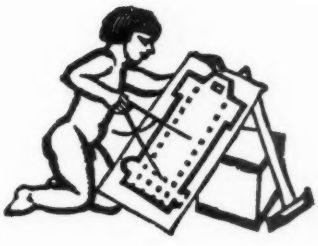
KING GEORGE V MEMORIAL, WESTMINSTER

ABOVE is a photograph of the model of the King George V Memorial to be erected on a site in Old Palace Yard, Westminster. Work on the site is to proceed at once. The architect for the scheme is Sir Giles Gilbert Scott, R.A., and the sculptor will be Sir Reid Dick, R.A. The model was executed by Mr. John B. Thorp. Astragal refers to this Scheme on page 156.

PAINTING OF THE NEW YORK WORLD FAIR

The first official painting, by H. M. Pettitt, of the New York World Fair, showing how it will appear at the opening on April 30. The official description of the painting says : " The painting shows clearly major arterial, subway, railroad and other lines which tie 1,216½-acre Fair to mainland. Extreme upper right is Whitestone Bridge route from New England and Canada ; next in order come Flushing Bay boat piers, North Beach Airport and Grand Central Parkway Extension to Triborough Bridge. Parallel with this side of grounds are tracks of Long Island Railroad and I.R.T.-B.M.T. subways, while Fair station of Independent Subway may be seen at bottom centre just left of World's Fair Boulevard, which bisects grounds and connects directly with Queensborough Bridge.

"The main exhibit area of the Fair lies north of World's Fair Boulevard with buildings and displays of 1,400 exhibitors on tree-shaded avenues radiating in rainbow colours from pure white Perisphere and Trylon. Extending diagonally to lower right from this Theme Centre is richly embellished Constitution Mall leading to fountain-studded Lagoon of Nations and Government Zone where twin-towered Federal Building and exhibits of 62 nations centre on 7-acre Court of Peace. Between Lagoon and Boulevard rises 12-acre Court of States group housing displays of most of 35 exhibiting commonwealths. South of Boulevard lies 280-acre Amusement Area, its quaint villages, gay restaurants, thrilling rides and shows fronting on Fountain Lake, scene of nightly fire and water shows."



STAY NORTH, YOUNG MAN

EVERY year about 360 young men or women become Associates of the R.I.B.A. and may thus be supposed to begin an architectural career. How many do the same with lower, or no, qualifications cannot be calculated. But it is probable that annually 500 people begin to earn a livelihood out of architecture.

What happens to them all is a fascinating mystery ; and one which, *sometime*, the profession must presumably clear up in its own interests.

At present the requests for an occupational census of architects come from those who maintain that the R.I.B.A. Council should be perfectly—or a great deal more closely—representative of the occupational subdivisions of the total membership. And as the Council does not see the need for such a census, and the bulk of members do not demand one, there the matter is likely to rest for a year or two.

But only for a year or two. As it becomes possible to state exactly how many architects enter the profession annually, it will be obviously desirable to ascertain the jobs likely to be available for them and to examine the numbers and status of the architectural assistants, not entitled to call themselves architects, who will exist for a long time.

At present no one can speak with certainty about numbers or opportunities. But one can speak fairly certainly of trends ; and this time of year is a good one at which to do it.

A large number of men and women are just starting on an architectural career after six months' qualifying period in an office. They are, or ought to be, thinking of prospects. What *are* their prospects?

Far better outside London—that is the first and most important answer. It is likely to be truer with every passing year.

Strategic considerations and their effect on industrial siting, and growing faith in regional planning and redistribution of population, are the biggest indications of a coming change. In the long run it is a certain change.

More immediately weighty in the young architect's mind is the effect of the schools of architecture and large official departments in big provincial cities. In every case the architectural standards of the district have benefited, the professional societies been enlivened, and a greater local interest achieved in cultural matters. (At the Glasgow Exhibition, for instance, it was clearly shown that Scottish architects were capable of holding their own with any invaders from the south.)

The young genius has therefore no longer the biggest excuse for deserting the provinces.

The last really important consideration in this looking ahead is that of livelihood—in security and size of income. And in this as well the long view seems to tell against London. The expansion of London in the last ten years has made it a large labour market for assistants. It is at least extremely doubtful if this will continue. And even if it does the young architect would be wise to draw a sharp line between two or three years' experience, and making a career of it. By twenty-eight he may have done quite well in London ; by thirty-eight he will be lucky if he has done much better.

The JOURNAL makes no claim to special inside knowledge, and prophecies about the future in 1939 are likely to have a wide margin of error. But it is at least infinitely more probable that good architectural livelihoods in the future will be found outside London. What is more, an architect practising outside the Home Counties (official or private) will create far more jobs for architects in general—if he has any outside interests at all—than ever he would within them.

The Architects' Journal
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NOTES & TOPICS

THE KING GEORGE MEMORIAL

THERE is no subject for discussion dearer to the hearts of the British public than the latest memorial statue. As soon as the first models are produced, the correspondence columns of the press are quickly filled, and "Auntie Times" really lets her back hair down for a nice long chat about epaulettes and cruppers.

*

The apathy that greeted the recent publication of the King George V Memorial,* designed by Sir Giles Gilbert Scott and Sir William Reid Dick, is unusual and significant. It may be the result of exhaustion from the rigours of the Haig statue campaign (which lasted several years) or a feeling that once the Vardy houses had been saved nobody could be expected to do any more.

*

More likely it is the calm before the storm. Already the ice of silence which had closed over it has been gently cracked by Mr. Frank Pick, and though Sir Herbert Baker stepped as delicately as a buck on his native veldt, he has still further revealed the depths of controversy latent below the surface. Criticism has been principally directed against the canopy which frames the figure.

*

Despite its assured handling in Sir Giles' Liverpool manner, it is thought, with justification, that it will compete unsuccessfully with the pinnacles and towers of the Abbey, which forms its busy background. The screen wall has also been objected to, but perhaps its least attractive quality lies in its lack of scale. From a photograph it is quite impossible to tell what size it is. Like the Albert Memorial, it looks like a small shrine seen through a magnifying glass. I have seen, in a recently built block of flats, an ornamental feature which, owing to the wrong scale being put on the drawing, was carried out to twice the intended size, and the effect was not dissimilar to this. And why, when every vicar is being asked to ban it from his churchyard, white Italian marble for the figure?

*

As was recently remarked, "a monument is a convention and should be handled in a conventional way." To do otherwise is to invite not only the acrimonious opposition of today, but also the ridicule or, worse still, the indifference of tomorrow.

* Photograph of the model appears on page 153.—ED. A.J.

ALEXANDER THE GREAT

Canon Alexander, Treasurer of St. Paul's, celebrates this week his thirtieth year as canon of the cathedral. He was appointed in 1911 to take special charge of the finance and fabric of the building, and was plunged at once into an encounter with the L.C.C. over a new underground tramway terminus near the cathedral. He emerged victorious, and next commissioned a report upon the stability of the structure. This was prepared by Sir Francis Fox, and when published in 1913, disclosed an alarming situation. As only a few years before the cathedral surveyor and Sir Aston Webb had agreed there was nothing seriously wrong, the report was not at first given much attention. The next step, however, was a dramatic one. The Chapter was served by the authorities with a Dangerous Structure Notice. An appeal was at once initiated, which produced nearly half a million pounds. For seventeen years the work of reconstruction went on, and in June, 1930, the dome was finally re-opened.

*

But Canon Alexander did not rest there. He was still fighting for another theory. This was the creation round St. Paul's of a "sacred area," in which no deep foundations would be permitted. Once again he was successful, and despite opposition, an Act of Parliament was passed in 1935 creating this safety zone, and the foundations of St. Paul's are now safe from external interference.

*

It is a magnificent record of perseverance and sustained effort. The President of the R.I.B.A. did not exaggerate when he described Canon Alexander as "one who has done more than any other man to see that Wren's great masterpiece was to be preserved for ever."

THE DREARY STORY

Now that architects are to be a "reserved occupation" in an Emergency it is more important than ever for them to understand why they are reserved and what is now happening in the activities in which they may be asked to help. Here are some recent events.

*

Numbers of doctors have been agitating for structural A.R.P. in hospitals for a long time. The official memorandum† just issued by the Ministry of Health is full of the simple ideas about sandbags and "cellophane" over windows. Various other features, however, are to be "avoided as far as practicable." Notably "enclosed courts or light wells" and "*heavy architectural features, such as heavy cornices and pediments.*"

*

I am interested, too, to learn that a 5-in. concrete roof will keep out incendiary bombs and "also afford some protection against anti-aircraft shell splinters." So it looks as though just keeping quietly indoors may not protect you from the British after all.

*

In the meantime, ten days after Mr. Cook's protest swim in the Primrose Hill trenches (*Daily Express* and opposite), Sir John Anderson has inspected the first Crisis trenches to be made permanent. These are on Islington Green and have sample lengths of different types of reinforced concrete construction.

*

These at least show that something is stirring somewhere

† *Structural and other Precautions against Air Raid Risks in Hospitals.* H.M. Stationery Office. 3d.

in official circles. In unofficial circles a great deal is doing—the most important for architects being the question of camps for evacuation and other war purposes.

*

A study of the large correspondence in the Press shows considerable public agreement that—

(1) Camps for at least a million persons and equipped with full sanitary services would be enormously useful in peace or war.

(2) The camps should be carefully laid out in suitable surroundings for holidays.

(3) They should be constructed largely of pre-fabricated standardized sections.

(4) They should be outside the areas served by the London retail distribution system in matters of food, and other essential commodities.

*

Here is a problem which is a town planners' and architects' problem first and last. In this architects, through the R.I.B.A., could stop trailing after official departments and give a lead. They do a great public service by volunteering to take over the whole preparation of such camps ; they could also do so with the great mental satisfaction of knowing the camps would be for a constructive purpose.

JACKDAW'S NEST

A man can make investigations all his life without ever learning how to investigate. Unless he knows how to use facts when he has ascertained them he will have no guide as to which facts are worth ascertaining and which are not, and his brain will become no tidy storehouse, but rather a jackdaw's nest of aimless pilferings.

So warned Mr. Goodhart-Rendel when he gave his address to students at the R.I.B.A. last Monday.

*

The President had something to say about the "uneducated doctrinaires" by which "architectural skill is regarded as an extra in architectural education like music and dancing in a school for young ladies."

*

Well, the fight still rages. But for my part I hope the President's timely warning that architecture is still an art will not be dismissed by all his audience as bunk. "Architecture," he said, "beside being a valuable public service, is a channel through which flow experiences necessary to civilized man, experiences without which his emotional life is incomplete." If this is bunk to any young man, he should read Mumford's *Culture of Cities* and think again.

*

Other points : The speaker hoped that the tendency of architects to "trade together in groups" would increase, and that there would eventually be a union between architecture and engineering—not merely in a partnership but, better still, in an individual who would continue the two rôles in himself. A splendid aim, certainly. But is it any more difficult than a union of architecture with sociology or geotechnics ?

MR. ARNOLD SILCOCK

The Henry Florence Bursary for the study of Hellenistic architecture has been awarded this year to Mr. Arnold Silcock. He is particularly suited to the task as he is already familiar with current archæological progress in the Near East. Last year he spent some weeks as architect to the British Museum expedition directed by Sir Leonard Woolley in north Syria, and was also for some time in Istanbul. He has acted as architectural adviser to many of the recent exhibitions at Burlington House, and has designed and supervised the construction of a university in China. I understand that Mr. Silcock will be leaving in the Spring, and will be away for some months.

GLOUCESTERSHIRE AND CAMBRIDGE

Mr. S. E. Urwin's appointment as architect to Gloucestershire ends a great collaboration.

*

Today, several education authorities are building fine schools. Three years ago the Cambridgeshire schools, in theory and practice, were almost the only light in a dreary landscape. For this encouragement to the world of education Mr. Henry Morris, the Director of Education, and Mr. S. E. Urwin, County Architect, were jointly responsible; and in the further development of the Village College idea at Bottisham and Linton they have continued to make the pace for the country.

*

Gloucestershire has now been very fortunate. One hopes that Cambridge will be equally lucky in Mr. Urwin's successor. Something more than long-term competence as Deputy County Architect elsewhere is needed in the man who takes a position now so famous.

SERVICES NOT REQUIRED

I have just received this letter from five enlightened citizens :

30 Blomfield Road,
W.9.
21st January, 1939.

DEAR SIR,

A situation has arisen in this Borough which has such serious implications for national planning as a whole that we, a group of Paddington residents, feel that it is our duty to lay the matter before the Press. The Paddington Borough Council is refusing to place a large working-class housing scheme costing over half a million pounds in the hands of an architect.

We invite you to send a representative to a Press Reception which will be held at 13 Suffolk Street, Pall Mall (by kind permission of the Housing Centre), on Thursday, 26th January, at 6 p.m.

The position will be explained and a Memorandum is being prepared in time for distribution at the Conference.

We hope that it will be possible for your Architectural Correspondent or other appropriate representative to attend in person, as this controversy is now beginning to attract attention and there are some aspects of it which are better dealt with by question and answer.

VIOLET BONHAM CARTER
BARBARA BLISS
CELIA COATES
ALAN COLLINGRIDGE
LEONARD DENT

R.S.V.P. to Barbara Bliss, 30 Blomfield Road, W.9.
Telephone : ABErcorn 3034.

The party is for to-day (Thursday), so no more for the present, but look out next week.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

● The King, accompanied by the Queen, will open the new Westminster Hospital on April 20.

● The most recent figures showing the position of slum clearance and rehousing are summarized below. *Clearance Areas and Orders.*— During December local authorities declared areas comprising 3,944 houses representing the displacement of 16,545 persons, as compared with 2,461 houses and a displacement of 8,249 persons in November. *Rehousing Progress.*—The latest available figures are those for November. At the end of that month there were 68,758 houses under construction as compared with 72,969 at the end of October and 71,025 at the end of November, 1937. 10,369 houses were completed during November as compared with 8,756 during October and 6,809 during November, 1937. New houses approved during December numbered 3,221 as compared with 5,462 in November and 8,742 in December, 1937.

● The highest yearly number of houses completed by local authorities in Scotland was attained in 1938. During that year local authorities completed the erection of 19,160 houses. This is an increase of approximately 44 per cent. over the 1937 output of 13,341. Since 1919 local authorities have erected in Scotland 208,337 working class houses.

● On Friday, February 10, at St. Pancras Town Hall, Euston Road, N.W., at 8 p.m., six documentary films are to be shown, including "The New Moscow," which is to be introduced by Mr. Clough Williams-Ellis. Tickets (1s. to 2s. 6d.) are obtainable from the Society for Cultural Relations, 98 Gower Street, W.C.

● The S.P.A.B. is soon to vacate its offices in the Adelphi. New offices have been taken in Gt. Ormond Street, W.C.

● The annual dinner of the College of Estate Management Students Union will be held at the Imperial Hotel, Russell Square, W.C.1, on Friday, March 17. We are asked to state that old students of the college will be especially welcome. Tickets, price 5s. 6d., may be obtained from Mr. John Westcott, P.A.S.I., 35 Lincoln's Inn Fields, W.C.2.

● At the annual general meeting for 1938 of insured members of the Architects' and Surveyors' Approved Society, held at the R.I.B.A., Mr. Herbert Shepherd, F.R.I.B.A., in the chair, the following were elected to serve on the Committee of Management for 1939 : Sir Ian MacAlister, Major A. H. Killick, D.S.O., and Messrs. Geoffrey T. Bentley, J. W. Denington, L.R.I.B.A., W. J. D. Import, F.A.I., F.I.A.S., Albert P. Knight, David Leslie, John Mitchell, P. Scott Martin, R. Russell Walker, L.R.I.B.A., Herbert Shepherd, F.R.I.B.A., and Hubert Worley. Mr. J. M. Wolstenholme, B.SC., was re-elected treasurer of the society for 1939.

THE ARCHITECTS' DIARY

Thursday, January 26

INSTITUTION OF STRUCTURAL ENGINEERS AND THE INSTITUTION OF CHEMICAL ENGINEERS. *At 10 Upper Belgrave Street, S.W.1.* "*Floors for Industrial Purposes.*" *By R. Fitzmaurice and F. M. Lea.* 6.30 *p.m.*

Friday, January 27

INSTITUTION OF CIVIL ENGINEERS (*Birmingham and District Association*). *Joint meeting with the West Midland District of the Institution of Municipal and County Engineers.* "*Air Raid Precautions with special reference to Civil and Municipal Engineering Problems.*" *By Commander Morrison.*

Saturday, January 28

ROYAL INSTITUTION, 21 *Albemarle Street, W.1.* "*Art and Industry : The Consumer's Point of View.*" *By Frank Pick.* 3 *p.m.*

A.A.S.T.A. *Visit to Gilbey House, Camden Town.* 2.15 *p.m.*

Wednesday, February 1

ROYAL SOCIETY OF ARTS, *John Street, Adelphi, W.C.2.* "*The Difficulties of Air Raid Risks Insurance.*" *By Commander P. Harrington Edwards.* 8.15 *p.m.*

UNIVERSITY OF LONDON. *Special lecture at the London School of Economics, Houghton Street, Aldwych, W.C.2.* "*Some Legal Aspects of Town and Country Planning.*" *By Sir John Maude.* 5 *p.m.*

BLACKPOOL AND FYLDE ARCHITECTURAL SOCIETY. *At Blackpool. Lecture by Raymond Walker.*

INSTITUTION OF STRUCTURAL ENGINEERS, *Lancashire and Cheshire Branch. At the College of Technology, Manchester.* "*Design of Welded Plate Girders.*" *By S. M. Reisser.* 7 *p.m. Midland Counties Branch. At York House, Great Charles Street, Birmingham.* "*The Welding of Steel Reinforcement.*" *By M. Semet.* 7 *p.m.*

R.I.B.A., 66 *Portland Place, W.1. Informal General Meeting. Discussion on* "*The Effect of the Competitive Element in Education.*" 6.30 *p.m.*

● Mr. S. E. Urwin, F.R.I.B.A., County Architect to the Cambridgeshire County Council, has been appointed architect to the Gloucestershire County Council in succession to Mr. R. S. Phillips, who is retiring.

There were 112 applications for the post, and four applicants appeared before the Council. The salary attached to the position is £800 per annum, rising by annual increments of £50 to a maximum of £1,000 per annum, with travelling and subsistence allowances. Mr. Urwin, who is forty-six, was educated at Birmingham Technical School and School of Art.

● Mr. Reginald W. Cave, A.R.I.B.A., has been appointed full time assistant lecturer in the school of architecture at the Leicester College of Art and Crafts.

● The Board of Management of the Erinville Maternity Hospital, Cork, is to promote a competition for Irish architects for a new maternity hospital in Cork, which, it is believed, will cost about £100,000.

Mr. Vincent Kelly, B.ARCH., F.R.I.A.I., F.R.I.B.A. has been appointed assessor.

● We understand that the result of the Newcastle-upon-Tyne competition will be announced about the middle of next month.

● New competition. Proposed new council offices to be erected on a site in Market Square, Consett, Co. Durham. Open to chartered and/or registered architects. Assessor : Mr. R. Norman Mackellar, F.R.I.B.A. Premiums : £150, £100 and £75. Conditions are obtainable from : Mr. T. W. Bell, Clerk, Council Offices, Consett, Co. Durham. Deposit £1 1s. Latest date for submission of designs : June 15.

● The death took place last week in London of Major W. H. D. Caple, F.R.I.B.A. He was seventy-three. Elected a Fellow of the Institute in 1906, he was formerly in practice at Birmingham and Cardiff. In 1929, as a Socialist Parliamentary candidate for the Edgbaston Division of Birmingham, he stood unsuccessfully against Mr. Neville Chamberlain in a three-cornered contest.

● R.I.B.A. Board of Architectural Education announces that Mr. Nelson Foley and Mr. Stanley Jordan, who were placed first and second, respectively, in the competition for the R.I.B.A. Alfred Bossom Travelling Studentship, and Mr. N. B. Dant, who was placed first in the competition for the Banister Fletcher Essay Prize, were unfortunately found, after the opening of the sealed envelopes containing particulars of the competitors' qualifications, not to be eligible to receive the awards. It has, therefore, been decided not to make any awards in these competitions.

● The centenary of the birth of John Francis Bentley, architect of Westminster Cathedral, will be celebrated in the Holy Souls Chapel at the Cathedral by a requiem mass on Monday next, at 11.30. He was born on January 30, 1839.

EXHIBITIONS

[*By D. COSENS*]

MATTHEW SMITH'S retrospective exhibition at the Leicester Galleries does not by any means show the full range of his painting, or do him complete justice, as it is the collection of Mr. Epstein alone, and includes nothing later than 1931. Nevertheless, it could not fail to be interesting, for even those who sometimes doubt the complete success of this artist's arbitrary colour and rather florid designs must admire the conviction and courage of his work and his occasional brilliant harmonies. And although his later painting would seem to have added but little to the very complete solutions he arrived at somewhere about 1926, those qualities remain.

*

At the outset of his exhibition Sir Francis Rose has allowed himself to be put at a disadvantage by the too ardent puffing of his supporters. His catalogue, prefaced by a very affected portrait by Cecil Beaton, and a misplaced eulogy by Gertrude Stein in which she describes him as the most important young painter painting today (she is also reported to have hailed him as a new Picasso), could hardly be justified even by work of the utmost sincerity. Can it really be that Miss Stein, outstanding in her own medium and no mean judge of modern art, is serious, or is this the voice of Alice B. Toklas? Or, darker thought, is she wondering just what she can feed the foolish British public? Modestly, in the face of such august support, we would suggest that this artist's importance among the young painters of today is nil, and that his affinities lie, not with Picasso, but with the charming pastiches of such near-interior-decorators as Cecil Beaton or Rex Whistler. In that direction Sir Francis has a very considerable talent and to his credit it must be said that he would seem to acknowledge this in seldom attempting anything beyond his scope.

*

Dr. Pailthorpe and Dr. Mednikoff are probably the first to explore surreal art from the psychiatrist's point of view, or rather to use it purposely as a liberating force, and those who are interested in either surrealism or psychoanalysis may find their own exhibition at the Guggenheim Jeune Gallery interesting. The paintings are the outcome of five years research, the results of which are shortly to be published. Dr. Mednikoff possesses, perhaps, greater technical ability in the formal co-ordination of the various elements of his design, but Dr. Pailthorpe's work is extraordinarily fresh and vigorous and her colour sense is excellent. Whatever their secondary purpose these paintings form a genuine contribution to surreal art.

*

Matthew Smith. Leicester Galleries. Until February.

Francis Rose. Mayor Gallery, 19 Cork Street, Until February 7.

G. W. Pailthorpe and R. Mednikoff. Guggenheim Jeune Gallery, 30 Cork Street. Until January 31.

CENTENARY

JOHN FRANCIS BENTLEY

[*By DUDLEY HARBRON*]

John Francis Bentley (From a portrait by René de l'Hôpital)

JOHN FRANCIS BENTLEY, the third son of Charles Bentley, of Doncaster, was born in that northern town on January 30, 1839. The approving stars must have twinkled brightest on his advent, for although there have been many great men born in Yorkshire (indeed, some who have not had their greatness recognized), quite a number of whom have been architects, only one of them has ever built a cathedral. That is by common consent the kind of edifice which for the architect is as remote as the field marshal's baton for the private. Moreover, until the miracle befell him, Bentley never expected any such employment. He was one of the most retiring men in his public attachments and appearances; only in private did he expatiate upon the vices and virtues of other architects' architecture. Among his friends he lay down the law with a firm hand, enjoying the discomfort of all opposition as had Dr. Johnson.

After some experimental employment in the neighbourhood of Doncaster, he left in 1855 for London, where he was indentured to Winsland and Holland, a celebrated firm of contractors. His father wanted him to become a practical man and was averse from a professional career for his son. But a year after he had arrived in London, Charles Bentley died, and Mr. Richard Holland, one of the partners of the firm with which he was serving, persuaded and encouraged the young Bentley to give up building and train for the profession of architecture, because he believed that Bentley's ability lay in that art. Holland introduced his apprentice to Henry Clutton, an architect at the time in partnership with William Burges. The members of the firm were firm believers in, and protagonists of, the Gothic revival. They had just been awarded the prize in the Lille Cathedral competition. Without reluctance Bentley commenced his training with them in 1858, supporting himself for the next few years upon such little capital as he had. When his time ended he was offered a partnership by Clutton, who had, as had his pupil, become a convert to the Church of Rome. Bentley, however, elected to begin on his own account, and to that end opened an office at 14 Southampton Street, Strand, in 1862. Though only twenty-three years of age when he took this step, he was a singularly mature-minded man; he wrote letters to his friend Charles Hadfield, whom he had met at Ushaw, which read as if he were his father, though very few years separated the two young men.

