in any of the past seven years. Industrial and commercial building shows great increases.

*

Deposited plans seem to indicate that a revival of building may be expected in the North of England, in all categories of work—domestic, industrial, public and commercial. Indeed, the peak of the building boom is not likely to be reached in the North for some considerable time.

*

Building operations share to some extent the general tendency to higher wages—share some of the £332,200 which the Ministry of Labour tells us represents the weekly increase. The position might almost be described as "very favourable."

TELEVISION

Television at last. The first public demonstrations of high-definition television began this week and proved immensely superior to the low-definition television many of us have known for some years.

*

For the present the technical novelty of the broadcasts catches our big interest—the enormous mast and vast studios, the quite distinct methods of collecting the picture ("scanning," as it is called), using the old spot light, the intermediate film (which is photographed, developed, fixed, washed and converted into television signals in under 30 seconds!), the use of "talkie" films and then the Emitron camera for, chiefly, outside work.

*

Soon we shall be more concerned with the programmes, their length and times and, most important of all, their content and quality. They need an entirely different approach from ordinary broadcast programmes and will receive greater criticism. From the public point of view, to listen *and* look at one and the same time needs some concentration—televising will be a more deliberate pastime than listening-in.

*

There is a golden opportunity, as I have said before, for some lectures on good and bad building—a novel architectural entertainment impossible through any other medium.

*

And meanwhile the original bits of bicycle, string, wire, sealing wax, etc., of which the first television set was constructed, are to take their place in the Science Museum, alongside the bits of bicycle, string, wire, sealing wax, etc. which first flew in the air.

LEGAL PICKINGS

Quite a number of the readers of this JOURNAL may have decided to skip the reports of the report of the Circuits Committee.

*

Alterations of any old-established things always produce cries of annoyance. Vested interests half as old as time are always turned up as perfectly alive and annoyed as the pig which I brought out of its sty, on my holiday, to look at a gorgeous full moon. I have *never* seen a pig so annoyed . . .

*

—However, architects must leave the question of which towns judges ought to visit on Assize Circuits to be decided elsewhere. The real point for us is the one, probably older than time, about ill winds.

*

Sheffield, which is to have an assize at last, is considering a new building in which to put it. Mr. Dingle, the Clerk to the Sheffield justices, has said that the lack of suitable court accommodation has become a scandal. It is now expected that the new assize will certainly produce a new building, which will include a new police courts, police headquarters and fire station as well.

*

Guildford, on the other hand, is trying to get its assize back again; but it also has nowhere to put it if it succeeds. The Borough Hall, where the court used to sit, was apparently used as a theatre when the town was doing without litigation.

*

Mr. Justice Bucknill is supposed to have said that he administered justice upon a stage, retired to the green room, and "my word, you ought to have seen the furniture."

*

I will take it for granted. But Guildford is also meditating a new Courts, so two competitions pending may perhaps also be taken for granted.

UNOBSERVED ARCHITECTURE

Mr. Peter Fleming has revived the Elizabethan spirit of magnificent travelling, although it would no doubt irritate him to hear his gift for adventure described like that. But although he emulates the gentlemen of the English renaissance in his disregard for danger and privation, and in his towering endurance of fatigue, he lacks their superb powers of observation.

*

In his latest book, *News from Tartary*, you will find acute portraits of people; vividly coloured sketches of political

The new police headquarters at Manchester approaching completion. The architect is George Noel Hill, City Architect

and military intrigue; a tender series of animal illustrations; but a blank disregard for the works of man—a strange insensitiveness to the form and character of architecture. He admits in this book that he has no sense of smell; but his pages disclose some defects in his sense of sight.

*

True, this last journey of his took him through places where building was often rudimentary; but I found myself longing for some of the descriptive felicities of Robert Byron whenever I visited a town in Mr. Fleming's company.

NORMAN SHAW STOCK DOWN IN U.S.A.

In an article in the current number of *Harper's Magazine*, Robert H. Hutchinson writes about the "lesson of Scotland Yard." He is comparing English and American police procedure, but he slips in an architectural criticism. He mentions "that ugly pile of stones on the bank of the Thames."

*

Does it strike Americans that way? I *have* heard it called a "cute castle," but then everything old and new is ingloriously confused by American visitors to London. Not always by visitors either. A book of the month club advertisement in that same issue of *Harper's* drops a beautiful brick in urging the interest of *The Seven Pillars of Wisdom*.

*

The advertisement writer describes how Lawrence lost the original manuscript of the book "while he was changing trains at Reading Station in London." In the words of Fred Astaire's song, maybe American observation "isn't what it's cracked up to be!" Anyway, Robert H. Hutchinson's crack about Scotland Yard would have the support of one English critic. I remember a storm that Mr. Trystan Edwards once raised by a remark in his monograph on Sir William Chambers, in which he referred to Norman Shaw's design as "shameless in its clumsy rusticity."

A BUNCH OF BLUE RIBBONS

So R.M.S. *Queen Mary* has done it at last, not by a very startling margin, but apparently by enough to make it quite certain that one record is really hers this time. Maybe the Cunard tactics of waiting until the ship is run in are the best, but there is none of the *éclat* and general jollification produced by smashing the record heartily on a maiden voyage, as did the *Bremen*, *Europa*, and the *Normandie*, each in their turn.

*

Curiously enough the *Hindenburg* has chosen this particular week to put up a record as well, and at a speed which makes the *Queen Mary's* effort look rather small. Incidentally, do people realize that the fare from Frankfort to New Jersey by Zeppelin is only £50? Rather less than the minimum first-class fare in the *Queen Mary* and only a little more than third-class return.

*

Probably an unfair comparison, I agree, for nobody knows how much Government subsidy each vessel receives, but the difference in cost doesn't seem to be very much. And comfort and amenities generally? I don't know, but I have always regarded the air as a very reasonable medium for travel, and it seems to me that the shipping companies are liable to be caught napping, at any rate so far as their luxury passengers are concerned, unless they keep a very wary eye on a form of transport which may be in its teething stages so far, but which won't remain so for very long.

THE CEMENT THAT WOULDN'T PLAY

The staggering physical powers of the more highly-paid screen heroes have often aroused the envy of at least one follower of a sedentary occupation—if architecture can be so miscalled.

*

Men who really don't look very big batting each other with pseudo-oaken chairs; slim youths, whose ties are never displaced even in sewers, joyously flicking bureaux at curiously immobile police; these have been seen and wondered at. Even a turbaned lancer twirling a 250-pound (and presumably red hot) Vickers gun with all the disinterest of one using a garden syringe, has been known to pass across the console. But I'm still glad that Portland cement has decided that a line *must* be drawn somewhere.

*

In producing a new superlative thriller the hero and heroine were to be trapped in the most horrific cellar; and then to escape by cutting down a brick wall with a heavy coal tub. A mere trifle to the giants of the super-seaters.

*

But, sad and (apparently) true, the scene was late in its shooting. The bricks and cement, expressly erected for the gripping seconds of the coal tub in action, had had time to get acquainted and to decide to stop this mockery. The mortar had set.

*

After a few resonant "bongs" a bucket, curiously altered in shape, was understood to say that it had had enough. I have a certain admiration for that wall.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

BUILDING PROSPECTS

The preliminary building approval returns show an increase of 5.4 per cent. compared with July, 1935. The second quarter of the year established a new record of £32,800,000, compared with £28,000,000 in the first quarter and £29,600,000 in the second quarter of last year.

According to the *Financial News*, these facts mean that a high level of activity is therefore ensured for at least twelve months ahead; whilst on a comparison with the 1929 slump, a high level of employment will probably continue for six months after a decline of building volume has begun.

Of the total, April-June, of £32,800,000 for plans approved, £20,910,000 represented residential buildings, showing how essential to building is this part of its output. There are some signs that "housing" in this broad sense is nearing saturation point in London, the South-East and Midlands; in the north activity is still small, relative to population.

Commercial and industrial building has improved 58 per cent. on last year, and together with "recovery" building in the north, may offset saturation of the housing market south of the Trent.

INN SIGNS EXHIBITION

An exhibition of old signs from hotels, inns and public-houses will be held at the Building Centre, Old Bond Street, W., next November.

In the last few years there has been considerable regret expressed that such examples of local painting and craftsmanship have tended to diminish in favour of standardized trade signs, often of questionable merit.

Mr. Guy Dawber wrote last week to *The Times* asking the public to help make the exhibition a success by lending actual signs, photographs and measured drawings, as well as drawings showing how the signs are fixed. Notes on materials would also be welcomed. All those interested are asked to write to Mr. Gerald Miller, Room 167, St. Stephen's House, Westminster, S.W.1, before September 9.

THE ARCHITECTS' DIARY

Thursday, August 27

TOWN AND COUNTRY PLANNING SUMMER SCHOOL. *At the Salisbury Diocesan Training College, Salisbury. Until September 2. The programme was printed on page 205 of the* JOURNAL *for August 13.*

Saturday, September 12

ARCHITECTURAL ASSOCIATION. *Annual excursion to Czechoslovakia. Until September 26.*

Wednesday, September 16

BUILDING EXHIBITION. *At Olympia. Until September 30.*

Friday, September 25

INSTITUTE OF HOUSING ADMINISTRATION. *At Bristol. Annual General Meeting and Conference. Also September 26.*

TELEVISION

Broadcasts from the new B.B.C. television station at Alexandra Palace will be seen and heard by visitors to the Radio Exhibition at Olympia. The chief architectural features of the new entertainment will be the height of the aerial masts, the range of the short waves used being greatly extended by additional height.

The photograph reproduced on page 257 shows the mast at Alexandra Palace. The east tower, 80 ft. in height, is surmounted by the 220 ft. of the mast. The total height of the top of the mast is 600 ft. above sea level.

ARCHITECTURAL SCHOLARSHIPS

Ten scholarships covering tuition fees and maintenance grants of £40 a year for three years are offered annually by the Technical College, Cardiff. These scholarships are open to students wishing to join the Welsh School of Architecture, the standard of the examination being about the same as matriculation.

Elementary drawing may be taken instead of one of the five papers.

EVERYDAY THINGS AT LIVERPOOL

The R.I.B.A. exhibition of Everyday Things has had a very successful show at the Walker Art Gallery in Liverpool. A certain amount of resentment was aroused among local shopkeepers, who did not understand the objects of the exhibition, but when once it was realized that the object of the exhibition was not to sell goods, but merely to show the public what was obtainable, both shopkeepers and the Press gave the exhibition their whole-hearted support. The result has been a record at this gallery for a summer exhibition, as no fewer than 31,250 people visited it. The exhibition now goes to Manchester.

DESIGN IN THE PEAK DISTRICT

The Sheffield and District branch of the C.P.R.E. has issued a booklet of designs for small houses and bungalows suitable for the Peak District, which has suffered from disfigurement by dwellings of bad design. The designs have been prepared by an advisory panel of architects nominated by the Sheffield, South Yorks and District Society of Architects and Surveyors, the Nottingham, Derby and Lincoln Architectural Society and others. The plans and elevations were chosen after a competition for local architects. Seven types of house are shown.

BALCONIES

The question of balconies on old buildings in London is receiving a good deal of attention in view of the coronation procession next year. A district surveyor for London has stated that a superficial inspection is not alone sufficient to decide whether a balcony is in good structural condition. The L.C.C. is reported to be considering whether property owners should be circularized to call attention to the need of very careful tests before balconies overlooking the Royal route are loaded, and possibly overloaded, with spectators.

CINEMA CIRCUSES

A cinema and playhouse company contemplates spending a million and a half upon a series of theatres which, besides being suitable for showing films, will have the added attraction of stage circuses. Sites have been secured in Sheffield, Liverpool, Lincoln, Cheltenham and Nottingham.

The theatres, it is stated, are to be built on the stadium principle, with special stage accommodation and stabling at the rear for the animals.

LECTURES ON TIMBER

The Department of Commercial Products of the City of London College announces a three-years evening course on Timber. The syllabus includes lectures on: Common Timbers; Business Methods; Timber Preservation and Mensuration (Part I). Special Timbers (Part II), and Practical Examination of Timbers (Part III). The course has been approved by the Timber Trade Federation, and students may enrol for any subject or combination of subjects.

NEW SLOANE SQUARE STATION

The London Passenger Transport Board is shortly to begin the reconstruction of Sloane Square Station, the deepest and one of the oldest stations on the District Line. It was opened in 1868. The new building will be brought forward to the building line in the square.

A PLEASURE PALACE FOR MANCHESTER

Manchester is to have a vast new stadium on a corner site in Ducie Street and Piccadilly; the scheme includes a swimming pool, ice rink, gymnasium, a news theatre, shops, and a club. The plans have been passed by the Manchester Corporation and work is to start in the autumn. Sir Charles Allom is the architect.

CUMBERLAND ARCHITECTS

The annual meeting of the Cumberland Branch of the Northern Architectural Association was recently held when the officers were re-elected for a second year of service as follows:—Chairman, Mr. H. E. Scarborough, F.R.I.B.A.; vice-chairman, Mr. S. W. B. Jack; executive Committee, chair-

man, vice-chairman, hon. secretary (Mr. H. E. Ayris) and Messrs. A. Huddart, F.R.I.B.A., J. Peascod, A.R.I.B.A., R. Morton Rigg, L.R.I.B.A., J. S. Stout, L.R.I.B.A., and P. M. Hope, L.R.I.B.A., vice T. Nicholson, A.R.I.B.A.

REGISTRATION COUNCIL

The Architects' Registration Council of the United Kingdom announces that from September 7, 1936, the address of its offices will be 68 Portland Place, W.1. Telephone : Welbeck 9738.

COMPETITION RESULT

Mr. Louis de Soissons, F.R.I.B.A., the Assessor in the Birmingham Working-class Flat Competition, has made his award as follows :—

Design placed first (£400) : Messrs. G. Grey Wornum and Anthony Tripe, 39 Devonshire Street, W.1.

Design placed second (£250) : Messrs. Praxis and David Goddard, in collaboration with Miss Blanco White and the British Steelwork Association, 7 Southampton Street, W.C.1.

Design placed third (£150) : Messrs. Howes and Jackman, 10 Gray's Inn Square, W.C.1.

Design placed fourth (£100) : T. Cecil Howitt, Exchange Buildings East, Nottingham.

The following designs were commended : No. 15, Frank Scarlett, 5 Raymond Buildings, Gray's Inn, London, W.C.1; No. 19, Frederick Gibberd, 29 Sloane Square, London, S.W.1; No. 21, Paul Pascoe, 43 Wells Street, London, W.1; No. 22, Arthur Frederick Russell, 4 Regent Square, London, W.C.1; No. 28, Frederick Milton Harvey, 3 Raymond Buildings, Gray's Inn, London, W.C.1. The Emily Street scheme is the first scheme for the building of tenement dwellings under the 1930 Act undertaken in Birmingham, and is considered as in the nature of an experiment.

NEW COMPETITION

The Lancashire Mental Hospitals Board invite Chartered and/or Registered British and Irish Architects to submit designs in Competition for a New Mental Hospital for 1,000 Patients (Group 1), and a New Institution for 2,000 Mental Defectives (Group 2), proposed to be erected on a site at Lathom Park, near Ormskirk, Lancashire.

The Board have appointed Messrs. Charles E. Elcock, John Kirkland and Patrick L. Abercrombie—Fellows of the Royal Institute of British Architects—to advise them on the conduct of the Competition, to act as their Assessors, and to adjudicate on the whole of the designs submitted, and to make the Award.

Premiums of £500, £400, and £300 will be paid to the authors of the designs placed by the Assessors 1st, 2nd and 3rd, respectively, in each Group.

Applications for a copy of the conditions and other particulars must be made to the Clerk to the Mental Hospitals Board, County Hall, Preston, not later than September 1, 1936, and be accompanied by a deposit of £3 3s.

THE PROPOSED L.C.C. AMENDMENTS

By W. E. J. BUDGEN, B.Sc., A.M.Inst.C.E.

LOADING

As mentioned on August 20, the loads given apply to "every part of a building" and not only to frame buildings. The suggested superimposed loadings are given in Table I (the figures in brackets give the corresponding loads in the reinforced concrete code of practice).

It is difficult to compare these with any existing L.C.C. requirements because, owing to the waiver system, there has been no uniformity in these requirements, except that it has been rare for them to allow any slabs to be designed for a superimposed load of less than 100 lbs. per sq. ft. In this respect the proposed new loadings are an improvement, but it seems a little unfortunate that, if only for the sake of uniformity, the loadings proposed by the Reinforced Concrete Code of Practice have not been adopted.

There is, however, one serious point and that is in the last item : "Any purpose not herein specified." Had the loading here been "Loading to be provided for to be ascertained to the satisfaction of the district surveyor," this would have been reasonable, but the addition of the words "not less than 150 lb. per sq. ft. of floor area" completely spoils the clause. For unless the previous classes of floor are to be interpreted in so loose a manner as to make them almost ridiculous, many buildings not specified can easily be thought of where a loading of 150 lb. per sq. ft. is extravagantly heavy—a B.B.C. studio, a hospital, a theatre are only a few.

The remaining clauses dealing with wind pressure, etc., follow almost exactly the steel code of practice.

MATERIALS

The majority of these clauses follow either the steel and concrete codes of practice, or refer to British Standard Specifications, where these exist. A noteworthy point is the introduction of a short specification for high alumina cement. Briefly, in addition to complying with certain physical and chemical requirements as to its composition, 3 : 1 sand cement specimens made with this type of cement must show a tensile strength of 475 lb. per sq. in. within 24 hours of gauging and 550 lb. per sq. in. within seven days.

The principle of "ordinary" and "high" grade concrete introduced in the reinforced concrete code of practice has been recognized and adopted as will be seen from Table II giving mixes, breaking strengths required and allowable stresses.

Mixes III and IIIa are what is commonly called a 1 : 2 : 4 concrete, while mix VII is usually known as a 12 to 1 concrete. The required strengths are as specified in the reinforced concrete code of practice—the allowable stresses will be discussed later.

Bricks and blocks are divided into four strengths thus :—

Designation of bricks or blocks as regards strength	Minimum load in lb. per sq. in. of horizontal area
First strength	7,500
Second strength	5,000
Third strength	3,000
Fourth strength	1,500

Cavity bricks are recognized and their dimensions as regards relationship of solid and void specified.

TABLE I

Use of floor	Superimposed loading in lb. per square foot of floor area	
	On slabs and other floor constructions between main beams or other supports	On main beams and other supporting constructions
Residential purposes	80 (50)	40 (40)
Offices above entrance floor	80 (80)	50 (50)
Offices on and below entrance floor, retail shops and the like	90 (80)	80 (80)
Corridors, landings and stairs	100 (100)	100 (100)
Workshops and factories, garages and the like	Loading to be provided for to be ascertained to the satisfaction of the district surveyor but not less than :— 150 (100)	120 (100)
Warehouses, book stores, stationery stores and the like.	Loading to be provided for to be ascertained to the satisfaction of the district surveyor but not less than :— 200 (200)	200 (200)
Any purpose not herein specified	Loading to be provided for to be ascertained to the satisfaction of the district surveyor but not less than :— 150	150

TABLE II

1 Designation of concrete	2 Cubic feet of aggregate per 112 lbs. of cement		3 Minimum re sistance to crushing in lbs. per sq. in. within 28 days after mixing		4 Maximum permissible stress, in lbs. per sq. in.			
	Fine aggregate	Coarse aggregate	Preliminary tests	Works tests	Compression other than in columns	Compression in columns	Shearing	Bond
IA ..	1¼	2½	5,625	3,750	1,250	1,000	125	150
I	1½	2½	4,388	2,925	975	780	98	123
IIA ..	1⅞	3¾	4,950	3,300	1,000	880	110	135
II ..	1⅞	3¾	3,825	2,550	850	680	85	110
IIIA ..	2½	5	4,275	2,850	950	760	95	120
III ..	2½	5	3,375	2,250	750	600	75	100
IV ..	7½		2,180	1,480	—	—	—	—
V ..	10		1,630	1,110	—	—	—	—
VI ..	12½		1,090	740	—	—	—	—
VII ..	15		550	370	—	—	—	—

FOUNDATIONS

The tables of allowable pressures on various types of soils given in the 1930 Act are replaced by the following general clauses :—

29. Every foundation shall be constructed safely to sustain and transmit all the loading imposed thereon, and without exceeding the limitations of permissible stresses provided in these byelaws.

33. The pressure upon earth intended or likely to support any part of a building shall be calculated; and the intensity of such pressure shall not exceed that allowed by the district surveyor.

A very elaborate table has been prepared for this section giving the allowable pressures on concrete "restrained against horizontal movement" in various ways. The necessity for this table is not evident on a first study, particularly as it applies to plain concrete supporting walls and piers where the brickwork is more likely to set the limit as regards allowable stress.

WALLS AND PIERS

The first section repeats previous restrictions as to the amount of window opening, and it may be argued that this is an unnecessary restriction where framed buildings are concerned.

4½ in. brick walls are permitted in certain cases under clause 45 as follows :—

45. No external wall, party wall or supporting wall shall be of less thickness in any part than eight and one-half inches exclusive of plastering rendering, roughcast or other applied covering. Provided that :—A reinforced concrete non-load-bearing panel between the columns and beams in an external wall of a building of reinforced concrete framework construction may be of any thickness not less than four inches exclusive of any applied covering, if such wall complies in all other respects with the requirements of these byelaws.

Provided also that : (i) a building of not more than one storey in height, not being a dwelling-house, and the width of which (measured in the direction of the span of the roof) does not exceed thirty feet and the height of the walls of which does not exceed ten feet; or

(ii) an erection situated above the level of the roof of a building and intended for the protection of a tank or motor or for a like purpose, and not intended for or adapted to use for habitable purposes or as a work room, such erection being adequately supported to the satisfaction of the district surveyor, and not exceeding ten feet in either length or width and not exceeding eight feet in height measured from the level of the roof of the building to the top of the walls of such erection, may be enclosed with external walls not less than four inches thick subject to the following conditions :—

(*a*) That any such wall be bonded into piers of the size required by calculations based on the loads and stresses referred to in byelaw 57, but not less than eight and one-half inches square in horizontal section.

(*b*) That such pier be provided at each end of such external wall.

(*c*) that in the case of (i) further similar piers be provided if any such wall exceeds ten feet in length, as may be necessary so to divide the wall that the length of each portion of such wall shall not exceed ten feet.

(*d*) That all bedding and jointing be in cement mortar.

(*e*) That the roof be so constructed that the walls are not subject to any thrust therefrom.

(*f*) That no load other than a distributed load of the roof be borne by walls which are less than eight and a half inches in thickness.

Cavity walls are allowed by clause 51 as external walls not exceeding 25 ft. in height and 30 ft. in length, "adequately supported by supporting walls at each end." A query arises as to whether this will allow them to be used as external walls in frame buildings where they will be supported at the ends by columns.

Solid bricks or blocks are required, so that apparently cellular bricks must not be used in a cavity wall.

The clauses in the second schedule dealing with footings are omitted. Apparently, therefore, footings will not be required where the pressure on the concrete foundations is within the allowed limit without the use of side spread.

The thicknesses specified for "external and party walls constructed under the prescribed conditions" in buildings other than public buildings, or buildings of the warehouse class, are given in Fig. 1. They are but slightly altered from the present requirements. The requirements for walls of the warehouse class of building are unaltered. Other supporting walls may be two-thirds of these thicknesses as before.

These tabulated thicknesses will, however, be of little importance for the following reasons.

Firstly, they apply to walls "constructed under the prescribed conditions" and since one of the prescribed conditions is that, with the exception of loads from floor joists not more than 16 in. apart, the wall shall not be subjected to loads other than distributed loads, and there are few walls in practice which will be built under the prescribed conditions. Secondly, clause 49 says that "subject to byelaws 45 and 59 (which, broadly speaking, limit the thickness of any wall to not less than 8½ in. or one-sixtieth of its height) any external or party wall constructed under the prescribed conditions may be of such thickness as will comply with byelaw 54, which states "Every wall or pier constructed otherwise than under the prescribed conditions shall be designed and constructed to sustain and transmit without exceeding the limits of stress provided in the appropriate byelaws, all the dead and superimposed loadings stipulated in these byelaws."