The friendship between them, both Catholics, and both originally hailing from Doncaster, lasted undisturbed as long as Bentley lived. Throughout the next forty years they exchanged letters. From first to last Bentley maintained this paternal attitude—it was the written equivalent of his conversational dogmatism.

He changed much in other respects, but in his friendship and relations with his correspondent Hadfield he never varied.

Bentley was a young man of ideas. Although influenced by the Gothic revival dogmas then all about him, he thought for himself on the meaning of architecture. He came to certain conclusions which in order were :—

(1) That it was not architecture to copy old work however excellent the subject or the copy.

(2) That old and tried methods were the most sound.

(3) That form and colour are inseparable.

In support of this last axiom, he was at pains as a young man to collect instances of the choice of stones by medieval masons whereby they strove to obtain polychromatic effects where painting was impracticable. In the use of glass he held the same view that form was subservient to colour. Our loss of the sensible use of colour he thought to be due to the study of the Bible by the Puritans. They had taken the passage, " God divided the light from the dark," and translated it into light and shade in building.

When he first arrived in London he lived in very frugal style, spending only a pound a week upon his food and apartments, finding his own fuel and candlelight. At this date his beau ideal of a professional man was Street, with as his second choice Butterfield. The latter idol fell into disfavour when Bentley had inspected his decoration at Winchester Cathedral, but his admiration for Street never wavered. Street's outmoded work will yet bear examination for its beauties of form; Butterfield's for his experiments in the usage of both form and material. The latter was attempting the more difficult and hazardous task—the former the more sensible. They cannot be compared, for their aims were so very different.

Yet, notwithstanding his axioms, Bentley was as deeply involved in confusion as it is possible for an antiquarian to be. He actually desired, and liked when found, a Gothic pianocase.

Most of Bentley's first work was the design of fittings for the buildings of other architects. He was at pains to be extremely accurate about all he did.

In 1866 he was commissioned by the poet Coventry Patmore to design Heron's Ghyll. The contact with the literary Catholic infected the architect, who relieved his mind and soul by the writing of poetry, as if to demonstrate that if poets thought themselves architects, architects had as much claim to consider themselves poets. His attempt was in the form of some simple couplets :

> Drifting away, onward we flow,
> Gathering cares in the evening glow.

This is the third verse of one such poem, having a time scale from birth to death in eight lines.

Old Mr. Hadfield, the father and partner of Bentley's friend, had worked for Robinson on the House of Commons designs. In turn, as became a Doncaster man, he was one of Bentley's most consistent patrons. The altar for St. Peter's, Doncaster, and other decoration in the sanctuary, were now entrusted (1867) to the latter. The priest in charge was a man whose economical ideas caused a good deal of friction. He wanted a wooden floor covered with a carpet in the sanctuary; Bentley thought otherwise and was eventually successful in getting his own way. He was particularly proud of the tabernacle door in blue enamel and gilt which he had prepared for this church. The design engaged him for a week in the making.

Later in the same year he went on holiday in the district about Winchester, where he employed his time from nine in the morning to dusk in exploring the churches and sketching anything that interested him. He was much impressed by Romsey, but was grieved and surprised to see the damage done by Ferrey in the nave and Christian in the chancel. These men, he thought, should have known better than to pull down and mutilate the edifice as they had done, destroying in their course the unique double aisled Lady Chapel beyond the chancel.

The next spring he moved his office

from Southampton Street to more convenient chambers at 13 John Street, Adelphi. He left his old address with regret, although the accommodation had been unsuitable, for he had become attached to his surroundings.

In 1869 he was continually occupied in the design of the glass for the chancel windows of Truton Church: these he considered to be his most successful works of this kind. The figures were designed by Westlake, who made the whole.

In 1874 Bentley became engaged to be married. Previous to his meeting the lady who became his wife, he had appeared a confirmed bachelor, who, indeed, rather prided himself as being non-susceptible to the attractions of matrimony. But when this event happened he burst forth into lyrics as he had done after his contact with Patmore.

From 1887 onward he was engaged upon the most important of his works prior to Westminster Cathedral. This was the design and building of the Church of the Holy Rood at Watford.

This church was a one-man job; if it fails it is because within its walls Bentley has left nothing for any other hand to do. It has a tight sort of look as if he had kept a curb upon everyone who had in anyway assisted toward its completion. Obviously the whole of the craftsmen were obeying the master's orders. Moreover, there is an attempt about it to cram too much into too small a receptacle, to accomplish in too short a time what had in other days been the accumulation of years.

He was here engaged by his patrons the Hollands, this time his employer being S. Tapperell Holland, the then principal of the building firm with which he had been associated as a boy, and the members of which supported him throughout his career.

In 1891 Bentley found himself unemployed; nobody required his services. However he optimistically "looked for better times ahead." These came unexpectedly, when in July, 1894, he was chosen by Archbishop Vaughan as the architect for the proposed cathedral church in Westminster. Bentley's appointment was prompted by the suggestion of Tapperell Holland, who held him in the highest regard, and who, as a builder of great experience and, incidentally, a very liberal subscriber to the funds, was entitled to be heard with respect. Bentley had been asked some time before if he would submit a design in competition. His answer was "No," for it had been one of the consistent opinions held by him that competitions were injurious to architects, assessors and architecture. Holland, who had given him Watford to build, and was deservedly impressed, naturally spoke ardently for his protégé.

The selection caused some surprise because Bentley had lived such a retired life and had not seemed likely ever to figure as other than an architect's architect. With Vaughan he set out for Italy in November, 1894, intending to examine and study the principal churches in that country. For it was Vaughan's desire that a Basilican or Italian type of plan and building should be erected. The archbishop was not enamoured of the Gothic revival, and possibly Bentley's predilections in this direction caused him to hesitate over his appointment. Together they visited Rome, a city for which as a Catholic Bentley had the deepest reverence, though for the architecture of the buildings there he had nothing but distaste, and he had always been most vehement in their condemnation. It is rather amusing to visualize the excursion of these twain in search of architectural inspiration. Vaughan discovering it in quarters where Bentley found it absent, neither being able to convince the other. The result was a compromise to which both of them had to concede something.

When in Rome he was received in private audience by his Holiness the Pope, Leo XIII. By other dignatories he was greeted everywhere with the greatest respect and consideration. Still he could not disguise his dislike for everything he was shown. St. Peter's was, in his opinion, the worst building he had ever seen, save the Duomo of Florence, which, with St. Paul's-beyond-the-walls, he felt to be the two most unreasonable buildings in the world. As he had expected he found Rome of the late Renaissance "dreadful" and "without the least Christian significance." Only in the country about Ravenna did he discover any building that he could admire or which proved a source of inspiration to him. There he discovered the marriage of colour and form which it had been his youthful ambition to achieve. Ill-health prevented his proceeding (as he had hoped) to complete his inspection of churches in the Near East.

At the end of March, 1895, he was back in England and commenced to prepare his plans for the new building. These were sufficiently advanced for the foundation to be laid on Saturday, June 29, 1895, with due solemnity. The proceedings were carried through without any contretemps. Next year his old friend, William Purdue, who had lived above his office for many years, died on November 14. Purdue had in his time been the finest draughtsman of the day.

Broken only by a brief visit to the U.S.A. in May, 1898, where he was called to advise about a new Catholic cathedral at Brooklyn, the rest of his time was spent on the working drawings and constantly watching the great building grow. He did not like the Americans. In fact, he said that he was glad that the Atlantic lay between them and ourselves.

The cathedral progressed slowly until he was able to write in 1899:—

"It is beginning to look very vast now that the great arches are being turned." As for the Archbishop's house, it was to be "like unto the cathedral, what that is I know not, though I do know it was drawn from what I saw in the East, all the same I saw nothing like it."

When the lines of the building became evident the critics revived their condemnation of the building as un-English: they had often made that complaint since they had known it was not to be Gothic. To the complaint of its foreignness they added the pedantry that it was incorrect Byzantine.

Bentley conceded that it was un-English, yet claimed that it was not as strange as modern Gothic. And as for the archæology, the study of existing buildings might be a suitable occupation for students—he had done as much himself—but for any man who claimed the distinction of architect, his work must be the child of his own brain; if not it was but a cheat and a fraud.

Two years later he had the pleasure of showing Shaw and Lethaby over his building. They both expressed their approval. Bentley complained that Lethaby placed too much stress upon the practical side of things. That he should object to this attitude was rather strange, since he had himself adopted a constructional approach to design. He was proud that he had only employed brick, stone and concrete in the attainment of his objective, to enclose this vast space for public worship, without recourse to steel. Though the engineers had advised him that steel was necessary, he had, against their opinion, done without, and as a result of his success he felt that he had advanced the art of building.

The clothing of the interior in marble was barely commenced before Bentley was removed by death. It is clear that he always intended that the building should be completed by marble mosaic linings, for much of his later correspondence with Hadfield is taken up with the request for suggestions for the subject matter of these decorations, the main building being expected to serve as a screen for the representation of a History of the Church in England. There is no indication as to how Bentley intended to put these incidents into coloured effect.

He intended that these should be simple enough to be read by the spectator without assistance.

Now that his work was well advanced, his one trouble was the growing impediment in his speech. Other things went well with him. The profession of which he was a member now generously and properly decided to request the Queen to confer her Royal Gold Medal upon him. But fate was at the door. For three weeks the building of the great campanile was arrested. A severe frost interfered with the work. Some few days after this had broken, John Francis Bentley passed away, dying suddenly at his home, The Sweep, Clapham, on March 2, 1902, the day before the medal should have been awarded him.

The Architects' Journal Library of Planned Information

INFORMATION SHEET

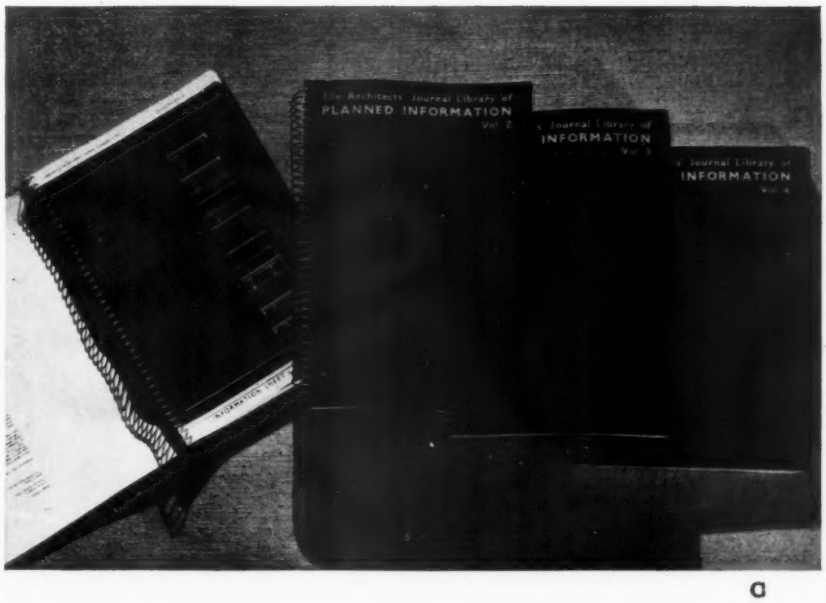
SUPPLEMENT

SHEETS IN THIS ISSUE

699 Tile Hanging

700 Floor Construction

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



a

Sheets issued since index :

601 : Sanitary Equipment
602 : Enamel Paints
603 : Hot Water Boilers—III
604 : Gas Cookers
605 : Insulation and Protection of Buildings
606 : Heating Equipment
607 : The Equipment of Buildings
608 : Water Heating
609 : Fireplaces
610 : Weatherings—I
611 : Fire Protection and Insulation
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613 : Roofing
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615 : Heating : Open Fires
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619 : Glass Walls, Windows, Screens, and Partitions
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635 : Kitchen Equipment
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644 : Elementary Schools—VIII
645 : Metal Curtain Rails
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693 : Fuel Storage
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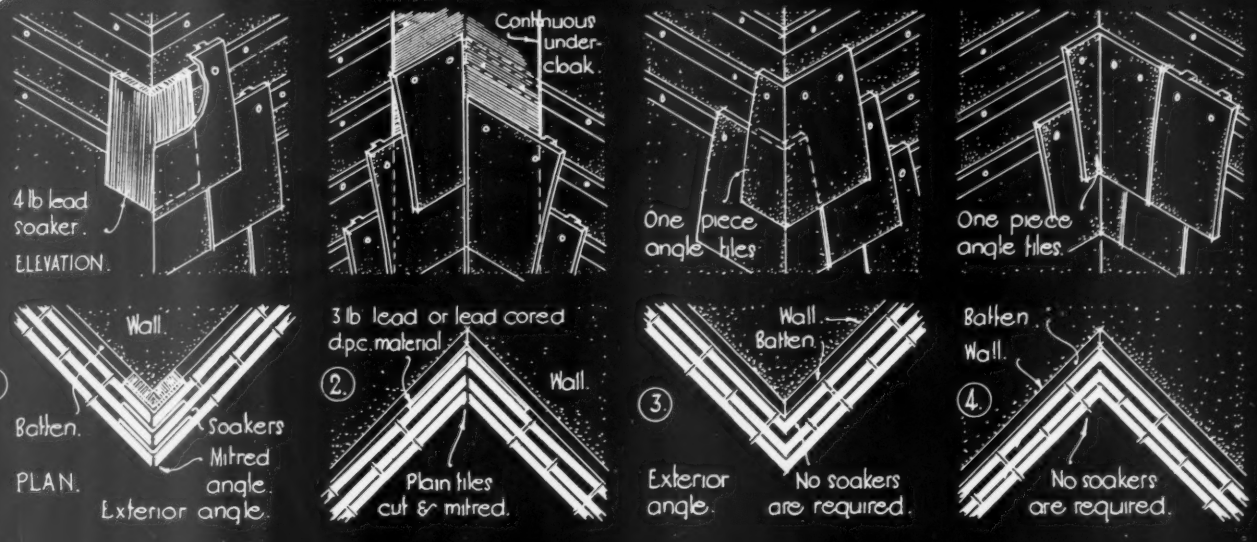
695 : Wallboard Fixing
696 : Waterproofing and Damp-proofing
697 : Electrical Equipment
698 : Tile Hanging

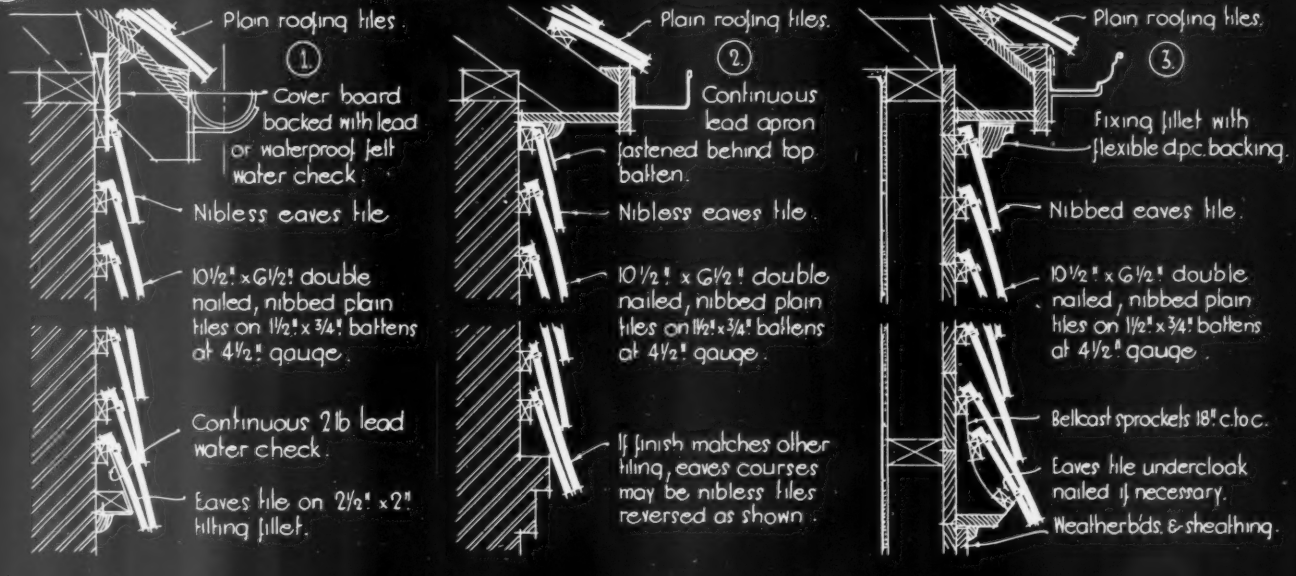
THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

DETAILS OF FINISHES AT CORNERS, EAVES & BELLCASTS AND GABLES : Scale 1" = 1'0"

A. JUNCTIONS OF STRAIGHT RUNS AT CORNERS.



B. UPPER & LOWER EDGES OF STRAIGHT RUNS.



C. TILING OF GABLE ENDS.

Information from Clay Products Technical Bureau of Great Britain.

INFORMATION SHEET : PLAIN TILE HANGING ON EXTERNAL WALL SURFACES : 2.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 699 •

TILE HANGING

Subject : Tile hung corners, upper and lower edges, and gables

The general technique of tile hanging is given in detail in Information Sheet No. 698, the first of this series on vertical tile hanging. The details given on the front of this Sheet show typical treatments of

(*a*) the corners ;
(*b*) the upper and lower edges of tile hanging ;
(*c*) gable ends.

(*a*) Corners :

Exterior (details A.1 and 3) or interior angles (details A.2 and 4) can be made either with plain tiles and tiles-and-a-half, cut and mitred to the angle (details A.1 and 2) or with angle tiles (details A.3 and 4). The use of angle tiles presents several advantages : (*a*) they dispense with lead soakers or undercloak ; (*b*) they present an unbroken surface at corners ; (*c*) having no thickness of lead beneath them they line up with the adjoining tiling ; (*d*) labour in cutting or mitreing is eliminated.

Details A.1 and 2 : Mitred corners.—These details, which show the treatment of an exterior and interior angle, using cut plain tiles mitred to the angle, normally require 3 lb. and 4 lb. lead soakers (which are virtually metal angle tiles) beneath every course as shown in detail A.1. Secret soakers are normally adopted, but soakers with suitably shaped tails protruding below the tile level are sometimes used. Although shown here applied to angles 90 degrees on plan the treatment is the same for all angles.

An alternative method of water-sealing the continuous vertical inlet formed at the junction of the mitred tiles is shown in detail A.2. A continuous undercloak of 3 lb. lead or of lead cored bituminous d.p.c. material at least 12 ins. wide is fixed over the battens at the corner and the cut and mitred tiles (with the nibs removed) fixed to the underlying battens as shown in detail A.2.

Nail holes in cut tiles.—Where the cutting of the tile involves the loss of a nail hole another should be made as the utmost rigidity is necessary at mitred angles to prevent gaping and the consequent admission of water.

Details A.3 and 4 : Corners using angle tiles.—The treatment of exterior and interior angles using angle tiles is self-evident : angle tiles are normally available for 90 degrees angles and for the larger angles such as 120 degrees (hexagonal) and 135 degrees (octagonal), etc.

(*b*) Upper and Lower Edges of Vertical Tile hanging :

The details B.1 to 3 show typical finishes of the eaves and lower edges of straight runs of vertical tiling.

Detail B.1.—Shows the use of a lead sheet or waterproof felt-backed cover board to finish the upper (eaves) edge of tile hanging below open eaves. The top course of vertical tiling is in nibless eaves tiles nailed through the lead or felt to the tiling batten below. At its lower edge, drainage down the tile hanging is thrown clear of the wall beneath by a tilting fillet (with a soffit board if desired), the entry of up-blown moisture being prevented by a continuous run of 2 lb. lead sheet enclosing the eaves tile batten and the tilting fillet.

Detail B.2.—Differs from the previous detail in using a visible lead apron (plain or scalloped) over the top (eaves) tile of the hanging, this apron being preferably taken down behind the eaves tile batten to prevent direct blow in of moisture through the vertical joints in the top course. The bedding of the top course in cement or mortar is inadvisable, as it encourages frost action, bird damage, etc., and usually falls away to leave possible entries for moisture. Where tiles are available having the same surface texture and colour on both sides, the bottom course with the undercloak of eaves tiling can be used in reverse camber (with the nibs removed) as shown in the bottom portion of the detail.

Detail B.3—Shows a variant of treatment beneath close-soffited eaves, the top course of eaves tiling being held down against possible wind lift by a fixing fillet, preferably backed with a thin lead sheet or other flexible d.p.c. material. The bottom portion of the detail illustrates a bell-cast finish to the tile hanging. If the site is so exposed that the eaves tile undercloak may be lifted by the wind, the eaves tiles can be bored centrally to enable them to be nailed down to the bottom batten.

(*c*) Vertical Tiling of Gable Ends :

C.1. *Junction with roof verges.*—This detail shows tile-and-a-half tiles splay-cut to fit the pitch of the intersecting roof, the splay-cut edge of the tile being nailed down (through a nail hole especially made in the tile) to a $1\frac{1}{2}$ in. by $\frac{3}{4}$ in. batten which follows the pitch of the roof.

C.2. *The Winchester cut.*—The treatment here is identical with that shown in detail C.1 except that both the verge tile (or tile-and-a-half) and the adjacent plain tile are splay-cut symmetrically and the tail edge of the former is at 90 degrees to the line of the roof.

C.3. *Angle tile sealing of exposed gables.*—Where the tile gable faces extreme weather conditions, the junction of the plain tiles splay cut (C.1) or Winchester cut (C.2) tiles with the roof verge may be vulnerable to driving rain. Detail C.3 shows 90 degree angle tiles fitted tight on to the splay cut tiles-and-a-half as a second undercloak, to the roof verge ; this method is an alternative to the use of a lead apron. The angle tile undercloak must be fitted after the tile hanging is complete but before the verge tiling is laid.

Previous Sheet :

The first Sheet in this series dealing with tile hanging is No. 698.

Issued by : Clay Products Technical Bureau of Great Britain

Address : 19 Hobart Place, Eaton Square, London, S.W.1

Telephone : Sloane 7805

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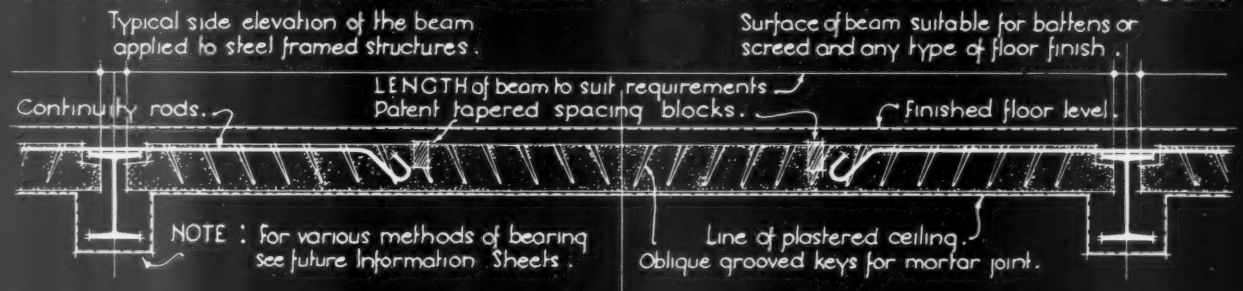
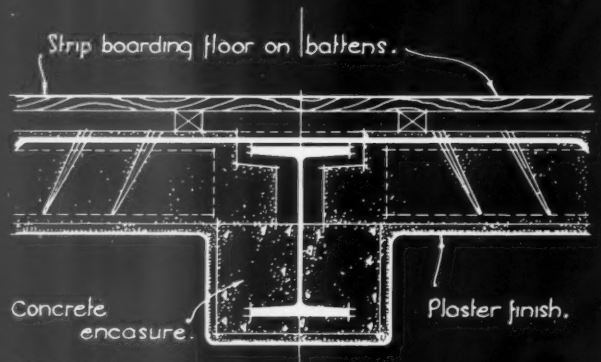
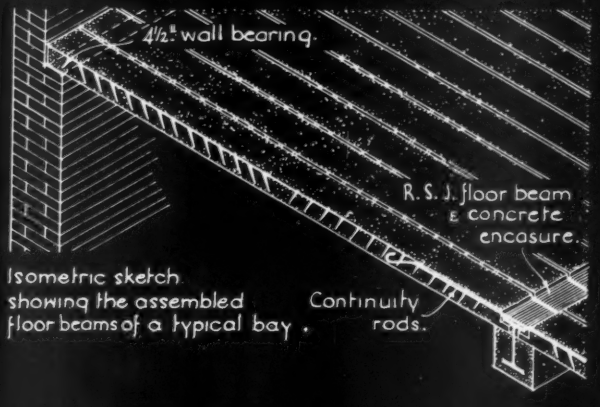
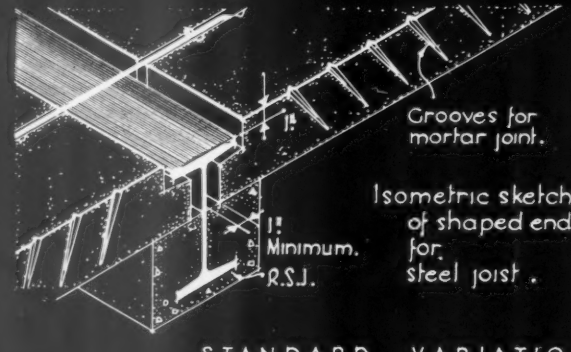
DETAILS OF THE SIEGWART PRECAST CONCRETE HOLLOW BEAM FLOOR

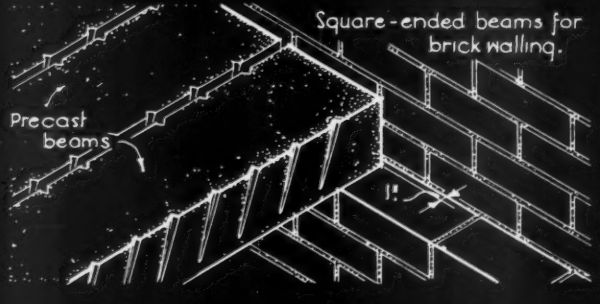




1" Scale typical section at supports.







STANDARD VARIATIONS OF SECTION:

TABLE GIVING MAXIMUM PERMISSIBLE FREE SPANS FOR ANY GIVEN LOADING.

NOTE.—This table is calculated to the requirements of the London County Council Building By-laws.

THICKNESS OF FLOOR	WEIGHT PER SQ.FT. Fixed.	MAXIMUM ALLOWABLE SPAN.	SUPERIMPOSED LOADS IN POUNDS PER SQ. FT. Effective spans in feet and inches: 50.	70.	80.	100.	112.	140.	168.	224.	280.	336.
4 ½"	31 lbs.	10' 0"	9'6"	•	•	F O R	R O O F S	•	•	•	•	•
5 ¼"	40 "	11' 9"	11'9"	11' 8"	11' 3"	10' 6"	10' 2"	9' 5"	8' 10"	7' 11"	7' 3"	6' 8"
6 ½"	44 "	14' 8"	14'8"	13' 7"	13' 1"	12' 3"	11' 10"	11' 0"	10' 3"	9' 3"	8' 5"	7' 10"
7 ½"	47 "	16' 10"	16' 7"	15' 3"	14' 9"	13' 10"	13' 4"	12' 5"	11' 8"	10' 6"	9' 7"	8' 11"
8 ¼"	56 "	18' 7"	18' 7"	17' 3"	16' 9"	15' 9"	15' 3"	14' 2"	13' 5"	12' 1"	11' 1"	10' 4"
9 ¼"	64 "	20' 10"	20'10"	19' 9"	19' 2"	18' 2"	17' 7"	16' 5"	15' 6"	14' 0"	12' 11"	12' 0"

20 lbs. for finishes is allowed for in addition to the superimposed loads shown.

Information from Siegwart Fireproof Floor Co. Ltd.

INFORMATION SHEET: SIEGWART PRECAST FLOORS: No. 1.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Otea a Bayne

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 700 (266 revised) •

FLOOR CONSTRUCTION

Product : Siegwart Precast Floors

Note—This sheet supersedes No. 266, published in 1935, which is now cancelled.

The Precast Beam :

This Sheet is the first of a series devoted to precast floor construction, and it sets out in general the use and main variations of the Siegwart Floor made up of precast hollow beams.

Succeeding Sheets deal in detail with the various types of bearing which may be used with the precast beam ; the fixing of pipes, machinery, etc., to the floors; trimming of openings; large and small heavy-duty floors, and pitched roof work; mansards and all other details connected with floor construction.

General :

The company undertakes the design, manufacture and erection complete of hollow concrete floors and roofs to the Siegwart system of construction. This means that no centering is required in the erection, as the floors and roofs are composed of hollow concrete beams, precast and matured at works to required sizes, so that they can be delivered and fixed at a very quick rate. The floors and roofs are formed by laying the precast beams side by side with spaces between about 1 in. wide. These spaces are grouted in and the floor is then finished and may be used in 48 hours.

All details are illustrated in these Sheets.

Standard Sizes :

As will be seen from this Sheet, the Siegwart precast beam is made in six standard sizes, each designed on the same principle, with a hollow interior and solid ends; the beam being reinforced according to the span and the load for which it is designed.

End Shapes :

It is important to point out that the beam is standardised as far as possible for each job, but that the use of the floor is not limited by this standardisation, as the end shape of the beam is designed to suit the type of bearing provided and the beam is especially designed for each job. As is shown on this Sheet, for typical steel frame construction, with joists of I section, the ends of the beams are shaped to fit in under the flange of the steel and into a close bearing ; in typical brick or masonry construction a square-end beam is provided.

Sides of Beams :

The sides of all beams are indented with slanting grooves which, in a plain panel floor, give extra key to the grouting, and greatly assist in transmitting the stresses between steel and concrete in a floor reinforced with continuity rods.

Spacing Wedges :

Patent brick wedges are driven in between beams to obtain the correct spacing and to hold the beams firm while the grouting hardens.

Cross Reinforcement :

Where desired, cross reinforcement is provided on the underside of the floor, in specially cast channels running across each beam (not shown in this Sheet). This patent system provides a cross tie between beams where it is most effective in the underside of the floor.

Concrete Bearings :

The concrete bearings, which also form the fire protection in steel frame buildings, are carried out by the company, and it is recommended that wherever possible this work should be done by the company, as it prevents overlapping and divided responsibility and makes for faster erection. Concrete and other bearings are dealt with in Information Sheet 285.

Design :

The table given on this Sheet is, as noted, calculated to the requirements of the London County Council Building By-Laws, 1937. The table is, however, only a guide and the company should be asked to work out the most economical design for every specific case.

Finish :

The surface obtained in floors laid with the precast beams is reasonably true and even, and strip floors on battens may be laid direct on the beams; for wood blocks, lino and other floorings, a 1 in. screed is required to give a fine surface. The surface obtained on the underside of the bare beams is sufficiently true for factory and warehouse work which requires only distemper, paint or other surface application. For more finished interiors, plaster and other finishes are applied in the usual way, the key and suction provided for plaster being specially good.

The General Advantages of Precast Construction :

The advantages of the Siegwart system may be summarised under the following points :—

(*a*) No centering required for erection.

(*b*) Speed of construction.

(*c*) Suitability for immediate use: the precast Beams can be used immediately after erection, whether grouted or not, and may be put to full use within 48 hours of grouting.

(*d*) Rigidity: for stiffness and resistance to sound vibration, the precast floor beams are designed of not less depth than 1/27th of the span.

(*e*) Ease of trimming, fixing finishes, hung ceilings, pipes, etc., as shown in Information Sheets 285 and 307.

(*f*) Continuity of spans : continuity rods bedded between beams enable advantages of the cast in situ floor to be obtained in addition to those of precast construction.

(*g*) Uniformity of material : the units being produced under factory conditions, the irregularities of site work and of weather conditions are avoided.

Further details :

For further details see Information Sheets 285, 307, and 322. See aiso No. 493 for details of precast balcony stepping.

Manufacturers : Siegwart Fireproof Floor Co., Ltd.

London : Thanet House, 231 Strand, W.C.2

Telephone : Central 4894

Birmingham : Winchester House, Victoria Square

Telephone : Birmingham, Midland 3331

Manchester : Millgate Buildings, 18 Long Millgate

Telephone : Manchester, Blackfriars 3033

Glasgow : 121 St. Vincent Street

Telephone : Central 7277

Belfast : c/o Robert Kirk, Ltd., Exchange Street

Telephone : Belfast 24681

Leicester : Enderby

Telephone : Narborough, 2203

WORKING DETAILS : 719

GENERAL CONSTRUCTION • HOUSE AT SWINTON, NEAR MANCHESTER • NORMAN BENNETT

The external walls are 11-in. brick cavity with sand-faced brick facing and reinforced concrete lintols. Internal partition walls are also in brick. There is a reinforced concrete floor to the studio and entrance hall over the garage. Elsewhere the floors are normal wood joist construction, the living-room having an oak boarded finish, bedrooms—deal boards, kitchen—quarry tiles and bathroom rubber finish.

The staircase is in wood built round the circular flue to the heating chamber, which is in pre-cast concrete in 36-in. lengths.

The internal wall finish is distemper, with the exception of the kitchen and bathroom which have an enamelled wall finish. The woodwork in the living-room and staircase is wax polished walnut. Elsewhere all woodwork is enamelled.

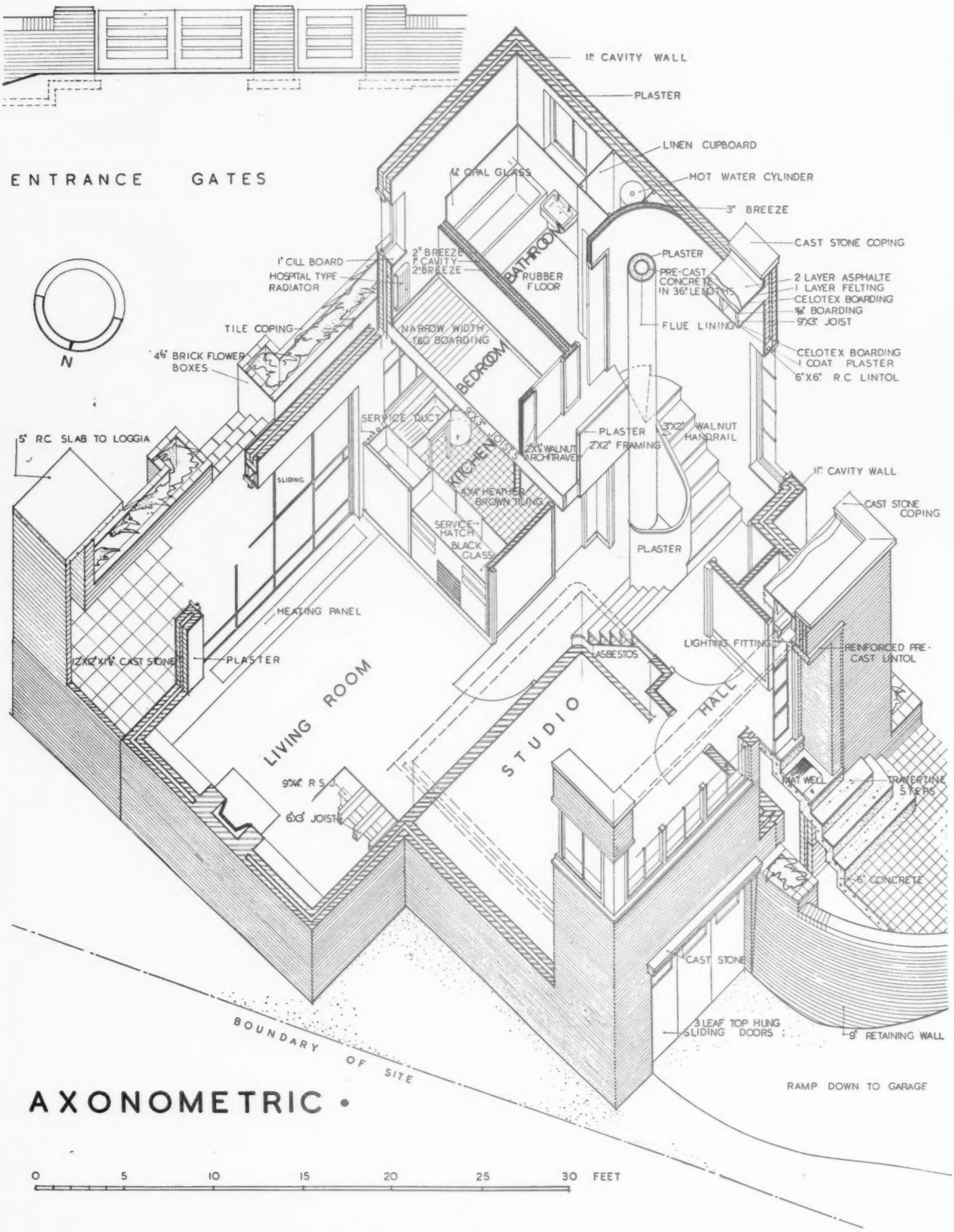
Heating and hot water are provided by a domestic boiler on the low pressure system. There are radiators in all the principal rooms.

Details are shown overleaf.

FILING REFERENCE:

WORKING DETAILS : 720

GENERAL CONSTRUCTION • HOUSE AT SWINTON, NEAR MANCHESTER • NORMAN BENNETT



AXONOMETRIC •

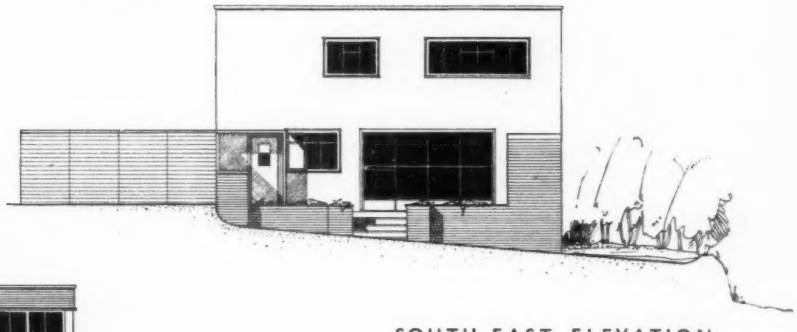
Constructional axonometric of the house illustrated overleaf.

HOUSE AT SWINTON, NEAR MANCHESTER

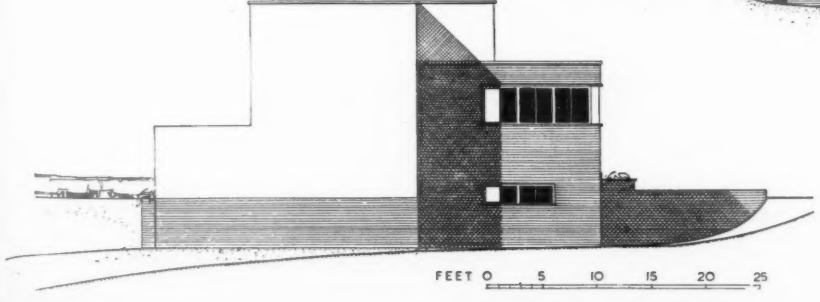
DESIGNED BY NORMAN BENNETT

Above, a view of the south-east front.

NORTH-WEST ELEVATION

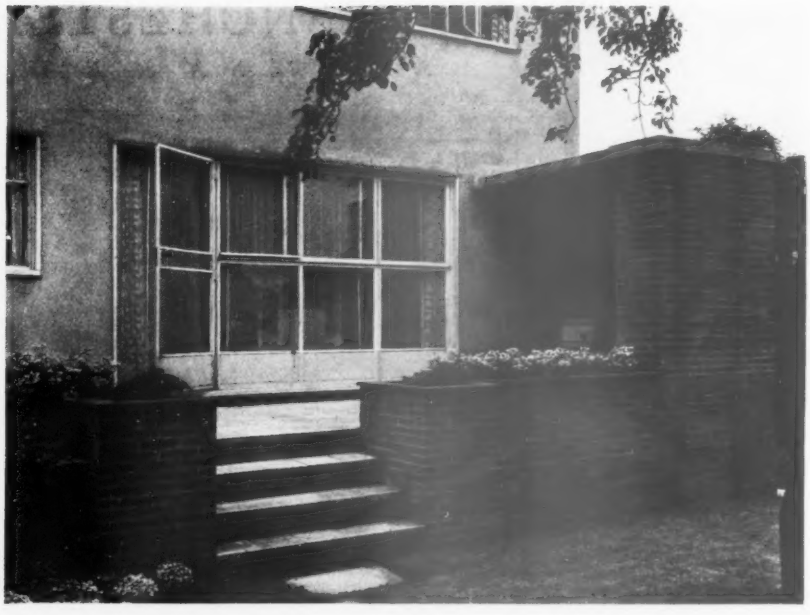


SOUTH-EAST ELEVATION



NORTH-EAST ELEVATION

D



PROBLEM—*The client desired a two-bedroom house with a large living-room and studio and with a garage incorporated in the building.*

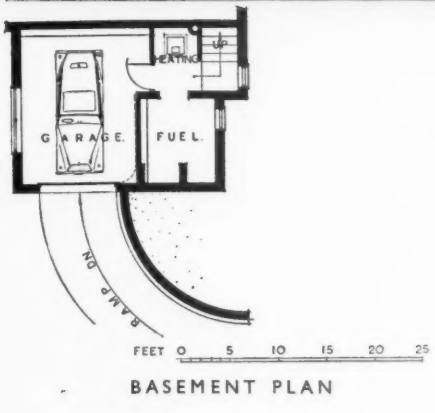
SITE—*The site had a cross-fall of 7 ft., which allowed the various parts of the house to be economically placed at respective half-landing levels. The studio windows face north and the other rooms have a south aspect.*

CONSTRUCTION AND FINISHES—*See notes on the Working Detail printed on page 167 of this issue.*

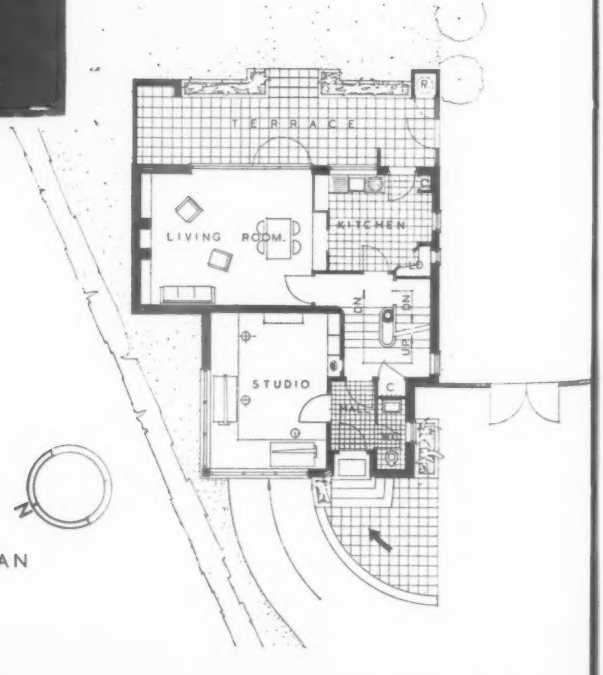
COST—*1s. 3d. per cube foot.*

Left, two views of the south-east front.

The general contractors were E. B. Jones & Rawlinson, Ltd.; for list of sub-contractors see page 184.



BASEMENT PLAN



GROUND FLOOR PLAN

HOUSE AT SWINTON, NEAR MANCHESTER • BY NORMAN BENNETT

LETTERS

D. W. BOISSEVAIN (Managing Director, Merchant Adventurers of London, Ltd.)
G. MAXWELL AYLWIN, F.R.I.B.A.
R. D. BEST (Chairman, Best and Lloyd, Ltd.)

Competitive Estimates

SIR,—May we express our trepidation at the apparent increase among architects of an unfortunate practice of inviting competitive estimates on competitor's designs?

A schedule of lighting fittings recently submitted as a basis for quotation was admittedly a selection from the architect's preferences for fittings used on previous jobs ; of ten types of fittings shown, three were simple shapes and, except in details of construction, common to the trade, two were special designs by a firm also represented by one stock design, one other was an adaptation (in size only) of a second competitor's standard design, and three were standard designs as catalogued by a third firm.

It may thus be assumed that a minimum of three firms were invited each to quote against the others for fittings the prices of which were listed in their respective catalogues, trade terms being generally known. The price of any listed fitting must necessarily bear some proportion of the original designing costs and some share of publicity expenses ; and if no property is assumed in the design rival manufacturers have an obvious unfair advantage.

It is easy to suggest that a property does exist in the designs and that they are adequately protected. In practice this does not apply ; it would be a brave firm who would sue architect, contractor or competitor and risk the hazards of litigation with the prospect of jeopardizing future business as a consequence. It might further be argued that trade morality is at fault and this might well be admitted ; a prominent firm of decorators recently stated that if they wanted fittings illustrated in A.'s catalogue B. would manufacture them and give them a bigger discount than A. found possible.

But the issue surely could be met in some degree if architects, satisfied that a reasonable price was being paid, were to simplify it by specifying that fittings were only to be obtained from their particular designers and manufacturers.

D. W. BOISSEVAIN,
Managing Director for the Merchant Adventurers of London, Ltd.

What is an Architect?

SIR,—THE ARCHITECTS' JOURNAL for January 12 is fairly typical of what it has become. It is made up very largely of A.R.P., slum clearance, and—perhaps as a natural sequel—evacuation. It is illustrated with a bridge in course of erection ; a building which I took to be a factory but find is a health centre ; a timber house roofed flat, presumably because of the known difficulties of making a timber roof otherwise ; a kitchen sink both in photograph and in that blessed style known as axonometric ; and several illustrations of boys listening to a lecture on architecture. They are mostly laughing, being babes and sucklings.

I am tempted thus to ask the question with which I have headed this letter.

Now, sir, I am sufficiently old-fashioned to believe that an architect is an artist whose chief aim and delight is to create beauty in building both within and without. I believe that only in this capacity is he an irreplaceable member of the community, and that all the other things he does, like contriving that people do not bump their heads on the landing, or that it doesn't rain inside when it is raining outside, he does because those are the necessary means towards the end—the price he pays for his creative delight.

Old as I am getting I still think I am fairly typical of quite a number of my profession in believing that an architect is just that, and in expecting that frame of mind to be catered for in the journals we read.

I believe also that I am only one of many in my earnest desire that your well printed, well made-up, and lively JOURNAL should revert once more to expressing that normal architecture which is not so rare as a foreigner might think by reference to your pages in their functional and, I hope, temporary mood.

G. MAXWELL AYLWIN,
Farnham

Trade Notes

SIR,—In your issue for January 5 your contributor has some complimentary things to say about my firm and the "Bestlite" lamp. Such praise is, indeed, gratifying, coming as it does from a publication of the standing of THE ARCHITECTS' JOURNAL. There are, however, two points in Mr. Scholberg's paragraph which call for some comment. The first relates to the comparative merits of the spun parabolic reflector and the parchment shade. Now there is no doubt that the shape of the aluminium spinning is much more attractive that that of a conical shade, and suits the lines of the standard admirably. Against this must be set the hard black silhouette of the metal which is seen when the lamp is in use. Some people, whose reputation and work carry weight, believe that a translucent shade is easier to the eye. To satisfy these one is faced with the alternatives of either supplying moulded translucent materials or a parchment shade. The demand for the translucent type of shade is insufficient to warrant the cost of the moulds which would be necessary to reproduce the parabolic reflector in plastic material. The parchment shade, therefore, comes nearest to the Gropius ideal of "grösste Wirkung mit mindelsten Mitteln."

The other point arises out of your contributor's remark that "for the last two or three years Best and Lloyd have been fairly quiet." It will generally be agreed that a product such as the "Bestlite" comes to hand only once every now and again. Many manufacturers would affirm that it is really a case of once in a generation. My father had the counterpart of the "Bestlite" in the "Surprise" gas pendant, the first really functional and adjustable modern lighting fitting. Even so, to say that my firm has of late been "fairly quiet" hardly describes the facts. To give details would suggest thinly disguised advertising ; particulars, however, may be placed before your contributor should he desire it. It is sufficient to say that since the "Bestlite" was put upon the market a number of interesting products have followed, and the series of contracts which my firm has secured indicates that the organization is still alive and abreast with changing conditions.

May I conclude by making the gesture your contributor calls for—the name of the designer is Eric Paton.

R. D. BEST,
Chairman, Best and Lloyd, Ltd., London

R.I.B.A.

PRESIDENT'S ADDRESS TO STUDENTS

Following are some extracts from the address to students given by Mr. H. S. Goodhart-Rendel on Monday last :

GIVEN a profession of architects all skilled at their job, in what way are their services likely to be chiefly employed? I expect that you all either heard or have read Professor Holford's charming lecture, *The Next Twenty Years*, a lecture in which our professional horizon was surveyed and our future predicted with great

On January 18 Viscount Samuel unveiled a plaque fixed to an outside wall of Stockleigh Hall, a block of flats in Albert Road, Regent's Park. The architects of this building, Mr. Robert Atkinson, F.R.I.B.A., and Mr. A. F. B. Anderson, F.R.I.B.A., were recently awarded the London Architecture Bronze Medal for 1937; the plaque commemorates the fact that Stockleigh Hall was the building for which the medal was given. Photograph shows—Left to right, Mr. A. F. B. Anderson, Mr. Robert Atkinson (architects of the building), the Mayor of St. Marylebone, Mr. M. I. Tanchan (chairman of Stockleigh Hall Estates, Ltd.), Viscount Samuel, and Mr. A. H. Moberley, Vice-President of the R.I.B.A.

sagacity. If I seem to be covering some of the same ground, it is because this occasion demands it; as far as possible, however, I am making my remarks supplementary to Professor Holford's rather than parallel with them. I feel no certainty, personally, about the likelihood or unlikelihood of future architects forming themselves more generally than they do at present into groups or large firms. I feel no certainty as to whether the commonest architect in the future will be paid by salary with his jobs found for him or paid by scale with a sporting licence to hunt jobs for himself. I feel no certainty as to whether architecture and civil engineering will remain separate professions indefinitely, or whether they will again become the one profession from which each has sprung. I feel no certainty as to whether our chief work in the near future will be rebuilding what has outlived its use or rebuilding what an enemy has violently destroyed. In none of these things can I predict what is going to happen, but I know what I wish would happen, what I hope for.