Presumably these clauses, read together, mean that (*a*) the few walls constructed under the prescribed conditions may be of the thickness given in the table whatever the load they carry, but, if calculations are made and it is found that the stress is safe with a lesser thickness, this lesser thickness may be used.

(*b*) the majority of walls, i.e. those not constructed under the prescribed conditions must be designed and the thickness decided by the stress.

If this is the correct interpretation then the byelaws are an improvement on the requirements of the present second schedule.

The allowable stresses and the methods of design of the walls are covered by the following clauses :—

56. For the purpose of byelaw 57 the slenderness ratio of any storey-height of a wall or pier constructed of bricks or blocks or of plain poured concrete shall be the ratio of the effective height to the horizontal dimension lying in the direction of the horizontal support determining such storey-height.

For the purpose of this byelaw, the effective height shall be :—

In the case of a storey-height of a wall without horizontal support at the top thereof, one and a-third times such storey-height.

In the case of a storey-height of a wall with horizontal support at the top thereof, three-quarters of such storey-height.

In the case of a storey-height of a pier without horizontal support at the top thereof, twice such storey-height.

In the case of a storey-height of a pier with horizontal support at the top, the actual storey-height.

57. For the purposes of byelaw 54, in any wall or pier or storey-height of such wall or pier not having a slenderness ratio exceeding 6, if such wall or pier be constructed of bricks or blocks, the total compressive stress due to the vertical load, eccentricity of loading, horizontal pressure and to any other forces shall not exceed the maximum pressure indicated in Table III (following) in respect of the designation of the blocks or bricks employed as regards strength or of the proportions of the mortar employed, whichever is the weaker. If such wall or pier or storey-height thereof be constructed of plain poured concrete, such compressive

stress shall not exceed the maximum pressure indicated in Table IV (following).

TABLE III—MAXIMUM PERMISSIBLE PRESSURES ON WALLS AND PIERS OF BRICKS AND BLOCKS

Designation of bricks or blocks as regards strength (as specified in Byelaw 21)	Proportion of mixture of mortar (in volumes)			Maximum pressure in tons per sq. ft.
	Cement	Lime	Sand	
First strength	1	—	2½	20
Second ,,	1	—	3	15
Third ,,	1	—	4	11
Third ,,	1	1	6	10
Fourth ,,	1	—	4	8
Fourth ,,	1	1	6	7
Fourth ,,	1	2	9	6
Fourth ,,	1	3	12	5½
Fourth ,,	1	4	15	5
Fourth ,,	1	5	18	4½
Fourth ,,	—	1	3	4

TABLE IV—MAXIMUM PERMISSIBLE PRESSURES ON WALLS AND PIERS OF PLAIN POURED CONCRETE

Designation of concrete as regards strength (as specified in Byelaw 16)	Cubic feet of aggregate per 112 lbs. of cement		Maximum pressure in tons per sq. ft.
	Fine aggregate	Coarse aggregate	
I	1½	2½	40
II	1¾	3¾	35
III	2½	5	30
IV	7½		20
V	10		15
VI	12½		10
VII	15		5

If, in any case, the designations of the materials are not determined, the maximum permissible pressure shall be as approved by the district surveyor.

If in any wall or pier in the same storey-height materials differing in designation be employed, the weakest shall be deemed to be employed.

If such wall or pier or any storey-height thereof have a slenderness ratio of 12 such total compressive stress shall not exceed 40 per cent. of the corresponding maximum pressure indicated in Table III or Table IV as the case may be. If in such wall or pier or in any storey-height thereof, the greater slenderness ratio be between 6 and 12, the total compressive stress in such wall or pier or such storey-height thereof shall not exceed a pressure correspondingly proportionate to the pressure appropriate to the slenderness ratios of 6 and 12.

No load-bearing wall or pier constructed of bricks or blocks or of plain poured concrete nor any storey-height thereof shall have a slenderness ratio exceeding 12.

Provided that where a wall or pier constructed of bricks or blocks or of plain poured concrete supports a girder or stanchion or is otherwise subjected to local loading of a like nature, and the stresses resulting from such loading are immediately distributed through adjacent material not so stressed, the compressive stress in the material so subjected to local loading may exceed the appropriate maximum pressure indicated in Table III or Table IV, as the case may be, by not more than 20 per cent.

58. For the purposes of byelaw 54 (except as hereafter provided) no account shall be taken of resistance to shearing or tensile stresses in any wall or pier of bricks or blocks or of plain poured concrete, and such materials shall not be relied upon to resist such stresses except in the case of arches, lintols, corbelling, footings and the like constructions which shall be to the satisfaction of the district surveyor. Provided that if a wall constructed of bricks or blocks or of plain poured concrete be adequately supported by supporting walls, piers or other constructions to the satisfaction of the district surveyor and the length of wall between such supports does not exceed forty-five feet and does not exceed forty-five times the thickness of such wall, then such wall may be deemed to transmit to such supports a horizontal load equal to twenty-five per cent. of the wind-pressure on such wall.

As before the storey-height must not exceed 16 times the thickness of the external wall for buildings other than of the public or warehouse class, and 14 times in the case of warehouse class buildings, but the restriction to 10 ft. storey-height for walls less than 13 in. thickness is removed.

The following clauses have been added dealing with the minimum thickness of other walls :—

60. If a wall of a building be so constructed that any part thereof does not in itself sustain nor aid in sustaining any of the loads on the rest of such wall and the rest of such wall be of sufficient strength, stability and stiffness to resist all the loads on the whole of such wall, such part of such wall, being properly bonded, or otherwise adequately joined to the rest of such wall, shall, for the purpose of byelaw 54 be deemed to be a separate wall or panel or separate walls or panels, and subject to the provisions of byelaw 61 following, shall be calculated as such.

61. Notwithstanding the requirements of byelaw 60 with regard to the calculations of the parts or panels of walls described therein, it shall suffice (subject to the requirements of byelaw 45 with reference to minimum thickness, and subject to the following provisions) if the overall thickness throughout of such parts or panels, exclusive of rendering, plaster, stone or other slab facing or other decorative finish, be not less than one-eighteenth of their length or height, whichever is the lesser.

Provided that—

(1) Such parts or panels shall be non-load-bearing and properly bonded or otherwise adequately joined to the rest of the wall.

(2) The height of such parts or panels of a wall shall in no case exceed 25 feet.

(3) That where such parts or panels of a wall are constructed as cavity walls they shall comply with the requirements of byelaw 46, and the height or the length (whichever is less) of such panels or parts of a wall shall not exceed thirteen feet and the area thereof shall not exceed 200 square feet.

(4) That any such part or panel of a wall shall not overhang the support thereof by more than one-third the thickness of such part or panel of a wall and not more than one-third the thickness of the leaf of such part or panel when such is constructed as a cavity wall, except that if such panel or part of a wall otherwise so constructed as a cavity wall is solid at the bottom to a height equal to its overall thickness it may overhang the support to the extent of one-third the overall thickness of such part of a wall or panel.

Underpinning in reinforced concrete is now officially allowed.

THE USE OF STRUCTURAL STEEL

It was to be hoped that, as the steel code of practice was now automatically granted by the L.C.C. under their waiver system, this would have been adopted by them as their byelaws, unless they felt that its requirements could be safely reduced. This was indeed the course recommended in the

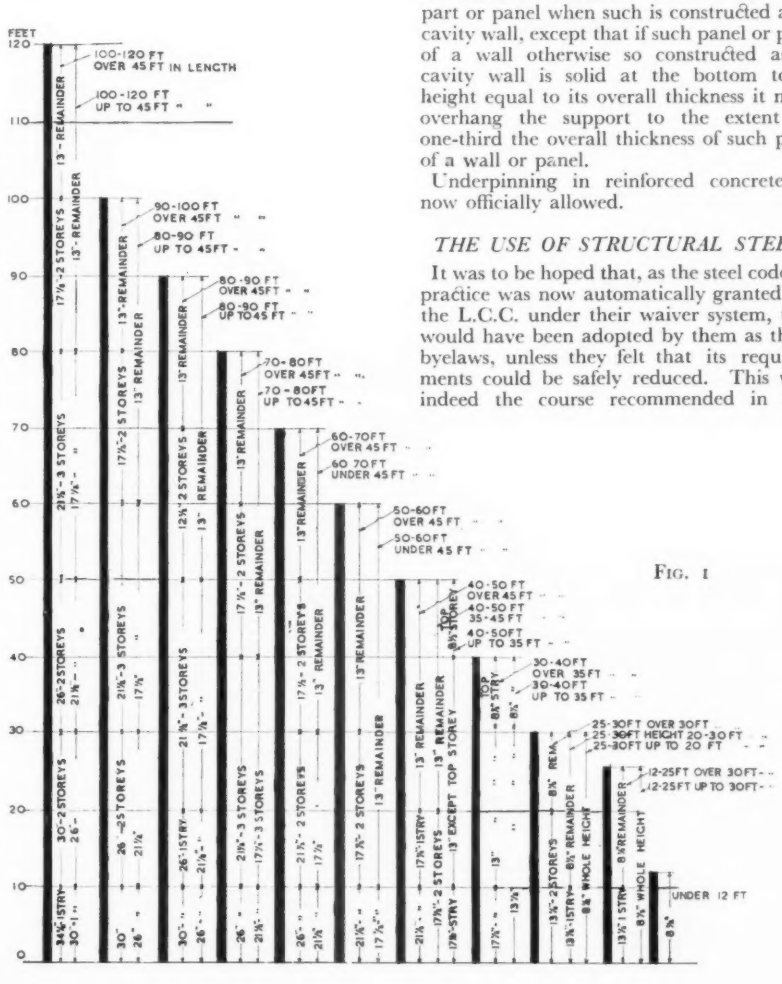


FIG. 1

Report of the Advisory Committee on the Amendment of the London Building Act. There can surely be no question of the sufficiency of the code as regards safety, for there are plenty of buildings to-day standing surety to this. Instead of adopting the code however, the new byelaws contain numerous alterations. For example, the allowable column stresses are as follows :

Ratio $\frac{l}{r}$	Allowable column stress in tons per sq. in.	
	L.C.C. proposed Byelaws	L.C.C. waivers or Code of Practice
20	6·4	7·2
40	5·6	6·6
60	4·8	5·9
80	4·0	4·9
100	3·2	3·8
120	2·4	2·9
140	1·6	2·3
160	0·8	0
180	0	0

The code of practice was formulated by a committee of engineers, it has been tried in practice and found safe, present-day designers are now used to it, and their tables of safe loads are based on its requirements. What point has the L.C.C. then, in altering the code to something more onerous, particularly as they are at present allowing it to be used in all steel frame buildings constructed in their area ?

The allowable stresses for other members vary in a few particulars from the code, but the variations are not so important as the column stresses.

Other points of importance may be noted :

(1) From the materials section only steel complying with B.S.S. 15 is allowed, so that the use of high tensile steel is not covered.

(2) The requirements as regards cover are as follows :

72. (*a*) A steel column or beam wholly or partly in an external wall or wholly or partly within a recess in a party wall shall be completely encased and protected from the action of fire with brickwork, terra-cotta, concrete, stone, tiles or other similar incombustible materials at least four inches in thickness in compliance with this byelaw.

Provided that the casing on the underside of such a beam, and to the edges of the flanges thereof and of plates and angles connected therewith, may be of any thickness not less than two inches.

(*b*) Any other steel column or beam shall be completely encased and protected from the action of fire with brickwork, terra-cotta, concrete, stone, tiles or other similar incombustible materials at least two inches in thickness in compliance with this byelaw.

Provided that the casing on the upper surface of the upper flange of such a beam, and on other parts (such as projecting cleats, projecting rivet-heads and the like) of such a beam or column may be of any thickness not less than one inch.

This requirement shall not apply in the case of a building which comprises only one storey and is not more than twenty-five feet in height.

(*c*) All casing required for compliance with this byelaw shall be executed with Portland cement, and shall be bedded close up to the steel without any intervening cavities. All joints in such casing shall be made full and solid.

73. Steel shall be treated and protected to prevent corrosion of or other damage to such steel which might affect adversely the stability of the building or of any part thereof.

These are on the lines of the present third schedule and are more reasonable than those in the code, which were indeed seldom used.

(3) The requirements as regards rivets and bolts would seem to prohibit welded connections.

(4) Any clauses in the code which gave methods of design are omitted.

(5) An old third schedule requirement, not in the code, has been retained as follows :

91. The bearing stress in a steel packing or beam interposed between a superimposed column and a column beneath shall not exceed the stress permissible in such superimposed column under byelaw 85 and the width of such interposed steel shall be not less than the corresponding width of such superimposed column.

This seems unnecessary and illogical, since there is no reason why the bearing stress in a short packing should be limited to that in a slender column which it may carry.

THE USE OF REINFORCED CONCRETE

As regards reinforced concrete, a code of practice was issued by a committee of the D.S.I.R. in January, 1934, and has been, in spite of some criticisms, widely adopted. The L.C.C. have always refused to grant waivers giving the use of the whole of this code, but have allowed parts of it. The Advisory Committee on the Amendment of the London Building Act, however, put forward the code, almost unaltered, as suggested byelaws. The present proposed byelaws, in spite of this, differ from the code considerably. Bearing in mind the personnel of the D.S.I.R. committee and the institutions which they represented one is tempted to ask why.

A few of these points of difference may be noted :—

(*a*) Allowable stresses. With the exception of mixture IIa, where probably through a misprint there is a slight discrepancy, these are as the code, with this important exception. The code allows a certain direct compressive stress and an increase of 25 per cent. on this stress where this compressive stress is induced by bending. The L.C.C. also propose to allow this increase, but only where this bending is in beams and not in columns. No reason is given for this.

(*b*) The proposed working stresses in reinforcing steel are as the code, with the very important exception of the steel in columns. This will be referred to again later.

(*c*) Methods of design.

Requirements as to methods of design, which were cut down to a minimum in the code, have been almost entirely eliminated in the L.C.C. proposals. The statement is merely made that the stresses shall be calculated. In one point the L.C.C. have, however, specified a method of design and departed radically from the code. That is in the design of columns. Previous to the publication of the code, columns were designed by allowing a certain stress in the concrete and a stress in the steel equal to the modular ratio multiplied by the stress in the concrete. Experiments show that the state of affairs assumed by this method does not exist, and that, owing to shrinkage of the concrete and other causes, the stress in the steel may reach the yield point before the column is even loaded. The code therefore puts forward a more logical method of design in which a steel stress is specified independent of the concrete stress. This method of design the L.C.C. apparently propose to prohibit because they state that the stress in the steel in a column shall not exceed " the calculated compressive stress in the surrounding concrete multiplied by the modular ratio." They do not state how the stress in the surrounding concrete is to be calculated, or what value is to be assumed for the modular ratio. The word " assumed " is used deliberately, since, although the modular ratio has a strict definition, i.e. the ratio of the elastic moduli of steel and concrete, roughly speaking there is no definite elastic modulus for concrete, and therefore there can be no definite modular ratio. Is the designer to be allowed to choose any value he fancies, or who is to settle this point? Surely these are points where it would have been wise to follow the guidance of the code.

GENERAL

The chief item in this, i.e. the submission of calculations to the district surveyor, was dealt with last week.

Summing up—

1 : The proposed byelaws will do away with some obsolete and onerous portions of the Building Act.

2 : As byelaws these proposals can in future be altered with less trouble than an Act of Parliament, but, remembering that the reinforced concrete regulations have been in this form since 1915, and have not been changed it is as well not to be too hopeful in this respect. They can also (like the corresponding clauses in the present Act) be waived on application. In spite of this nothing out of date or restrictive should be allowed in these the first of the new byelaws.

3 : In many points, particularly those dealing with construction, the L.C.C. has chosen to vary from existing tried codes of design and practice, and in most cases the variations, if adopted, will result in more costly structures. This is in spite of the fact that these codes were recommended for adoption by the advisory committee on the amendment of the Building Act. It is difficult to see the reason for this, particularly since in the rest of the byelaws, wherever possible, reference is made to existing standard specifications. It is also difficult to see why the recommendations of authoritative committees should be ignored.

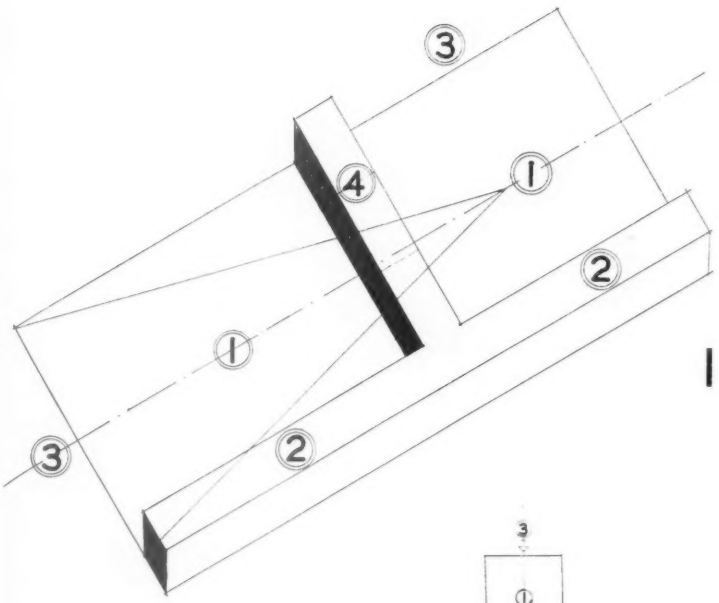
4 : The byelaws seem to increase the responsibility and work of the district surveyor in a very marked way. In fact, in many cases the workability of the clauses will depend entirely on him.

5 : Legal points in the byelaws have not been dealt with in this article, but in view of the time taken in their preparation and the complication of some of the phraseology, it is probable that this side has been thoroughly explored.

ANALYSIS OF A BUILDING: 6

FILM STUDIOS AT SHEPPERTON

DESIGNED BY CONNELL, WARD AND LUCAS



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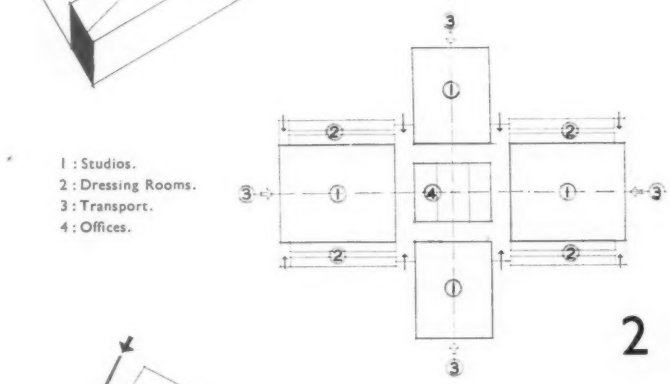

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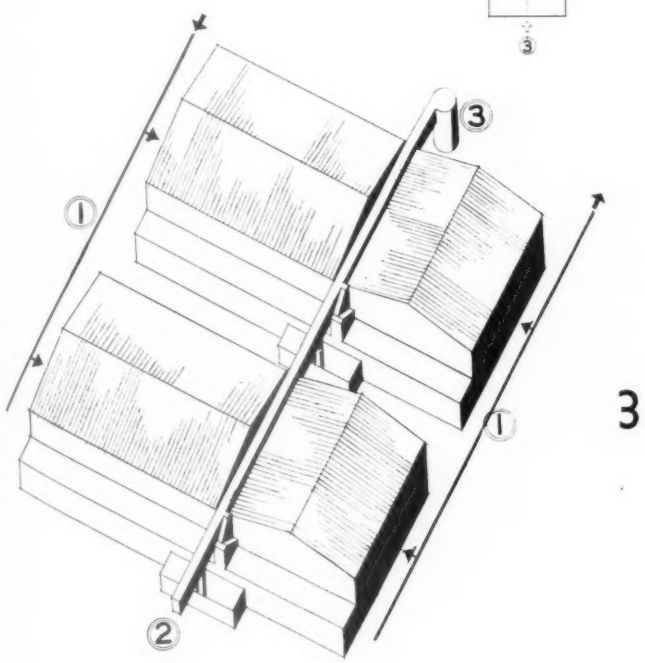


3

Messrs. Sound City (Films), Ltd., already possessed, and had, in fact, developed the site for film manufacture.

The new studios are designed so that they may be leased to film-making corporations, although the owners are themselves producers. The scheme originally consisted of six studios, but only four have been carried out.

The main requirements were :—

1 : Each studio to be entirely self-contained.
2 : To be erected with the maximum speed.
3 : That the units (i.e. each studio) should not disorganize existing plant.

It was thus decided that a complete studio unit—studio, offices, dressing-rooms, etc., must be arrived at first.

THE STUDIO UNIT

Main factors governing the design of the studio unit are :—

1 : Each studio to be quite soundproof.
2 : To have an uninterrupted floor area of 120′ span (allowing in width for two maximum sets of 60′).
3 : (*a*) Control of actors' and supers' entrances.
(*b*) Easy access for scenery, etc., from workshops.
4 : As long a camera angle as possible (Fig. 12)—at least 200 ft.
5 : Two types of studio, large and small, capable of being self-contained or leased as one where required.

1 From these considerations the unit in Fig. 1 was evolved. Its advantages over any other arrangement are :—

1 : The studios can be leased separately or can be thrown into one by means of sliding doors, thus giving a long camera angle. The space between being utilized for other purposes and giving sound-insulation between the studios.
2 : Dressing-rooms and offices. Placed along the long side give a unified control of approaches to both studios.
3 : Transport. Space on three sides for loading of equipment.
4 : Ventilation ; enables a common plant to serve both studios.

2 The Tonfilm studios at Berlin, by Otto Kohtz, represent a similar problem, though here the dressing-rooms are not so well placed for the smaller studios.

3 The unit is capable of repetition as shown in Fig. 3.

Actors and supers (2) approach by bridge to first floor dressing-rooms, from one point.

A control tower is shown on this drawing (3) and is intended to facilitate the control of supers from one unit to another.

This scheme did not proceed as it was considered by the clients that each unit of two studios, each with dressing, etc., rooms, should be entirely self-contained.

ANALYSIS OF A BUILDING : 6

SITE PLAN

1. Existing house and out-buildings.
2. Old workshop.
3. Old studio.
4. Old dressing-room.
5. Gardens.
6. Formal garden.
7. Pool.
8. River.
10. New studios.

4

5

SITE : The general character of the site is admirably suited to its purpose. Figs. 4 and 5. Round the existing house are well laid out formal gardens, a pool, and beyond, a tributary of the Thames. The estate is well timbered and it was particularly desired that none of these natural amenities should be destroyed.

The position of the studios on the site was governed by :—

1 : Number of units to be built and future expansion.

2 : Relation of units to existing plant and buildings.

3 : Access to and from London of (*a*) supers, brought by the bus-load ; (*b*) goods, studio property and technical equipment.

4 : Preservation of existing gardens, etc.

5 PLACING OF UNITS

Central control of supers, etc., with approach to studios through covered bridge and dressing-rooms on first floor. This has been omitted at the present stage and approach is by a staircase to each unit.

One-way circulation of traffic without crossing any counter-streams.