I hope that the tendency of architects to trade together in groups will increase. I think that this practice brings disadvantages that are all avoidable and advantages that can be gained in no other way. To take the disadvantages first, the group is beset by temptations toward a specialization that is good for the group commercially and bad for the individual intellectually, resulting in an eventual output of stock products that are just as good and no better than they need be to find a market. One man may do the schools, another man the hospitals, another housing, none of them ever sharpening his wits by tackling anything else. Worse still, the specialization may be not in jobs but in functions; one man may do all the planning, another the steelwork, another the dressing up, and yet another the pursuit and capture of potential employers. A group so organized can be useful in producing standardized work of very decent quality, but its members narrow as they age, and ought in the public interest to be liquidated by the State every five years and replaced by new.

Protection against these dangers of specialization, however, is not difficult. A group of architects, each with his special subject, can pool not only their expenses and receipts, but their ideas, can be as it were a parliament. One of them must be master, since businesses cannot be run by majority vote without delay and confusion. For every design also one man must be responsible, since architecture is an art and not a manufacture. Each, however, can have at least the tip of his finger in every office pie, and can be learning daily more of the other men's special subjects as well as of his own. Experience has taught those in charge of architectural education that what students learn from each other is fully as valuable as what they learn from masters. It has also shown that specializing stunts the growing mind as surely as gin is reputed to stunt the growing body. Groups at their best ought to continue in after life the mutual education that is so useful at school, and to refuse, as being eventually suicidal, any commercial advantages that undue specialization may seem to offer.

The advantages offered by groups are patent. Private architectural practice is precarious and combination lessens its risks. The pooled knowledge of several men's special subjects will be more than could be found in any one man's head. I have already pointed out the parliamentary value of the group, and with the right men rightly associated that value can be very great indeed.

Groups will be paid by scale, architectural departments by salary. Most of what I have said about the group applies also to the department, but with two essential differences. In the first place, the department will be hierarchical rather than egalitarian, the architects in it will be graded in position and authority. In the second place work will come to it automatically and will not have to be sought in the open market or by means of competitions. I hope that success will crown the efforts being made by many of the big men in this branch of our profession to remove its admitted defects. That the name of the designer responsible for each building should always be published is a goal toward which great progress has already been made. That there *should* always be one designer responsible for each building and working with all allowable freedom is another principle that is gaining acceptance. A great many of you, after comparing the prospects offered by private practice and by salaried practice, will probably decide in favour of the salaried. To those that so decide I say: Take care that the department you enter is one that provides you not only with a means of living, but with something to live for. There are departments in which your powers will get full scope and recognition, and in these you may be as happy as any architect alive. There are others that you would regret having entered. The Official Architects' Committee of the Institute is always at work trying by precept and practice to level all departments up to the standard of the highest and I hope that before Professor Holford's twenty years have expired such words of caution as these of mine will have become no longer necessary.

The eventual union between the professions of architecture and of civil engineering is a long-distance hope of mine, but one on which I set great store. While the post-Renaissance convention of architecture held, divorce between the two professions was understandable if not defensible; there were only certain things the haughty art was prepared to do, and the ways of doing them were well known and not such as to necessitate much consultation. Now that architecture has set out upon one of her periodic voyages of discovery, the exploration of all constructional possibilities is regarded as not only lawful but expedient. Such exploration can be made by an architect and an engineer hand in hand, but I cannot help thinking it could be made better still by a man who combined the two rôles in himself. It is to such men that we probably owe the masterpieces of the Middle Ages and a few of the remarkable works of today. Neither profession, however, is yet ready for unification with the other; architects in general are not yet sufficiently awake to the true logic of construction, nor engineers to the science of orderly design. A partnership between two friends, one of either profession, is however perfectly possible already, and is an arrangement I would gladly see becoming usual.

I have now told you my own hopes about three of the four things in the future that I mentioned as unpredictable. About the fourth we all have but one hope. We hope that the menace of war and the destruction it would bring may be lifted and that the happier England we all hope to plan may rise peacefully from the England we have and not from a scene of havoc wrought by war. I think it is now plain that war can only come upon us when all possible doubt as to its motive has disappeared; that we in this country are past the folly of fighting for material wealth and would take up arms only in defence of ideas that are more precious to us than our lives. We will fight only for the things of the mind and the spirit, for Christendom and the ideal of freedom, and for the human rights of the weak.

ROYAL SOCIETY OF BRITISH SCULPTORS

The gold medal "for Distinguished Services to Sculpture" has been awarded to Mr. Sigismund Goetze by the Royal Society of British Sculptors. This medal was founded in 1923 and is the highest distinction which British sculptors can bestow.

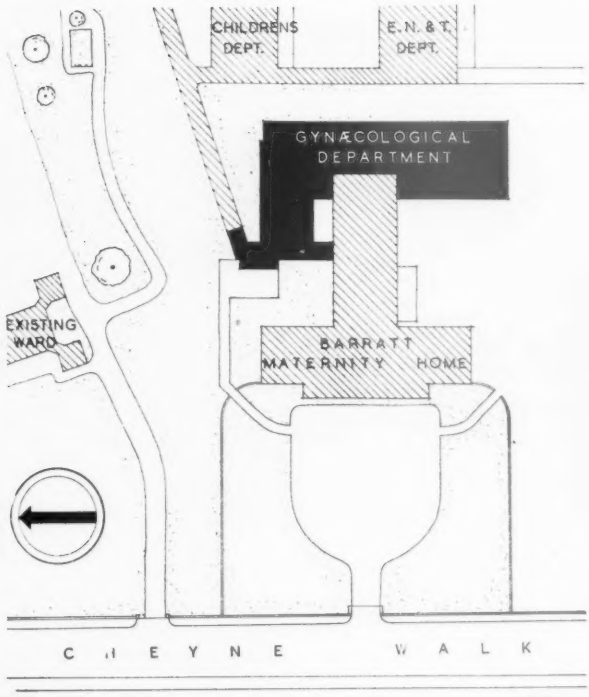
CHANGE OF ADDRESS

Messrs. Franklin, Newman and Press, architects and surveyors, have moved their office to No. 20 Regent Place, Rugby.

ADDITIONS, NORTHAMPTON GENERAL HOSPITAL

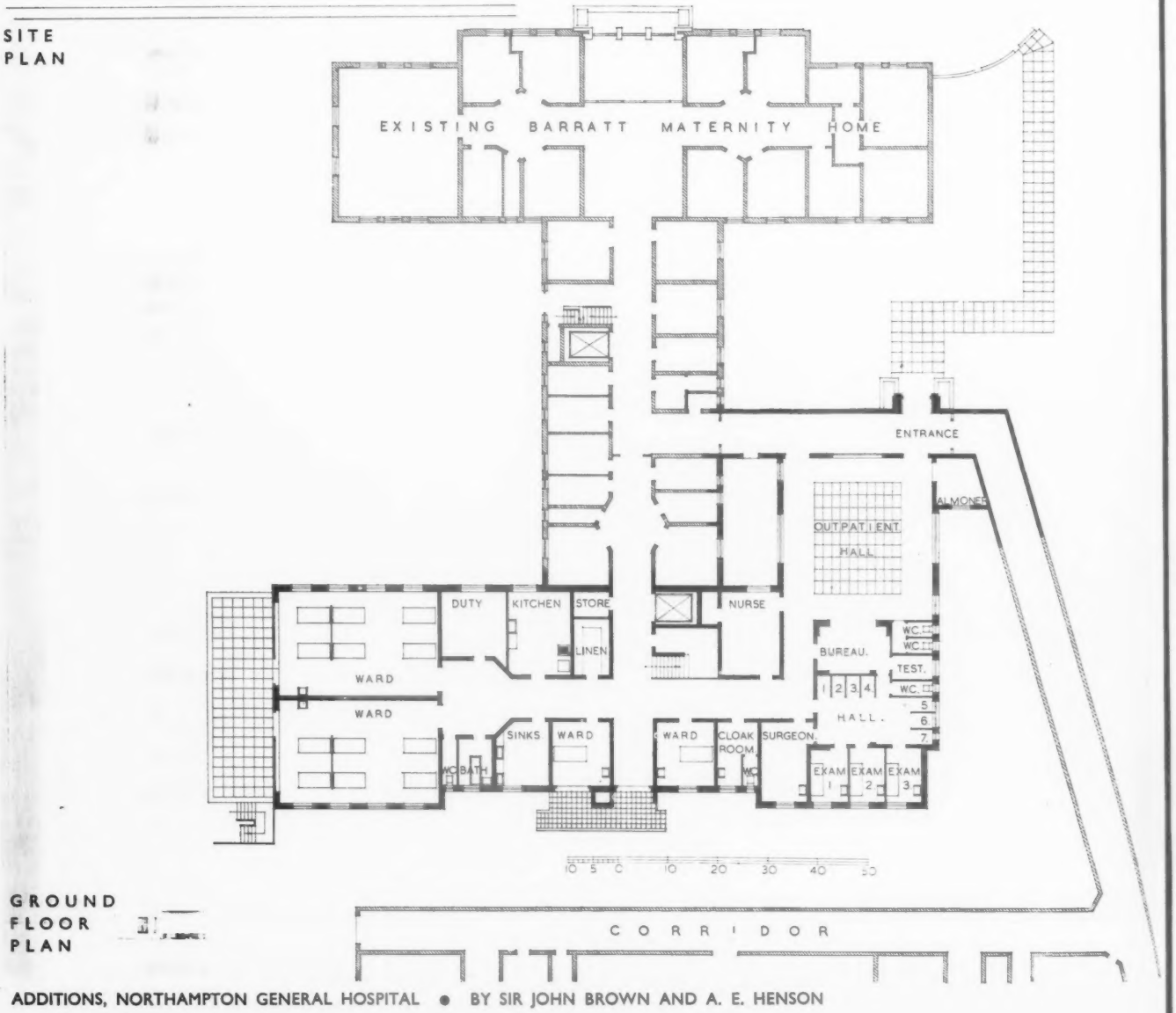
DESIGNED BY SIR JOHN BROWN AND A. E. HENSON

The first floor corridor, showing access to sitting room (second floor) and waiting recess



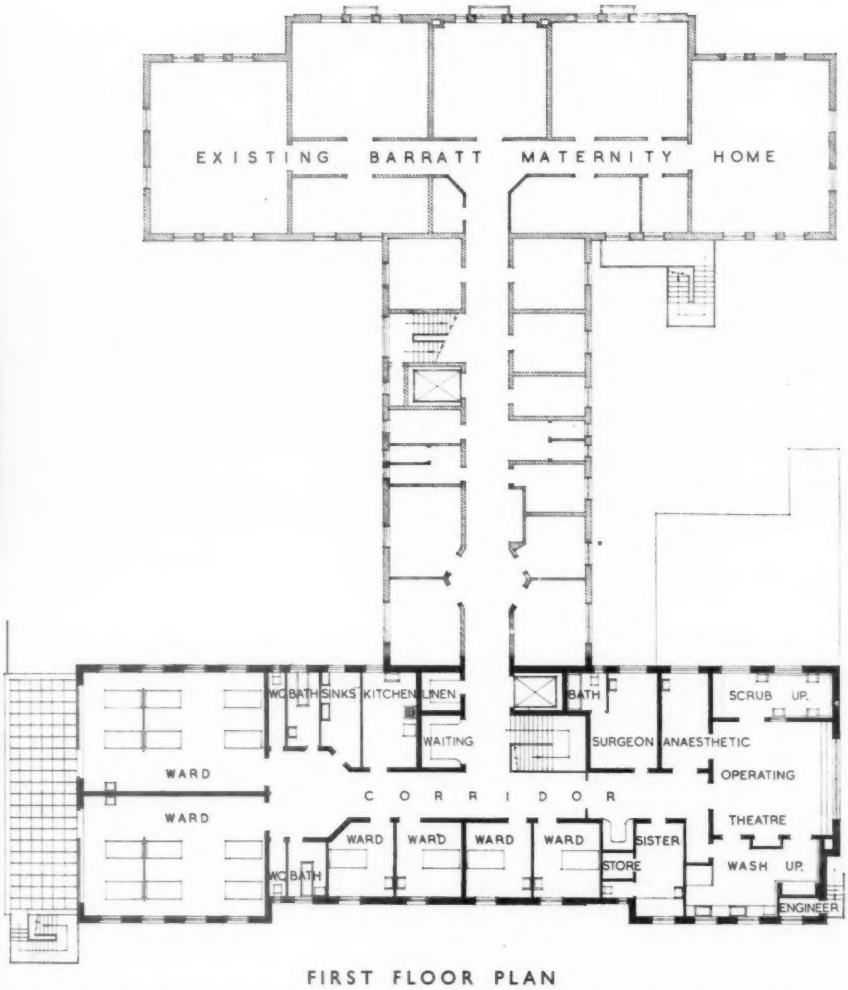
SITE PLAN

A view from the south-east showing the balcony.



GROUND FLOOR PLAN

ADDITIONS, NORTHAMPTON GENERAL HOSPITAL • BY SIR JOHN BROWN AND A. E. HENSON



FIRST FLOOR PLAN

PROBLEM—*The new gynæcological department is planned adjacent to the recently built Barratt Maternity Home, in order that all the female departments of the hospital could be under one control. It contains four six-bedded wards and six single wards, together with an out-patient department and an operating theatre suite. The small out-patients' department is placed on the ground floor with access from the Barratt Maternity Home. This enables the patients to visit the department without going through the general hospital. The theatre is for gynæcological use only.*

SITE—*The site was restricted and the plan forms of two wards running parallel was evolved to obtain the maximum sunlight possible.*

PLAN—*The out-patients' department forms a separate unit, and can be sub-divided from the rest of the gynæcological department. It also gives access to a small garden where patients can wait during hot, sultry days. This department has three examination cubicles and an examination hall with five undressing cubicles. A sitting-room is provided on the second-floor level for patients. On the first floor is a small recess fitted with settees for the use of waiting relatives of the patients. The operating theatre has seats from which operations are viewed by pupil midwives. The circulation of clean and dirty instruments has been carefully considered and a one-way system evolved.*

CONSTRUCTION—*Brick walls with pre-cast floors and roof. R.S.J.s are used to support upper walls where required.*

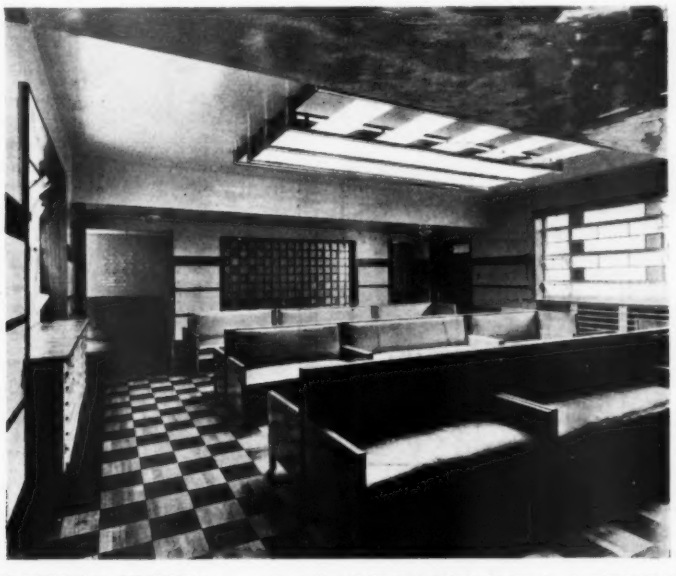
EXTERNAL TREATMENT—*The additions have been designed to conform to the existing Barratt Maternity Home, and are faced with hand-made sand-faced light red St. Albans' bricks. The columns to the balcony are covered with green tiles.*

INTERNAL FINISH—*The out-patients' hall is panelled with sycamore panels and teak surrounds; the operating theatre suite has terrazzo walls and floor, the upper part of the walls of the theatre being finished in green tiles. Floors are: corridors, cork tiles; wards, wood. Bathrooms and sinkrooms are finished to a height of 5 ft. with buff-coloured tiles and have red-coloured floor finish.*

SERVICES—*Heating is by low-pressure hot water; the theatre, by steam. All pipes are buried, with access at various points and ample cleaning eyes.*

COST—*The work was carried out on the schedule of the recently constructed Barratt Maternity Home and works out at 1s. 8½d. per cube foot. The final figure, including all fittings, being in the region of £20,000. Below, the operating theatre and the out-patients' hall.*

The general contractors were Henry Martin Ltd.; *for list of sub-contractors see page 184.*



ADDITIONS, NORTHAMPTON GENERAL HOSPITAL • BY SIR JOHN BROWN AND A. E. HENSON

OFFICE BUILDING, THEOBALD'S ROAD, W.C.

DESIGNED BY WELCH AND LANDER

PROBLEM—*Rebuilding at expiration of lease of 82-4 Theobald's Road, Holborn, for general office or warehouse purposes. The G.P.O. took on the lease of the ground floor and the rear portion of the fourth floor. The door on the right of the ground floor plan, the corridor and the lift and stairs are for the joint use of the G.P.O. and the other tenants on the upper floors.*

PLAN—*The open floor areas on the upper floors are planned for easy sub-division to suit the particular requirements of the tenant. Lavatories are provided for the use of male and females on alternate floors.*

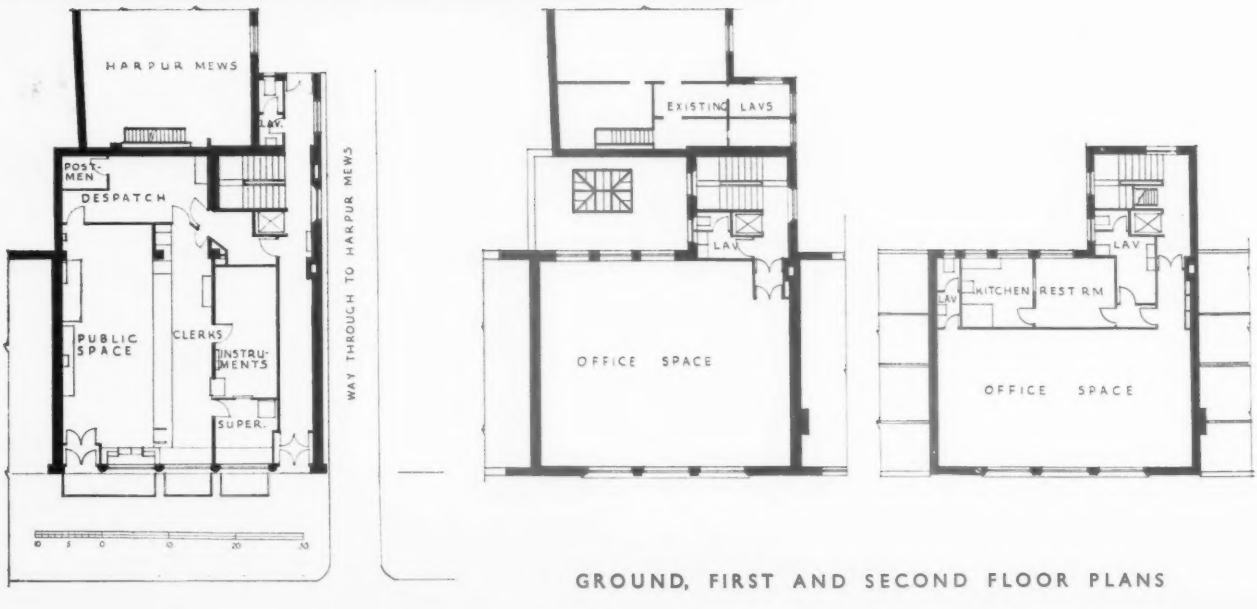
CONSTRUCTION.—*Party walls were existing : hollow tile and concrete floors and roofs ; partitions 3-in. terra-cotta blocks, 4½-in. brick partitions to staircase.*

EXTERNAL FINISH—*Multi-coloured grey to red facing bricks ; metal windows ; cills and heads to windows reinforced concrete, moulded.*

INTERNAL FINISH—*Plaster walls and ceilings ; floors, deal boards on fillets generally. Entrance floor, terrazzo tiles ; Post Office public space, ceramic tiles ; behind counter and despatch room, maple blocks ; lavatories, tiles ; stairs and landings, granolithic.*

SERVICES—*Hot-water low-pressure heating.*

COST—*Approximately 1s. 10d. per cubic foot. The general contractors were E. A. Roome & Co., Ltd. : for list of sub-contractors see page 185.*



GROUND, FIRST AND SECOND FLOOR PLANS

Notes from the Building Research Station on*

NATURAL STONE MASONRY

ITS DECAY, PRESERVATION AND REPAIR

PART II

CAREFUL selection of building stone, proper design and periodic washing can do much to ensure that masonry buildings weather well and preserve a good appearance. The renovation of stonework, however, is a problem which most architects are called upon to tackle at some time or another, for want of attention to these matters in the past. The following notes on the cleaning, repair and preservation of stone masonry cover the main points which need consideration in this kind of work. Attention is restricted to the treatment of the relatively superficial injuries of stone due to the action of weathering agencies. Major structural injuries, resulting from subsidence, vibration or excessive concentrations of stress, are not discussed. The operations dealt with in the notes, involving, as they do, the services of specially trained craftsmen and skilled supervision, are often entrusted to specialist firms—a matter which is referred to later.

FORMS OF DECAY OR DISFIGURATION

An old masonry structure, whether it be a church or hall, a bridge, a statue or a pedestal, may exhibit some or all of the following forms of decay or disfiguration arising from causes enumerated in Part I.†

Injuries due to frost.—Flaking or severe crumbling of exposed features—parapets, string courses, cornices, upper surfaces of buttresses, retaining walls, etc.

Injuries due to salt action and skin formation.—General surface powdering or crumbling, peeling of hard skins, loss of mortar from joints.

Vents.—The term "vents" is applied to veins or planes of potential weakness in stones which often open up on weathering.

Deposits and discoloration.—General blackening, growth of slime and moss, formation of heavy masses of soot and decay-products in sheltered positions: beneath window heads, cills and throatings.

In some instances—as, for example, the total or partial destruction of highly exposed decorative features—the injuries may be due to a variety of causes acting in combination.

Cracking due to corrosion.—A common kind of injury is the cracking of cornices, columns, etc., due to the use of iron or steel cramps, which rust and burst the stone in which they are bedded. The cramps or dowels must be replaced by bronze or other non-corrosive metal set in suitable mortar.

At the outset a decision must be taken as to the nature and extent of the renovation required. In one case it may be decided that the work must be restored as nearly as possible to the original condition and appearance. In another it may be desired merely to repair the deepest injuries. The actual effect desired must be understood between architect and client.

The next step is to make a detailed survey of the structure in order to discover the extent and decide the cause of the various injuries, each of which must receive its appropriate treatment. If defects in design are found, the possibility of correcting them is the first matter which should receive attention. It is useless to renew or repoint stone if the cause of the injury is not removed. Many injuries may be traced to defects which have developed in flashings, gutters, rainwater pipes. These must, of course, be repaired. These points having been attended to, the work will then fall under one or more of the following heads: cleaning, repair, pointing, which are discussed in the following pages, together with the subject of preservatives for stonework.

CLEANING

Methods of Cleaning.

The methods used for cleaning buildings which are described below are intended for the removal of deposits accumulated during long periods of exposure. They must not be confused with the periodic washing for maintenance purposes described in Part I.

They all depend on the use of clean water and clean water alone, without the addition of any chemicals. Solutions of caustic soda, washing soda or other highly alkaline cleaning preparations are sometimes used, ill-advisedly, to minimize labour. These substances soften the surface films consisting of soot and decay products and allow of their ready removal by brushing. The initial effect of such treatment may be most pleasing, but the subsequent effect on the stone may be disastrous. Reference has already been made to decay caused by absorption of soluble salts, of which sodium sulphate is one of the most damaging, and formation of sodium sulphate in the stone will follow from the use of caustic soda or washing soda in cleaning. The objection to the use of such alkalis will thus be realized. In a number of cases severe decay has started in masonry (which previously was sound and durable) as a result of the use of alkalis, and the use of these substances should not be permitted. There is a temptation to use alkalis on areas which prove refractory with other cleaning methods, but it should be resisted.

The dangers associated with the use of alkalis are now fairly well recognized, and firms specializing in cleaning and restoration are prepared to guarantee that no alkalis will be used. It is considered that such guarantees should always be obtained.

The various methods of cleaning with water may be described under the following headings:—

(*a*) Scrubbing with water.
(*b*) Spray treatment.
(*c*) Steam cleaning.

(a) *Scrubbing with water.* The use of fresh water, assisted by vigorous brushing, is sufficient to restore a building to a relatively clean condition. The process not only removes the dirt but also, if soluble salts are present, effects their partial removal and so reduces the *rate* of decay. The condition of the stone is thereby improved.

The ordinary water-cleaning process suffers from certain disadvantages. Some deposits are almost impossible to remove by the ordinary method, and the vigorous brushing or scrubbing involved may cause damage to delicate carvings. Furthermore, in carved work it may be impossible to reach the deeply cut portions where the heaviest deposits may occur.

(b) *Spray treatment.* With limestones, the efficiency of water-cleaning may be greatly improved if opportunity is allowed for the water to soften the deposits. If a fine spray of water is played for a sufficient time on the surface of the stone covered with the usual black deposits it will be found that the skin will be so softened that it can be completely removed with a soft paint brush. The period of spraying required varies according to the nature of the stone and its condition. In some instances half an hour may be sufficient, and it was found, for example, that a piece of Cotswold stone, which could only with difficulty be cleaned by chemical treatment, required only half an hour's spraying to enable the surface deposits to be completely removed. A sample of weathered Caen stone was cleaned after an hour's spraying without the least damage. In other cases, for example dirty Portland stone, the period required may be two hours or longer.

The process has recently been used on several important limestone buildings and has proved very successful. The Adam screen in front of the Admiralty building in Whitehall was cleaned in this way, and the fact that all the incrustations formed during 150 years' exposure to the London atmosphere were removed without the slightest injury to delicate details of carving on the frieze, is striking evidence of the value of the process.

(c) *Steam cleaning.* The use of steam jets facilitates the cleaning of masonry and generally effects a more perfect renovation than the ordinary water-washing process. The method is now widely adopted. Suggestions have been made that the heating can cause immediate mechanical damage, but there is no proof of this. The steam cleaning process tended to fall for a time into disfavour because of cases where, after treatment, the stone suffered from efflorescence and decay. This was wrongly attributed to the effect of steam, whereas it was really due to the use of alkalis to expedite the work. Where steam alone has been used the result has been at least as satisfactory as the more laborious method of scrubbing with water.

Staining.

Soot deposits contain soluble brown substances which may be absorbed by the stone during natural weathering or during the cleaning process. Within a little while after a building has been cleaned irregular brownish stains which are somewhat disfiguring may appear. Portland stone of some age has been known to behave in this way. In the natural process of weathering, the stains slowly disappear and it is likely that their removal can be accelerated by occasional hosing.

Effectiveness of the Cleaning Process on Various Types of Stone.

Cleaning processes are all far more effective with any kind of limestone than with sandstones or other stones which can be classed as "insoluble." Limestones form thick incrustations, consisting partly of soluble material, which are softened by the action of water, particularly in method (*b*), which involves prolonged spraying;

* Crown copyright reserved. † Published in the JOURNAL for December 29.

but on sandstones a thin soot film is formed which is deeply ingrained and difficult to remove. Some improvement can always be effected by washing or steam cleaning, and often very good results are obtained. In cases of doubt a trial of the process by a competent firm on an inconspicuous portion of the work should be arranged. If the results are not satisfactory, no attempt must be made to improve matters by the use of alkalis. The effects on sandstone may be even more serious than with limestone.

PRESERVATIVES FOR STONEWORK

There is a widespread demand for some substance which can be applied to the surface of masonry to prevent it from decaying, but experience does not afford much hope that any effective treatment will be discovered. An exception must be made in the case of paint which, if maintained, can preserve stone indefinitely, but this, of course, entirely masks the character of the material.

The methods offered for stone preservation fall into three main categories :—

(1) Processes for hardening the surface by silicates or similar substances, sometimes applied as a two-solution treatment.

(2) Processes depending on waterproofing the surface by the application of oils or waxes or solutions of the same.

(3) Sterilizing treatments, depending on the use of bactericides or fungicides with the object of destroying the supposed organisms of decay.

The two chief sorts of treatment—(1) and (2)—both have the disadvantage of forming a skin of different properties from the rest of the stone, and so can accelerate any natural tendency to flaking.

Practical experience of all the methods with buildings has been disappointing, and there is no evidence that any of the " preservatives " tested exert any permanently beneficial effect. The only " preservative " that can be unreservedly recommended is pure water, applied, either in the form of liquid or vapour, for the purpose of *cleaning*, and regular washing will enable stone to give the best service of which it is capable under the conditions to which it is exposed.

For small masses of stone which are of particular value or interest, and can be treated and kept under observation, the treatment being renewed as required, there are certain substances which may possibly do some good, but the special care and periodical renewal that can be arranged in such cases is probably impracticable with buildings.

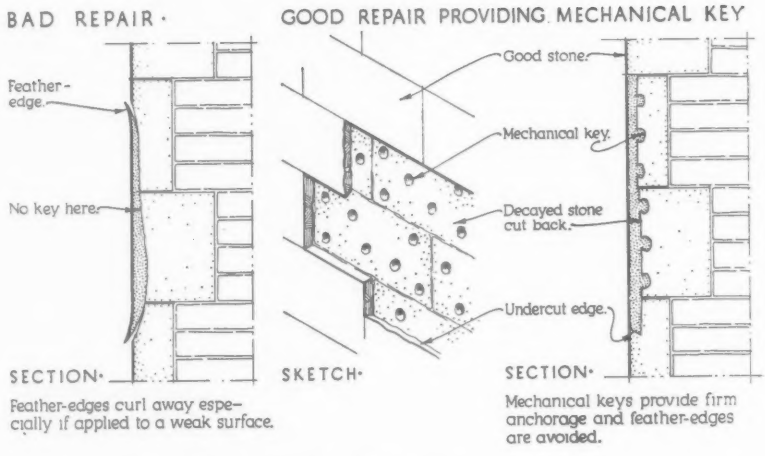
REPAIR

The restoration of any badly decayed structure will involve either replacement or plastic repair of stone. Which method will be adopted will depend upon the depth and overall extent of injury and upon the general character of the building.

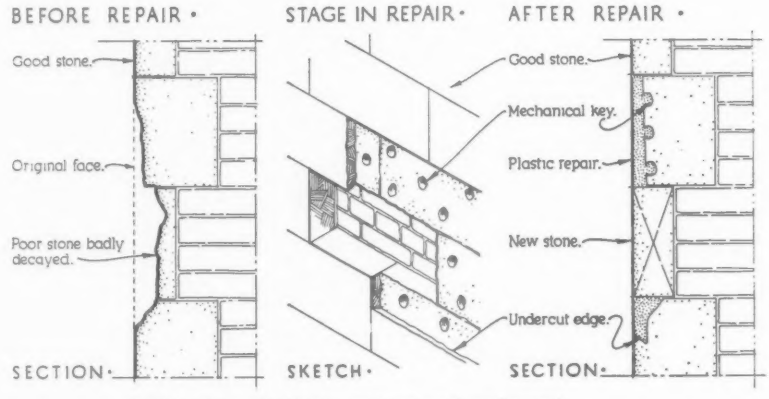
If it is found that some stones have been much more seriously affected than the rest of the work, and if there is no external cause for their poor behaviour, it must be concluded that they are of poorer quality than the rest and they should be replaced by new. In the case of decorative features which are exposed to severe weathering it may be cheaper to replace with new stones than to attempt the rather costly plastic repairs that would be required, but generally plastic repairs are cheaper than replacement.

In making replacements, stone should be used which is similar in type and texture to that which, in the building under consideration, has weathered best. Obviously limestone should not be repaired by inserting sandstone, and close-textured stone should not be replaced by open-textured stone, or *vice versa*. If stone from the same beds as that originally used can no longer be obtained the choice may be difficult and it may be necessary to seek technical advice.

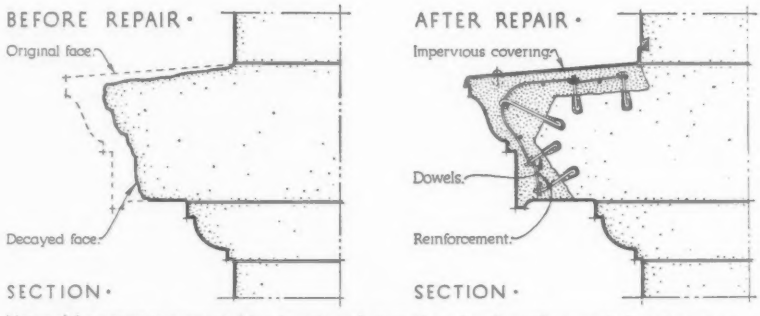
A great deal of the restoration required may be accomplished by the use of plastic materials for refacing stones only superficially attacked, for making good fissures and cavities in otherwise sound stone, or even for restoring moulded work the detail of which has been entirely obliterated. Restoration by plastic material has often incurred deserved criticism, owing to the use of unsuitable substances or unskilful workmanship. Actually, when proper material is carefully used, plastic repair is quite unobjectionable, for it permits restoration to be carried to any desired standard of newness and can be so successful that the new work is—and remains—indistinguishable from the old.



Good and bad methods of plastic repair.



Restoration by plastic repair and replacemt.



Heavy plastic repair to cornice using reinforcement.

Figure 1.

The materials oftenest used are :—

(1) Mortars based on Portland cement. The aggregate used may be sand or sound natural stone, similar to that being repaired, crushed to a suitable degree of fineness. Lime putty may also be incorporated.

(2) Mortars having a special cement, such as zinc oxychloride as a binder. Aggregates similar to those mentioned above are used.

The chief faults in masonry can perhaps best be avoided by observing the warning against putting a new piece of cloth in an old garment. The mortar used should be such as, when set and hardened, will have characteristics as closely similar as possible to those of the adjacent stone. The resemblance must extend, not only to colour and surface texture, but also to porosity and strength. The same principle is to some extent applicable to the jointing and pointing of masonry.

Other practical points in connection with plastic repairs, some of which are illustrated in Fig. 1, are as follows :—

(1) No attempt must be made to cover soft, decayed stone with repairing material. All affected stone must be cut back to sound stone capable of retaining and restraining a mass of applied mortar.

(2) Thin layers of repair must not be used. All mortars shrink on drying and sufficient thickness must be used to enable some support to be obtained from adjacent stone. In particular, repairs must not be worked to a feather-edge, but preferably should be undercut into sound stone.

(3) Good adhesion must be secured between the natural stone and the added repair. Light repairs may be adequately secured by priming or grouting the cavities to be filled. Heavier repairs may necessitate the use of non-corrosive metal dowels. Projecting masses of considerable size may in addition need to be reinforced by metal rod, suitably disposed.

POINTING

The repair of an old building almost always involves some re-pointing, and the mortar used must be chosen with care and used with skill or the results will be unsatisfactory. The process of filling up joints and re-pointing stone resembles, if it is not identical with, plastic repair, and what is said of one applies also to the other.

A good rule is that mortar used in jointing should neither be stronger nor denser than the stone which it binds. Sometimes the attempt is made to compensate for the weakness of the stone by increasing the strength of the joints or pointing ; the mortar is then preserved at the expense of the stone. Preferably the mortar should allow a slight yielding of the masonry joints ; the risk of major structural cracking is then reduced.

Space will not allow of a detailed study of mortar specifications, but it must suffice to say that the strength and texture of joints can be adjusted by :—

(1) The use of white lime and cement in varying proportions to yield a mortar as strong or as weak as may be required.

(2) The use of hydraulic lime, which, suitably treated, will yield a joint of medium strength and density often very suitable for jointing or repointing.

(3) The use of sand for dense mortar or crushed stone (Portland stone, sandstone, etc.) for open-textured mortar.

For the strongest stone, such as granite, plain cement mortar will be suitable, but for Portland or Bath stone this would be too strong. Crushed stone is generally used as aggregate in jointing limestones.

A common error in masonry repairs consists in the use of dense pointings, and it is easy to see by what line of reasoning this course comes to be adopted. In an old building the joints are generally much more decayed than the stone. From this it is concluded that the mortar was too weak. Actually, the mortar has served to act as a safety valve for moisture and salts in the masonry. If this outlet is sealed the decay spreads from the pointing sideways into the stone, and in a decade or so the work may be in a worse condition than if it had been left alone.

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The foregoing account of the treatment of old masonry will have sufficiently indicated that much of the work involved requires a high degree of skill and experience. The preparation of a specification for such work is a matter of great difficulty, and the cost of supervision is considerable. For this reason it is often convenient to entrust such work to firms who have specialized in stone cleaning and restoration and are prepared to guarantee the results. Even so, it has been thought that a brief statement of the principles involved and of the kinds of restoration which are possible would be welcomed ; the present notes should be regarded rather as a statement of principles than as the basis for specifying the actual materials and labours required.

LAW REPORT

DISPUTED CONTRACT

Kirk and Kirk, Ltd. v. *Universite de Lille.—Official Referee's Court. Before his Honour S. R. C. Bosanquet, K.C.*

THIS was an action by Kirk and Kirk, Ltd., builders and contractors, of Upper Richmond Road, London, against the Universite de Lille, of Queensberry Place, South Kensington, to recover damages for alleged breach of contract and money due for work done.

The facts of the case appear from the reserved judgment, the case taking several days to hear.

His honour said that at the beginning of 1935 the defendants were desirous of erecting a certain block of buildings in Queensberry Place, for the use of the Institut Français, and on June 4 of that year a contract, which was generally in the usual R.I.B.A. form, was entered into between the defendants, through their recteur, M. Chatelet, and Messrs. Baffrey-Hennibique, a French firm, for the erection of a block of buildings designed by Mr. Albert J. Thomas, an English architect, for the sum of £96,000. Messrs. Baffrey-Hennibique were, for the performance of the contract, merely a conduit pipe, and the contract as a whole was immediately assigned by them to the plaintiffs. It appeared that at the moment the contract was entered into it was already in the contemplation of the parties that it could not be adhered to as a whole, but that instead, for a portion of the whole by Mr. Thomas, there would be substituted buildings built to the design of M. Bonnet, a French architect. No further contract was entered into with regard to this later work, but it was agreed that it was to be done by the plaintiffs upon the terms and conditions applicable to the original contract. The work under the original contract was to have been completed by September 23, 1935, but owing to the alterations there was, in fact, no final date for completion fixed, and the contract actually dragged on until February, 1938, and was then incomplete. It was common ground that the defendants, who were being financed by the French Government, were continually short of money to pay for the work designed by M. Bonnet, and in addition M. Bonnet himself was very dilatory in supplying plans for the work he wanted done. However, the work went on, though slowly, and the plaintiffs were still on the job, with all their scaffolding and plant, on February 21, 1938, when the plaintiffs received a letter from Mr. Thomas stating that he had received a letter from the recteur, dated February 17, saying that they proposed stopping all the work, including the glazing, and removing all the scaffolding, unless the plaintiffs wired to the contrary, and stating that the expenses to be paid could not be more than £4,000.

It was claimed by the plaintiffs that that letter constituted a repudiation of the contract. It appeared that in April, 1937, the defendants' difficulties with regard to finance were acute, and an arrangement was come to that no further work in addition to that already completed should be undertaken by the plaintiffs without the express authority of the recteur of the Universite. The value of the work then executed was £139,799, and further orders were given amounting to nearly £20,000. Then another gentleman became recteur, and having looked into the position of the contract he became alarmed, because, while there was a great deal of work to be done, the money which he was receiving or had received from the French Government was limited in amount, and finally he wrote a letter to the architect expressing his grave displeasure at the position which had arisen and stating that he should not pay the thirty-first instalment until he had received detailed and accurate proofs of the expenditure.

Proceeding, his honour said the question was whether the letter of February 21 was, as the plaintiffs alleged, a repudiation of the contract by the defendants, the latter contending that it was not, as the suspension of the work on the buildings did not necessarily involve the termination of the contract.

His honour said he had no hesitation in holding that in its plain meaning, as read by the ordinary man, it clearly constituted a repudiation of the contract. He held that the defendants had broken and were liable to the plaintiffs, not only for the money due to them under the contract, but also for damages for breach of contract. Under the first head of claim the plaintiffs were entitled to the sum of £6,745 15s. 11d. and interest to the date of the hearing, which amounted to £304 18s., making a total of £7,050 13s. 11d.

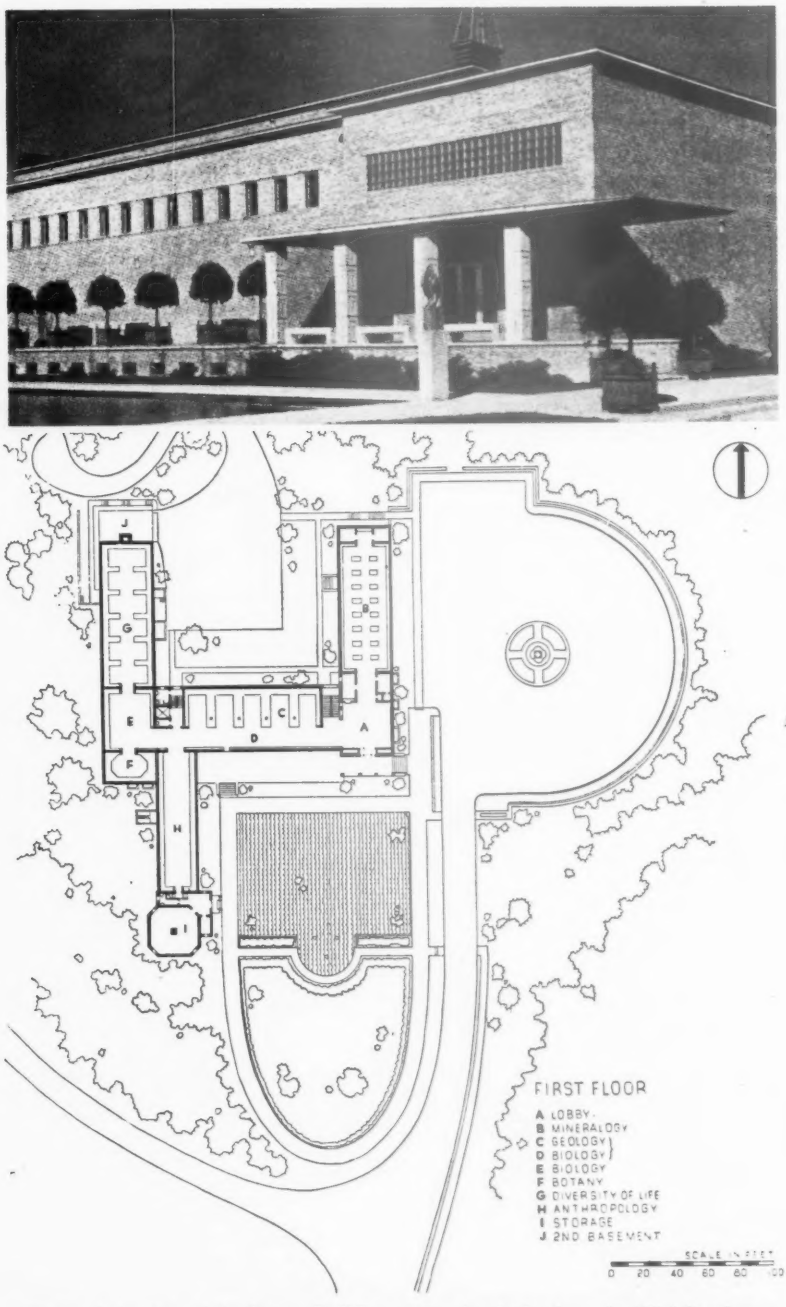
As regarded the damages for the breach of contract, it was agreed that the proper measure was the amount of profit which the plaintiffs would have made if the contract had not been put an end to. He held that the plaintiffs were entitled to the full loss which they had sustained by the defendants' breach of contract. Mr. Drewery, for the plaintiffs, estimated that they would have made a profit of £3,209 4s. 5d., while the evidence called on behalf of the defendants said it would

not have exceeded £1,715 os. 8d. His honour thought Mr. Drewery's estimate was right, with the reservation that he considered the proper proportion for the overhead charges must be set against that part of the contract. He decided that £465 4s. must be subtracted from Mr. Drewery's total of £3,209 4s. 5d., making the actual figures due to the plaintiffs £2,744 os. 5d. Adding the two together viz. the £7,050 13s. 11d. and the £2,744 os. 5d., it made a total of £9,794 14s. 4d. due to the plaintiffs, and there must be judgment for that amount, with costs.

Mr. Macaskie, K.C., for the defendants, applied for a stay of execution pending an appeal from the judgment, and after a long discussion his honour granted a stay as regarded the sum of £3,048, provided the balance of £6,745 odd was paid to the plaintiffs within twenty-one days and the £3,048 was paid into court within the same period. The costs of the action were ordered to be taxed and paid to the plaintiffs' solicitors on the usual undertaking.

PERIODICALS

DECEMBER ANTHOLOGY



Plan and elevation of the Science Building at Cranbrook Academy, by Eliel Saarinen.
[From the "Architectural Forum."]

AMERICA

Architectural Forum

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

DECEMBER. The science building at Cranbrook Academy by Eliel Saarinen, an asymmetrical plan with slightly Dutch elevations, sculpture by Carl Milles; and air-conditioned flat block in New York by F. L. Ackerman, windows mainly in glass brick; the "Plus" supplement contains an article on exhibitions by Siegfried Giedion and the Hotel Gooiland by J. Duiker. The "Products and Practice" supplement deals briefly with welding, and there are some interesting details of factory-produced housing units.

Architectural Record

(Monthly, $1.00. 115 West 40th Street, New York)

December. A scheme by Courtens and Nicolas for a 7,000 acre tourist resort near Montreal, with community centres, hotels, etc.; a sanatorium in California by Hunt and Chambers, interesting chiefly for anti-earthquake construction; Douglas Haskell has a ten-page article on welding; building types section covers office buildings and has some useful dimensions for passageways, desks, and filing systems; there are also some notes on the "design factors that affect rentability."

Pencil Points

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

December. An analysis of the preliminary studies for the Goucher College competition; Hubert Ripley contributes some interesting reminiscences of architectural practice in Boston in the middle nineties; four pages of working details of light fittings; Professor Hamlin discusses architectural sculpture; the records of early American architecture continue to maintain a high standard.

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FINLAND

Arkkitehti

(Monthly, 15 fmk. Ainonkatu 3, Helsingfors)

No. 11. A general review of the development of the Helsingfors central hospital scheme with details of the proposed buildings, including the children's hospital, by Uno Ullberg; a general hospital for the town of Piri by Jussi Paatela.

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FRANCE

L'Architecture

(Monthly, 10 frs. 2 rue de l'Echelle, Paris 1er)

December. A review of architecture and decoration at the Salon d'Automne; sixteen-page illustrated article by Albert Laprade on the work of Mr. Howard Robertson.

La Technique des Travaux

(Monthly, 10 fr. 54 rue de Clichy, Paris, 9e)

December. The Regent cinema at Neuilly by Montaut and Gorska, a straightforward plan on a comparatively easy site; a girls' school at Liége by Jean Moutschen; a mixed school at Vincennes by Quarez and Lapostolle, symmetrically planned.

GERMANY

Baukunst und Städtebau

(Monthly, 1m. 90. Bauwelt Verlag, Charlottenstrasse 6, Berlin, S.W.68)

December. An aerodrome in south Germany with traditional living accommodation and modern hangar buildings; medium size country houses; an article on town halls of the nineteenth century.

Baumeister

(Monthly, 3m. Georg Callwey, Munich)

December. An article by Guido Harbers on the work carried out by Paul Heim of Stuttgart between 1931 and 1938, thirty-six pages of illustrations and twelve pages of working details and measured drawings from the same jobs.

Bauwelt

(Weekly, 90 pf. Bauwelt Verlag, Charlottenstrasse 6, Berlin, S.W.68)

December 1. Two competition results, a school won by Heuser and Hentrich, a hospital won by Bischof and Menszel; A.R.P. notes.

December 8. Further details of the aerodrome buildings described in *Baukunst* above.

December 15. A review by Albert Gut of the German architecture exhibition at Munich; a school in Brunswick by Hans Reichow.

December 22. Competition for the Nazi building in Eberbach, won by C. F. Gerstung; a large municipal open-air swimming bath near Hamburg by Constanty Gutschow.

December 29. An open-air swimming bath in Saxony; a thermal bath by Hans Vath.

Deutsche Bauzeitung

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

December 7. The work of Auguste Perret.

December 14. Technical notes and new equipment.

December 21. A review of the architecture and arts and crafts exhibition at Munich.