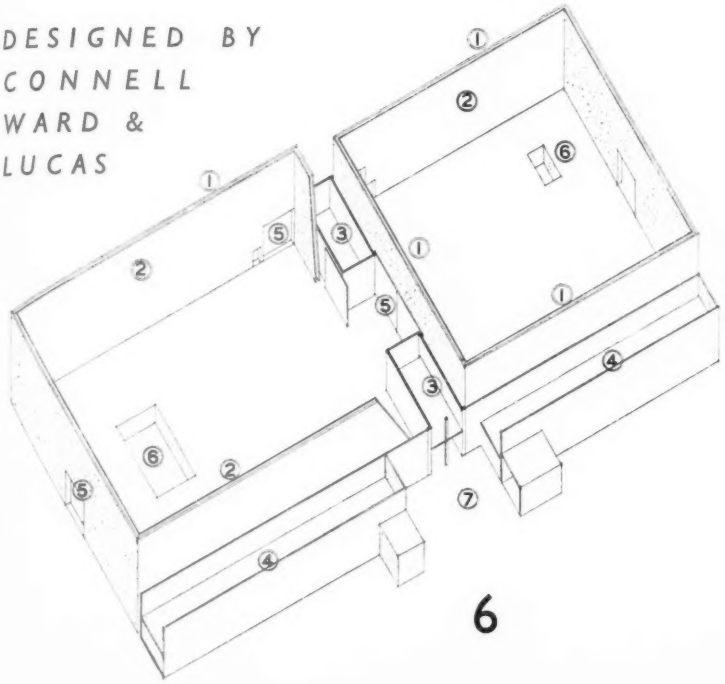
Allows eventually three units to be built. Two are now being proceeded with.

Existing gardens not interfered with and units screened from it.

Site is almost dead level.

FILM STUDIOS AT SHEPPERTON

DESIGNED BY CONNELL WARD & LUCAS



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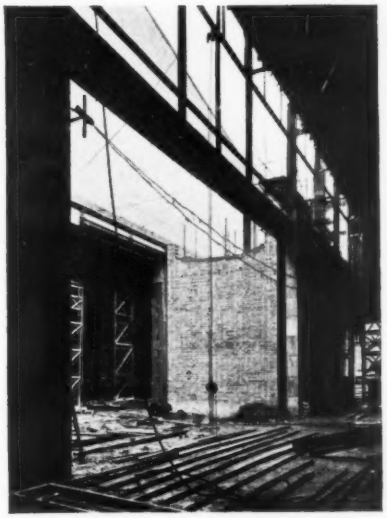
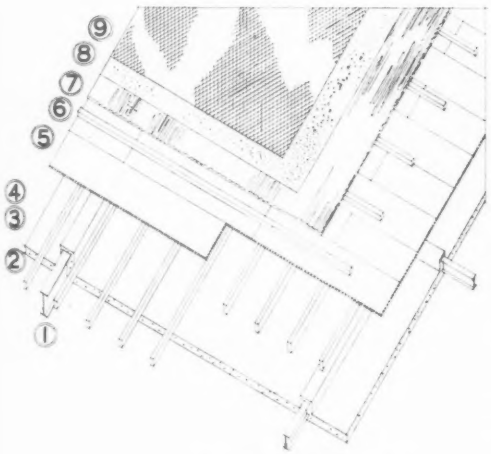


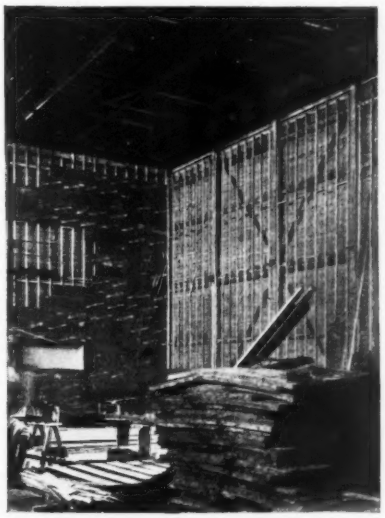
7 Folding doors opening between studios and brick structure.



8 SOUNDPROOF WALLING

1. Wall frame R.S. sections.
2. External structural wall 4″ r.c. web, except where adjacent to dressing-rooms.
3. Air space.
4. 4″ by 2″ hangers at 1′ 8″ centres hung from wood beam at ceiling level.
5. 80″ by 20″ Heraklith slabs.
6. 2″ by 2½″ battens at 34″ centres.
7. 2″ sprayed asbestos on wire mesh.
8. Muslin covering.
9. Wire mesh

No part of the internal wood structure for sound-proofing touches external wall; where supported, it rests upon cork pads.



9 Fig. 9 shows wall lining in process of erection. Left, Heraklith slabs in position for battening; right, the 4″ by 2″ vertical studding.

SOUND INSULATION

Sound insulation is the principal factor in the design of studios. With the type of unit adopted there must be :—

No transmission of noise from one studio to another.
No transmission of noise from outside, e.g. traffic, aeroplanes.
No transmission of noise from structure.
No transmission of noise from mechanical equipment, ventilation plant, etc.

Hence the unit was planned :—

1 : Each studio structurally separate.

2 : Each lined with sound-proof partition insulated and separate from structure. Figs. 7, 8, 9, 10.

3 : The studios were separated from each other and a solid brick structure containing the ventilating plant erected independently. Figs. 6 and 7.

4 : Special means of lining and deadening the machinery and ducts adopted.

5 : All doors rendered soundproof.

6 ISOMETRIC OF STUDIO UNIT

1 : Studios—structurally separate.

2 : Soundproof lining disconnected with structure.

3 : Solid brickwork structurally disconnected, for fan chamber, etc.

4 : Dressing-rooms and offices structurally separate.

5 : Sliding doors soundproofed.

6 : Water tanks.

7 : Hall and property stores ceiling removed to show disconnection.

ANALYSIS OF A BUILDING : 6

10 TYPICAL DOOR AND JAMB —showing soundproofing :

1 : Heraklith.
2 : Flocculent asbestos.
3 : Felt and mastic.
4 : Felt.
5 : ½" Tentest.
6 : ¼" plywood.
7 : 20 gauge sheet metal.

CONSTRUCTION

Main factors in design are :—
1 : Sound insulation.
2 : Uninterrupted span.
3 : Speed of erection.

ROOF—For the roof a light steel truss of 120 ft. span was adopted. Its design was governed by the size of members for transport.

Lightness and consequent economy (*a*) secondary and tertiary trusses cheaper than closely-spaced parallel trusses with R.S.J. purlins.

Speed ; certain joints welded, others riveted on site.

Gave 40 ft. gangways, and grid of steel members above floor level for fixing arc lights, scenery, etc.

11

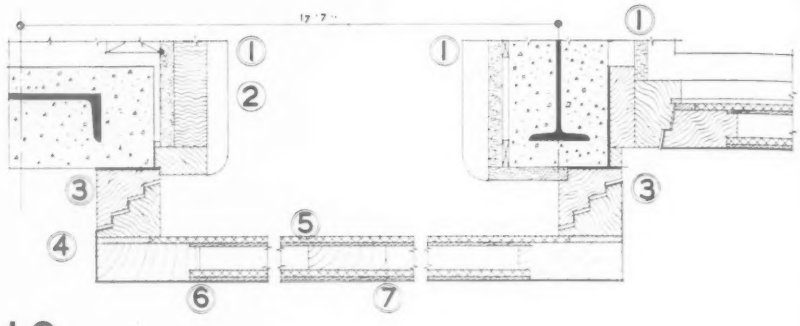
	% saving in weight of welded structure
1 : 4 main roof trusses, 120 ft. span, 30 ft. centre to centre	18·7
2 : 15 secondary trusses, 30 ft. span. Hangers to ceiling	30·8
3 : 20 braced rafters, 30 ft. span, hangers to ceiling	26·1
4 : Framed gable.	

WALLS—R.C. web with frame of R.S. beams and stanchions where external. Where adjacent dressing-room block, precast slabs have been used.

DRESSING-ROOM BLOCK—Is entirely separate from main structure, even to foundations. Steel frame with hollow block external wall and r.c. floors and roof.

HEATING AND VENTILATION

Two main considerations :—
1 : Fairly rapid ventilation owing to heat of arc lamps.
2 : Silence in operation.
Central boiler-house supplies heat to all units.
Separate ventilating system to each unit.
VENTILATION—Fan chamber : one intake fan for each studio—
large 32,500 cu. ft. per min.
small 21,800 ,, ,,
controlled by variable speed motors of 13 and 10 h.p., respectively.
Extraction by two fans in each gable.
All fans and ducts lined and baffled.
Total capacity of plant = 6½ million cub. ft. per hour.
HEATING—Boiler-house (Fig. 4) serves all units. The boilers are capable of heating 6,000 gallons per hour with automatic coal fired. Induced draught to boiler lessens chimney height.
Plant supplies :—
1 : Gilled tubular heater for air supply.
2 : Calorifiers to dressing-room block under stairs, with normal pressure heating (Fig. 12).
3 : Direct hot-water supply calorifier : in summer when main plant not in use auxiliary heating employed.



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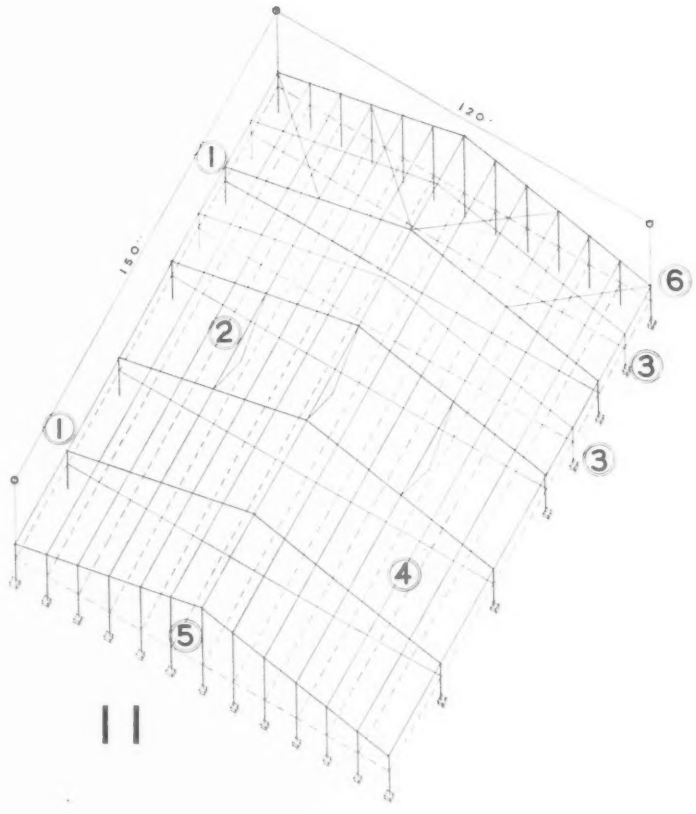

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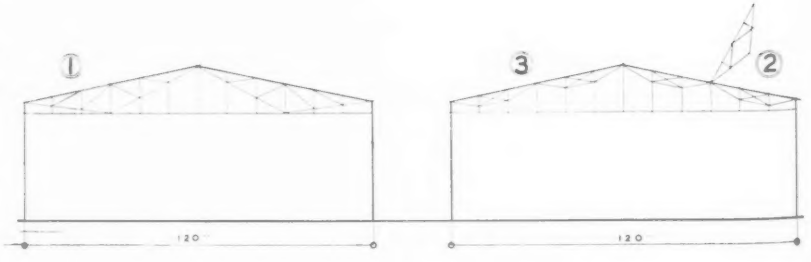

FILM STUDIOS AT SHEPPERTON

DESIGNED BY CONNELL, WARD AND LUCAS

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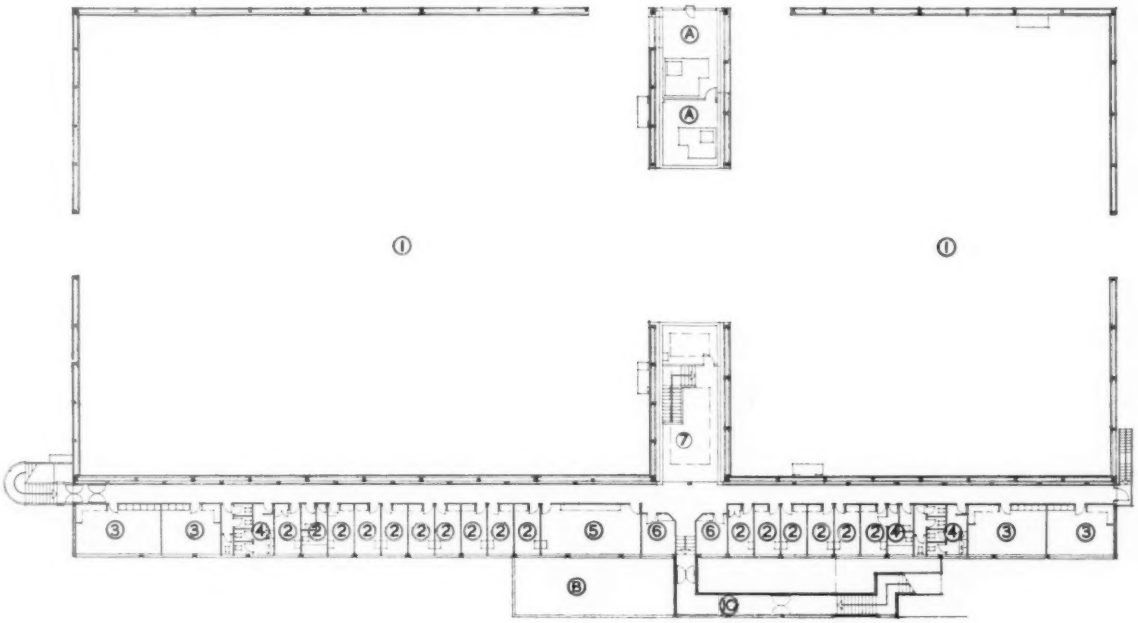


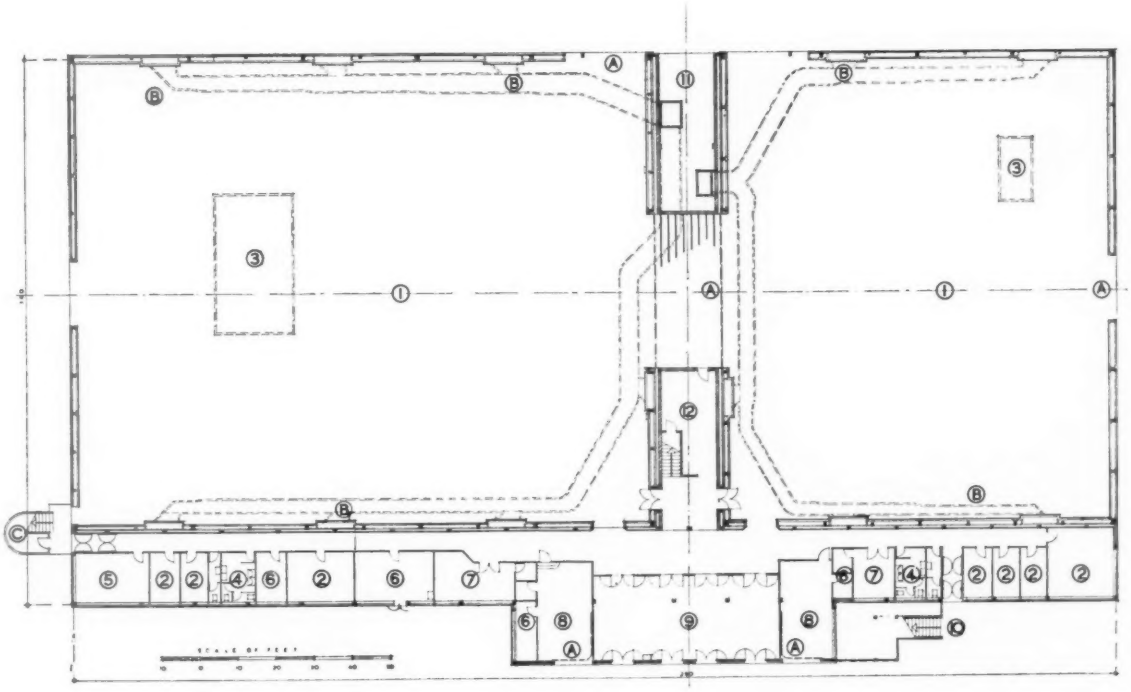
12 FIRST FLOOR PLAN

1 : Studios.
2 : Dressing Rooms.
3 : Ground Rooms.
4 : Lavatories.
5 : Wardrobe.
6 : Pay Office.
7 : Stairs to Studio.
8 : Fan Rooms.
A : Fans.
B : Flat Roof.

13 GROUND FLOOR PLAN

1 : Studios.
2 : Offices.
3 : Tanks.
4 : Lavatories.
5 : Art Room.
6 : Workshops.
7 : Camera.
8 : Sound Van Garage.
9 : Property Store.
11 : Scaffold Store.
12 : Tea Room.
A : Sliding Doors.
B : Ventilation Ducts.
C : Calorifier.

13



HOUSE NEAR HENLEY-IN-ARDEN

GENERAL PROBLEM — *Restoration of Whitley, a Warwickshire farmhouse. In the Doomsday Book, the house is entered as a "stone house," but little stone remains except in one or two fireplaces. The house has been altered considerably through the centuries, the reconstruction work being carried out in local bricks around what remained from time to time of the timber framing. The old timbers and roof trusses came from the Warwickshire forests and are of generous scantlings.*

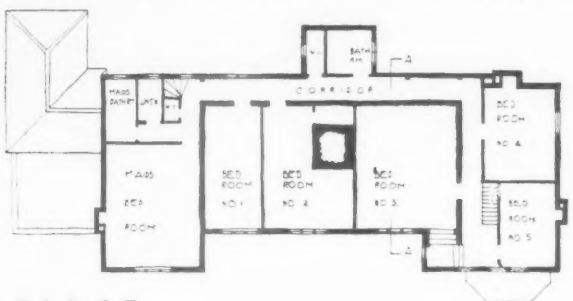
PLAN—*A kitchen block has been built, with an external service corridor to obviate cutting through the old timbers and roof trusses, cloak- and bath-rooms, and a new front entrance. The restoration work has been carefully executed, and very little of the old structure has been demolished.*

CONSTRUCTION—*The walls are built in old bricks, the roof partly covered with old and partly hand-made new tiles. Fireplaces are brick, with flush rubbed joints.*

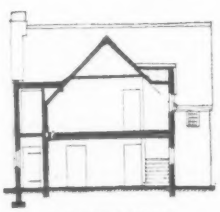
For list of general and sub-contractors see page 282.

The photographs show: top, the south front; centre, the dining-room; bottom, the lounge.

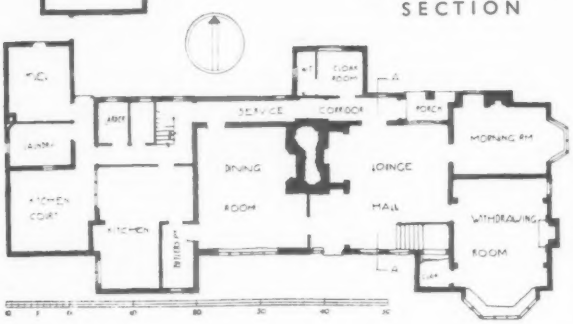
DESIGNED BY FRANCIS W. B. YORKE



FIRST AND GROUND FLOOR PLANS



SECTION



WORKING DETAILS : 479

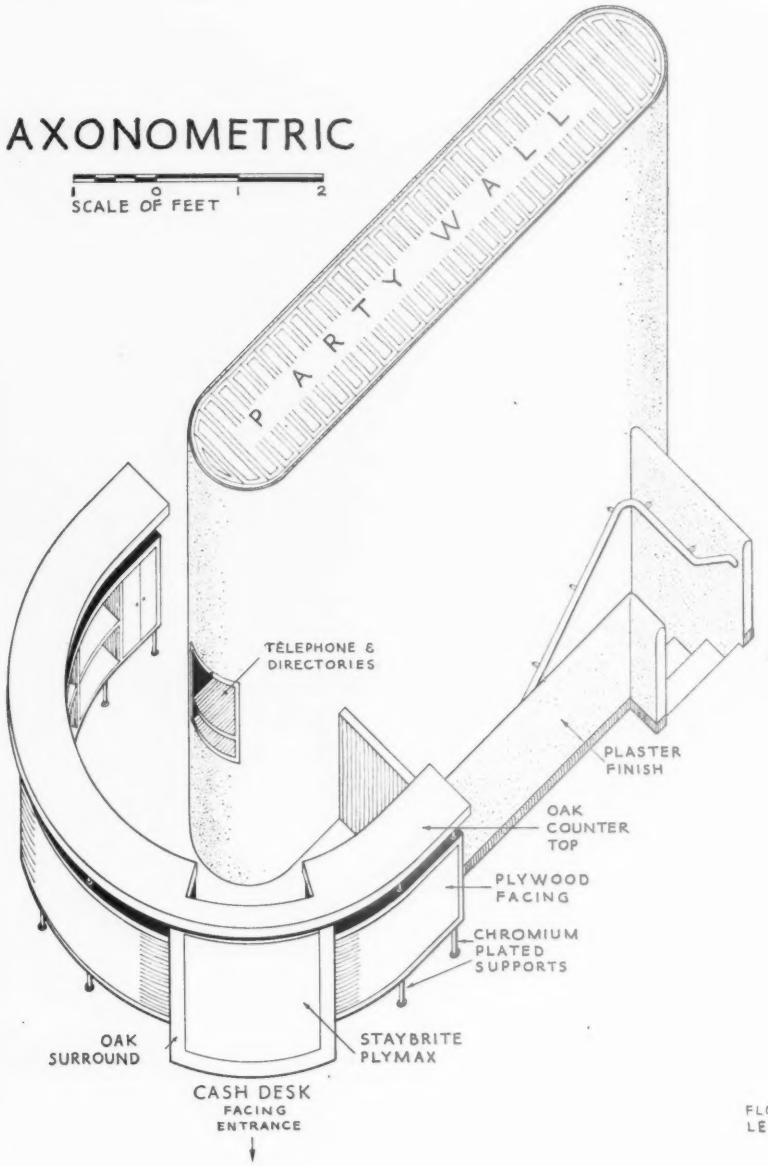
RESTAURANT CONVERSION • VEGA RESTAURANT, LEICESTER SQ., W. • SAMUEL & HARDING

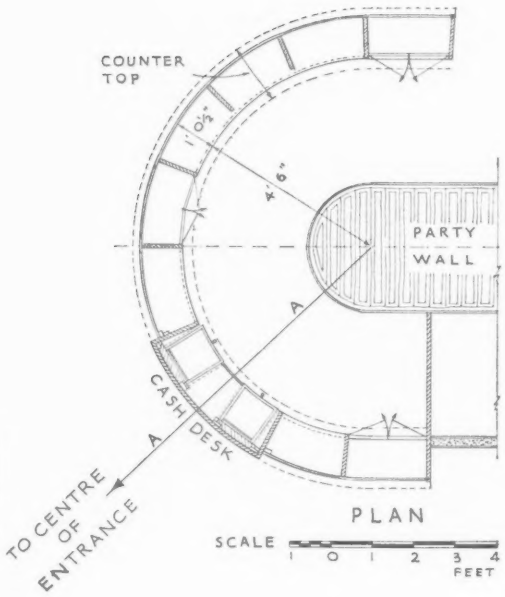
The restaurant illustrated above has been enlarged by the addition of the shop next door, the old party wall remaining only in the centre of the restaurant space as a free-standing column. An axonometric and details are shown overleaf.