December 28. An article by Walter Hahn on the interior and exterior lighting of hotels and restaurants.

Building Supplement. An open-air swimming bath and ice rink in Cologne; office building in Dresden; the German art building in Munich; country houses near Tübingen by Kurt Weidle.

Innen Dekoration

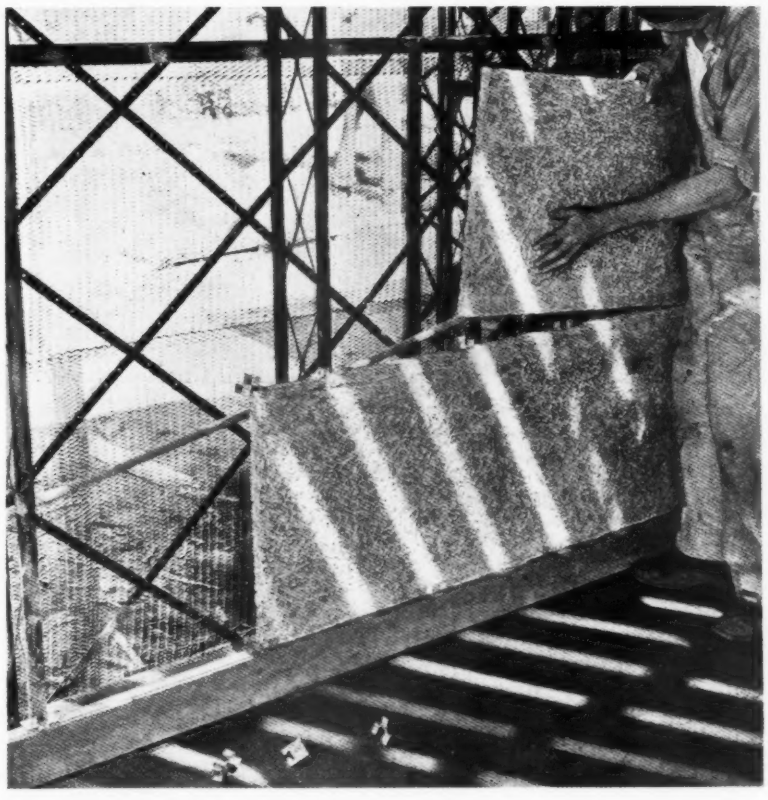
(Monthly, 2m. 50. Alexander Koch, Neckarstrasse 121, Stuttgart)

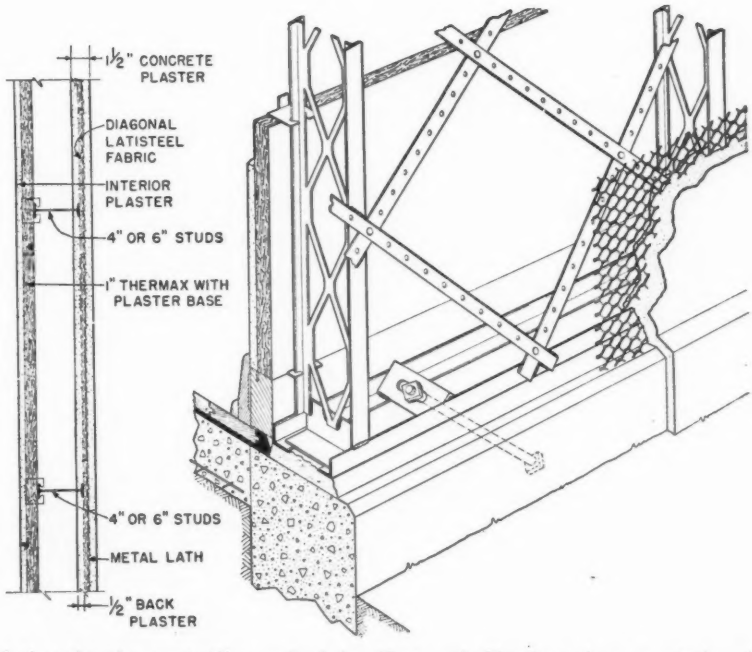
December. Interior decoration by Oskar Riedel, a Sudeten German architect; furniture from the Oslo exhibition; an article by Ernst Dobler on hotel bars and beer halls.

Moderne Bauformen

(Monthly, 3m. Julius Hoffmann, Stuttgart)

December. A lookout tower to commemorate the fiftieth anniversary of the Swabian Alpine Society; a Hitler youth hostel by Jargstorf and Weber on a site to the north of Stuttgart and overlooking the Neckar valley; a gear wheel factory in Friedrichshaven by Wilhelm Ritter; a quick service restaurant for 250 people by Robert Kotas.





Anti-earthquake construction evolved by Hunt and Chambers for a sanatorium in California. [*From the "Architectural Record."*]

HOLLAND

Bouwkundig Weekblad Architectura

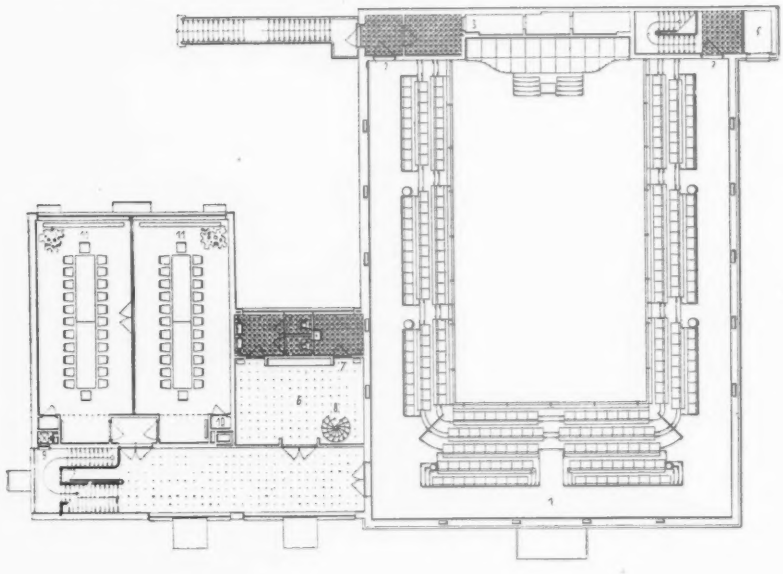
(Weekly, 15 florins per annum. Weteringshans 102, Amsterdam)

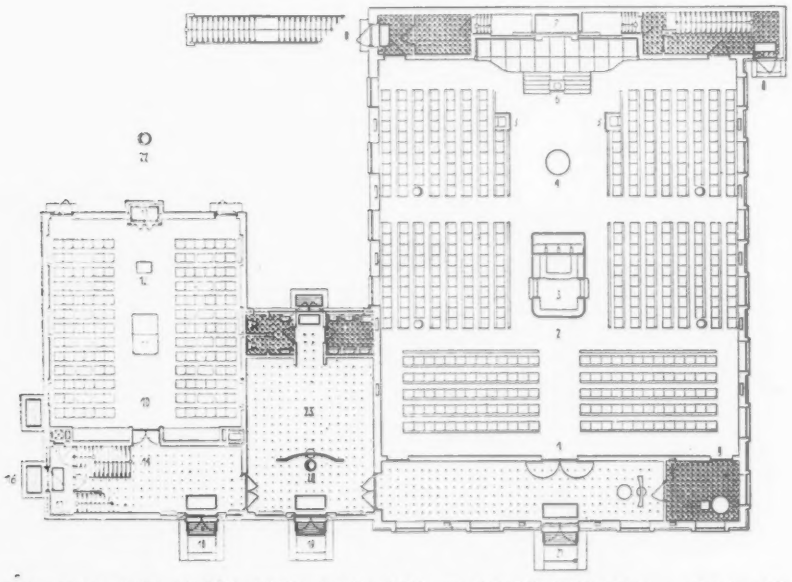
December 3. An appreciation by J. P. Mieras of van den Berg.

December 10. Several pages of interiors from the *Nieuw Amsterdam*, mostly very good.

December 17. A synagogue in Amsterdam by A. Elzas, good photographs, plans and sections.

December 24. The large scale restoration





FIRST FLOOR PLAN, MEETING ROOM, CLOAK ROOM, and WOMEN'S SYNAGOGUE. SCALE 1 : 300.—1. Women's Synagogue ; 2. Emergency Exit ; 3. Parcel Room ; 4. Emergency Exit ; 5. Extra Emergency Exit ; 6. Women's Cloak Room ; 7. Cleaners' Quarters ; 8. Corridor leading to Choir Gallery ; 9. Small Lift for the service of the Meeting Room ; 10. Flue and Ventilation Pipes ; 11. Meeting Room.

GROUND PLAN, CHILDREN'S SYNAGOGUE, CLOAK ROOM and MEN'S SYNAGOGUE. SCALE 1 : 300.—1. Entrance to Men's Synagogue ; 2. Men's Synagogue ; 3. Biema Platform ; 4. Small Table in front of Water Tap ; 5. Rabbi Stalls ; 6. Access to Reader's Pulpit ; 7. Holy Arch ; 8. Emergency Exit and Room for Officiating Vestments ; 9. Room for Officiating Rabbi ; 10. Children's Synagogue ; 11. Biema Platform ; 12. Access to Reader's Pulpit ; 13. Holy Arch ; 14. Corridor to Women's Synagogue and General Meeting Room ; 15. Small Lift and Refuse Tank Accommodation ; 16. Entrance Hall ; 17. Corridor leading to Hall ; 18. Women's Entrance ; 19. Men's Entrance ; 20. Small Water Tap with Screen ; 21. Entrance for Official Occasions ; 22. Ventilator ; 23. Men's Cloakroom and W.C.

of old buildings, an article by E. J. Beumer.

December 31. Street decorations, an article by C. Feltcamp.

de 8 en opbouw

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

December 10. A complete number devoted to the synagogue referred to above.

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ITALY

Architettura

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

November. A seaside colony at Marina di Massa by Sotsas and Guaitoli ; competition for a new palace of justice at Palermo, won by Gaetano and Ernesto Rapisardi; competition for a similar building at Forli, won by Francesco Leoni.

Rassegna di Architettura

(Monthly, 15 lire. Via Podgora 9, Milan)

October. A war memorial by Greppi and Castiglioni ; recent work by Giovanni Pellegrani at Tripoli, including a cinema and a flat block ; a small power station in Lombardy by A. E. Aresi.

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SWEDEN

Byggmästaren

(Weekly, 20 kr. per annum. Kunsgatan 32, Stockholm)

No. 34. Metal windows, an excellent article by Olof Thünstrom with numerous diagrams.

No. 35. Floor insulation, an article by Niels B. Hast.

Nos. 37–38. Skansen, recent work at the Stockholm open-air museum.

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SWITZERLAND

Schweizerische Bauzeitung

(Weekly, 1 fr. Dianastrasse 121, Zürich)

December 3. An article by Hans Schmidt on the layout and precise placing of buildings on the Acropolis, in Pergamon and at Palmyra ; the geology of Finland ; a flat block in Zürich by H. Weideli.

December 10. Reinforced concrete bridges by Robert Maillart ; competition for a church and rectory won by Erwin and Ziegler.

December 17. A new secondary school in Kreuzlingen by H. A. Schellenberg.

Werk

(Monthly, 3m. 50. Mühlebachstrasse 59, Zurich)

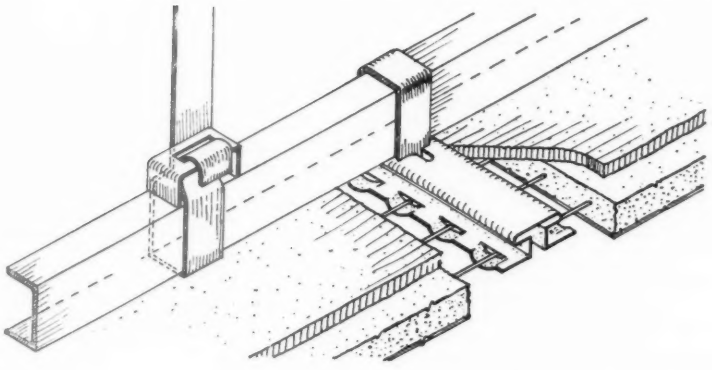
December. The 1938 Berne exhibition held to celebrate the 25th anniversary of the Swiss Werkbund ; a delightful article by Richard Seewald on the marionette theatre.

Publications Received

Gardens in the Modern Landscape. By C. Tunnard. London. Architectural Press. Price 15s.

Your House and Mine. By Geoffrey B. Boumphrey. London. George Allen and Unwin. Price 15s.

On left, elevation and ground and first floor plans of a synagogue in Amsterdam by A. Elzas. [*From "Bouwkundig Weekblad Architectura."*]



TRADE NOTES

[*By PHILIP SCHOLBERG*]

Suspended Ceilings and Solid Partitions

ANY large building nowadays has such a multiplicity of ducts, conduits, pipes and cables rushing here and there that suspended ceilings, at any rate in corridors, become almost a necessity. Various manufacturers have from time to time evolved schemes of varying ingenuity for carrying out the suspension, the protagonists of the latest effort being Messrs. Honeywill and Stein. Their system is marketed under the name of Plaxstele and the sketch at the head of these notes gives a general idea of how it works. The ceiling anchorages can be either flats or rods embedded in the concrete, straps for use with R.S.J.'s or wood joists. The main interest of the system, however, lies in the method of hanging the channels and the loop channels. The main support of the ceiling is a series of 1½ by ¾ in. channels, which are fixed to the hangers by special saddle pieces ; these channels are arranged at 3 ft. centres, and in turn support loop channels at 18-in. centres : it is these loop channels which carry the ceiling proper. The loop channels are a modified I section made from mild steel sheet, the bottom flange being extended sideways to give extra support to the ceiling lath sheet and being also slit to allow reinforcing rods to be threaded through it. This channel is hung on key hangers which hook over the main channel and which have a nib which is passed through a slot in loop channel and then given a half-turn to lock both parts together. When this framework has been completed the sheets of lath plaster base are slid into position, small reinforcing rods at 18-in. centres are run through the slits in the edges of the channels and the surface is then ready for plastering. The ceiling can therefore be erected without any special tools, nothing beyond a pair of pliers being necessary. The entire absence of hanging and tie wires is a point worth considering, for it is very easy to overtwist a wire, failure is seldom noticed until the load is applied, and then there is nothing for it but to do a good deal of the job all over again. With this system the whole of the erection of the ceiling can be carried out by the plasterer, and the rods and loop channels provide a two way mat of reinforcement which is embedded in the slab formed by the plaster and lath. All metal parts liable to come in contact with plaster are rust proofed.

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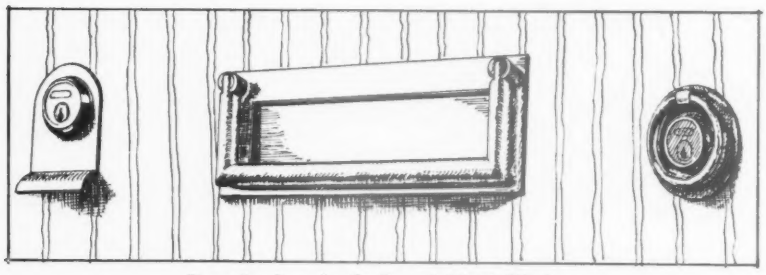
The same system can be modified for the construction of non-bearing partitions up to 12 feet in height without any structural support. Construction and assembly are much the same as for the ceilings. Runner channels are fastened to the floor, walls and ceiling, and the loop channels and plaster base are then inserted vertically between the floor and ceiling channels. Then the reinforcing rods and then plastering. It should be noted that for partitions the vertical channels are alternately reversed, so that the slits for the reinforcing rods occur on both sides of the partition. Round door openings it is quite easy to insert a few more rods for extra strength. Temporary bracing has to be provided while the base coat of plaster is being applied. A 2-by-4 timber is supported half way between floor and ceiling by 2-by-4 posts wedged between floor and ceiling in the usual way. Key-ended strips are then inserted in the loop channels, the partition is lined up, and a nail driven through a hole in the end of the fixing strip into the horizontal timber. As soon as the base coat has set the strutting can be removed. With a three coat finish the thickness of the complete partition is only 2 inches, so that in a large building the amount of floor space saved would be quite considerable.—(*Honeywill and Stein, Ltd., Building Materials Division, 21 St. James's Square, London, S.W.1.*)

Tradition and modernity from contemporary Germany. Living quarters and hangar at an aerodrome in South Germany. [*From "Baukunst und Städtebau."*]

Sensible Ironmongery

A year or so ago I suggested that the Dryad Metal Works had a pretty high



Door furniture by the Dryad Metal Works.

standard of design in door handles, drawer knobs and general ironmongery. It is encouraging, therefore, to see from their latest supplement that this firm is continuing on the same lines and producing good straightforward stuff with no nonsense about it. While it is difficult to select any particular fitting, I noticed a letter plate with a hinged handle knocker (19s. 6d. in bright or satin chromium plate) a very simple pull handle made up from flat strip and a similar fitting with a ring knocker; both these fittings are designed for use with the ordinary type of cylinder lock, but are arranged so that they are fixed separately from it, a good feature, as these locks often have a habit of working loose. Both these fittings are reasonable in price. The sketch at the foot of this page gives an idea of the fittings already described, but there are several others in the latest list which are equally well worth seeing.—(*The Dryad Metal Works, 40 Sanvey Gate, Leicester.*)

A.R.P. Shelters

Faced with innumerable catalogues of expensive A.R.P. equipment, not very many people seem to have thought of inexpensive ways of providing shelter. Most of us, however, have seen ghost perspectives showing a happy family in a steel or concrete tube playing the gramophone while bombs thunder overhead. And the price? A mere couple of hundred pounds or so for the ordinary family of three, plus, of course, still more money for an air filtration plant if you want to be really safe for any length of time. In an attempt to cut down the cost of these things why has nobody thought of using old factory boilers? Any old Lancashire or Cornish type boiler, eight feet or more in diameter, would make a most excellent lining if it were placed in a trench and had concrete poured round it, and even at ground level it would probably be every bit as splinterproof as Sir John Anderson's lean-to efforts. Take, for example, a typical boiler 10 feet diameter, and say 25 to 30 feet long. A boarded floor three feet up from the bottom would still leave seven feet of headroom in the centre, and seats and lockers could be run down each side where headroom would be less. The existing furnaces, long tubes which run from one end of the boiler to the other, would have to be cut out, but in a Lancashire boiler of the size I have suggested, you would thus get two 25-feet steel tubes about 3 feet to 3 feet 6 inches diameter, quite large enough to take an iron ladder and give access to the shelter even if it were some way below ground. If the shelter were near the surface, the existing mud hole doors could probably be reversed so that they would close from the inside, though this would involve crawling in on hands and knees. If you want services like water or electricity there are plenty of existing steam or water leads all ready and waiting.

The fact that a boiler has been condemned does not necessarily mean that it would not be suitable for this particular purpose. The companies who insure boilers are pretty thorough, and a boiler no longer suitable for steam raising still can have a useful life; quite a number of firms use them for storage tanks and other purposes where they do not have to stand pressure. Used for A.R.P. shelters, they can obviously provide only a partial solution to the problem for the number available cannot be very large. At this comparatively early stage, however, the possibility seems worth investigating.

Caulking Window Frames

When window manufacturers show "mastic pointing" as a seal between metal frames and concrete walls what exactly do they mean? Mr. Fitzmaurice asks this question in B. R. S.'s recent book, and suggests that it is not at all easy to find a material which will not ultimately harden up and finally let the weather through. An American firm, however, has recently produced a compound of rubber, linseed oil and asbestos. The rubber content of the mixture allows movement to accommodate temperature changes and the linseed oil gives the waterproof film. It is also claimed that the mixture can be painted after 24 hours.—(*Tamms Silica Co., Ltd., 288 North La Salle Street, Chicago, Illinois.*)

. . . and another possibility

It is, perhaps, worth adding here a recipe given by the late Claud Worth, the author of the Cruising Yachtsman's Bible. Spars frequently develop longitudinal cracks which do not do very much harm but from which the water must be excluded. Putty is no good as a filling, for it sets too hard. Dr. Worth's recipe is as follows: Heat ½ pint linseed oil and dissolve into it ½ lb. rosin, then ¼ lb. beeswax, then stir in 3 ozs. turpentine. The mixture can be worked in rather like a soft putty and "never becomes quite hard." B. R. S. might do worse than give this mixture a trial.

Manufacturers' Items

The Gravity Ladders, Ltd., are showing their all-steel gravity ladders at the Building Trades Exhibition now being held in the Drill Hall at Leeds, and for the first time the new "Packawheel" type is on view. This can be conveniently carried on the back of a bicycle, a specially designed bracket with insulated tray being provided, and although it is very compact can be extended into a rigid ladder to lengths up to 10 ft. 6 in., and is particularly useful for electric, gas and general utility companies, by whom it is extensively used.

The gravity loft ladder, the "Instant" fire escape, and the "Packaway" portable ladders are also shown and continually demonstrated on stands Nos. 2 and 3 at the exhibition.

Messrs. Langley London, Ltd., of 161 Borough High Street, S.E.1, has just issued an illustrated brochure devoted to their Sterreberg interlocking pantiles.

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Herbert Terry and Sons, Ltd., of Redditch, have sent us their latest catalogue, which gives a comprehensive review of all their products. Copies are obtainable from the firm, free of charge.

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We regret that the name of Messrs. Joseph Sankey and Sons, Ltd., was inadvertently omitted from the list of sub-contractors for the Finsbury Health Centre, published in our issue for January 12. They supplied the pressed steel door frames.

Bank News

Following are some extracts from the report of the directors of the Midland Bank, Ltd., for the year ended December 31, 1938:—

"The directors report that, full provision having been made for all bad and doubtful debts, the net profits for the year ended December 31, 1938, amounted to £2,445,670 19s. 11d. to which has to be added the balance of £591,044 1s. 2d. brought forward from last account, making together a total sum of £3,036,715 1s. 1d., out of which the following appropriations have been made: to interim dividend, paid July 15, 1938, for the half-year ended June 30, 1938, at the rate of 8 per cent. actual less income tax, £879,200 0s. 4d.; to reduction of bank premises account, £150,000; to reserve for future contingencies, £500,000; total, 1,529,200 0s. 4d. Leaving a sum of £1,507,515 0s. 9d., from which the directors recommend a dividend, payable February 1, 1939, for the half-year ended December 31, 1938, at the rate of 8 per cent. actual less income tax, making 16 per cent. for the year, £879,200 0s. 4d. Balance to be carried forward to next account, £628,315 0s. 5d."

THE BUILDINGS ILLUSTRATED

PRIVATE HOUSE, SWINTON, LANCASHIRE (pages 169-170). Architect: Norman Bennett. The general contractors were E. B. Jones and Rawlinson, Ltd., who were also responsible for excavation, foundations, reinforced concrete and joinery. Sub-contractors and suppliers included: R. H. Lord and Son, damp-courses and asphalte; Buckley Junction Metallic Brickworks, Jacobean grey-brown bricks; Liverpool Artificial Stone Co., artificial stone: Dennis Ruabon, heather-brown tiles and rock bitumen flats; Ruberoid Co., Ltd., roofing felt; Moler Products, Ltd., 2-in. moler blocks (partitions); Pilkington Bros., glass; Edgar Fitton & Co., Ltd., central heating; Crane, Ltd., boilers; E. Beal and Son, electric wiring; Troughton and Young, Ltd., electric light fixtures; R. Crabtree and Son, plumbing: Shanks & Co., sanitary fittings; Dryad Metal Works, door furniture and cloakroom fittings; Henry Hope and Sons, casements and window furniture; F. and J. Pilling Bros., plaster and tiling; J. and H. Patteson, Ltd., marble and mantels; Plan, Ltd., furniture.

NORTHAMPTON GENERAL HOSPITAL—GYNÆCOLOGICAL DEPARTMENT (pages 173-175). Architects: Sir John Brown and A. E. Henson. The general contractors were Henry Martin, Ltd., who were also responsible for the joinery. Sub-contractors and suppliers included: St. Albans Brick Co., 2-in. handmade sandface (multi) bricks; Excelsior Patent Stone Co., Ltd., artificial stone; Young & Co., structural steel; D. Anderson and Son, Ltd., "Thermotile" special roofing; Crittall Manufacturing Co., Ltd., patent glazing and casements; Hollis Bros. & Co., Ltd., wood-block flooring; P. Jaconello, Ltd., terrazzo and walls; Ashwell and Nesbit, Ltd., central heating; Northampton Gaslight Co., Ltd., gas fixtures; E. Goldston, Ltd., electric wiring; E. M. F. (Electrical), Ltd., electric light fixtures; Bell

Range and Foundry Co., Ltd., and Dent and Hellyer, sanitary fittings ; Dryad Metal Works, door furniture ; General Electric Co., call-bells and indicator system ; Northampton Machinery Co., Ltd., iron staircases ; Birmingham Guild, Ltd., balustrade and lay lights ; Carter & Co., Ltd., tiling ; Cork Insulation Co., Ltd., floors ; Edwin Todd, Ltd., wall-papers ; Jeffery, Sons & Co., Ltd., furniture ; Express Lift Co., Ltd., lifts.

POST OFFICE AND OFFICE BUILDING, HOLBORN, W.C. (page 176). Architects : H. A. Welch and F. J. Lander. The general contractors were E. A. Roome & Co., Ltd., who were also responsible for excavation, foundations, dampcourses, plumbing, bells, plaster, joinery and tiling. Sub-contractors and suppliers included : H. J. Moyes, demolition ; Brick Makers and Factors, Ltd., bricks ; C. A. and A. W. Hawards, structural steel ; Field and Palmer, Ltd., Macflex for flat roofs ; Chas. P. Kinnell & Co., Ltd., central heating and boilers ; Pemberton Sturgess (Gt. Britain), Ltd., electric wiring ; Speirs & Co., sanitary fittings and door furniture ; C. E. Welstead & Co., casements ; Fenning & Co., marble ; Hammond and Champness, Ltd., lifts.

THE WEEK'S BUILDING NEWS

PROVINCES

BARNSLEY. *Houses.* Plans passed by the Barnsley Corporation : 40 houses, Queen's Drive and Stanhope Gardens, Vernon Dunk, Ltd. ; 24 houses, Dodworth Road, Mr. E. Hibbert.

BARROW-IN-FURNESS. *Houses.* The Barrow-in-Furness Corporation is to erect 174 houses on the Greengate Street estate.

BIRMINGHAM. *Flats, etc.* The Birmingham Corporation is to erect 256 flats and 20 maisonettes on the Hutton estate, at a cost of £158,356.

BIRMINGHAM. *Flats.* The Birmingham Corporation is to erect 323 flats in Alcester Road, Moseley, at a cost of £222,607.

BIRMINGHAM. *School.* The Birmingham Education Committee is to erect a school in Turfpits Lane.

BIRMINGHAM. *School Enlargements.* The Birmingham Education Committee is to enlarge the Cockshut Hill school, at a cost of £41,800.

BIRMINGHAM. *Hangar.* The Birmingham Corporation is to erect a hangar at the Elmdon airport, at an estimated cost of £60,000.

BIRMINGHAM. *School Improvements.* The Birmingham Education Committee is to improve the Shawbury school, at a total cost of £15,200.

BIRMINGHAM. *Gymnasia, etc.* The Birmingham Education Committee is to enlarge the Paget Road school and provide two gymnasia, at a cost of £13,600.

BIRMINGHAM. *School.* The Birmingham Education Committee is to erect a combined infant and nursery school at the Erdington cottage homes, at an estimated cost of £5,600.

BLACKPOOL. *Houses.* Plans passed by the Blackpool Corporation : 32 houses, Anchorsholme Lane East, R. and H. Fletcher, Ltd. ; 12 houses, Poulton Old Road, R. Fielding and Son ; eight houses, Crompton Avenue, Mr. T. Harrison ; eight houses, Westby Avenue, Mr. D. E. Abbott.

BOUGHTON. *Telephone Exchange.* H.M. Office of Works is to erect a telephone exchange on the Welford main road, Boughton, Northants.

BOURNEMOUTH. *Schools.* The Bournemouth Education Committee has approved revised plans of the proposed new Winton and Moordown Council senior schools, Oswald Road, to provide accommodation for 480 boys and 480 girls.

BOURNEMOUTH. *Telephone Exchange.* H.M. Office of Works is to erect a telephone exchange in Bath Road, Bournemouth.

BOURNEMOUTH. *Shops, etc.* Plans passed by the Bournemouth Corporation : 11 shops and flats, Hillview Road, Davis Estates, Ltd. ; 28 bungalows, Glendale Road, etc., Mr. A. Bedford ; 28 houses, Windham and Boscombe Grove Roads, and block of flats, Richmond Hill, Mr. H. W. Clark.

BRADFORD. *School.* The Bradford Education Committee has approved plans by the City architect for the erection of a senior elementary school at Fairweather Green, at an estimated cost of £63,300.

BRADFORD. *Domestic Centre.* The Bradford Education Committee is to erect a domestic centre at Bolton Royd, at a cost of £12,800.

BRIDGWATER. *Extensions.* The Bridgwater Corporation is to extend the municipal offices, at a cost of £5,860.

CHELMSFORD. *Laboratory.* The Essex C.C. is to erect a County Laboratory at Chelmsford, at a cost of £9,925.

COLCHESTER. *Houses, etc.* Plans passed by the Colchester Corporation : 10 bungalows, Berechurch Road, Baron Estate Co., Ltd. ; eight houses, Margaret Road, Mr. F. Humm ; 15 houses, Roddam Close, Lexden estate, and extension, Sussex House, Lexden Road, Mr. F. W. Primett ; 10 houses, Cavendish Avenue, Mr. E. E. Chamberlain.

COVENTRY. *Crematorium.* The Coventry Corporation is to provide a cemetery and crematorium at Canley, at a cost of £13,167.

DARTFORD. *Houses.* Plans passed by the Dartford Corporation : 30 houses, Ashem Drive, Ashleigh Estates, Ltd.

EAST HAM. *Houses.* The East Ham Corporation is to erect 35 houses at North Woolwich, at a cost of £18,573.

EAST HAM. *Hospital Block.* The East Ham Memorial Hospital Committee is to erect a maternity and children's block at the hospital, at a cost of £42,000.

HALIFAX. *Houses.* The Halifax Corporation is to erect 294 houses on the Backhold Lane estate and 110 on the Nursery Lane estate, at a cost of £134,160.

HASTINGS. *School.* The Hastings Education Committee has approved plans for the erection of a central school for senior girls at Ore, at a cost of £36,994.

HASTINGS. *School.* The Hastings Education Committee is to erect an infants' school at Hollington Old Lane, at a cost of £17,484.

HATFIELD. *Nurses' Home.* The Herts C.C. has approved plans by Mr Courtenay M. Crickmer, F.R.I.B.A., for a new nurses' home at Welfield, Hatfield, at a cost of £5,300.

HOVE. *Houses, etc.* Plans passed by the Hove Corporation : 28 bungalows, Gleton Avenue ; 16 houses, Northease Drive ; 10 houses, Windmill Close.

HOYLAND. *Houses.* The Hoyland U.D.C. is to erect 124 houses on the Cobcar estate, at a cost of £42,480.

NEWPORT. *Houses.* The Newport (I. of W.) Corporation is to erect 28 houses on the Field House estate, at a cost of £23,110.

NORTHANTS. *A.R.P. Depots, etc.* The Northants C.C. is to adapt buildings for first-aid posts at a cost of £4,490, and provide A.R.P. depots at a cost of £25,000.

OSSETT. *Houses.* Plans passed by the Ossett Corporation : 37 houses, Kingsway, Mr. Clough.

PLYMOUTH. *Cinema, etc.* Plans passed by the Plymouth Corporation : Cinema, corner of Victoria Road and Stirling Road, Mr. A. F. Leest ; six houses, 59–65 Scott Road, Trustco Builders, Ltd. ; 22 bungalows, Vicarage Gardens, Davis Estates, Ltd.

PURLEY. *Houses.* Plans passed at Purley : 13 houses, Whytecliffe Road, etc., H. F. Thoburn, Ltd.

READING. *Houses.* The Reading Corporation is to erect 72 houses on the Whitley estate, at a cost of £25,184.

SANDERSTEAD. *Shops.* Plans passed at Sanderstead : 17 shops with maisonettes, Addington Road, Selsdon, Marshall and Tweedy.

SCARBOROUGH. *Sanatorium Enlargements.* The Scarborough Corporation is to enlarge the sanatorium, at a cost of £21,500.

SCARBOROUGH. *Baths.* The Scarborough Corporation is to provide indoor swimming baths on the site of the White House in the Crescent, at a cost of £50,000.

SCARBOROUGH. *Café Rebuilding.* The Scarborough Corporation is to rebuild the Corner Café, Peasholm, at a cost of £60,000.

STALYBRIDGE. *Houses.* The Stalybridge Corporation is to erect 80 houses at Besom Lane and 20 additional houses on the Springs Lane site.

STOKE-ON-TRENT. *Abattoir.* The Stoke-on-Trent Corporation has approved a scheme by the chief architect for the construction of a new city abattoir at Fenton of a type which would be suitable as a central slaughterhouse, at a cost of £204,569.

STOKE-ON-TRENT. *Flats.* The Stoke-on-Trent Corporation has approved a scheme for the erection of 80 flats in four-storey blocks at Bold Street, Hartshill, and is considering a scheme for the erection of 228 flats at Providence Square, Hanley.

STOKE-ON-TRENT. *Flats.* The Stoke-on-Trent Corporation is to erect 90 flats at John Street, Longton.

STOKE-ON-TRENT. *Extensions to Fire Station.* The Stoke-on-Trent Corporation is to enlarge the fire headquarters station, at a cost of £3,000.

STRETFORD. *Swimming Bath.* The Stretford Corporation is to erect a swimming bath at Lostock, at an estimated cost of £12,000.

SUTTON COLDFIELD. *Houses.* Plans passed by the Sutton Coldfield Corporation : Six houses, Darnick Road, H. Lee Bros. ; eight houses, Halton Road, Mr. L. H. Bullivant ; six houses, Darnick Road, R. W. Stanton, Ltd. ; eight houses, Reddicap Hill, Mr. F. S. Sandover ; 13 houses, off Green Lanes, Mr. F. Spencer.

TROWBRIDGE. *School.* The Wilts Education Committee is to erect a senior school at Trowbridge, at a cost of £53,870.

WEYMOUTH. *Houses.* Plans passed by the Weymouth Corporation : 12 houses, Broughton Crescent, Smith and Lander ; 11 houses, Goldcroft estate, Mr. R. W. Vine ; 10 houses, North Side Court Road, Mr. W. Knell.

WHITEHAVEN. *Houses.* The Whitehaven Corporation is to erect 166 houses on their Hensingham estate, at a cost of £54,731.

WOLVERHAMPTON. *Housing.* The Wolverhampton Corporation is to undertake re-housing schemes, at a cost of £274,858.

WOLVERHAMPTON. *School.* The Wolverhampton Education Committee is to erect a senior school in the Bushbury Low Hill area, at a cost of £53,000.

WOLVERHAMPTON. *Enlargement of College.* The Governors of the Wolverhampton and Staffordshire Technical College are to enlarge the premises in Stafford Street, at a cost of £23,700.

WOLVERHAMPTON. *Houses, etc.* Plans passed by the Wolverhampton Corporation : Eight houses and shops, Linton Road Woodlands Estate, H. and M. (Wolverhampton), Ltd. ; six houses, Fir Tree Road and Gibbs Street, Mr. O. Denning ; 54 houses, Mason Crescent, Mr. G. W. Yates ; 12 houses, Harrowby Road, Mr. L. T. Taylor ; 10 houses, Penn Road, Mr. E. A. Colman.

WORTHING. *Houses, etc.* Plans passed by the Worthing Corporation : Six houses, Sea Lane, Worthing Estates Building Co. ; 11 houses, Harvey Road, Mr. A. G. Keatch ; nine houses, Patricia Avenue, Princes (Worthing), Ltd. ; 11 houses, Goring Way, West Sussex Coast Development Co., Ltd. ; 19 houses, Thesiger Road, Potter and Trower ; 10 houses, Dawes Close, Mr. W. T. Bagnall ; 26 houses, Vale Walk, Mr. F. Kenton ; 16 houses, Elgin Road, Brick Houses, Ltd.

SCOTLAND

GLASGOW. *Schools Extensions.* The Glasgow Education Committee has approved plans for school extensions at Househillwood at £6,500 ; Lourdes school, £3,500 ; Red Road school, £3,500 ; St. Philomena school, £3,500 ; Berryknowes school, £7,500, and Knightswood school, £5,000.

GLASGOW. *Houses.* The Glasgow Corporation is to erect 30 houses at Berwick Drive, Cardonald.

GLASGOW. *Assembly Hall, etc.* The Glasgow Corporation has approved plans for the erection of assembly and dining halls at the Crookstom Homes, at a cost of £27,000.

Copies of the loose supplement containing the labour rates for the principal towns and districts throughout the country can be obtained from the JOURNAL, price 2d. to cover postage.

PRICES

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

1. Current Market Prices of Materials, Part I. (published last week)
2. Current Market Prices of Materials, Part II.
3. Current Prices for Measured Work, Part I.
4. A. — Current Prices for Measured Work, Part II.
   B — Prices for Approximate Estimates.

PART 2

IMMEDIATELY below, Messrs. Davis and Belfield mention the principal changes which have occurred in the last month. Similar notes, and the deductions that may be drawn from them, will be published on this page each month.

NOTES ON PRICE CHANGES

Prices generally remain at about the same level. Such changes as have occurred are marked as indicated below.

O. A. DAVIS. F.S.I.

On the 12th of this month the National Joint Council for the Building Industry reviewed the wage payments now in force and decided that they should continue to be applicable. Certain districts however have been regraded. A loose supplement showing the Labour Rates Gradings which come into force on February 1st, will be published with THE ARCHITECTS' JOURNAL shortly.

Prices vary according to quality and quantity ordered.

Those given below are average market prices and include delivery in the London area, except where otherwise stated, but do not include overhead charges and profit.

CURRENT MARKET PRICES OF MATERIALS

BY DAVIS AND BELFIELD

JOINER

Prices are for standards in one delivery; when less than a standard is required, or special lengths, add £1 per standard

Joinery Timber

				Per standard £ s. d.	Per foot cube s. d.
3″×9″	Scantling	2nd	Archangel	42 0 0	5 1¼
3″×9″	,,	3rd	,, ...	28 10 0	3 5½
2″×9″	,,	2nd	,, ...	47 10 0	5 9½
2″×9″	,,	3rd	,, ...	28 10 0	3 5½
3″×8″	,,	2nd	,, ...	33 0 0	4 0
3″×8″	,,	3rd	,, ...	24 10 0	2 11¾
● 2″×8″	,,	2nd	,, ...	36 0 0	4 4½
2″×8″	,,	3rd	,, ...	24 0 0	2 11
3″×7″	,,	2nd	,, ...	32 10 0	3 11½
3″×7″	,,	3rd	,, ...	23 0 0	2 9½
● 2″×7″	,,	2nd	,, ...	36 0 0	4 4½
2″×7″	,,	3rd	,, ...	22 10 0	2 8¾
2″×6″	,,	u/s	,, ...	22 0 0	2 8
1¼″×11″	,,	3rd	,, ...	38 10 0	4 8
1¼″×9″	,,	u/s	,, ...	34 10 0	4 2¼
1″×9″	,,	2nd	,, ...	47 10 0	5 9½
1″×9″	,,	3rd	,, ...	35 0 0	4 3
1″×11″	,,	2nd	,, ...	50 0 0	6 0¾
1″×11″	,,	3rd	,, ...	39 10 0	4 9½
1¼″×9″	,,	2nd	,, ...	47 10 0	5 9½
1¼″×9″	,,	3rd	,, ...	35 10 0	4 3½
1¼″×11″	,,	2nd	,, ...	50 0 0	6 0¾
1¼″×11″	,,	3rd	,, ...	41 0 0	4 11¾

● **Items marked thus have risen since December 22.**

JOINER—(*continued*)

Flooring

		7/8″	1″	1¼″
Yellow deal, plain edge in batten widths ..	per square	19/9	22/6	28/6
Ditto, T. & G.	per square	20/3	23/–	29/–
Ditto, T. & G. narrow widths	per square		21/6	28/–
● T. & G. rift sawn B.C. pine in 4″ widths ..	per square		32/–	
T. & G. random grain in 4″ widths	per square		18/6	

Wall Linings

Deal Match Boarding :—

1″ × 6″ T.G.B.	per square	24/–
1″ × 4½″ T.G.V.	per square	23/6
¾″ × 6″ T.G.B.	per square	18/–
* ¾″ × 4½″ T.G.V.	per square	17/–
⅝″ × 6″ T.G.B.	per square	14/9
* ⅝″ × 4½″ T.G.V.	per square	13/9
* ½″ × 4½″ T.G.V.	per square	11/3

Asbestos-Cement :—

5/32″ Semi-compressed flat building sheets, grey	per yard super	1/3¾
3/16″ Ditto	per yard super	1/4½
¼″ Ditto	per yard super	1/11
¼″ Metal reinforced flat building sheets	per yard super	3/4

Prices are for orders of less than 1 ton.

* **Items marked thus have fallen since December 22.**

CURRENT PRICES

BY DAVIS AND BELFIELD

JOINER AND STEEL AND IRONWORKER

JOINER—(*continued*)

Wall Boards :—

Asbestos-cement wall board (in sheets 8′ 0″ × 4′ 0″ only) under 5,000 feet super	per foot super	– 2¾
Asbestos-cement stipple glazed sheets (in sheets 8′ 0″ × 4′ 0″ only)	per yard super	7/6
Ditto, plain white glazed sheets (in sheets 8′ 0″ × 4′ 0″ only) ..	per yard super	8/6
Marble glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″)	per yard super	7/6

	300 yards	300–1,000 yards	1,000–2,000 yards	Over 2,000 yards
½″ Fibre board ..	2/–	1/10½	1/9	1/7

	25-75 yards	150–300 yards	600 yards
⅜″ Fireproof plaster board per yard super	2/2	1/10	1/6
¼″ Ditto .. .. .. per yard super	2/–	1/8	1/4
Joint tape (approx. 250 feet run) per roll	..	..	1/6
Joint filler .. .. per lb.	..	..	–/4

Plywoods :—

	4 m/m	5 m/m	6 m/m	9 m/m	15 m/m
Birch (A) per square	18/9	23/6	—	37/–	—
,, (B) per square	15/6	—	21/–	30/6	43/–
Japanese figured oak (A.A.) per square	33/6	—	39/3	65/–	—
Austrian oak, figured one side, plain oak reverse (A.A.) per square	—	—	86/3	92/6	—
Australian walnut, finely figuredoneside(boards 72″ × 36″) per square			¼″ 67/6	⅜″ 85/–	
Sycamore, figured one side (ditto) per square			75/–	85/–	
Honduras mahogany, figured one side (ditto) per square			75/–	—	
Honduras mahogany, finely figured (boards 84″ × 36″) per square			125/–	—	

Prices are for complete bundles.

Blockboards :—

Alder :—

Thickness			Boards 60″ × 183″	Boards 72″ × 183″
½″	.. ..	per square	59/3	59/3
⅝″	.. ..	per square	66/3	66/3
¾″	.. ..	per square	72/6	72/6
⅞″	.. ..	per square	79/–	79/–
1″	.. ..	per square	85/6	85/6
1¼″	.. ..	per square	99/6	99/6
1½″	.. ..	per square	114/6	114/6
1¾″	.. ..	per square	128/–	128/–

Birch :—

Thickness			Boards 60″ × 84″ & 54″ × 72″	Boards 60″ × 140″
½″	.. ..	per square	43/9	47/3
⅝″	.. ..	per square	50/–	54/–
¾″	.. ..	per square	55/3	59/6
⅞″	.. ..	per square	60/–	64/–
1″	.. ..	per square	67/6	72/3

Prices are for complete bundles.

Hardwoods

Joinery Quality.

English oak	per foot cube	15/–
American oak (plain)	per foot cube	10/–
,, ,, (quartered)	per foot cube	12/–
Australian Silky Oak (plain) ..	per foot cube	11/–
,, ,, ,, (quartered) ..	per foot cube	12/6
Walnut, European	per foot cube	18/–
Teak, Rangoon	per foot cube	15/–
,, African	per foot cube	12/–

JOINER—(*continued*)

Mahogany, Honduras	per foot cube	13/6
American whitewood	per foot cube	9/–
Birch	per foot cube	8/–
Cedar (aromatic)	per foot cube	16/–
Japanese oak (plain)	per foot cube	10/–
,, ,, (quartered)	per foot cube	12/–
Austrian oak (plain)	per foot cube	10/6
,, ,, (quartered)	per foot cube	14/–

Sundries

Slaters or sarking felt	per yard run	–/6
Roofing felt	per yard run	–/8
Bituminous hair felt	per roll	33/–

All rolls 25 yards long by 32″ wide.

Cork slabs, 1″ thick (3′ 0″ × 1′ 0″)	per foot super	–/4½
,, 2″ thick (3′ 0″ × 1′ 0″)	per foot super	–/8
Slagwool	per cwt. (approx.)	12/–
Building paper in rolls of 100 yards, 1-ply, 60″ wide (B.I.80 and L.G.I.80)	per roll	67/6
Ditto, 2-ply, 60″ wide (B.I.80)	per roll	135/–
Ditto, 2-ply, 60″ wide (B.I.20)	per roll	202/6

"Cabots" Quilt :—(Ex Works Twelve roll lots delivered carr. free.)

Double ply ..	per roll	42/–	per half roll	23/6

All rolls 28 yards long by 36″ wide. Special terms for quantities.

Cut steel clasp nails, 1″	per cwt. 30/6	4″	per cwt.	21/6
,, ,, floor brads, 2″	,, 20/9	3″	per cwt.	19/9
Bright oval wire nails 1″	,, 32/9	4″	per cwt.	21/6
Scotch glue			per cwt.	65/–

Floor Clips :—

		£ s. d.
One leg floor clip	per 1,000	8 8 0
2″ short leg floor clip	per 1,000	8 8 0
2″ Regular floor clip	per 1,000	8 15 0
3″ ,, ,, ...	per 1,000	9 0 0
2″ Regular ceiling clip	per 1,000	8 15 0
Single leg ceiling clip (7¼″)	per 1,000	10 10 0

Special terms for quantities.

STEEL AND IRONWORKER

Steelwork

		£ s. d.
Basis price for rolled steel joists sections 5″ × 3″ to 16″ × 6″, in 10 ft. to 50 ft. lengths	per ton	13 0 0
Extras on above for :—		
9″ × 7″ Section	per ton	0 5 0
4″ × 3″, 5″ × 2½″, 10″ × 8″, 12″ × 8″, 14″ × 8″ and 16″ × 8″ to 20″ × 7½″ sections inclusive	per ton	0 10 0
3″ × 1½″, 3″ × 3″, 4″ × 1¾″, 4½″ × 1¾″ and 24″ × 7½″ sections	per ton	1 0 0
Channels, angles and tees	per ton	14 0 0
Mild steel plates	per ton	14 0 0
Screw bolts	per ton	35 0 0

Fabricated Steelwork

		£ s. d.
Joists cut and fitted	per ton	17 0 0
Stanchions, ordinary sections with riveted caps and bases	per ton	20 0 0
Stanchions, compound	per ton	23 0 0
Plate girders	per ton	25 0 0
Framed roof trusses, 25′ 0″ span	per ton	25 0 0
,, ,, ,, 60′ 0″ span	per ton	23 0 0

Prices ex stock are higher, and definite quotations should be obtained.