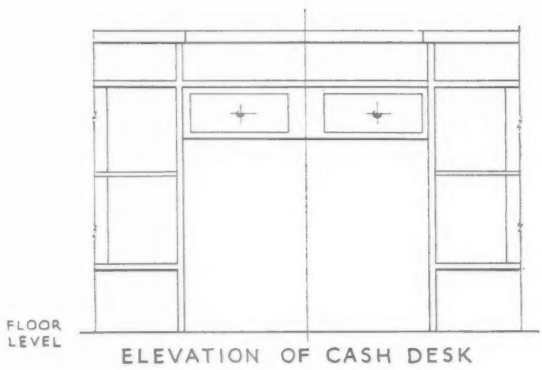
WORKING DETAILS : 480

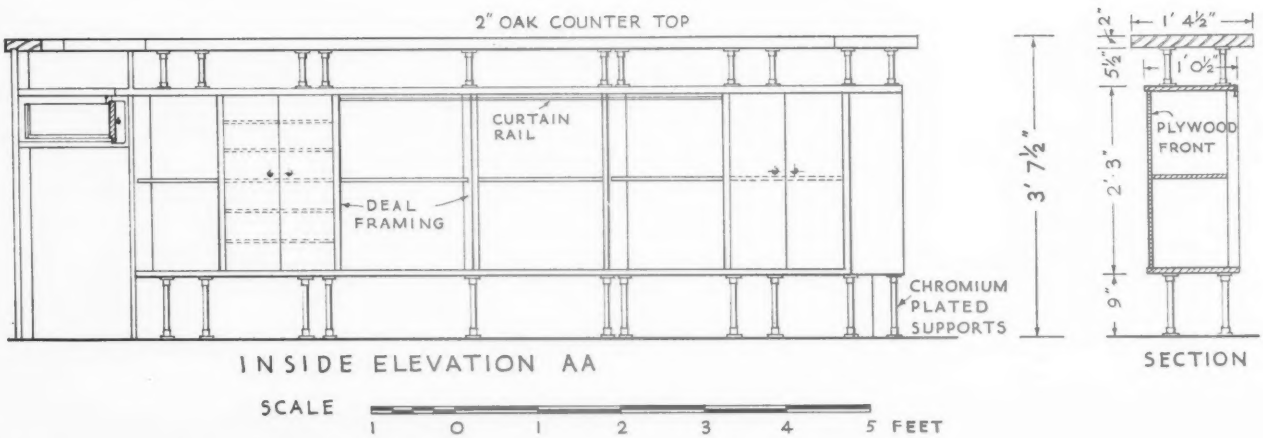
RESTAURANT CONVERSION • VEGA RESTAURANT, LEICESTER SQ., W. • SAMUEL & HARDING

AXONOMETRIC









Axonometric and details of the counter are illustrated overleaf.

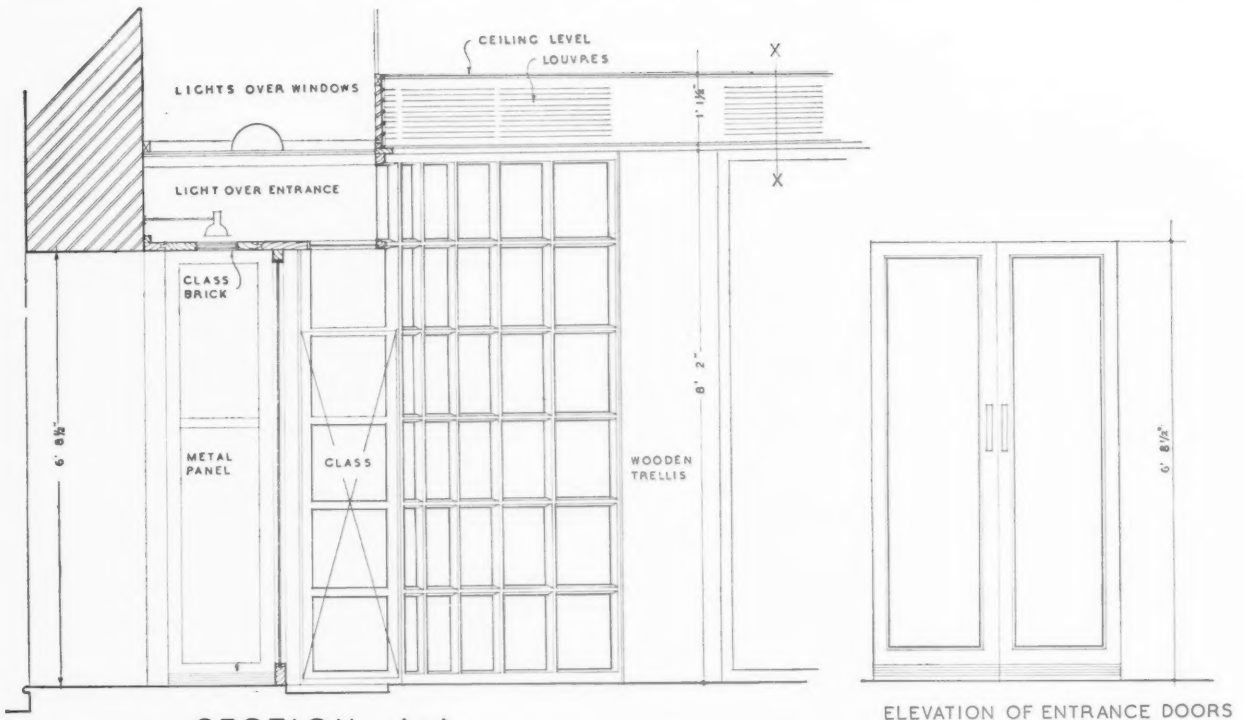
WORKING DETAILS : 481

ENTRANCE • VEGA RESTAURANT, LEICESTER SQ., W. • SAMUEL & HARDING

The illustration shows the main entrance to a restaurant reconstruction job where the lobby has been planned to form a double window for plants and at the same time link together the windows of the old and new restaurants. Ventilation is by wooden louvres fixed between the false ceiling and the transom level of the existing windows. An elevation and details are shown overleaf.

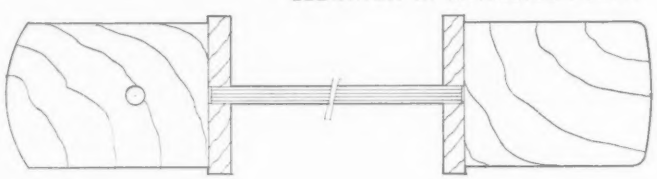
WORKING DETAILS : 482

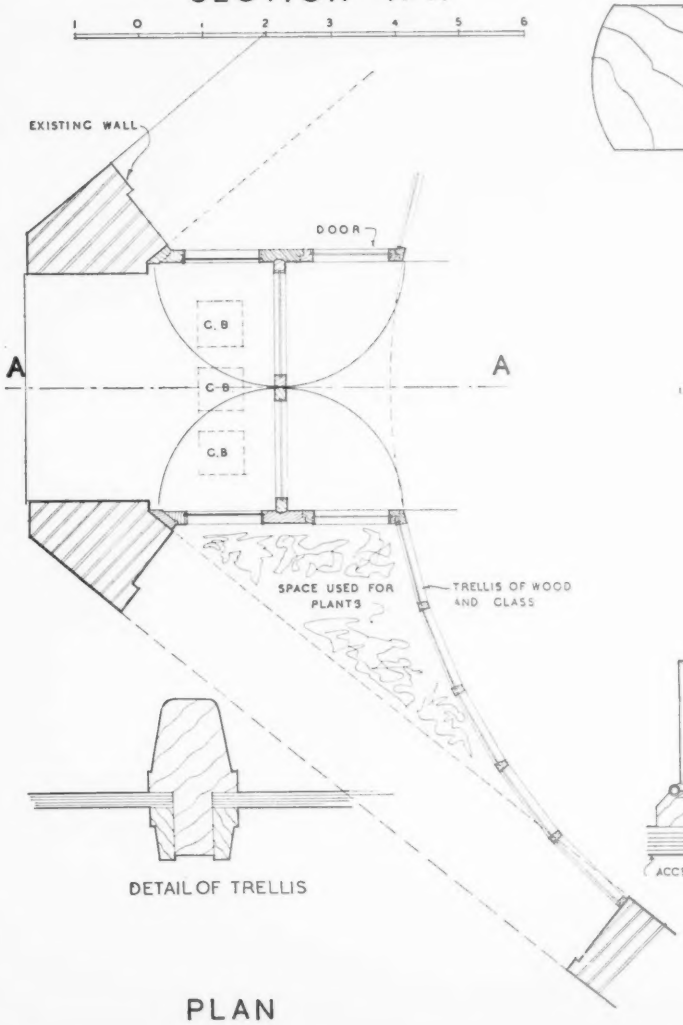
ENTRANCE • VEGA RESTAURANT, LEICESTER SQ., W. • SAMUEL & HARDING



SECTION A-A

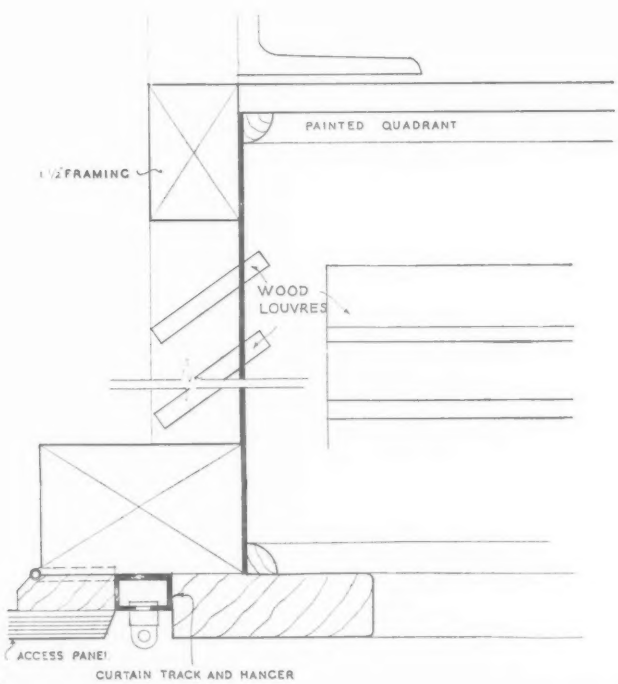
ELEVATION OF ENTRANCE DOORS



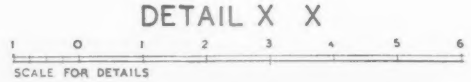


PLAN

DETAIL OF TRELLIS



DETAIL X X



Elevation and details of the entrance illustrated overleaf.

A view from the tower of the Hôtel d'Assézat at Toulouse. On the left is the church of the Jacobins, and on the right the Basilica of St. Sernin.

LITERATURE

BRICKWORK IN LANGUEDOC

The Use of Brick in French Architecture. Part One: The Midi. By William Emerson, F.A.I.A., and Georges Gromort, D.P.L.G. Drawings by Samuel Chamberlain. New York: The Architectural Book Publishing Company, Inc. London: Williams and Norgate. Price 25s.

THE best way to study the architecture of Albi, to take as example the city that rightly has much prominence in this admirably illustrated book, is to go there on a day when there has been rain and the Tarn is in flood, to take lunch *chez* Rieux, and to come out into an atmosphere that the rain has washed so clear that the colour that is Albi's most notable adornment warms one in a way that even the wines of the Rieux cellar can scarcely do.

On such a day even the river, carrying away the rich soil in its flood, is as red as the city—"a rose-red city, half as old as time." The phrase was turned about a jewel of the desert. Albi is a jewel in a richer land, and if it is not half as old as time its brick gives it to perfection the mellowness and great richness of aspect that many older and most newer places have not. The cathedral, that remarkable monument, and the archiepiscopal seignory are here well illustrated as to the exterior—as well, indeed, as pencil and camera can illustrate a place in which colour counts for so much—but we might reasonably have been taken inside the cathedral and shown something of the technique of building it.

Toulouse, a city that carries a metropolitan air with an easy grace, is pretty amply treated and proper regard is paid to her peculiar splendours of domestic architecture. They have done some very notable things with brick there, although they are freer than, for instance, at Albi with their use of stone facings. But they seem always to turn back to brick. A gracious bishop who was showing me St. Sernin's Cathedral was amused to point out places where the builders' supply of stone must have run out on the exterior of the east end of that great basilica and where, unable to get more for the time being, or too lazy to fetch it, they had interrupted the pattern of the stone with brickwork.

Montauban, a younger town, is the subject of interesting work, and to go to the other corner of the area covered in this volume, Perpignan's Castillet, her Cathedral and certain other of her memorials are interestingly explored. But a special value of the book is the way in which it draws attention to churches and houses off the beaten track.

There are uncommon riches of architecture in Languedoc. A history uncommonly full of religious strife has not left it impoverished. Of some of these riches many will hear for the first time from this book. It is by no means overloaded with technical matter, and indeed the text very often takes us very little further than the guide-books do, but as an introduction to, or reminder of the glories of the region, with a notable collection of drawings and photographs, it is commendable. Succeeding volumes will deal with the Centre, Normandy, Ile-de-France, Flanders and Modern French Brickwork.

E. H. W. A.

A detail of the Hôtel d'Assézat at Toulouse.

BATH

[*By HUBERT FITCHEW*]

Historic Bath: the Official Handbook. By John Haddon (Bath City Spa Committee).

BEAU NASH dominates both covers of this 60-page booklet, as his spirit dominates Bath — a reduced facsimile of Miss D. M. Batty's poster, in fact, now in display on the G.W.R. Within, an excellent sketch-map, page after page of beautiful photographs to the number of nearly 150, and letter-press of a straightforward yet scholarly order. The whole gives one just the thing needed. If one is not an architect, it is well to be told that Bath is *the* Georgian City—" nowhere can English 18th century architecture and civic planning be seen in such perfection." If one is in robust health it is well to know about the curative facilities of the waters, which, by the way, are unique in England as being hot (120° F.), spring up, in all probability, from a depth of 5,000 feet, and are radioactive. Bath is a fine city set about with a profusion of beauty-spots, and attention could hardly be more effectively drawn to the facts.

BUYING A HOUSE

The Right Way to Choose Your House: Clay Products Technical Bureau of Great Britain.

FROM the Clay Products Technical Bureau comes this compact and cogent booklet. Its business is to state the claims to consideration on the part of the prospective house-owner of brick and tile—" earth itself "—" burnt moulded clay "—as basic materials of construction. Here is no specious argument, but fact after fact, plainly and (what is almost more commendable) lucidly stated, about strength, durability, insulation against heat and sound, resistance to fire, and so forth.

Most valuable to the layman are the sections devoted to enlightened methods of construction and maintenance. If all propaganda were made to tell as heavily as do these 16 small but well-planned and clearly-illustrated pages, the cult of good building would be notably advanced. The promised future publications will be awaited with interest.

BOOKS RECEIVED

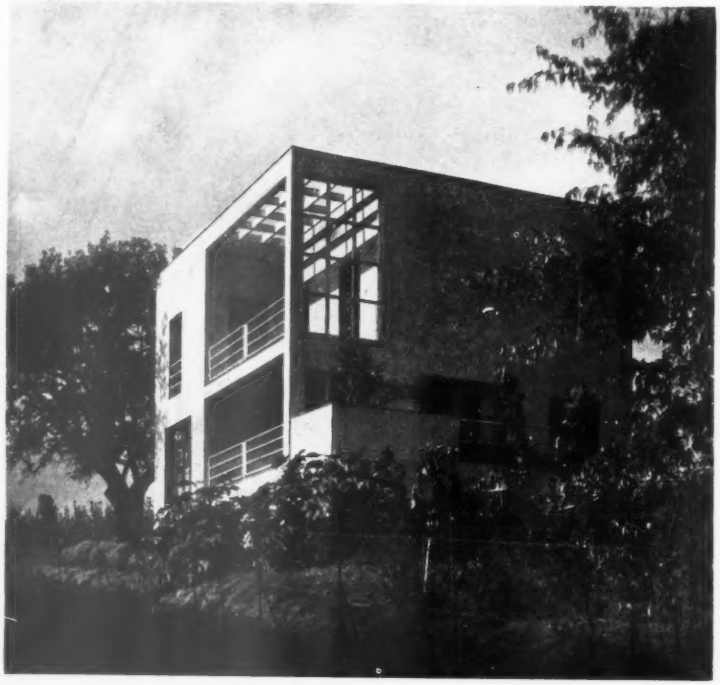
Practical Painting and Decorating. By J. E. Butterworth. London: The English Universities Press. Price 5s.

Land-Value Rating. By J. C. K. Douglas. London: The Hogarth Press. Price 2s. 6d.

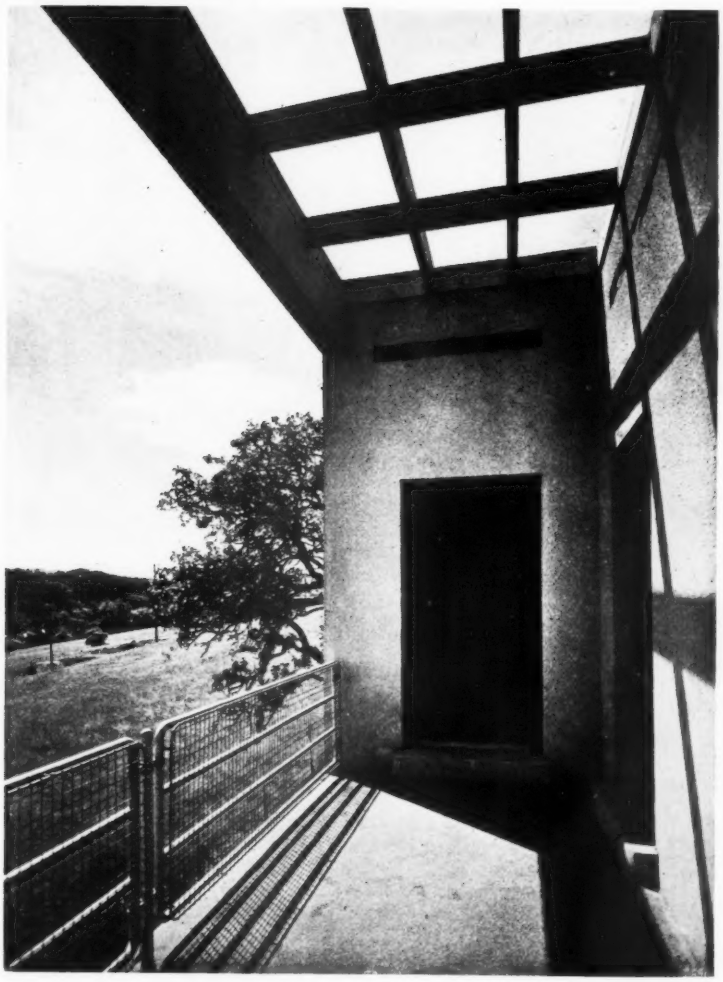
English Church Screens. By Aymer Vallance. London: Batsford. Price 25s.

HOUSE NEAR VIENNA

DESIGNED BY ERNST PLISCHKE

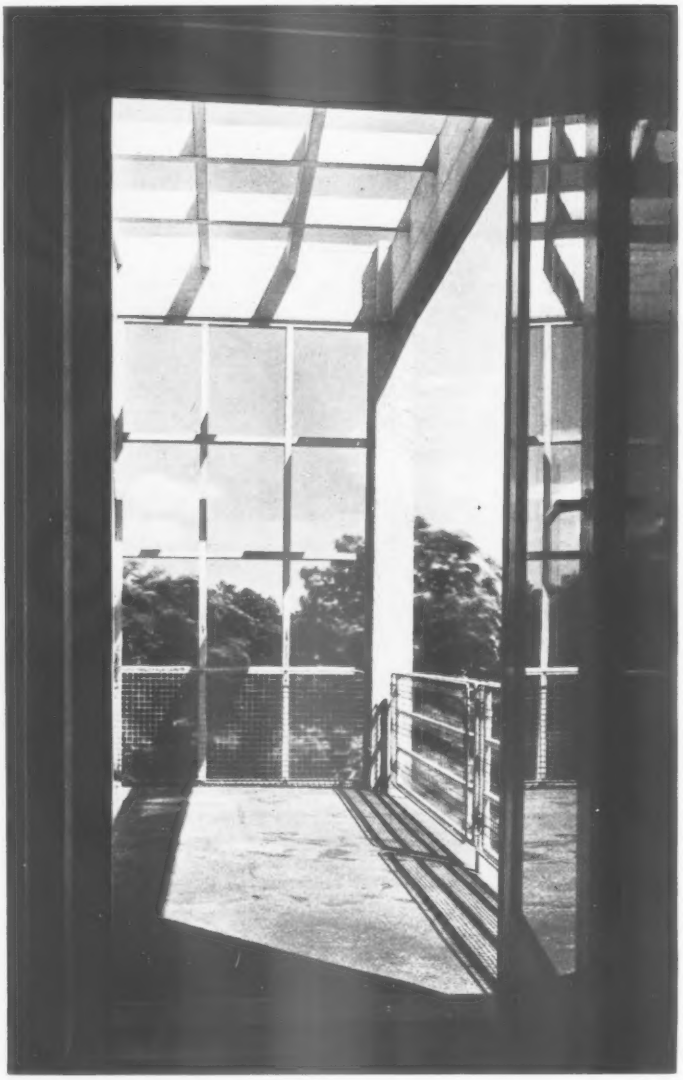


PURPOSE—*A small country house in the Rosental, a hilly district on the borders of the Vienna forest. The site was specially selected for the reason that preservation laws prevent any further building in the neighbourhood.*



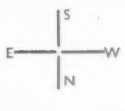
The photographs show two views of the south front and a detail of the upper verandah.

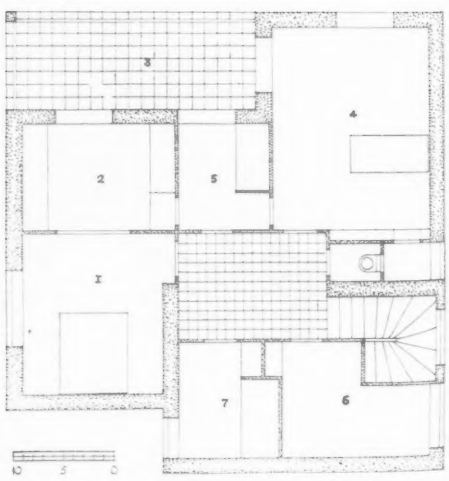
HOUSE NEAR VIENNA: BY ERNST PLISCHKE



PLAN—*The architect aimed at a plan form which would intimately link the rooms with the open air whilst still being economical. The ground plan has a large living room opening on to a winter garden which can be enclosed with glass screens; a small dining room opening out of the living room; kitchen; and cloakroom. The first-floor plan has two bedrooms (2 and 4), which have access both to the south verandah and to the principal bathroom (5). There are also two other bedrooms and another bathroom.*

CONSTRUCTION—*Brick, with walls roughcast. Upper floor and roof are of timber, and windows and doors of hardwood: all doors are fully glazed with plate glass in order to increase the sense of space in all rooms. Roof and verandahs are finished with small gravel and bitumen composition. Right, the upper verandah from the principal bedroom. Below, the winter garden and the folding doors of the living room.*





TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

"Keep the Home Odor-Free"

"STALE cooking odors have no place in the home. When greasy fumes and odors course their way from the unventilated kitchen into the other rooms of the home they cause the housewife many difficulties. Walls and furnishings are discolored and soiled. Long after the meal has been forgotten, the home with an unventilated kitchen bears the stale, musty odors that prove so embarrassing to the hostess, so disagreeable to her guests."

•

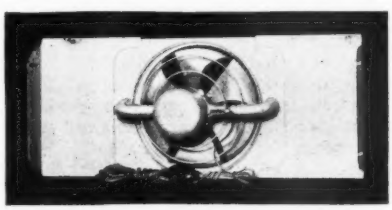
Thus the high pressure American overcoming sales-resistance. The catalogue from which the above is quoted goes on to stress the disadvantage of smells on the staircase in flat blocks not equipped with extract fans; the building, rather like the unfortunate young salesman whose unknown B.O. prevents him from getting in to see the boss, repels prospective tenants and loses rental value.

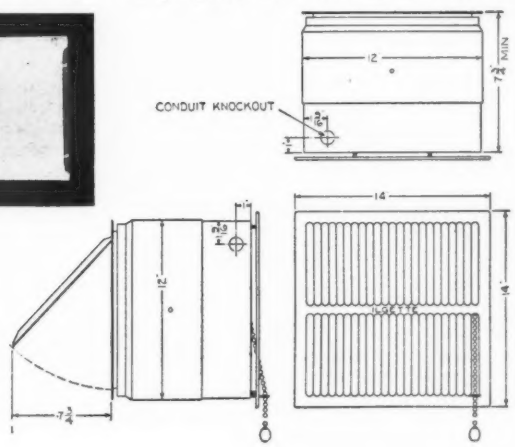
•

It is, of course, easy enough to poke fun at a good deal of American advertising, but the fact remains that the removal of smells from kitchens or steam from bathrooms is well worth while, as is shown by the excellent sales records of the devices already on the market in this country. And now Messrs. Air Conditioning and Engineering, Ltd., are importing the Ilg range of ventilators, which are made by the Ilg Electric Ventilating Co., one of the best known fan manufacturers in America.