Prime Galvanized Corrugated Iron Sheets

(Ex London Stocks)

	10 cwt. lots £ s. d.	Less quantity £ s. d.
*4 to 9 fts. 18 or 20 gauge, 8/3″ corrugations .. .. .. per ton	18 15 0	19 15 0
*10 fts. 18 or 20 gauge, 8/3″ corrugations	19 5 0	20 5 0
*4 to 9 fts. 22 or 24 gauge, 8/3″ corrugations .. .. .. per ton	19 5 0	20 5 0
*10 fts. 22 or 24 gauge, 8/3″ corrugations	19 15 0	20 15 0
*4 to 8 fts. 26 gauge, 8/3″ corrugations ..	20 10 0	21 10 0
*9 fts. 26 gauge, 8/3″ corrugations ..	21 0 0	22 0 0
*10 fts. 26 gauge, 8/3″ corrugations ..	21 10 0	22 0 0

*** Items marked thus have fallen since December 22**

CURRENT PRICES

BY DAVIS AND BELFIELD

PLASTERER, PLUMBER AND INTERNAL PLUMBER

PLASTERER

Plaster and Cement

		1-ton loads	5-ton loads	
Sirapite (coarse)	per ton	70/–	64/–	
„ (fine)	per ton	78/–	—	
Victorite No. 1	per ton	85/–	78/6	6-ton loads
„ No. 2 or non sweat	per ton	80/–	73/6	
Thistle (browning, haired and pink finish)	per ton	70/–	64/–	
Thistle (fine)	per ton	78/–	—	
Pink plaster	per ton	66/–	—	
White plaster	per ton	78/–	—	
Keene's pink	per ton	112/6	—	
Keene's white	per ton	117/6	—	
Super Carbo	per ton	—	47/6	4-ton loads
Carbo-setting	per ton	—	57/6	

	1 ton upwards £ s. d.
Cullamix No. 2 cream (rendering mixture) per ton	5 10 0
„ No. 3 cream „ „ per ton	5 10 0
Snowcrete mixture „ „ per ton	5 5 0

Sundries

Sharp washed sand	per yard cube		8/–
Cow hair	per cwt.		40/–
Goat's hair	per cwt.		55/–
¾″ laths	per bundle		2/–
1″ laths	per bundle		2/4½
Expanded metal lathing, 9′ 0″ × 2′ 0″ ⅜″ mesh × 26 gauge	per yard super		–/11
Lath nails (galvanized) 1¼″ × 14 gauge	per cwt.		48/6
„ (bright wire) „ „	per cwt.		27/–
	Less than 150 yds.	Less than 300 yds.	Over 300 yds.
⅜″ Plaster board	per yard super	1/–	–/11	–/10
1½″ Galvanized nails	per lb.	–/5		
Scrim cloth in 100-yard rolls	per roll	2/3		

Wall Tiles

Commercial quality.		
Ivory, white, etc., glazed 6″ × 6″ × ⅜″	per yard super	9/9
Angle beads (1½″ wide)	per yard run	1/2¾
„ „ (1″ „)	per yard run	–/10
Rounded edge tiles	per yard run	2/6½
Coloured enamelled bright glazed, 6″ × 6″ × ⅜″	per yard super	14/3
Angle beads (1½″ wide)	per yard run	1/4¾
„ „ (1″ „)	per yard run	–/11¼
Rounded edge tiles	per yard run	2/7
Eggshell gloss enamelled, 6″ × 6″ × ⅜″	per yard super	15/–
Angle beads (1½″ wide)	per yard run	1/7½
„ „ (1″ „)	per yard run	1/0¾
Rounded edge tiles	per yard run	2/8½

PLUMBER

Lead

3½ lbs. and upwards milled sheet lead in quantities of 5 cwts. and upwards	per cwt.	23/6
Add if cut to sizes	per cwt.	3/–
Lead ternary alloy, No. 2 quality extra over sheet lead	per cwt.	7/–
Allowance for old lead delivered to merchant	per cwt.	14/–

Cast Iron Rainwater Goods (Painted or Unpainted)

The following prices for rainwater pipes and gutters are subject to 20 per cent. trade discount, and the prices of the fittings are subject to 5 per cent. and 20 per cent. trade discount.

Rainwater Pipes

	2″	2½″	3″	3½″	4″	4½″	5″	6″
Round pipes per yard	2/8½	2/9¾	3/7¾	4/0¾	4/9½	6/1¾	7/2½	9/2
Shorts, 2′ 0″, 3′ 0″ and 4′ 0″ extra per yard	–/3¾	–/3¾	–/3¾	–/3¾	–/3¾	–/5	–/5	–/5
Bends each	1/9	2/–	2/6	3/–	3/7	5/–	6/6	8/5
Offsets, 4½″ and 6″ projection each	2/2	2/8	3/–	3/5	4/4	6/3	7/6	9/10
Offsets, 9″ projection each	2/10	3/2	3/9	4/8	5/7	7/6	8/10	11/2
Branches, single each	2/7	3/1	3/9	4/4	5/3	7/6	8/5	13/1
Shoes each	1/6	1/9	2/–	2/8	3/–	4/4	5/5	7/6

PLUMBER—(*continued*)

Square and rectangular pipes.

3″ × 3″	per yard	6/9½
3½″ × 3½″	per yard	8/4
4″ × 2″ or 2½″	per yard	7/4¾
4″ × 3″	per yard	7/4¾
4″ × 4″	per yard	9/0¾
4½″ × 3″	per yard	8/5½
5″ × 3″ or 3½″	per yard	9/7

Gutters

	3″	3½″	4″	4½″	5″	6″
Half round gutters per yard	1/9¼	2/1	2/1	2/2¼	2/4¾	3/7¾
Shorts 2′ 0″, 3′ 0″ and 4′ 0″ extra per yard	–/2½	–/2½	–/2½	–/2½	–/3¾	–/3¾
Angles and nozzle pieces each	1/5	1/7	1/9	2/–	2/2	3/1
Stop ends each	–/5	–/5	–/7½	–/9	–/10½	1/–
Ogee gutters per yard	2/1	2/3½	2/4¾	2/6	2/9¾	3/10¼
Straight back and shorts 2′ 0″, 3′ 0″ and 4′ 0″ extra per yard	–/2½	–/2½	–/2½	–/2½	–/3¾	–/3¾
Angles and nozzle pieces each	1/11	1/11	2/–	2/4	2/8	3/3
Stop ends each	–/6	–/7½	–/9	–/10½	1/–	1/3

Mild Steel Rainwater Goods

The following prices are subject to 12½ per cent. trade discount.

24 Gauge rainwater slip jointed pipes.

	2″	2½″	3″	3½″	4″
Galvanized round pipes with ears per 6′ 0″	2/7½	3/1½	3/9	4/3	4/9
Painted round pipes with ears per 6′ 0″	2/7½	3/–	3/4½	3/10½	4/3
Painted or galvanized short lengths with ears, extra each	–/6	–/6	–/6	–/6	–/6

18 Gauge Gutters.

	3″	3½″	4″	4½″	5″	6″
Galvanized half round gutters per 6′ 0″	2/–	2/3	2/4½	2/9	3/–	3/7½
Painted half round gutters per 6′ 0″	1/6	1/9	2/–	2/3	2/6	3/–
Painted or galvanized short lengths extra each	–/3	–/3	–/3	–/3	–/3	–/3

Asbestos-Cement Rainwater Goods

The following prices are subject to 10 per cent. trade discount.

Rainwater pipes.

Prices are for 6′ 0″ lengths, and 10′ 0″ lengths in 2″, 2½″ and 3″ diameters. Short lengths up to 2′ 0″ are charged as one yard. From 2′ 0″ to 4′ 0″ charged as 1½ yards. From 4′ 0″ to 6′ 0″ charged as 2 yards. Over 6′ 0″ charged as 10′ 0″.

Round pipes.

2″	per yard run	1/10
2½″	per yard run	2/0¾
3″	per yard run	2/5¾
3½″	per yard run	2/11¼
4″	per yard run	3/4¾
4½″	per yard run	4/10¼
5″	per yard run	5/9¼
6″	per yard run	7/1¾

Gutters.

Short lengths of gutter up to 2′ 0″ charged as 1 yard; from 2′ 0″ to 4′ 0″ as 1½ yards, and over 4′ 0″ as 2 yards.

	3″	4″	4½″	5″	6″	8″
Half round gutters per yard run	1/3¾	1/6¾	1/7¾	1/11	2/8	3/3½
Ogee gutters per yard run	—	1/11	2/0¾	2/5¾	3/0½	3/11¼

INTERNAL PLUMBER

Lead pipe in coils, 5 cwts. and upwards	per cwt.	23/–
Lead soil pipe	per cwt.	26/–
Add if ribbon marked	per cwt.	–/3
Lead ternary alloy, No. 2 quality extra over lead pipe	per cwt.	7/–
Plumber's solder	per cwt.	95/–
Tinman's solder	per cwt.	122/–

Drawn lead traps with brass screw eye, 6 lbs.

	1″	1¼″	1½″	2″
S. trap each	1/7	1/10	2/3	3/3
P. trap each	1/5	1/6	1/10	2/8
Extra for 3″ deep seal each	–/6	–/6	–/6	–/6

CURRENT PRICES

INTERNAL PLUMBER

BY DAVIS AND BELFIELD

INTERNAL PLUMBER—(*continued*)

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.

Tubes.		½″	¾″	1″	1¼″	1½″	2″
Tubes 2 ft. long and over	per ft.	–/5½	–/6¾	–/9¼	1/1	1/4½	1/10
Pieces 12″ to 23½″ long	each	1/1	1/5	1/11	2/8	3/4	4/9
Bends	each	–/11	1/2	1/7½	2/7½	3/2	5/2
Fittings.							
Elbows, square ..	each	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round ..	each	1/2	1/5	1/8	2/4	2/10	4/8
Tees	each	1/3	1/7	1/10	2/6	3/1	5/1
Crosses	each	2/9	3/3	4/1	5/6	6/7	10/6
Sockets, plain ..	each	–/4	–/5	–/6	–/8	–/10½	1/3
Sockets, diminished	each	–/6	–/7	–/9	1/–	1/4	2/–
Flanges	each	1/–	1/2	1/4	1/9	2/–	2/9
Caps	each	–/5	–/6	–/8	1/–	1/3	2/–
Plugs	each	–/4	–/5	–/6	–/8	–/10	1/3

Fittings and flanges and tubes ordered in long random lengths are subject to the following trade discounts :—

	Tubes	Fittings	Flanges
Gas	62½%	53⅓%	57½%
Water	58¾%	50%	52½%
Steam	56¼%	46⅔%	47½%
Galvanized gas	53¾%	46⅔%	47½%
,, water	48¾%	42½%	42½%
,, steam ..	43¾%	38¾%	37½%

Brasswork. Best Quality

		½″	¾″	1″
Chromium plated screw-down bibcocks, screwed for iron ..	per dozen	38/–	62/–	109/–
Ditto, with screw ferrule	per dozen	47/3	74/–	116/–
Ditto, with capstan head lettered, screwed for iron ..	per dozen	44/6	66/–	118/9
Ditto, with screw ferrule	per dozen	53/9	86/–	137/–

		Brass Screwdown Stop Cocks with Unions both Ends	Brass Screwdown Stop Cocks with Screwed Ends	Brass Screwdown Stop Cocks with Male Screwed End and Iron Unions
½″	per dozen	41/9	47/3	38/6
¾″	per dozen	65/9	71/6	59/6
1″	per dozen	99/–	107/3	92/3
1¼″	each	14/–	14/9	13/3
1½″	each	22/6	23/6	20/9
2″	each	43/9	45/3	41/9

		½″	¾″	1″
Portsmouth pattern ball valve for low pressure, screwed for iron ..	each	4/3	6/–	12/5
Ditto, with flynut and union ..	each	4/8	6/10	14/–
High pressure ditto, screwed for iron	each	3/11	6/–	12/5
Ditto, with flynut and union ..	each	4/8	6/10	14/–

		2″	2½″	3″	4″
Socket thimble sloping shoulder	per dozen	11/–	14/3	16/10	24/6

		1½″	2″	2½″	3″
Flanged ferrule thimble ..	per dozen	8/–	9/9	14/9	17/5

		½″	¾″	1″	1¼″	1½″	2″
Union joints for lead and iron ..	per dozen	8/3	11/3	15/5	28/2	46/9	101/2
Single nut short boiler screws ..	per dozen	6/6	9/9	15/9	23/–	36/3	66/–
Double nut boiler screws	per dozen	9/–	10/6	16/6	24/9	47/6	75/9
Belfast sink wastes stamped brass with brass plug diameter of outlet 2″	per dozen						19/10

Galvanized Mild Steel Open Top Cisterns riveted with internal angle iron at top and corner plates

The following prices are subject to 15% and 20% trade discount :—

		14-gauge £ s. d.	12-gauge £ s. d.	⅛″ plate £ s. d.	3/16″ plate £ s. d.
50 gallon capacity	each	2 5 11	2 14 5	3 1 7	7 0 8
100 ,,	each	3 8 9	4 2 11	4 16 9	9 10 8
200 ,,	each	6 6 9	6 19 5	7 18 3	13 1 0
500 ,,	each	12 6 0	13 16 1	15 16 3	22 6 9
1,000 ,,	each	—	21 9 4	24 19 5	34 15 4

INTERNAL PLUMBER—(*continued*)

Galvanized Hot Water Tanks, fitted with handhole cover.

The following prices are subject to 15% and 20% trade discount :—

Capacity		16-gauge tested to a pressure of 1 lb. per sq. inch = 1⅓ ft. head of water £ s. d.	14-gauge tested to a pressure of 3 lbs. per sq. inch = 4⅓ ft. head of water £ s. d.	12-gauge tested to a pressure of 7½ lbs. per sq. inch = 10 ft. head of water £ s. d.	⅛″ plate tested to a pressure of 10 lbs. per sq. inch = 15 ft. head of water £ s. d.
20 gallons	each	2 0 3	2 3 11	2 7 8	2 12 9
40 ,,	each		3 1 7	3 9 0	3 16 8
			Tested to a pressure of 5 lbs. per sq. inch = 7½ ft. head of water		Tested to a pressure of 7½ lbs. per sq. inch = 10 ft. head of water
60 ,,	each		4 19 3		5 5 5
80 ,,	each				7 5 7
100 ,,	each				8 4 5

Screwed flanges or bosses

½″	¾″	1″	1¼″	1½″	1¾″	2″	2¼″	
1/8	2/–	2/4	2/11	3/4	3/9	4/8	6/9	Extra per flange or boss.

2½″	3″	3½″	4″	4½″	5″	6″
8/4	14/3	16/9	19/3	26/11	30/1	45/1

Galvanized Hot Water Cylinders, Mild Steel Riveted throughout, without Manhole, with usual number of flanges

The following prices are subject to 15% and 20% trade discount :—

Capacity		16-gauge tested to 5 lbs. pressure = 10 ft. head of water £ s. d.	14-gauge tested to 15 lbs. pressure = 30 ft. head of water £ s. d.	12-gauge tested to 20 lbs. pressure = 40 ft. head of water £ s. d.	⅛″ plate tested to 25 lbs. pressure = 50 ft. head of water £ s. d.
20 gallons	each	1 18 7	2 2 8	2 8 4	2 15 4
40 ,,	each	2 10 11	2 16 8	3 6 1	3 15 0
65 ,,	each		4 8 7	5 1 8	5 16 1
75 ,,	each		5 1 7	5 15 0	6 11 4
85 ,,	each			6 10 8	7 11 9
100 ,,	each				8 2 5

Cast Iron Soil Pipes and Connections, L.C.C. 3/16″ metal.

The following prices for soil pipes are subject to 20% trade discount, and the prices of the fittings are subject to 20% and 5% trade discount.

		2″	2½″	3″	3½″	4″	5″ ¼″ metal	6″ ¼″ metal
Minimum weights in lbs. per 6′ 0″ length		24	30	35	41	46	78	92
Pipes coated or uncoated	per yard run	3/10¼	4/0¾	4/5¾	5/–	5/8¾	11/8	14/0¾
Double sockets extra	each	–/11¼	–/11¼	–/11¼	–/11¼	–/11¼	1/0½	1/0½
Short lengths extra 2′, 3′ and 4′	per yard run	–/3¾	–/3¾	–/3¾	–/3¾	–/3¾	–/5	–/5
Single spigot branch cast on pipe	each	4/3	4/5	4/7	4/9	4/11	7/6	9/3
Single socket branch cast on pipe	each	10/9	11/–	11/3	11/6	11/9	16/–	19/–
Bends, standard angles	each	3/1	3/5	3/9	4/8	5/3	9/4	12/9
Large radius bends	each	4/–	4/4	5/–	6/–	7/–	13/–	16/9
Inspection bends raised flange door, 4 gunmetal bolts	each	16/1	16/11	17/9	18/8	19/3	31/10	36/6
Swannecks 4½″ and 6″ projection	each	3/9	4/4	5/11	6/10	7/11	14/11	20/1
9″ ditto	each	5/–	5/7	6/10	7/11	9/4	17/1	22/10
12″ ditto	each	5/11	6/10	7/11	9/8	10/7	19/1	27/1
Single branch with two sockets. T pieces. T pieces diminishing two sockets, inverted two sockets.	each	3/9	4/8	5/7	6/6	7/6	15/10	21/8
Parallel branch pieces not exceeding 6″ centres. Y pieces. Anti-syphon branches with curved arm.	each	4/10	5/11	6/10	7/11	8/11	—	—
Double branch pieces, three sockets	each	5/11	7/–	7/11	9/–	10/3	20/3	27/3
Inspection branch pieces double oval access door, 2 gunmetal screws	each	12/11	14/–	14/11	16/6	17/9	29/2	36/2
Long branch pieces	each	5/–	6/–	7/3	8/6	9/9	19/–	25/–

CURRENT PRICES

BY DAVIS AND BELFIELD

COPPERSMITH AND ZINCWORKER, GLAZIER AND PAINTER

COPPERSMITH AND ZINC WORKER

Copper

Hot rolled copper sheeting in 1 cwt. lots, all gauges to 24 wire gauge	per lb.	–/9½
Copper tube, seamless solid drawn	per lb.	1/0¾
Copper wire, 10 and 12 gauge	per lb.	–/9¼
Copper nails, 1″ and up	per lb.	–/11

Fittings for Copper Tubes

Compression Type :	½″	¾″	1″	1¼″	1½″	2″	2½″
Straight coupling each	1/1½	1/4¾	2/0¾	2/8	3/9¾	5/7¾	14/–
Obtuse elbow each	1/10¼	2/2¼	3/3	4/1½	7/1¼	10/5¾	—
Tees each	2/1½	2/5½	4/–	5/9½	9/3	13/1½	19/3½
Crosses each	3/–	3/4¾	5/2¼	6/8¾	10/11¼	15/3	26/4¾
Reducing coupling each	—	1/4¾	2/0¾	2/8	3/9¾	5/7¾	14/–
Bends each	1/7¼	1/11½	2/11	3/8¾	6/7¼	9/10¾	14/1
Brass stop cocks each	3/11½	5/10¾	8/7½	15/11¾	22/3¾	37/8¾	—

Extra for Polishing 25%; Chromium plating 50%; Nickel plating and polishing 50%.

Capillary Type							
Straight coupling each	–/7¼	–/10¼	1/3¾	1/8½	2/3¾	3/4½	5/9
45° elbow each	1/3¾	1/8½	2/4½	3/2	4/9	7/1½	11/1
Tees each	1/5½	1/7¾	2/8	3/11½	5/7¼	8/3¾	12/8
Crosses each	1/10¼	2/0½	3/4½	4/9	7/2½	10/6	18/2½
Reducing coupling each	—	–/6¼	–/8¾	1/0¾	1/7	2/9¼	4/4¼
Bends each	1/7	1/11	2/9¼	3/9½	5/11¼	8/3¾	11/10½
Pillar tap connection each	1/–	1/5½					

Extra for Polishing 15%; Chromium plating 40%; Nickel plating 27½%.

Zinc

		Quantities of less than 3 cwts.	Quantities of more than 3 cwts.	Quantities of more than 5 cwts.
Sheet zinc, 10 gauge and up	per cwt.	33/–	32/6	32/–
		5 sheets and under		12 sheets
8 gauge zinc safe hole perforated sheets, size 8′ 0″ × 3′ 0″	per sheet	4/11½		4/2½
7 gauge ditto	per sheet	4/4½		3/9
6 gauge ditto	per sheet	3/11		3/4¾

GLAZIER

Sheet Glass cut to size (ordinary glazing quality)

		In squares not exceeding 2 ft.	4 ft.	5 ft.	Over 6 ft.
18 oz. clear sheet	per foot super	–/2½	–/2¾	–/3	–/3½
24 oz. ditto	per foot super	–/2¾	–/3¾	–/4	–/4⅜
32 oz. ditto	per foot super	–/4	–/5⅞	–/6⅞	–/7⅞
Obscured sheet glass net extra		–/1½	–/1½	–/1½	–/1½
⅛″ figured rolled glass, white	per foot super	–/6½			
⅛″ ditto, normal tints	per foot super	–/9½			
Hammered, double rolled, Cathedral white	per foot super	–/6			
Ditto, normal tints	per foot super	–/8½			

Thick Drawn Sheet Glass cut to size

		In squares not exceeding 1 ft.	2 ft.	3 ft.	4 ft.	6 ft.	8 ft.
3/16″ thick	per foot super	–/9	–/11	1/–	1/2	1/3	1/4
¼″ thick	per foot super	–/11	1/–	1/3	1/5	1/7	1/9
		In squares not exceeding 12 ft.	20 ft.	45 ft.	65 ft.	90 ft.	100 ft.
3/16″ thick	per foot super	1/6	1/7	1/9	—	—	—
¼″ thick	per foot super	1/10	2/2	2/4	2/8	3/–	3/–

For selected glazing quality add 10 per cent. to the above prices.

British or Foreign Polished Plate Glass cut to size

Ordinary ¼″ Substance In Plates not exceeding		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
1 ft. super	per foot super	1/–	1/3	1/7
2 ,,	per foot super	1/4	1/6	1/10
3 ,,	per foot super	1/10	2/1	2/6
4 ,,	per foot super	2/6	2/9	3/2
6 ,,	per foot super	2/10	3/–	3/6
8 ,,	per foot super	2/11	3/4	3/8
12 ,,	per foot super	3/1	3/8	3/11
20 ,,	per foot super	3/1	3/9	4/1
45 ,,	per foot super	3/8	4/–	4/4
65 ,,	per foot super	3/7	4/3	4/11

GLAZIER—(*continued*)

British or Foreign Polished Plate Glass cut to size—(contd.)

Ordinary ¼″ Substance In Plates not exceeding		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
90 ft. super	per foot super	3/11	4/8	5/1
100 ,,	per foot super	4/–	4/10	5/4

Plates exceeding 100 ft. super or 160 in. long or 104 in. wide at higher prices.

The usual thickness of polished plate glass is about ¼″, but if required of special thickness for glazing purposes add to the above for :—

		Plates up to and including 4 ft. super	All plates over 4 ft. super
⅛″ to 5/32″	per foot super	–/2	–/4
⅛″ to 3/16″ exact	per foot super	–/2	–/3
3/16″	per foot super	No extra	–/1½
¼″ bare	per foot super	,,	–/1¾
¼″ exact	per foot super	–/2	–/2
5/16″ to ⅜″	per foot super	No extra	–/4½
⅜″ exact	per foot super	–/2	–/6

Special quotations should be obtained for other qualities and thicker substances.

Silvering

		Ordinary Quality on Polished Plate, Thick Drawn Sheet, Patent Sheet and Plain Sheet	On Embossed or Decorative Work
12 ft. super or 90 in. long	per ft. super	9d.	1/4
20 ft. ,, or 100 in. long	per ft. super	10d.	1/4
45 ft. super } or 110 in. long	per ft. super	1/–	1/5
50 ft. ,, } or 110 in. long	per ft. super	1/0½	1/6
55 ft. ,, } or 120 in. long	per ft. super	1/1	1/6½
60 ft. ,, } or 120 in. long	per ft. super	1/1½	1/7
65 ft. ,, } or 130 in. long	per ft. super	1/2	1/8
70 ft. ,, } or 130 in. long	per ft. super	1/3	1/9½
75 ft. ,, } or 140 in. long	per ft. super	1/4	1/11
80 ft. ,, } or 140 in. long	per ft. super	1/5	2/0½
85 ft. ,, } or 150 in. long	per ft. super	1/8	2/5
90 ft. ,, } or 150 in. long	per ft. super	1/11	2/9½
95 ft. ,, } or 160 in. long	per ft. super	2/2	3/2
100 ft. ,, } or 160 in. long	per ft. super	2/5	3/8

For silvering on fluted sheet, figured rolled and cathedral, add 4d. a foot to the prices set out in the first column for polished plate, etc.

Silvering bent glass, double or more, according to bend.

For plates over 100 ft. super, add 3d. per ft. super for every 5 ft. or part of same.

Plates over 160 in. long at special rates.

Stripping for re-silvering, add 8d. per ft. super.

Wired Glass Cut to Sizes

¼-in. Georgian rough cast	per ft. super	10d.			
		In squares not exceeding 1 ft.	2 ft.	3 ft.	4 ft.
¼-in. Georgian polished plate	per ft. super	2/6	2/8	2/10	3/2
		8 ft.	12 ft.	20 ft.	30 ft.
¼-in. Georgian polished plate	per ft. super	3/8	3/10	4/2	4/6

Supplied in sizes up to 110 in. long and up to 36 in. wide.

For cutting to allow for wires in adjacent pieces to be " lined up," add 4d. per foot super.

PAINTER

White ceiling distemper	per cwt.	11/6
Washable distemper	per cwt.	60/–
Petrifying liquid	per gallon	4/6
Ready mixed white lead paint (best) 5-cwt. lots, in 14 lb. tins	per cwt.	66/–
White enamel	per gallon	25/–
Aluminium paint	per gallon	20/–
Stiff white lead, genuine English stack process, 1-ton lots, in 1-cwt. kegs	per cwt.	49/3
Driers	per cwt.	36/–
Linseed oil raw (5-gallon drums)	per gallon	3/–
,, boiled ,, ,,	per gallon	3/3
French polish	per gallon	11/6
Knotting	per gallon	16/–
Oil stain	per gallon	12/–
Varnish, oak	per gallon	10/–
,, copal	per gallon	16/–
,, flat	per gallon	20/–
Turpentine, genuine American, 5-gallon lots	per gallon	3/3
Creosote, 1-gallon lots	per gallon	1/4
Putty	per cwt.	13/–
Size	per firkin	3/6
Best English quality gold leaf, 23 carat	per book	2/4½
Extra thick, ditto	per book	3/6