•

The line drawing at the foot of this page shows the overall dimensions of the smaller (450 cu. ft.) model and the illustration at the head of these notes shows what it looks like when installed. Control is by a single cord which operates the motor switch and the external air flap at the same time. The casing is telescopic, so that the unit can easily be fitted in any of the usual wall thicknesses, and although this naturally involves more expense than fitting the more usual type by cutting a hole in the window glazing the result is probably rather more efficient, for the fan can be fixed exactly where it is needed, presumably over the cooker or sink, and the window can still be opened fully.





Above, a portable ventilator for fixing at the top of the window opening. Right, overall dimensions of the Ilgette ventilator. (See note on this page.)

•

Mechanically the unit seems admirable. The hinged external flap is a good idea, for it should make back-draught quite impossible when the fan is not running, and the motor is self-ventilating, with shaded poles to prevent interference with wireless sets. Two sizes are available, the Ilgette shifts 450 cu. ft. of air a minute with a 40-watt motor, for the Ilgair the figures are 750 cu. ft. and 70 watts. Prices are £8 18s. and £13 10s.; fairly high, but the present stocks, being American made, presumably have to carry a fairly stiff import duty, and manufacture in this country, which I am told is probable if the demand is reasonably large, should make a considerable difference to the price.

•

Various other models are also listed, notably the portable type shown below which is fixed at the top of the window and telescopes over a range of 10 inches to allow for different widths. This unit is fitted to the reveal *inside* the window, and does not interfere with it in any way. In this model there is no need, therefore, for the air flap, since the window can be shut as usual to stop draughts. For larger widths, or where the maximum amount of daylight is desirable, a similar model is produced with glass panels at each side of the motor.

•

Other types for transom fitting are also catalogued, and there is the "package type" which replaces one pane of the standard metal window. Incidentally, American ventilating practice seems to demand fairly high standards: 30 air changes an hour for a restaurant is surely far more than is usual in this country, though I have no means of telling whether this high figure is a manufacturer's ideal or normal practice.

Poles

Poles—telephone, high-tension, street lamp and others: not, unfortunately, a subject on which the architect is very often consulted. None the less I have just received a catalogue of Adastra poles for all purposes, the method of construction

seeming to have effectively solved all the worst problems.

•

The ordinary wood or concrete pole suffers from high transport costs, largely because of its extreme unwieldiness and difficulties of erection: concrete poles can, of course, be cast on site, but the centrifugally-cast type, so popular in France and Switzerland for high-tension electrical distribution, must be factory-made.

•

The idea is simple enough, for this new pole is made up of tapering steel sections which can be packed inside one another for transport (twenty 35-ft. poles can go on a 30-cwt. truck with no overhang) and which are laid out loosely on the site and strained together by a tightening wire, hangers and cross-arms being added where necessary.

•

Elliptical sections are used to reduce wind resistance, the major axis being at right angles to the run of the power line. Various types of lamp post are catalogued, most of them extremely pleasant to look at, and up to the best standards of continental work. I suggest that the C.P.R.E. or the Road Beautifying Association should cause the noses of all town councillors to be rubbed firmly in this catalogue, for fourteen out of the sixteen public lighting standards are quite admirable, and the remaining two are a lot better than most.

•

The catalogue, too, is a very thorough piece of work and gives data on nearly everything one could want to know.

Electric Motors

The remarks made above about the usefulness of full information in catalogues apply equally to a small pocket-book which I have just received from Brook Motors, which deals with A.C. electric motors and control gear. Full details are given of the horse-power required to drive different types of machinery and the type of motor necessary to meet the atmospheric and load conditions met with in different types of factory. Further tables give the voltages and frequences of most of the large supply companies and there are good clear wiring diagrams for various types of starter.

•

A good and useful booklet produced by a firm which has specialized in A.C. motors for the past 35 years and which seems to take its job seriously.

Addresses

Air Conditioning and Engineering, Ltd., 4-12 Palmer Street, Westminster, S.W.1.
Poles, Ltd., 4 London Wall Avenue, E.C.2.
Brook Motors Ltd., Empress Works, Huddersfield.

LAW REPORTS

NUISANCE FROM MODERN BUILDING OPERATIONS. £4,500 DAMAGES AWARDED

Andreac v. *Selfridge & Co., Ltd.—Chancery Division. Before Mr. Justice Bennett*

THIS was an action by Mrs. Emmeline Andreac, the lessee and proprietor of the Wigmore Hotel, Wigmore Street, London, W., against Selfridge & Co., Ltd., of Oxford Street, W., to recover damages for alleged nuisance and injury caused to her business during demolition and building operations carried out by the defendants.

Plaintiff's case was that the defendants' works had been carried out in such a way as to render her premises materially less fit for use as an hotel and had infringed her rights under an agreement of October, 1931, made between plaintiff and the defendants, and alternatively under a lease of December 13, 1917, and made between Viscount Portman of the first part, Mr. Howard Leslie Harris of the second part, and the Authors Hotel Co., Ltd., of the third part as modified by the agreement.

It appeared that clause one of the agreement of October 21, 1931, provided that the plaintiff should sell and the defendants purchase at the price of £14,750 the leasehold premises known as the Wigmore Hotel as the same were held under the lease of December 13, 1917, being a lease of the premises for the term of 20 years from December 25, 1921, at the yearly rent of £330. The defendants paid £4,750 on account of and as a deposit of the purchase money, and arranged to pay the balance on September 29, 1936, on which date the purchase was to be completed and possession given.

Plaintiff's case was that this work began about 6.30 a.m., and as regarded a portion of the time cranes were kept in operation during a part of the night. That work continued until about March, 1933, and plaintiff complained of the annoyance caused and the interference with the amenities of her hotel. The defendants afterwards began demolition work on Nos. 10, 11 and 12 Orchard Street, and plaintiff complained of the nuisance caused by grit coupled with noise from the work which she said so seriously interfered with the carrying on of her hotel that existant and future bookings in the hotel were cancelled.

The defendants pleaded a denial that what had been done caused any serious interference with the amenities of the plaintiff's hotel. They further said that the work had been carried out with all reasonable care and skill to avoid annoyance to neighbours, and that if any annoyance was caused to the plaintiff, it had been temporary only and as the work was for a lawful purpose the plaintiff had no cause of action.

Mr. Voisey, K.C., and Mr. L. Tillard appeared for the plaintiff and Mr. Fergus Morton, K.C., and Mr. R. Turnbull for the defendants.

His lordship, in giving judgment, said this case affected people who lived near to a site on which a large building was being erected in accordance with what had been described to him as modern methods of construction. The defendants had put forward their case, as he understood it, that if one had the misfortune to live close to such a place, no matter what injury was suffered, the law gave no redress, because one was suffering from what was said to be a mere temporary inconvenience. His lordship could not agree with that defence. It was true the work was done by what were called up-to-date methods, but he could not regard that what was done on one part of the site was commonly done in the ordinary use and occupation of premises. In the present case there had been excavations to a depth of 60 ft., steel framework had been riveted and pneumatic drills used, and his lordship thought that this was neither usual nor common in carrying out such work as the defendants did. Mr. Gordon Selfridge had stated that nobody was to be caused any inconvenience, but notwithstanding that, the work had been pushed forward. On the question of damages he came to the conclusion that the proper sum to award the plaintiff was £4,500 and he entered judgment for plaintiff for that amount, with costs.

A stay of execution was granted with a view to an appeal.

Manufacturers' Items

Messrs. Wm. C. Yuille & Co., Ltd., who for a considerable number of years have represented Wm. Sanders & Co. (Wednesbury), Ltd., in Scotland, are ceasing to act in that capacity as and from September 1, 1936. Mr. P. McFall has been appointed in the capacity of Scottish representative and will take over his duties on the date mentioned. Messrs. Wm. C. Yuille & Co., Ltd., will continue to be associated with the company as wholesale distributors and will carry full stocks.

THE BUILDINGS ILLUSTRATED

SOUND CITY, SHEPPERTON (pages 267-271). The general contractors were Walter Taylor (Builders), Ltd. The principal sub-contractors and suppliers included: G. M. Callender & Co., Ltd., dampcourses; Excel Asphalte Co., Ltd., asphalt; Ferro-Concrete (Shepperton), Ltd., concrete blocks; Hirsts of Shepperton, Ltd., reinforced concrete; London Brick Co., Ltd., bricks; Redpath, Brown & Co., Ltd., structural steel; Broad & Co., Ltd., fireproof construction; J. Balmer and Sons, Ltd., glazing; James Clark and Son, Ltd., mirrors; Haywards, Ltd., canteen lights; Linolite Composition Flooring Co., Ltd., patent flooring; Sika Francois Ltd., waterproofing materials; Cement Marketing Co., Ltd., cement; British Reinforcement Concrete Engineering Co., Ltd., reinforcement; Chance Bros. & Co., Ltd., pipe lagging; Newalls Insulation Co., sound insulation; Honeywill and Stein, heraklith; J. G. Wagstaff, Ltd., central heating; Ruston & Hornsby, Ltd., boilers; City Electrical Co., electric wiring; Hall and Kay, Ltd., ventilation; General Light Castings, Ltd., B. Finch & Co., Ltd., John Bolding and Sons, Ltd., sanitary fittings; J. D. Beardmore & Co., Ltd., door furniture and metalwork; Williams and Williams, Ltd., casements; Haywards, Ltd., iron staircases and metalwork; W. Harland and Son, paint; Nobles and Hoare, Ltd., paint to steelwork; Sound City (Films), Ltd., soundproof sliding doors; Rippers, Ltd., sliding doors to garages; E. Hill Aldam & Co., Ltd., sliding door gear; Allensor, Ltd., joinery; W. B. Simpson and Sons, Ltd., tiling.

HOUSE NEAR HENLEY-IN-ARDEN (page 272). The general contractors were John Harris and Sons; the principal sub-contractors and suppliers included: D. Anderson and Son, Ltd., asphalt and special roofings; Charles Wade & Co., structural steel; Dreadnought, tiles; Venetian Flooring Co., patent flooring; J. C. Togood & Co., central heating; Percy Dove & Co., electric wiring and bells; H. A. J. Hunt, Ltd., electric light fixtures; Griffin Foundry Co., sanitary fittings; Walker and Wood, door furniture; Crittall Manufacturing Co., casements; Lewis and Sons, well-sinkers; Newey, water supply pump.

THE WEEK'S BUILDING NEWS

SOUTHERN COUNTIES

HAMPSHIRE. *Peter Symonds School.* Hampshire Education Committee is to alter and improve the Peter Symonds School, Winchester, at a cost of £2,805.

HAMPSHIRE. *Senior Council School.* Hampshire Education Committee is to erect a new Senior Council School at Millbrook at a cost of £23,316.

HAMPSHIRE. *Senior Council School.* Hampshire Education Committee is to erect a new Senior Council School at Alton at a cost of £30,388.

HAMPSHIRE. *Farm Institute.* Hampshire C.C. is to erect four cottages at the Farm Institute, Sparsholt.

HAMPSHIRE. Hampshire C.C. has approved proposals of the Winchester Castle Committee for the provision of additional accommodation for the several County services at Upper High Street, Winchester, and retained the services of Mr. C. Cowles Voysey, F.R.I.B.A. in connection therewith.

HAMPSHIRE. *Secondary School.* Hampshire Education Committee has approved plans for the erection of a secondary school at Brockle-hurst at a cost of £32,508.

HAMPSHIRE. *Nursery Home.* Hampshire C.C. is to erect a nursery home at the Compton Institution at a cost of £7,000.

HAMPSHIRE. *Senior School.* Hampshire Education Committee is to acquire a site at Copythorne for the erection of a senior school.

HAMPSHIRE. *Senior School.* Hampshire Education Committee is to erect a senior school at Cove at a cost of £10,447.

NEWPORT (I.O.W.). *Housing Scheme.* Newport (I.o.W.) Corporation is to acquire eight acres at Pan Lane for a housing scheme.

NEWPORT (I.O.W.). *Houses.* Newport (I.o.W.) Corporation is to prepare plans for the erection of 49 houses at Whitepit Lane.

NEWPORT (I.O.W.). *Plans.* Plans passed by Newport (I.o.W.) Corporation: Offices for County Council, High Street, for Mr. R. F. Gutteridge; houses, Newport Road, for Mr. A. S. Bunce; showroom extensions, St. James Square, for Messrs. Wadham and Sons, Ltd.; eight houses, Watergate Road, for Mr. R. Jolliffe; house, Burnt House Lane, for Messrs. Stratton and Millgate; pumping station, Bowcambe, for Corporation Water Engineer; development Clatterford Lodge Estate, for Mr. A. S. Hayward; house, Nodgham Lane, for Mr. F. W. Groundsell; house, Nodgham Lane, for Mr. E. L. Smith.

PORTLAND: *Plans.* Plans passed by Portland U.D.C.: Alterations at 90 Weston Road, for Mr. W. Pearce; alterations at Easton Post Office, for Mr. G. Maidment; alterations at 9 Queen's Road, for Mr. C. Smythe; alterations at 17 Straits, for Mr. L. S. Lynham; two cottages at Chiswell, for Mr. W. F. Davies.

PORTLAND: *Fire Station.* Portland U.D.C. is negotiating for a site at Easton for the erection of a fire station.

NORTHERN COUNTIES

BLACKPOOL. *Houses, etc.* Plans passed by the Corporation: Two houses, Arnott Road, for H. F. Hepworth; four houses, Plymouth and Poulton Roads, for Gartside Bros.; two houses, Napier Avenue, for Beardshaw & Co.; eight houses, Benson Road, for H. Grimblesdeston; two houses, Bentinck Avenue, for J. V. Whitehead; two houses, Greystoke Place, for Abson Bros.; two houses, Mossom Lane, for H. Earnshaw; six houses, Napier Avenue, for Watson and Myerscough; three shops, etc., Newhouse Road, for Blackpool Co-operative Society, Ltd.; church, Common Edge Road, for Rev. J. M. Lloyd; four houses, Dauntesey and Charnwood Avenues, for D. E. Etherington; and house, Queen's Drive, for N. Kay; house, Albion Avenue, for W. H. Airey; 25 houses, Knowle Avenue, for R. Fielding and Son.

BLACKPOOL. *Stanley Buildings.* Blackpool Corporation has approved plans by the Borough Surveyor for the provision of cantilever verandahs at both entrances to the Arcade in Stanley Buildings.

BLACKPOOL. *Cinema.* Blackpool Corporation has granted the application made by Mrs. E. Bradley under the planning scheme for permission to erect a cinema on land in Whitegate Drive, Marton, adjacent to the Corporation Transport depot.

DURHAM. *Houses.* Messrs. Geo. Cairns and Sons are to erect 46 houses at Murton, Co. Durham.

DURHAM: *Hotel.* Durham County Council Town Planning Committee has approved plans submitted by Messrs. J. W. Cameron & Co., Ltd., to erect a hotel at Newbottle, Co. Durham.

DODDINGTON. *Playing Field.* Doddington Parish Council is to provide a playing field at a cost of £600.

LANCASHIRE. *Village Hall.* The Lancashire C.C. has leased land in Wigans Lane to the residents of the district of Holmeswood, to erect a village hall and provide a recreation ground and children's playground.

LANCASHIRE. *Fairfield High School.* Lancashire Education Committee has approved a revised scheme for extensions at Fairfield High School at a cost of £17,137.

LANCASHIRE. *Nurses' Home.* Lancashire C.C. is to alter and extend the Nurses' Home at Lake Hospital, Ashton-under-Lyne, at a cost of £29,500.

LANCASHIRE. *Nelson Secondary School.* Lancashire C.C. has approved a revised scheme for extensions at Nelson Secondary School at a cost of £3,140.

LANCASHIRE. *Stretford Technical College.* Lancashire Education Committee has approved a revised estimate of £99,323 for the erection of the Stretford Technical College.

LANCASHIRE. *Park Hospital.* Lancashire C.C. is to remodel the central heating plant at the Park Hospital, Davyhulme, at a cost of £8,010.

LANCASHIRE. *High Carley Sanatorium.* Lancashire C.C. is to enlarge High Carley Sanatorium at a cost of £15,766.

LANCASHIRE. *Bury Police Station.* Lancashire C.C. has acquired property for extending the accommodation at the Bury Police Station.

LANCASHIRE. *Senior School.* Lancashire Education Committee has obtained a site on the Petre Estate, Rishton, for the erection of a senior school.

MORECAMBE. *Shop Premises.* Morecambe Corporation has sold land to Mr. W. S. Coupe for the extension of shop premises at the junction of Middleton Road and Tomlinson Road.

MORECAMBE. *Library.* Morecambe Corporation has provided a site on the old harbour site for the erection by the Lancashire C.C. of a library to cost £15,000.

OSSETT. *Sunnydale Estate.* Mr. Reginald Smith is to develop the Sunnydale Estate, Ossett.

PENRITH. *Plans.* Plans passed by Penrith U.D.C.: Alterations and improvements at Carleton Hall for Major Carleton-Cowper; detached house in Croft Avenue for Mr. A. Smith.

ROTHERHAM. *Extensions, etc.* Plans passed by the Corporation: Works extensions, Greasborough Road, for Messrs. W. N. Baines & Co., Ltd.; alterations and additions, Eastwood Men's Club, for J. Smith's Tadcaster Brewery Co., Ltd.; alterations and additions, 21–3 Effingham Street, for Messrs. Hunters, Ltd.; extensions, Sheffield Tube Works, Meadow Hall, for Messrs. Howell & Co., Ltd.; meter shop extensions, Don Street, for Messrs. Guest and Chrimes, Ltd.; workshop, Forge Lane, for Rotherham Forge and Rolling Mills Co., Ltd.; two houses, Barroby Road, for Messrs. G. Bilton and Son; two shops and houses, Wickersley Road, for Messrs. Andrews, Baldwin & Co., Ltd.

SOUTHPORT PIER. *Improvements.* The Corporation has approved plans for pier improvements at a cost of £32,744.

TODMORDEN. *Baths.* The Corporation has approved plans for the construction of open-air baths at a cost of £10,400.

WALLSEND. *Housing.* The Corporation is negotiating for 20 acres of land for housing schemes.

WALLSEND. *Houses.* The Corporation is discussing terms with the North Eastern Housing Association, Ltd., for the erection of houses in the town.

WALLSEND. *Training Centre.* The Ministry of Labour is to erect a training centre in West Street, Wallsend.

WALLSEND. *Extensions.* The Corporation has approved plans for extensions at the Infirmary, The Green.

WARRINGTON. *Houses, etc.* Plans passed by the Corporation: 60 houses, Longshaw Street, for Mr. H. Greenwood; two houses, Chester Road, for Holywell Building Co., Ltd.; two houses, Irwell Road, for Messrs. Woosey and Walton; alterations and additions, St. Paul's school, Rolleston Street, and Heathside school, for St. Paul's Church trustees; shop, 146 Padgate Lane, for Mr. H. Cross; works extensions, Mersey Wharf, for Whitecross Co., Ltd.; extensions, Bank Quay Mills, for Messrs. J. Fairclough and Sons, Ltd.; welfare centre, Folly Lane, for Bewsey Adult school trustees; eight houses, Beattie Avenue, for Mr. E. Forsyth; works extensions, Sankey Street, for Warrington Co-operative Society, Ltd.; alterations, Brook Inn, Knutsford Road, and Bull's Head Hotel, Church Street, for Messrs. Greenall, Whitley & Co., Ltd.

YORK. *Abattoir.* The Corporation has asked the city engineer to prepare plans for the erection of an abattoir in Navigation Road.

SCOTTISH

EDINBURGH. *Houses, etc.* Plans have been passed by the Dean of Guild Court for the erection by the Corporation of 459 houses at Granton Crescent, Portobello and Warriston Roads; and a bakehouse, two shops and five houses at St. Patrick Square.

GLASGOW. *Public Assistance Buildings.* The Corporation is to erect premises for the Public Assistance Committee in John Street, at a cost of £55,000; and in Broad Street, at a cost of £25,000.

GLASGOW. *Houses.* The Corporation is to build 300 houses on the Garscube estate.

GLASGOW. *Cinema.* Mr. Robert Pennycook is seeking sanction from the Glasgow Corporation for the proposed erection of a cinema at Battlefield Road.

GLASGOW. *Extensions.* The Corporation is to extend the Eastwood Cemetery at a cost of £10,000.

GLASGOW. *Cinema, etc.* Plans passed by the Corporation: Cinema at Shettleston Road, Messrs. Scott Theatres, Ltd.; alterations to property at 19 Argyle Street, for Messrs. Claude Alexander, Ltd.; store, Balmore Road, for St. Matthew's Episcopal Church; alterations, 60 Jamaica Street, for Messrs. Walter Wilson & Co. (Glasgow), Ltd.; addition to carpet factory, Templeton Street, for Messrs. James Templeton & Co., Ltd.; alterations, 188–196 Hope Street, for Mr. Herbert J. Guy; alterations, 59–61 Renfield Street, for Messrs. M'Lachlans, Ltd.; weaving shed, corner of Abercromby Street and Dornoch Street, for Messrs. James Templeton & Co., Ltd.; warehouse, 350 Cathedral Street, for Messrs. D. Macdonald Bros.; office and store, Vesalius Street, for Mr. Alfred J. Robertson; office, Lochburn Road, Maryhill, for Kelvin Construction Co., Ltd.; temporary school, Killearn Street, Possilpark, for the Corporation Education Department; electricity sub-station, Renfrew Road, Shieldhall, for Messrs. Henry J. Stewart and Bros., Ltd.; proposed building, Zenith Works, Thornliebank, for Messrs. Henry Wiggin & Co., Ltd.; pavilion, Craigton Road, for the Benburb Football Club; alterations to works at 203 Cartyne Road, for the Parozone Co., Ltd.; proposed office and store, Vesalius Street, for Mr. Alfred Robertson.

RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule. Column I gives the rates for craftsmen; Column II for labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

			I s. d.	II s. d.
A_1	ABERDARE ...	S. Wales & M.	1 5½	1 1½
A	Aberdeen ...	Scotland	1 6½	1 2
A_1	Abergavenny ...	S. Wales & M.	1 6	1 1½
A_3	Abingdon ...	S. Counties	1 5	1 0½
A	Accrington ...	N.W. Counties	1 6½	1 2
A_3	Addlestone ...	S. Counties	1 5	1 0½
A	Adlington ...	N.W. Counties	1 6½	1 2
A	Airdrie ...	Scotland	*1 6½	1 2
C	Aldeburgh ...	E. Counties	1 2½	11
A	Altrincham ...	N.W. Counties	1 6½	1 2
B_3	Appleby ...	N.W. Counties	1 3	11½
A	Ashton-under-Lyne	N.W. Counties	1 6½	1 2
B_1	Aylesbury ...	S. Counties	1 4	1 0
B_1	BANBURY ...	S. Counties	1 4	1 0
B_1	Bangor ...	N.W. Counties	1 4	1 0
A_3	Barnard Castle	N.E. Coast	1 5	1 0½
A_3	Barnsley ...	Yorkshire	1 6½	1 2
B	Barnstaple ...	S.W. Counties	1 4½	1 0½
A	Barrow ...	N.W. Counties	1 6½	1 2
A	Barry	S. Wales & M.	1 6½	1 2
B_1	Basingstoke ...	S.W. Counties	1 4	1 0
A_2	Bath	S.W. Counties	1 5½	1 1½
A	Batley ...	Yorkshire	1 6½	1 2
A_2	Bedford ...	E. Counties	1 5½	1 1½
A_2	Berwick-on-Tweed	N.E. Coast	1 5½	1 1½
A_2	Bewdley ...	Mid. Counties	1 5½	1 1½
B_2	Bicester ...	S. Counties	1 3	11½
	Birkenhead ...	N.W. Counties	*1 7½	1 2½
A	Birmingham ...	Mid. Counties	1 6½	1 2
A_1	Bishop Auckland	N.E. Coast	1 6	1 1½
A	Blackburn ...	N.W. Counties	1 6½	1 2
A	Blackpool ...	N.W. Counties	1 6½	1 2
A	Blyth	N.E. Coast	1 6½	1 2
B_1	Bognor ...	S. Counties	1 4	1 0
A	Bolton ...	N.W. Counties	1 6½	1 2
A_3	Boston ...	Mid. Counties	1 5	1 0½
A_2	Bournemouth...	S. Counties	1 5½	1 1½
B_2	Bovey Tracey	S.W. Counties	1 3½	11½
A	Bradford ...	Yorkshire	1 6½	1 2
A_1	Brentwood ...	E. Counties	1 6	1 1½
A	Bridgend ...	S. Wales & M.	1 6½	1 2
B	Bridgwater ...	S.W. Counties	1 4½	1 0½
A_1	Bridlington ...	Yorkshire	1 6	1 1½
A	Brighouse ...	Yorkshire	1 6½	1 2
A_2	Brighton ...	S. Counties	1 5½	1 1½
A	Bristol ...	S.W. Counties	1 6½	1 2
B	Brixham ...	S.W. Counties	1 3½	11½
A	Bromsgrove ...	Mid. Counties	1 5½	1 1½
B	Bromyard ...	Mid. Counties	1 [illegible]	11½
A	Burnley ...	N.W. Counties	1 6½	1 2
A	Burslem ...	Mid. Counties	1 6½	1 2
A	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury	N.W. Counties	1 6½	1 2
A	Buxton ...	N.W. Counties	1 6	1 1½
A_1	CAMBRIDGE	E. Counties	1 6	1 1½
B_1	Canterbury ...	S. Counties	1 4	1 0
A	Cardiff ...	S. Wales & M.	1 6½	1 2
A	Carlisle ...	N.W. Counties	1 6½	1 2
B	Carmarthen ...	S. Wales & M.	1 4½	1 0½
B	Carnarvon ...	N.W. Counties	1 4½	1 0½
A	Carnforth ...	N.W. Counties	1 6½	1 2
A	Castleford ...	Yorkshire	1 6½	1 2
A_2	Chatham ...	S. Counties	1 5	1 0½
A	Chelmsford ...	E. Counties	1 5	1 0½
A	Cheltenham ...	S.W. Counties	1 5	1 0½
A	Chester ...	N.W. Counties	1 6½	1 2
A	Chesterfield ...	Mid. Counties	1 6½	1 2
B_1	Chichester ...	S. Counties	1 4	1 0
A	Chorley ...	N.W. Counties	1 6½	1 2
B_1	Cirencester ...	S. Counties	1 4	1 0
A	Clitheroe ...	N.W. Counties	1 6½	1 2
A	Clydebank ...	Scotland	1 6½	1 2
A	Coalville ...	Mid. Counties	1 6½	1 2
A_2	Colchester ...	E. Counties	1 5½	1 1½
A	Colne	N.W. Counties	1 6	1 1½
A_2	Colwyn Bay ...	N.W. Counties	1 5½	1 1½
A_1	Consett ...	N.E. Coast	1 6	1 1½
A_2	Conway ...	N.W. Counties	1 5½	1 1½
A	Coventry ...	Mid. Counties	1 6½	1 2
A_2	Crewe	N.W. Counties	1 5½	1 1½
A	Cumberland ...	N.W. Counties	1 5	1 0½
A	DARLINGTON	N.E. Coast	1 6½	1 2
A	Darwen ...	N.W. Counties	1 6½	1 2
B	Deal	S. Counties	1 4	1 0
A_2	Denbigh ...	N.W. Counties	1 5	1 0½
A	Derby	Mid. Counties	1 6½	1 2
A	Dewsbury ...	Yorkshire	1 6½	1 2
B	Didcot ...	S. Counties	1 4½	1 0½
A	Doncaster ...	Yorkshire	1 6½	1 2
B_1	Dorchester ...	S.W. Counties	1 4	1 0
A	Driffield ...	Yorkshire	1 5	1 0½
A_2	Droitwich ...	Mid. Counties	1 5½	1 1½
A	Dudley ...	Mid. Counties	1 6½	1 2
A_2	Dumfries ...	Scotland	1 6	1 1½
A	Dundee ...	Scotland	1 6½	1 2
A	Durham ...	N.E. Coast	1 6½	1 2
A_2	EASTBOURNE	S. Counties	1 5½	1 1½
A_1	Ebbw Vale ...	S. Wales & M.	1 6	1 1½
A	Edinburgh ...	Scotland	1 6½	1 2
A_2	Exeter ...	S.W. Counties	*1 5½	1 1½
B	Exmouth ...	S.W. Counties	1 4½	1 0½
A_3	FELIXSTOWE	E. Counties	1 5	1 0½
A	Filey	Yorkshire	1 5	1 0½
A	Fleetwood ...	N.W. Counties	1 6½	1 2
B_1	Folkestone ...	S. Counties	1 4	1 0
A	Frodsham ...	N.W. Counties	1 6½	1 2
B_2	Frome ...	S.W. Counties	1 3½	11½
A	GATESHEAD	N.E. Coast	1 6½	1 2
B	Gillingham ...	S. Counties	1 4½	1 0½
A_1	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6	1 1½
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 5½	1 1½
A_2	Goole ...	Yorkshire	1 5½	1 1½
A_2	Gosport ...	S. Counties	1 5½	1 1½
A_3	Grantham ...	Mid. Counties	1 5	1 0½
A_1	Gravesend ...	S. Counties	1 6	1 1½
A	Greenock ...	Scotland	*1 6½	1 2
A	Grimsby ...	Mid. Counties	1 6½	1 2
B	Guildford ...	S. Counties	1 4½	1 0½
A	HALIFAX ...	Yorkshire	1 6½	1 2
A	Hanley ...	Mid. Counties	1 6½	1 2
A	Harrogate ...	Yorkshire	1 6½	1 2
A	Hartlepools ...	N.E. Coast	1 6½	1 2
B	Harwich ...	E. Counties	1 4½	1 0½
B_1	Hastings ...	S. Counties	1 4	1 0
A_2	Hatfield ...	S. Counties	1 5½	1 1½
B	Hereford ...	S.W. Counties	1 4½	1 0½
A	Hertford ...	E. Counties	1 5½	1 1½
A	Heysham ...	N.W. Counties	1 6½	1 [illegible]
A	Howden ...	N.E. Coast	1 6½	1 2
A	Huddersfield ...	Yorkshire	1 6½	1 2
A	Hull	Yorkshire	1 6½	1 2
A	ILKLEY ...	Yorkshire	1 6½	1 2
A	Immingham ...	Mid. Counties	1 6½	1 2
A_2	Ipswich ...	E. Counties	1 5½	1 1½
B_2	Isle of Wight ...	S. Counties	1 4½	1 0½
A	JARROW ...	N.E. Coast	1 6½	1 [illegible]
A	KEIGHLEY ...	Yorkshire	1 6½	1 2
A_2	Kendal ...	N.W. Counties	1 5	1 0½
A_3	Keswick ...	N.W. Counties	1 5	1 0½
A_1	Kettering ...	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 5½	1 1½
B_1	King's Lynn ...	E. Counties	1 4	1 0
A	LANCASTER ...	N.W. Counties	1 6½	1 2
A_1	Leamington ...	Mid. Counties	1 6	1 1½
A	Leeds	Yorkshire	1 6½	1 2
A	Leek	Mid. Counties	1 6½	1 2
A	Leicester ...	Mid. Counties	1 6½	1 [illegible]
A	Leigh	N.W. Counties	1 6½	1 2
B	Lewes	S. Counties	1 3	11½
A_2	Lichfield ...	Mid. Counties	1 5½	1 1½
A	Lincoln ...	Mid. Counties	1 6½	1 2
	Liverpool ...	N.W. Counties	*1 8	1 3
A_3	Llandudno ...	N.W. Counties	1 5½	1 1½
A	Llanelly ...	S. Wales & M.	1 6½	1 2
	London (12-miles radius)		1 8	1 3
	Do. (12-15 miles radius)		1 7½	1 2½
A	Long Eaton ...	Mid. Counties	1 6½	1 2
A	Loughborough	Mid. Counties	1 6½	1 2
A_1	Luton	E. Counties	1 6	1 1½
A	Lytham ...	N.W. Counties	1 6½	1 2
A_1	MACCLESFIELD	N.W. Counties	1 6	1 1½
A_3	Maidstone ...	S. Counties	1 5	1 0½
A_3	Malvern ...	Mid. Counties	1 5	1 0½
A	Manchester ...	N.W. Counties	1 6½	1 2
A	Mansfield ...	Mid. Counties	1 6½	1 2
B_1	Margate ...	S. Counties	1 4	1 0
A	Matlock ...	Mid. Counties	1 5	1 0½
A_1	Merthyr ...	S. Wales & M.	1 6	1 1½
A	Middlesbrough	N.E. Coast	1 6½	1 2
A_2	Middlewich ...	N.W. Counties	1 5½	1 1½
B_2	Minehead ...	S.W. Counties	1 3½	11½
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 3½	11½
A	Morecambe ...	N.W. Counties	1 6½	1 2
A_2	NANTWICH ...	N.W. Counties	1 5½	1 1½
A	Neath	S. Wales & M.	1 6½	1 2
A	Nelson ...	N.W. Counties	1 6½	1 2
A	Newcastle ...	N.E. Coast	1 6½	1 2
A	Newport ...	S. Wales & M.	1 6½	1 2
A	Normanton ...	Yorkshire	1 6½	1 2
A	Northampton...	Mid. Counties	1 6½	1 2
A	North Shields...	N.E. Coast	1 6½	1 2
A	North Staffs ...	Mid. Counties	1 6½	1 2
A_1	Norwich ...	E. Counties	1 6	1 1½
A	Nottingham ...	Mid. Counties	1 6½	1 2
A	Nuneaton ...	Mid. Counties	1 6½	1 2
A	OAKHAM ...	Mid. Counties	1 5	1 0½
A	Oldham ...	N.W. Counties	1 6½	1 2
A_3	Oswestry ...	N.W. Counties	1 5	1 0½
A_1	Oxford ...	S. Counties	1 6	1 1½
A	PAISLEY ...	Scotland	*1 6½	1 2
B_2	Pembroke ...	S. Wales & M.	1 3	11½
A	Perth	Scotland	*1 6½	1 2
A_1	Peterborough	E. Counties	1 6	1 1½
A	Plymouth ...	S.W. Counties	*1 6½	1 2
A	Pontefract ...	Yorkshire	1 6½	1 2
A_1	Pontypridd ...	S. Wales & M.	1 6	1 1½
A_2	Portsmouth ...	S. Counties	1 5½	1 1½
A	Preston ...	N.W. Counties	1 6½	1 2
A	QUEENSFERRY	N.W. Counties	1 6½	1 2
A_2	READING ...	S. Counties	1 5½	1 1½
B	Reigate ...	S. Counties	1 4½	1 0½
A	Retford ...	Mid. Counties	1 5	1 0½
A_1	Rhondda Valley	S. Wales & M.	1 6	1 1½
A	Ripon	Yorkshire	1 5	1 0½
A	Rochdale ...	N.W. Counties	1 6½	1 2
B	Rochester ...	S. Counties	1 4½	1 0½
A_1	Ruabon ...	N.W. Counties	1 6	1 1½
A	Rugby ...	Mid. Counties	1 6½	1 2
A_2	Rugeley ...	Mid. Counties	1 5½	1 1½
A	Runcorn ...	N.W. Counties	1 6½	1 2
A_1	ST. ALBANS ...	E. Counties	1 6	1 1½
A	St. Helens ...	N.W. Counties	1 6½	1 2
B_2	Salisbury ...	S.W. Counties	1 3½	11½
A_1	Scarborough ...	Yorkshire	1 6	1 1½
A	Scunthorpe ...	Mid. Counties	1 6½	1 2
A	Sheffield ...	Yorkshire	1 6½	1 2
A	Shipley ...	Yorkshire	1 6½	1 2
A_2	Shrewsbury ...	Mid. Counties	1 5½	1 1½
A_2	Skipton ...	Yorkshire	1 5½	1 1½
A_2	Slough ...	S. Counties	1 5½	1 1½
A_1	Solihull ...	Mid. Counties	1 6	1 1½
A_2	Southampton ...	S. Counties	1 5½	1 1½
A_1	Southend-on-Sea	E. Counties	1 6	1 1½
A	Southport ...	N.W. Counties	1 6½	1 2
A	S. Shields ...	N.E. Coast	1 6½	1 2
A_1	Stafford ...	Mid. Counties	1 6	1 1½
A	Stirling ...	Scotland	1 7	1 2½
A	Stockport ...	N.W. Counties	1 6½	1 2
A	Stockton-on-Tees	N.E. Coast	1 6½	1 2
A	Stoke-on-Trent	Mid. Counties	1 6½	1 2
B	Stroud ...	S.W. Counties	1 4½	1 0½
A	Sunderland ...	N.E. Coast	1 6½	1 2
A	Swansea ...	S. Wales & M.	1 6½	1 2
A	Swindon ...	S.W. Counties	1 5	1 0½
A_1	TAMWORTH ...	N.W. Counties	1 6	1 1½
B	Taunton ...	S.W. Counties	1 4½	1 0½
A	Teesside Dist....	N.E. Counties	1 6½	1 2
A_2	Teignmouth ...	S.W. Coast	1 5½	1 1½
A	Todmorden ...	Yorkshire	1 6½	1 2
A_1	Torquay ...	S.W. Counties	1 6	1 1½
B_2	Truro	S.W. Counties	1 3½	11½
A_3	Tunbridge Wells	S. Counties	1 5	1 0½
A	Tunstall ...	Mid. Counties	1 6½	1 2
A	Tyne District	N.E. Coast	1 6½	1 2
A	WAKEFIELD	Yorkshire	1 6½	1 2
A	Walsall ...	Mid. Counties	1 6½	1 2
A	Warrington ...	N.W. Counties	1 6½	1 2
A_1	Warwick ...	Mid. Counties	1 6	1 1½
A_1	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 6½	1 2
A_2	Weston-s.-Mare	W. Counties	1 5½	1 1½
A_2	Whitby ...	Yorkshire	1 5½	1 1½
A	Widnes ...	N.W. Counties	1 6½	1 2
A	Wigan ...	N.W. Counties	1 6½	1 2
B	Winchester ...	S. Counties	1 4½	1 0½
A_2	Windsor ...	S. Counties	1 5½	1 0½
A	Wolverhampton	Mid. Counties	1 6½	1 2
A_2	Worcester ...	Mid. Counties	1 5½	1 1½
A_3	Worksop ...	Yorkshire	1 5	1 0½
A_1	Wrexham ...	N.W. Counties	1 6	1 1½
A	Wycombe ...	S. Counties	1 5	1 0½
B	YARMOUTH ...	E. Counties	1 4½	1 0½
B	Yeovil ...	S.W. Counties	1 4½	1 0½
A	York	Yorkshire	1 6½	1 2

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

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

CURRENT PRICES

The 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, adjustment 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

		s.	d.
Bricklayer	per hour	1	8
Carpenter	"	1	8
Joiner	"	1	8
Machinist	"	1	8
Mason (Banker)	"	1	8
" (Fixer)	"	1	9
Plumber	"	1	8
Painter	"	1	7
Paperhanger	"	1	7
Glazier	"	1	7
Slater	"	1	8
Scaffolder	"	1	4
Timberman	"	1	4
Navvy	"	1	3
General Labourer	"	1	3
Lorryman	"	1	5½
Crane Driver	"	1	7
Watchman	per week	2	10

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	16	6
Hydrated Lime	"	3	0	9
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
¾" Crushed Ballast	"		7	0
Building Sand	"		7	6
Washed Sand	"		8	6
2" Broken Brick	"		8	0
¾" " "	"		10	3
Pan Breeze	"		6	6
Coke Breeze	"		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	4" d.	6" s.	6" d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	0
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS:					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	"		5		—

BRICKLAYER

		£	s.	d.
Fletton	per M.	2	15	0
Grooved do.	"	2	17	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	17	6
" Wirecuts	"	7	17	6
" Brindles	"	7	0	0
" Bullnose	"	9	0	0
Red Sand-faced Facings	"	6	18	6
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
2½" " " "	"		1	10
3" " " "	"		2	1
4" " " "	"		2	6

MASON

The following d/d F.O.R. at Nine Elms:		s.	d.
Portland stone, Whitbed	F.C.	4	4½
" " Basebed	"	4	7½
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" × 12" Duchesses	per M.	28	17	6
22" × 12" Marchionesses	"	24	10	0
20" × 10" Countesses	"	19	5	0
18" × 10" Viscountesses	"	15	10	0
18" × 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" × 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
" hand-made	"			9½
Nails, compo	lb.		1	4
" copper	"		1	6

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" " 2nds	" "			4
Mahogany, Honduras	" "		1	3
" African	" "		1	1
" Cuban	" "		2	6
Oak, plain American	" "		1	0
" Figured "	" "		1	3
" plain Japanese	" "		1	2
" Figured "	" "		1	5
" Austrian wainscot	" "		1	0
" 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, ¾"	Sq.		18	6
" 1"	"	1	1	6
" 1¼"	"	1	2	0
" 1½"	"	1	5	0
" 1¾"	"	1	10	0
Deal matchings, ¾"	"		14	0
" 1"	"		15	6
" 1¼"	"	1	4	0
Rough boarding, ¾"	"		16	0
" 1"	"		18	0
" 1¼"	"	1	6	0

Plywood, per ft. sup.

Thickness	¼" A	¼" B	¼" BB	⅜" A	⅜" B	⅜" BB	½" A	½" B	½" BB	¾" A	¾" B	¾" BB
Qualities	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6¼	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	–	1/–	9	–

		d.
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.)

		¼"	½"	1"	1¼"	2"
Tubes, 2'-14' long	per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"–23" long	each	10	1/1	1/11	2/8	4/9
" 3"–11½" long	"	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long	"	11	1/3	2/2	2/10	5/3
" " 3" M–½" long	"	8	10	1/5	1/11	3/6
Bends	"	8	11	1/7½	2/7½	5/2
Springs not socketed	"	5	7	1/1½	1/11½	3/11
Socket unions	"	2/–	3/–	5/6	6/9	10/–
Elbows, square	"	10	1/1	1/6	2/2	4/3
Tees	"	1/–	1/3	1/10	2/6	5/1
Crosses	"	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples	"	3	4	6	8	1/3
Diminished sockets	"	4	6	9	1/–	2/–
Flanges	"	9	1/–	1/4	1/9	2/9
Caps	"	3½	5	8	1/–	2/–
Backnuts	"	2	3	5	6	1/1
Iron main cocks	"	1/6	2/3	4/2	5/4	11/6
" with brass plugs	"	—	4/–	7/6	10/–	21/–

Discounts

TUBES.	Per cent.		Per cent.
Gas	65	Galvanized gas	52½
Water	61½	" water	47½
Steam	57½	" steam	42½

FITTINGS.			
Gas	57½	Galvanized gas	47½
Water	52½	" water	42½
Steam	47½	" steam	37½

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ¾"	"	10	6
" " ½"	"	10	3
" " ⅜"	"	10	0

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ¼"	cwt.	9	6
" " ⅜"	"	9	6
" " ½"	"	9	6
" " 1¼"	"	9	6
" " 1½"	"	9	6

		¾" s.	¾" d.	4" s.	4" d.
Cast-iron rain-water pipes of ordinary thickness metal	F.R.		8		10
Shoes	each	2	0	3	0
Anti-splash shoes	"	4	6	8	0
Boots	"	3	0	4	0
Bends	"	2	7	3	9
" with access door	"		—	6	3
Heads	"	4	0	5	0
Swan-necks up to 9" offsets	"	3	9	6	0
Plinth bends, 4½" to 6"	"	3	9	5	3
Half-round rain-water gutters of ordinary thickness metal	F.R.		5		6
Stop ends	each		6		6
Angles	"	1	7	1	11
Obtuse angles	"	2	0	2	6
Outlets	"	1	9	2	3

PLUMBER

		s.	d.
Lead, milled sheets	cwt.	24	6
" drawn pipes	"	24	6
" soil pipe	"	30	0
" scrap	"	16	0
Solder, plumbers'	lb.		9½
" fine do.	"	1	0
Copper, sheet	"		8½
" tubes	"		11

L.C.C. soil and waste pipes:		3"	4"	6"
Plain cast	F.R.	1 8	1 2	2 6
Coated	"	1 1	1 3	2 8
Galvanized	"	2 0	2 6	4 6
Holderbats	each	3 10	4 0	4 9
Bends	"	3 9	5 3	10 3
Shoes	"	2 10	4 4	9 6
Heads	"	4 8	8 5	12 9

PLASTERER

		£	s.	d.
Lime, chalk	per ton	2	5	0
Plaster, Coarse	"	2	10	0
" fine	"	4	15	0
Hydrated lime	"	3	0	9
Sirapite	"	3	6	0
Keene's cement	"	5	0	0
Gothite Plaster	"	3	6	0
Pioneer Plaster	"	3	6	0
Thistle plaster	"	3	6	0
Sand, washed	Y.C.		11	6
Hair	lb.			6
Laths, sawn	bundle		2	4
" rent	"		3	9
Lath nails	lb.			3

GLAZIER

		s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.	s. F.S.				2½
" " 26 oz.	" "				3
Flemish, Arctic, Figures (white)*	"				7
Blazoned glasses	"			2	6
Reeded: Cross Reeded	"				11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"				6
Crown sheet glass (n/e 12" × 10")	"			2	0
Flashed opals (white and coloured)	"	1	0 and	2	0
¼" rough cast; rolled plate	"				5½
¼" wired cast; wired rolled	"				9½
¼" Georgian wired cast	"				11
¼" Polished plate, n/e 1 ft.	"	†10 to ‡1		1	1
" " 2	"	†1 2	"	‡1	4
" " 4	"	†2 3	"	‡2	6
" " 8	"	†2 9	"	‡3	2
" " 20	"	†3 1	"	‡3	9
" " 45	"	†3 3	"	‡4	0
" " 100	"	†4 0	"	‡4	10
Vita glass, sheet, n/e 1 ft.	"			1	0
" " " 2 ft.	"			1	3
" " " over 2 ft.	"			1	9
" " plate, n/e 1 ft.	"			1	6
" " " 2 ft.	"			3	0
" " " 5 ft.	"			4	0
" " " 7 ft.	"			5	0
" " " 15 ft.	"			6	0
" " " over 15 ft.	"			7	6
"Calorex" sheet 21 oz., and 32 oz.	"	2	6 and	3	6
" rough cast ¼" and ½"	"		8½ "	1	0
Putty, linseed oil	lb.				3

* *Colours, 1d. F.S. extra.*
† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	"		2	9
Turpentine	"		4	1½
Patent knotting	"		14	0
Distemper washable	cwt.	2	6	0
" ordinary	"	2	0	0
Whitening	"		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	0
Flat varnish	"		14	0
Outside varnish	"		16	0
White enamel	"	1	15	0
Ready mixed paint	"		13	6
Brunswick black	"		7	6

CURRENT PRICES FOR MEASURED WORK

The following prices are for work to new buildings of average size, executed under normal conditions in the London area. They include establishment charges and profit. While every care has been taken in its compilation, no responsibility can be accepted for the accuracy of the list. The whole of the information given is copyright.

EXCAVATOR AND CONCRETOR

		£ s. d.
Digging over surface n/e 12" deep and cart away	Y.S.	2 9
" to reduce levels n/e 5' 0" deep and cart away	Y.C.	8 6
" to form basement n/e 5' 0" and cart away	"	9 0
" " 10' 0" deep and cart away	"	9 6
" " 15' 0" deep and cart away	"	10 9
If in stiff clay	add "	6
If in underpinning	"	4 0
Planking and strutting to sides of excavation	F.S.	1 0
" " to pier holes	"	5
" " to trenches	"	5
" " extra, only if left in	"	3
Hardcore, filled in and rammed	Y.C.	10 0
Portland cement concrete in foundations (6–1)	"	1 6 0
" " (4-2-1)	"	1 12 6
" " underpinning	"	1 16 0
Finishing surface of concrete, space face	Y.S.	7

DRAINLAYER

		4" s. d.	6" s. d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1 6	2 3
Extra, only for bends	Each	2 8	3 9
" junctions	"	3 9	4 6
Gullies and gratings	"	16 6	18 0
Cast iron drains, and laying and jointing	F.R.	4 9	6 9
Extra, only for bends	Each	10 6	15 6

BRICKLAYER

		£ s. d.
Brickwork, Flettons in lime mortar	Per Rod	26 10 0
" " in cement	"	27 12 6
" Stocks in cement	"	34 0 0
" Blues in cement	"	50 0 0
Extra only for circular on plan	"	2 0 0
" backing to masonry	"	1 10 0
" raising on old walls	"	2 0 0
" underpinning	"	5 10 0½
Fair Face and pointing internally	F.S.	1½
Extra over fletton brickwork for picked stock facings and pointing	"	8
" " " red brick facings and pointing	"	11
" " " blue brick facings and pointing	"	1 4
" " " glazed brick facings and pointing	"	3 6
Tuck pointing	"	7½
Weather pointing in cement	"	3
Slate dampcourse	"	10
Vertical dampcourse	"	1 1

ASPHALTER

		s. d.
½" Horizontal dampcourse	Y.S.	4 9
½" Vertical dampcourse	"	7 9
½" paving or flat	"	6 3
1" paving or flat	"	7 6
1" × 6" skirting	F.R.	1 0
Angle fillet	"	2½
Rounded angle	"	2½
Cesspools	Each	5 6

MASON

		£ s. d.
Portland stone, including all labour, hoisting, fixing and cleaning down, complete	F.C.	17 9
Bath stone and do., all as last	"	13 6
Artificial stone and do.	"	13 0
York stone templates, fixed complete	"	10 6
" thresholds	"	13 6
" sills	"	1 0 6

SLATER AND TILER

		£ s. d.
Slating, Bangor or equal to a 3" lap, and fixing with compo nails, 20" × 10"	Sqr.	3 10 0
Do., 18" × 9"	"	3 7 0
Do., 24" × 12"	"	3 17 0
Westmorland slating, laid with diminished courses	"	6 0 0
Tiling, best hand-made sand-faced, laid to a 4" gauge, nailed every fourth course	"	3 0 0
Do., all as last, but of machine-made tiles	"	2 16 0
20" × 10" medium Old Delabole slating, laid to a 3" lap (grey)	"	2 16 0
" " " " " " (green)	"	4 15 0

CARPENTER AND JOINER

		£ s. d.
Flat boarded centering to concrete floors, including all strutting	Sqr.	2 2 6
Shuttering to sides and soffits of beams	F.S.	7
" to stanchions	"	7
" to staircases	"	1 6
Fir and fixing in wall plates, lintols, etc.	F.C.	3 9
Fir framed in floors	"	4 6
" " roofs	"	6 6
" " trusses	"	7 6
" " partitions	"	8 6
¾" deal sawn boarding and fixing to joists	Sqr.	1 14 6
1" " " " " "	"	1 17 6
1¼" " " " " "	"	2 3 0
2" × 2" fir battening for Countess slating	"	9 6
Do., for 4" gauge tiling	"	12 0
Stout feather-edged tilting fillet	F.R.	4½
Patent inodorous felt, 1 ply	Y.S.	2 3
" " " 2 "	"	2 9
" " " 3 "	"	3 3
Stout herringbone strutting to 9" joists	F.R.	10½
1" deal gutter boards and bearers	F.S.	1 2
1¼" " " "	"	1 6
2" deal wrought rounded roll	F.R.	8
1" deal grooved and tongued flooring, laid complete, including cleaning off	Sqr.	2 1 0
1¼" do.	"	2 10 0
1½" do.	"	2 17 0
1" deal moulded skirting fixed on, and including grounds plugged to wall	F.S.	1 6
1¼" do.	"	1 9

CARPENTER AND JOINER—*continued*

		s. d.
1½" deal moulded sashes of average size	F.S.	1 9½
2" " " " " "	"	1 11½
1½" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ⅝" parting beads, and with brass faced axle pulleys, etc., fixed complete	"	3 7
2" " " " " "	"	3 10
Extra only for moulded horns	Each	6
1⅛" deal four-panel square, both sides, door	F.S.	2 0
2" " " " " "	"	2 8
1⅛" " but moulded both sides	"	2 4
2" " " " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " " " "	"	1 4
1½" deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1½" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages	"	2 6
1½" deal moulded wall strings	"	2 1
1⅛" " outer strings	"	2 4
Ends of treads and risers housed to string	Each	1 9
3" × 2" deal moulded handrail	F.R.	1 3
1" × 1" deal balusters and housing each end	Each	2 0
1½" × 1½" " " "	"	2 9
3" × 3" deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	"	6 0

SMITH AND FOUNDER

		£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt.	16 6
Riveted plate or compound girders, and hoisting and fixing in position	"	1 0 6
Do., stanchions with riveted caps and bases and do.	"	19 0
Mild steel bar reinforcement, ½" and up, bent and fixed complete	"	17 6
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g.	F.S.	11
Wrot-iron caulked and cambered chimney bars	Per cwt.	1 10 0

PLUMBER

		£ s. d.
Milled lead and labour in flats	cwt.	1 18 6
Do. in flashings	"	2 2 0
Do. in covering to turrets	"	2 7 6
Do. in soakers	"	1 13 3
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

		½" s. d.	¾" s. d.	1" s. d.	1¼" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks	F.R.	10	1 0	1 3	2 0	2 10	—
Do. soil pipe and fixing with cast lead tacks	"	—	—	—	—	—	5 6
Extra, only to bends	Each	—	—	—	—	2 0	6 9
Do. to stop ends	"	6½	8	9	11	1 6	—
Boiler screws and unions	"	3 3	3 9	5 0	8 0	—	—
Lead traps	"	—	—	—	6 3	8 9	—
Screw down bib valves	"	6 9	9 6	11 0	—	—	—
Do. stop cocks	"	7 0	9 6	12 6	—	—	—

		£ s. d.
4" cast-iron ½-rd. gutter and fixing	F.R.	1 0
Extra, only stop ends	Each	1 0
Do. angles	"	1 6
Do. outlets	"	2 9
4" dia. cast-iron rain-water pipe and fixing with ears cast on	F.R.	1 2
Extra, only for shoes	Each	1 3
Do. for plain heads	"	5 6

PLASTERER AND TILING

		£ s. d.
Expanded metal lathing, small mesh	Y.S.	2 0
Do. in n/w to beams, stanchions, etc.	"	2 9
Lathing with sawn laths to ceilings	"	1 3
½" screeding in Portland cement and sand or tiling, wood block floor, etc.	"	1 5
Do. vertical	"	1 7
Rough render on walls	"	1 2½
Render, float and set in lime and hair	"	1 9
Render and set in Sirapite	"	1 11
Render, backing in cement and sand, and set in Keene's cement	"	2 9
Extra, only if on lathing	"	4
Keene's cement, angle and arris	F.R.	6
Arris	"	1½
Rounded angle, small	"	3
Plain cornices in plaster, including dubbing out, per 1" girth	"	1½
1" granolithic pavings	Y.S.	3 6
1½" " " "	"	4 6
6" × 6" white glazed wall tiling and fixing on prepared screed	"	17 6
9" × 3" " " " " "	"	1 2 6
Extra, only for small quadrant angle	F.R.	8

GLAZIER

		s. d.
21 oz. sheet glass and glazing with putty	F.S.	6½
26 oz. do. and do.	"	7½
Flemish, Arctic Figured (white) and glazing with putty	"	1 1
Cathedral glass and do.	"	1 2
Glazing only, British polished plate	"	7
Extra, only if in beds	"	2
Washleather	F.R.	4

PAINTER

		s. d.
Clearcolle and whiten ceilings	Y.S.	6
Do. and distemper walls	"	9
Do. with washable distemper	"	1 1
Knot, stop, prime and paint four coats of oil colour on plain surfaces	"	3 3
Do. on woodwork	"	3 6
Do. on steelwork	"	3 0
Do. and brush grain and twice varnish	"	5 6
Stain and twice varnish woodwork	"	1 11
Stain and wax-polish woodwork	"	4 6
French polishing	F.S.	1 2
Stripping off old paper	Piece	2 0
Hanging ordinary paper	from "	2 9

d.
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6
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3½
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4

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9
2
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6

d.
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8

d.
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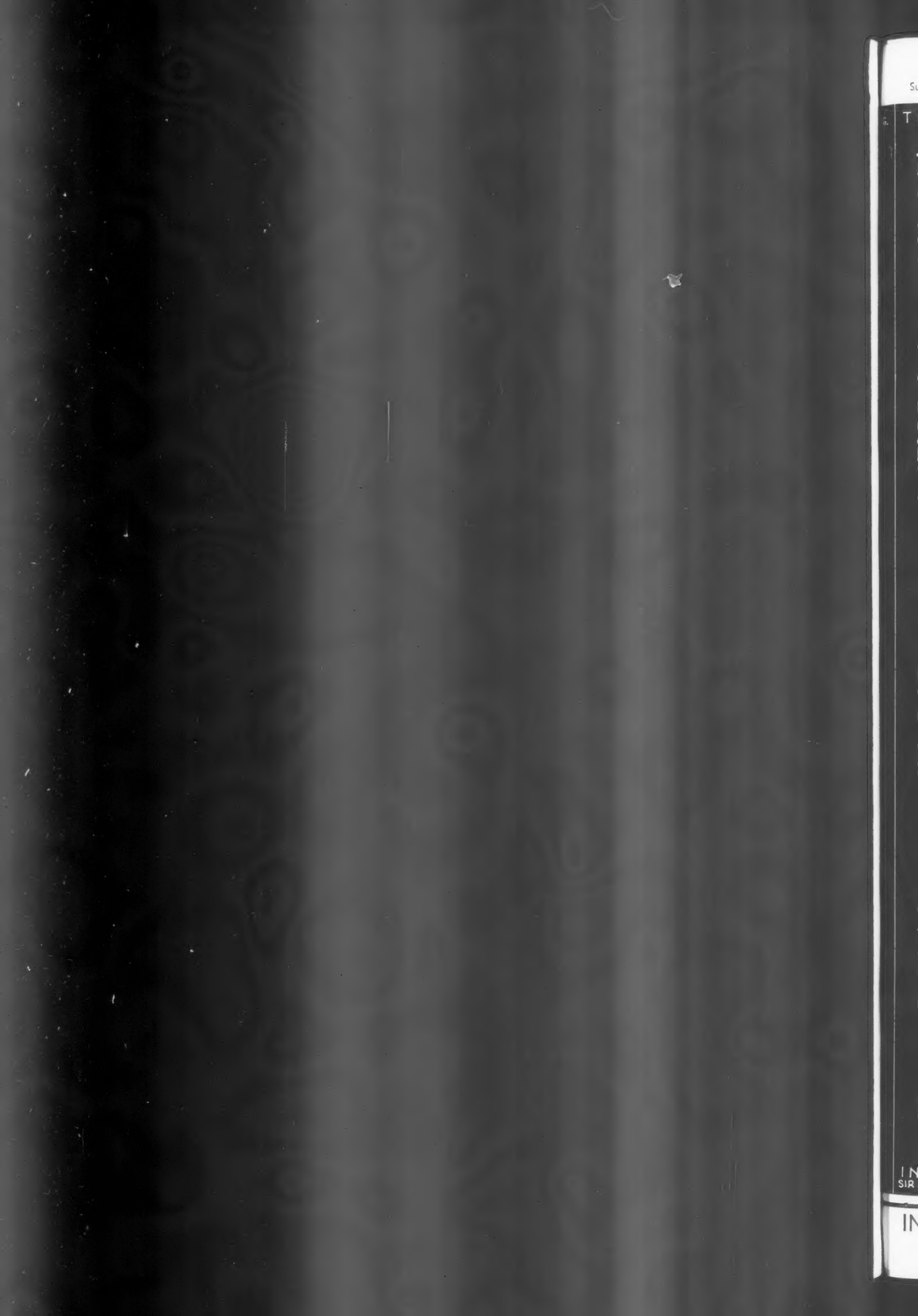

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•TURNALL• ASBESTOS-CEMENT TRAFFORD ROOF TILES : METHOD OF LAYING •(Straight or curved work.)

For general properties and uses of the tiles see Information Sheet N°1. of this series.

ORDER OF LAYING :
The tiles are laid right to left starting at the eaves and working upwards. The first tile, or starter, is fixed uncut, but the remaining tiles on the bottom course must have the top right hand corner mitred as shown. The mitre to subsequent courses is shown on detail.

DRILLING AND CUTTING :
The holes for the various fixing attachments (see future Information Sheets) should be drilled through the crown of the corrugations with an ordinary brace and drill.

Mitre and other cuts are made with an ordinary hand saw, under which the material will not flake or crumble.

LENGTH OF COVER :
The laid width of the tiles should be calculated in conjunction with the length of the roof, and if an odd length is required, it is then inserted at mid-length, cut down so that a corrugation occurs at each side for overlap jointing purposes. See reverse side of this Information Sheet.

TYPICAL LAYING DETAILS FOR STRAIGHT OR CURVED TRAFFORD TILES :

MITRED CORNERS :
When the tiled area has been covered, all mitred corners are concealed, and there is a fixing in every vertical side lap corrugation.

BEARING :
Roof ladders are employed for the fixing operations, and care should be taken not to deflect the tiles at intermediate purlins in an attempt to obtain solid bearing at purlins.

EXPANSION :
Special joints (see below) are inserted in roofs over 150' long between verges.

EAVES OVERHANG :
The maximum unsupported overhang for Trafford tiles at eaves is 1'0".

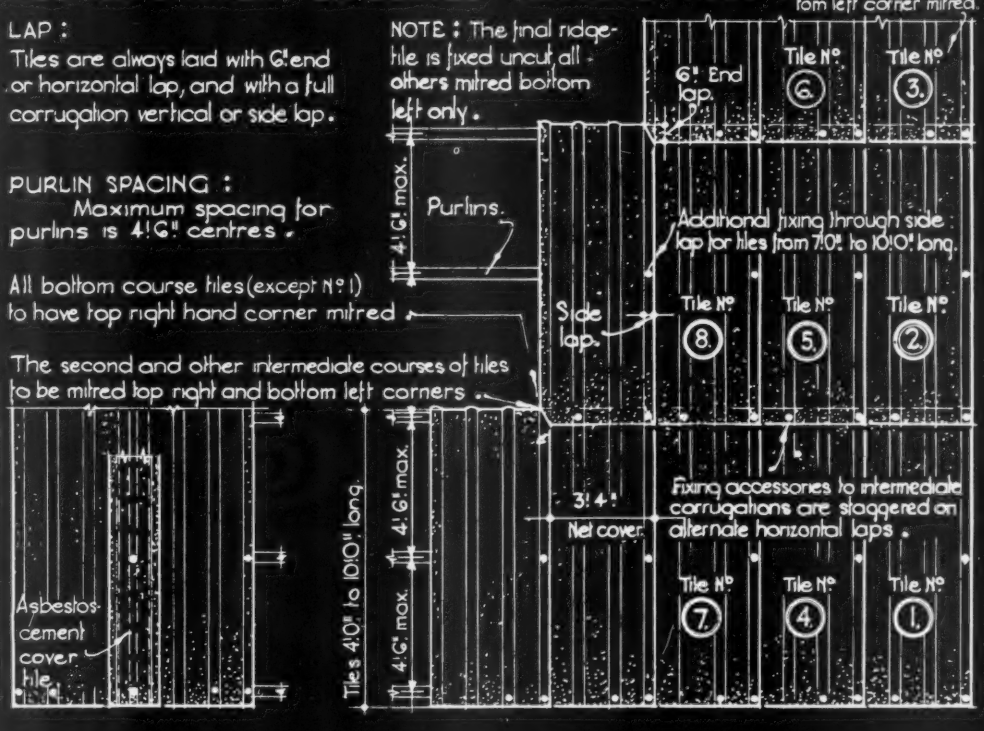
LAP :
Tiles are always laid with 6" end or horizontal lap, and with a full corrugation vertical or side lap.

PURLIN SPACING :
Maximum spacing for purlins is 4'6" centres.

All bottom course tiles (except N°1) to have top right hand corner mitred.

The second and other intermediate courses of tiles to be mitred top right and bottom left corners.

NOTE : The final ridge-tile is fixed uncut, all others mitred bottom left only.



ASBESTOS-CEMENT TILE EXPANSION JOINTS :

TABLE GIVING SPACING OF JOINTS :

LENGTH OF BUILDING IN FEET.	N° OF LINES OF EXPANSION JOINTS.
150 to 250.	1
250 to 350.	2
350 to 450.	3

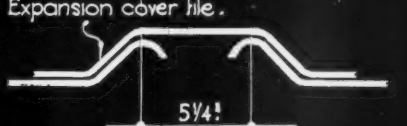
LAYING : Lengths are laid to break joint with horizontal lap of tiles, the bottom tile being trimmed off to correspond with edge of eaves tiles.

RIDGE : See detailed treatment at right.

SIZE AND COLOURS :
Cover tiles are made in lengths of 10'0", in standard colours of grey, red and russet-brown.

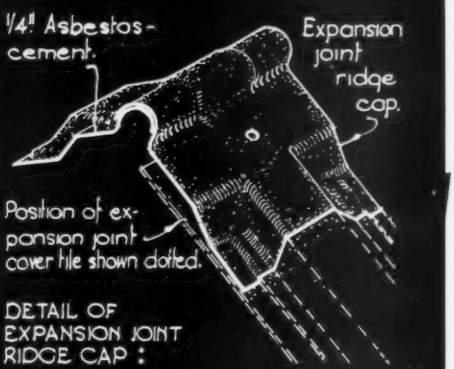
SECTION SHOWING ASBESTOS-CEMENT COVER TILE, and cutting of roof tiles to obtain similar finish at each verge of roof.

Minimum space obtainable between side corrugations of roof tiles.



Maximum space obtainable between side corrugations of roof tiles.

NOTE : The expansion joint allows movement in expansion or contraction between the asbestos-cement roof covering and the understructure of steel-purlined buildings.



DETAIL OF EXPANSION JOINT RIDGE CAP :

Information from Turners Asbestos Cement Co.-Branch of Turner & Newall Ltd.

INFORMATION SHEET : ASBESTOS-CEMENT ROOFING TILES : N°2.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Orat & Bapka

INFORMATION SHEET • 397 • ASBESTOS CEMENT ROOFING TILES—II

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INFORMATION SHEET

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ASBESTOS CEMENT ROOFING TILES—II

General

This is the second of the series of Sheets relating to the various uses of asbestos cement products in general building construction, and deals with the laying, cutting and jointing of "Turnall" Trafford Roofing Tiles. Sheet No. 1 of the series dealt with the general properties and uses, while future sheets will set out the fixing methods, purlin spacings, and the range of asbestos cement roof fittings for use in conjunction with the tiles.

Order of Laying

As shown overleaf, Turnall Trafford tiles are laid right to left, starting at the eaves and working upwards. The first tile or starter is fixed uncut, but the remaining tiles on the bottom course must have the top right hand corner mitred. The second and other intermediate courses of tiles require both the top right hand and bottom left hand corners mitred with the exception of the first and last tile, which have only the bottom left hand corner and top right hand corners cut respectively. The last or top course of tiles has the bottom left hand corner mitred only, except the final tile, which remains uncut. Tiles are laid with a full corrugation vertical or side lap. Where prevailing winds would tend to be directed into the side-laps the tiles may be laid *left* to *right*. The cutting of the mitres would then be exactly opposite to the above.

Drilling

The holes for fixing attachments are drilled and not punched through the crown of the corrugations. A joiner's brace and an engineer's twist drill sharpened to a rather long point (60°-90°) are used, and the holes made just large enough for the screws or hook bolts to be a push fit in them. As the tiles are being fitted on the roof the accessories should be tightened just sufficiently to hold the tiles in position. When the fixer is satisfied that the tiles are adjusted so that all the corrugations run perfectly straight from eaves to top of roof slopes the accessories are tightened. See later Information Sheets.

Fixing Accessories

The laying and fixing of the tiles (undertaken by the manufacturers if desired) is performed with the use of roof ladders. When fixing, care should be taken not to deflect the tiles at intermediate purlins in an attempt to obtain solid bearing on the purlin.

The diagram shows the position of fixing accessories, and it will be seen that when the tiled area has been covered, all mitred corners are concealed and there is a fixing accessory in every vertical side lap corrugation, also at the verge, but the two intermediate corrugations between the vertical side lap corrugations have the accessories staggered, i.e., intermediate accessories along horizontal laps are staggered on alternate horizontal laps. When the tiles are supported over intermediate purlins, as in the case of 7 ft. to 10 ft. lengths, an additional fixing accessory is required through the side lap corrugation only.

Mitres

For mitreing, or when it is necessary to cut a tile to make up a length, an ordinary hand saw is used. The tile should be cut so that a corrugation occurs at each side in order that it may be inserted in the middle of a roof length, which means that, if it happens that an odd width of tile be inserted as described, it may be possible to finish at the verges with either flats or corrugations. It is the best course to calculate the width of tiles in conjunction with the length of roof and to arrange the verge finishes accordingly. (*See table below.*)

Covering Capacity

The following table sets out the approximate covering capacity of the tiles.

No. of tiles	Length of Roof Covered	No. of tiles	Length of Roof Covered	No. of tiles	Length of Roof Covered
1	3′ 8″	21	70′ 4″	41	137′ 0″
2	7′ 0″	22	73′ 8″	42	140′ 4″
3	10′ 4″	23	77′ 0″	43	143′ 8″
4	13′ 8″	24	80′ 4″	44	147′ 0″
5	17′ 0″	25	83′ 8″	45	150′ 4″
6	20′ 4″	26	87′ 0″	46	153′ 8″
7	23′ 8″	27	90′ 4″	47	157′ 0″
8	27′ 0″	28	93′ 8″	48	160′ 4″
9	30′ 4″	29	97′ 0″	49	163′ 8″
10	33′ 8″	30	100′ 4″	50	167′ 0″
11	37′ 0″	31	103′ 8″	51	170′ 4″
12	40′ 4″	32	107′ 0″	52	173′ 8″
13	43′ 8″	33	110′ 4″	53	177′ 0″
14	47′ 0″	34	113′ 8″	54	180′ 4″
15	50′ 4″	35	117′ 0″	55	183′ 8″
16	53′ 8″	36	120′ 4″	56	187′ 0″
17	57′ 0″	37	123′ 8″	57	190′ 4″
18	60′ 4″	38	127′ 0″	58	193′ 8″
19	63′ 8″	39	130′ 4″	59	197′ 0″
20	67′ 0″	40	133′ 8″	60	200′ 4″

Expansion Joints

It is necessary to insert expansion joints in roofs over 150 feet in length between verges. When fixing these joints they should be laid so that they break bond with the tiles, the first or eaves, length butting up against the bottom of the second course tiles, thus making it necessary to trim off the bottom of the expansion joint to correspond with the edge of the tiles at the eaves.

Ridges

With the use of expansion joints on the roof it is necessary that the ridge be dealt with in a similar manner, to allow compensation for variation in expansion or contraction. For this purpose a special expansion joint ridge piece, as shown, is fixed over the ridge and laps over the expansion joints, where it abuts the ridge wing.

It may be mentioned that expansion joints are essential on long roofs of steel construction, but are optional on roofs with timber purlins.

Information from : Turners Asbestos Cement Co., Branch of Turner and Newall, Ltd.
Address (Head Office) : Trafford Park, Manchester, 17
Telephone : Trafford Park 2181 (8 lines)
London Office : Asbestos House, Southwark Street, S.E.1
Telephone : Waterloo 4041

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MAXHEAT OVAL TUBULAR HEATERS:

Due to the shape of the Maxheat oval over 90% of the surface is exposed to the current of air caused by the heat.

The heater consists of oval shaped tubes containing the electric heating elements which operate at low temperatures. Connection is made to the conduit at either end of the lowest tube.

The increase of contact area results in a more rapid rise in the room temperature & reduces the operating temperature of the room.

The DIAGRAM shows the airstream round an oval tube with 90% surface exposed to current.

HALF F.S. SECTION

STANDARD SIZES, ETC. OF HEATERS:

HEATING TUBES • SHAPE • Oval. 2 13/16" high by 1" wide.

LENGTH: From 2' 0" to 17' 0" in rises of 1 ft.

WEIGHT: 1 lb. per foot run + ¾ lb: 2' 0" weighs 2¾ lbs. 17' 0" weighs 17¾ lbs.

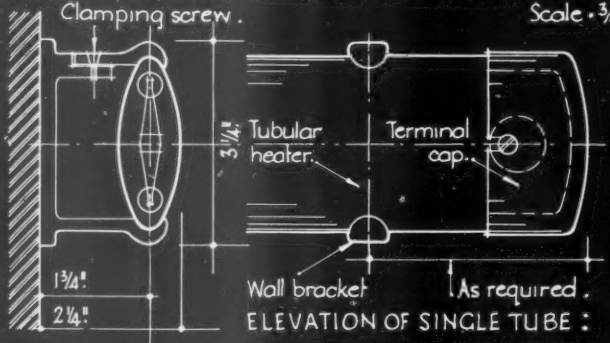
PROJECTION: From face of wall 2¼" overall.

FINISHES: Standard brown, Light Oak, Gold Bronze, Copper Bronze, Aluminium Bronze, Green, Black and Chromium plate.

WATTS PER FOOT RUN: 60 to 80 watts standard. 50 Watts for schools and Chromium finish tubes.

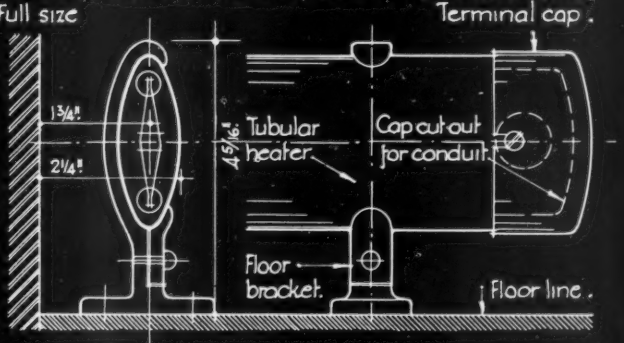
WALL MOUNTING BRACKETS FOR HEATERS:

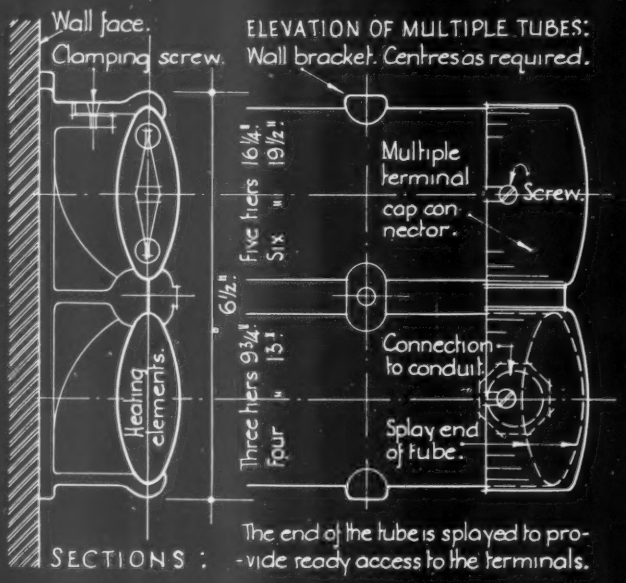
Scale • ¾ Full size



ELEVATION OF SINGLE TUBE:

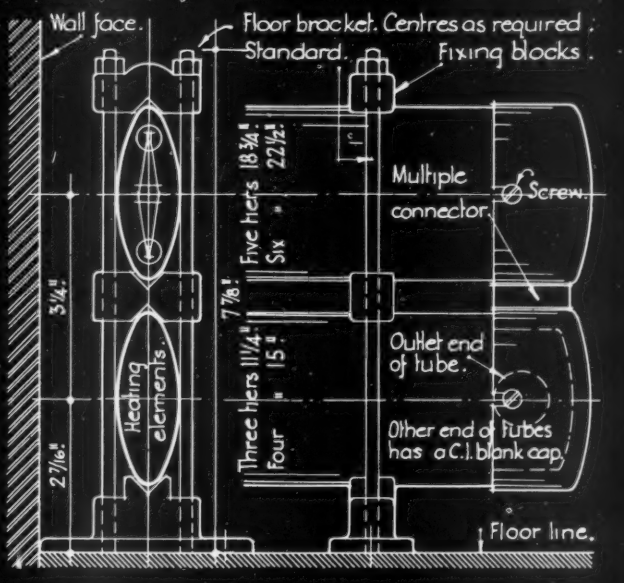
FLOOR MOUNTING BRACKETS FOR HEATERS:





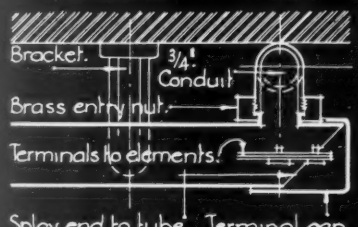
SECTIONS:

The end of the tube is splayed to provide ready access to the terminals.



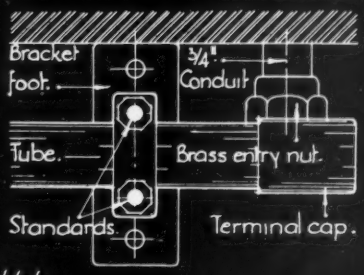
PLAN OF TUBE:

Section showing connection to conduit from floor. (Universal angle outlet.) Other types of connections:- Bushed outlet, and Cable gland.



PLAN OF TUBES

from above showing standard outlet to a wall conduit. This may be either at the right or left hand of the lowest tier of the Maxheat heater.



Information from The Wardle Engineering Co. Ltd.

INFORMATION SHEET: TUBULAR ELECTRIC HEATERS:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Burnet Tait & Lorne.

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ELECTRIC HEATERS

General

Maxheat Oval Tubular Electric Heaters consist of one or more tiers of oval steel tubing in which, along the full length of each, runs the electric heating element, comprised of high-grade nickel-chromium coil designed to operate at black heat. The coil is supported continuously throughout the entire length of each tube.

Fixing and Mounting

The heaters may be wall or floor mounted on special brackets manufactured for the purpose. The wall brackets give a total projection to the tubes of 2¼ ins., and are spaced according to requirements. Two fixing brackets are supplied with lengths up to and including eight feet, three for lengths from 9 ft. to 12 ft., and four for lengths from 13 ft. to a maximum of 17 ft.

Connections

Conduit connection to the heaters is provided at one end of the lowest tube, at the back. The standard outlet is for ¾ in. screwed conduit, but a universal angle outlet is also available. If required, bushed outlets can also be supplied, or provision made for ⅜ in. internal bore C.T.S. Cable Gland. Outlets may be provided to each tube of a multiple-tiered heater when individual tube control is necessary.

Terminal Caps

The terminal end of each tube is covered with a metal cap screwed to the tube. On tiered heaters the caps are joined as shown, and cut out at the back where outlets occur. The opposite ends of the tubes are closed with a cast iron blank end cap.

Heat Losses

Heat losses can be determined accurately by detailed calculations only, but abbreviated methods are useful in arriving at a first approximation and the following formula will be found useful in this connection :—

Watts loading = Floor area × K × Temperature difference.

K = Constant from Table.

Note. — The temperature equals the difference between the desired inside temperature and the outside temperature.

Application of Heaters

In Schools, Maxheat oval tubes should be installed round the walls and in the hall, which is usually lofty ; additional tubes should be placed at high level to obviate down draughts.

In cloak-rooms the tubes should be mounted below each rack to provide sufficient heat to dry damp clothes in damp weather. The complete installation should be thermostatically controlled to ensure an even temperature throughout the day.

In Cinemas and Theatres Maxheat oval tubes should be placed under the seats to afford an even distribution of heat over the floor area. With this arrangement the time for warming up the building will be a minimum, the radiant heat from the tubes providing sufficient warmth for the audience. As the auditorium fills sections of the installation may be switched off, thus preventing the atmosphere becoming oppressive.

In Churches, to afford an even distribution of heat, Maxheat oval tubes should be installed under the pews. Down draughts, which are usually common below the clerestory windows, should be countered by placing the tubes at high level.

In Residences Maxheat oval tubes installed under windows and near doors will counteract draughts and provide an even temperature throughout the room.

In Garages a length of Maxheat oval tube will prevent freezing and facilitate starting on cold mornings, while a tube placed close to a cistern will prevent freezing of the water pipes.

In Greenhouses tubes rated at 80 watts per foot are suitable. Thermostatic control ensures an even temperature and protects the plants from the effects of sudden climatic changes.

In Shop Windows Maxheat oval tubes rated at 30/40 watts per foot are suitable to prevent condensation. The tubes should be placed approximately ⅛ in. from the glass, and the provision of ventilation holes in the floor of the window immediately below the heater will ensure a flow of warm air upwards, thus preventing condensation on any part of the glass. The tube should extend the full length of the glass.

Prices

Prices of single tube heaters

Length ft.	Weight approx. lbs.	List price complete with fixing brackets
2	2¾	£0 12 0
3	3¾	£0 15 0
4	4¾	£0 18 0
5	5¾	£1 1 0
6	6¾	£1 4 0
7	7¾	£1 7 0
8	8¾	£1 10 0
9	9¾	£1 13 0
10	10¾	£1 16 0
11	11¾	£1 19 0
12	12¾	£2 2 0
13	13¾	£2 5 0
14	14¾	£2 8 0
15	15¾	£2 11 0
16	16¾	£2 14 0
17	17¾	£2 17 0

Table giving values of K

Height of room in ft.	Floor Area in sq. ft. 100	200	300	400	500	600	700	800	900	1000
8	·338	·336	·330	·324	·316	·308	·295	·283	·274	·255 ·234 above 1,000 sq. ft.
9	·360	·357	·351	·343	·334	·325	·312	·297	·277	·253 above 900 sq. ft.
10	·397	·376	·368	·349	·348	·335	·321	·297	·270 above 800 sq. ft.	
11	·398	·393	·383	·372	·353	·340	·334	·296 above 700 sq. ft.		
12	·415	·414	·405	·393	·378	·350	·346	·321 above 700 sq. ft.		
13	·432	·427	·414	·400	·380	·360	·337 above 600 sq. ft.			
14	·449	·448	·436	·420	·400	·372	·363 above 600 sq. ft.			
15	·466	·458	·440	·420	·391	·373 above 500 sq. ft.				
16	·480	·476	·460	·438	·408	·394 above 500 sq. ft.				
18	·509	·496	·473	·441	·435 above 400 sq. ft.					
20	·538	·533	·508	·475	·461 above 400 sq. ft.					

Recommended Temperatures

Recommended internal temperatures of various types of buildings in degrees F.

Assembly Hall ...	55	Lecture Halls ...	60
Banks ...	60	Living Rooms ...	60/65
Bedrooms ...	50	Museums	55/60
Churches ...	55	Offices	60
Cinemas and Theatres	50	Operating Theatres	70/80
Cloak Rooms ...	50	Paint Shops ...	60/70
Dance Halls ...	50	Public Buildings ...	55/60
Entrance Halls ...	50/60	Restaurants ...	60
Factories	50/55	Schools	60
Foyers	50/55	Shops	55/60
Garages	45/50	Showrooms ...	55
Hospitals... ...	60		

Name of Manufacturer : The Wardle Engineering Co., Ltd.

Address : Old Trafford, Manchester, 16

Telephone : Trafford Park, 1801

London Office : 34 Victoria Street, S.W.1

Telephone : Victoria 4072

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ADAMITE MIXTURE:

PROPERTIES:

Adamite Mixture consists of pure Atlas White Portland cement and coloured sand.

USES:

It is used for obtaining any desired colouring to stucco, renderings, cast stone, moulded and in situ concrete etc.

AGGREGATE:

The graded sand aggregate is permanently coloured by a special process before being mixed dry with the cement, in the proportions of 4½ of sand to 1 of cement by volume.

ENLARGED SECTION THROUGH RENDERING:

Exposed surface of rendering showing 60 to 70% of the coloured aggregate.

The total thickness of Adamite Mixture rendering is 1/3 to 3/8 inches.

SAND:

To ensure a dense mixture, three grades of sand are used, fine, medium and coarse. This proceedure, by enabling the cement content to be decreased, reduces the liability of crazing. When the sand is tinted the colour becomes an integral part of the grains.

APPLICATION:

For detailed specifications of the application of Adamite Mixture to various surfaces, see material on the reverse side of this Information Sheet.

TEXTURE:

Various textures are obtainable on the surface of renderings, etc, by brushing at different setting times, and with degrees of stiffness in the brushes used.

COLOURS:

The mixture is obtainable in standard colours of white, cream, buff, light brown, red, lilac, light blue, dark blue, light green and dark green.

·ATLAS WHITE· PORTLAND CEMENT:

PROPERTIES:

This material differs from grey Portland cement as it is pure white in colour, and does not stain the aggregate. It's other properties are similar.

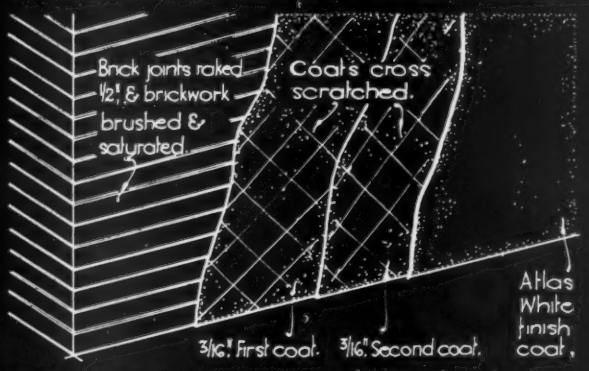
USES:

Atlas White may be used in any concrete work including terrazzo, pointing, stone or brickwork, cast stone, stucco, etc. When used with coloured aggregates & brushed, the colours are exposed, on a permanent white background.

AGGREGATE:

Preferably a coarse-grained washed aggregate, of a siliceous nature.

APPLICATION OF ATLAS WHITE STUCCO TO BRICKWORK:



3/16" thick First and second coats to be 3 of coarse grained and hard washed sand, to 1 of British Standard Portland cement.

1/3" to 3/8" thick final coat, to be of 3 to 1 Atlas White finished with a wood float, brushed to expose 60 to 70% of the sand after initial set, and protected.

COLOUR:

The colour of the stucco surface will invariably be the colour of the aggregate, as 60 to 70% of the surface should be composed of aggregate uncovered by neat cement. Should the surface become dirty, it can be scrubbed down with a 20 per cent solution of commercial muriatic acid and water, and thus brought back to original colour.

CONCRETE FACING, PRECAST WORK, ETC.:

A thin skin of Atlas White Portland cement concrete may be poured between forms against the main walling, the two skins being allowed to become monolithic, only when the mixes are sufficiently firm to permit removal of the steel shuttering.

By using specially coloured aggregates & brushing the exposed surface, any texture or finish is obtainable.

For detailed specifications, particulars of textures & finishes obtainable, see reverse side hereof.

Information from The Adamite Company Limited.

INFORMATION SHEET: WHITE AND COLOURED CONCRETES AND RENDERINGS:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1· Oscar P. Boyce

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INFORMATION SHEET
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COLOURED RENDERINGS

General

Atlas White Portland cement may be used to obtain a pure white surface to any form of concrete work, e.g. terrazzo floors, the pointing of stone or brickwork, cast stone, mass concrete, or Atlas White stucco. When used in conjunction with coloured aggregates, and brushed, the natural tints of that aggregate are exposed with their full colour values on a permanent white background.

Adamite Mixture is a variously coloured composition of graded sand and Atlas White Portland cement, and is used for obtaining any desired colouring to stucco, renderings, cast stone, moulded and in situ concrete, etc.

The sand is graded and treated by a special colouring process before being mixed dry with the cement, which remains permanently white.

Specifications

(*a*) *Stucco on Brick or Concrete Block Base.*

Apply the rendering in mortar form in three coats. Before applying the first coat, rake out the mortar joints to a depth of $\frac{1}{2}$ in. from the face. Remove all old plaster, thoroughly wire brush the face of the brickwork and saturate with clean water. (Surfaces that have been painted or waterproofed should be lathed with metal lathing).

The first and second coats to be of three volumes of coarse-grained hard-washed sand to one volume of British Standard Portland cement and to average $\frac{3}{8}$ in. in thickness.

Cross-scratch the surface of the first coat and allow a day to elapse before applying the second coat, which must also be cross-scratched.

Allow a full eight days (or longer) to elapse between the finish of the second coat and the application of the finish or Adamite Mixture coat. Thoroughly saturate the second coat with a hose the day following its application and for not less than three days thereafter. If weather is dry, saturate again the day before and also shortly before applying the finish coat.

The finish or Adamite Mixture coat should average $\frac{1}{8}$ in. to $\frac{3}{8}$ in. in thickness. The surface to be finished with a wood float and to have from 60 per cent. to 70 per cent. of sand uncovered by cement.

Avoid the use of a steel trowel and overworking of the surface.

Where possible, protect the finish coat until thoroughly hard against the sun, wind, rain or frost by means of tarpaulins. If in an exposed position, waterproof the base coats by adding Colemanoid waterproofer to the gauging water. Where Colemanoid is employed apply the Adamite Mixture coat forty-eight hours after application of the base coats.

If preferred, the finish coat can consist of three volumes of coarse-grained washed silica sand (or other approved aggregate) to one volume of Atlas White Portland cement.

In freezing weather, incorporate Colemanoid in the Adamite Mixture or finish coat.

(*b*) *On Concrete Base.*

Apply the rendering in mortar form in two coats. Before applying the first coat ($\frac{3}{8}$ in. in thickness) thoroughly clean down and roughen the face of the concrete. Where possible the concrete should be treated with an aggregate-exposing liquid (Redalon) during course of erection, in order to obtain a thorough bond. Apply the finish or Adamite Mixture coat as on a brick or concrete block base.

(i) *Typical Stucco Finishes.*

Sand Float.—The sand float or stone finish is that most usually employed on large buildings, such as flats, offices, factories, etc. The plasterer works perpendicularly, applying the material $\frac{1}{8}$ in. to $\frac{3}{8}$ in. in thickness, taking care to leave no float marks. The finished surface should be of even texture, showing at least 60-70 per cent. of sand uncovered by cement. A surface skin of neat cement must be either brushed away with a carpet float or wire brush, or removed with a muriatic acid solution. In this, as in all stucco finishes, no retempered mortar should be used. Enough mortar is mixed for one hour's use only, at one time.

(ii) *Float Sweep.*

This finish shows the broad sweep of the float. The plasterer works horizontally in broad, sweeping strokes from the shoulder, not the elbow. The material working past the end of the float leaves slight ridges, which no attempt is made to remove. The float is lifted at the end of each stroke, and is held at such an angle to the wall as to leave an even surface. The effect of this finish is to secure differences in plane rather than the sweep mark. If desired, the ridges may be subdued by rubbing with a burlap bag when partially set.

(iii) *Rough Texture.*

This finish has many variations. The method of application is from the bottom up. A full float of material (holding the float at a sharper angle to the wall than usual) is given a free, powerful stroke, so that the mortar is spread along a length of several feet. The heel of the float must not be dug in. At the end of the stroke the float is lifted. Holding the trowel at a sharp angle tears the material as it is applied, giving the rough texture. Spots that are not covered at the first stroke should be covered by a complete new sweep. It is sometimes useful to give the base coat a cover of the finish coat mortar, applying the texture over this while it is still soft.

(iv) *Effect Over Masonry.*

This finish gives the effect of being applied over rough rubble masonry and is obtained by applying the finish coat in irregular thicknesses, variations being not more than $\frac{1}{8}$ in. to $\frac{1}{4}$ in. The "lumps" should be roughly horizontal, to give the effect of underlying courses of stone. (The plasterer is liable to give them a slight pitch to the right.) Their size should correspond roughly to the size of the projection of a one-man stone. Major irregularities should be roughly worked out with the float. After setting for an hour or so the surface should be vigorously rubbed with a burlap bag.

(v) *Scraped Texture.*

This finish weathers evenly and does not show breaks in the finished surface. The method of application is identical with that of the sand float—the rendering being roughly trowelled with a wood float and left for approximately 24 hours before scraping which is carried out with a trowel or metal straight edge held nearly at right-angles to the rendering.

(c) *Setting and Backing.*

Clean and wet down the stone to be set. Spread the mortar to within 1 in. of the face of the stone, using either Adamite Mixture or three volumes of clean sharp sand to one volume of Atlas White. When backing a fine stone particularly subject to staining, use two volumes of sand to one volume of Atlas White. For backing tile use a mortar consisting of two volumes of sand to one volume of Atlas White.

(d) *Pointing.*

For stone, marble and other masonry, rake out the mortar joints to a depth of at least $\frac{3}{4}$ in. Thoroughly wet and point with Adamite Mixture or a mortar composed of one volume of silica sand of a fine character (not of a flour-like fineness) to one volume of Atlas White. For rough-faced brickwork, fine gravel or other comparatively coarse aggregate may be used. For hammered dressed stonework, rake out the joints to a depth of at least 1 in. For tiles, point with a mortar of Atlas White mixed sufficiently stiff with clean water to stay in place on a vertical surface. Where the pointing for tiles is to be tinted use a coloured aggregate or incorporate not more than 10 per cent. mineral oxide to Atlas White.

(e) *Concrete Surfacing.*

A method of construction frequently employed is to face the structure with a 2 in. skin of Adamite Mixture. The usual procedure is to place the concrete in forms, the Adamite Mixture concrete surface being separated from the grey concrete mortar during pouring by a movable steel shutter. When the two mixes are in position, well tamped and are sufficiently firm to prevent intermingling, the steel shutter is withdrawn—a thorough monolithic bond being thus obtained between the two concretes. When the steel shutter is removed the neat white Portland cement skin can be brushed off with a wire brush thereby exposing the colours of the aggregate in the Adamite Mixture (this method is useful for the interior walls of swimming pools).

A somewhat similar process is frequently used in precast work, i.e. Atlas White Portland cement cast stone or Adamite Mixture cast stone.

Quantities.

One ton of Adamite Mixture is sufficient for 70 yards super $\frac{1}{2}$ in. thick. One ton (six barrels) of Atlas White Portland cement is sufficient for 300 yards of stucco $\frac{1}{8}$ in. thick, or 240 yards $\frac{3}{8}$ in. thick, in a one-cement three-sand mix.

One ton of sand is sufficient for 118 yards super $\frac{1}{8}$ in. thick, or 90 yards super $\frac{3}{8}$ in. thick.

Standard Colours

Adamite Mixture is obtainable in the following colours: White, cream, buff, light brown, red, lilac, light blue, dark blue, light green and dark green.

Prices

No. 2 Cream, No. 3 Buff, No. 4 Light Brown, No. 10 Red	£9 per ton ex Works
No. 1 White, No. 6 Light Green, No. 7 Dark Green	£12 per ton ex Works
No. 5 Lilac	£16 per ton ex Works
No. 8 Light Blue	£17 per ton ex Works
No. 9 Dark Blue	£18 per ton ex Works

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