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

THURSDAY, NOVEMBER 28, 1940. NUMBER 2393 : VOLUME 92

PRINCIPAL CONTENTS

Owing to the paper shortage the JOURNAL, *in common with all other papers, is now only supplied to newsagents on a "firm order" basis. This means that newsagents are now unable to supply the* JOURNAL *except to a client's definite order.*

To obtain your copy of the JOURNAL *you must therefore either place a definite order with your newsagent or send a subscription order to the Publishers.*

THE ARTS CLUB

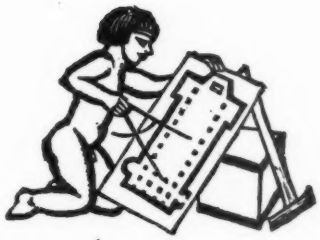
One of the most famous corners in London after recent damage by a German bomb. Some notes about the Arts Club, which has a large architectural membership, appear overleaf.

THE ARTS CLUB

There are only two or three real art centres in London. Each of these has its own peculiar character and represents its own particular brand of art. The Arts Club is one of them, perhaps the chief one of them, representing as it does what may be described as the art of the Royal Academy. But though many of its members are R.A.s, its membership is not confined to such, for it is the club par excellence *of architects, sculptors, engineers, and even poets. It is one of the most pleasant and intimate of clubs. All those who have the privilege of membership or have visited it as guests retain a great affection for it, and much art and history has flowed, so to speak, over its bar since the days of Algernon Charles Swinburne, one of its early members.*

The building itself, which recently received a direct hit, was taken over from the Lord Stanley of Alderley by the Arts Club in 1896. One of its greatest charms was its very perfect club plan, and the room shown on the previous page has probably seen more art and architectural history made and more art and architectural scandal discussed than any other room in London.

From the photographs it would seem that the building is a total loss, but, in fact, certain parts of the club are little damaged, and it is even possible not only that the Arts Club will continue as a club, but that the club will continue to use what remains of its old club-house.



MR. BLANQUE LOOKS BACK

A GOOD many architects who felt very gloomy a year ago were wise enough to count their blessings. And those who did so found that one of the worst sinking sensations to which they were professionally liable had vanished for the duration. Not until peace came, could they again be subjected to the succession of awful experiences which had always followed a stereotyped conversational opening.

"Janet tells me, Mr. Blanque," the ghastly phrases ran, "that you are an architect. Now, I want *your* opinion . . ." At the sound of that sentence and a half, the sun has died (for architects) off numberless tennis courts, sherry has turned to acid, a hundred pleasant rooms have become Gestapo basements.

And, when one looks back to those days of peace, the victim's methods of defence seem as stereotyped as the attack. The unhappy man chose always one of three. The repetition of "very nice" in varying pitches in a nightmare search for a ring of sincerity; the mock self-abasement—"Well, architects are very odd creatures, so you mustn't take *my* view . . ."; and, third, came the *loyal-to-the-last* (or medical practitioner) stand—"Yes, Mr. So-and-So (the architect concerned) is a most capable man."

The method chosen did not, of course, affect the outcome in the least. The hostess always tripped back to her friends with a gay little smile and said: "Mr. Blanque has been *so* polite . . . But I can see he doesn't really like . . ." And everyone looked at the architect as though his manners were much in question.

Yes, last autumn architects must have realized that one real terror had been lifted from their lives for quite a long time. But those who suspected that its place would not remain unfilled for long were quite right. The last six months have proved it. From last June onwards every architect has become a marked man—every one of them has become, willy nilly, an A.R.P. consultant.

The new rôle has, of course, one great advantage. An architect may now be asked whether the shelter wall blends nicely with the rockery, but that is about as far as TASTE can become mixed up with A.R.P. And it is reflection on her taste, however strongly denied, which no woman of spirit can forgive.

But the removal of this worst spike in the architect's burden has been offset by added weight. In the days of peace it was only acquaintances who asked for architects' opinions on their houses or *décor*: close friends and relatives never dreamed of doing so. After the fall of France, the architect as A.R.P. consultant enjoyed no such immunity. Friends, relatives, remote in-laws looked over their pass-books and got into touch with Cousin Blanque. Correspondence pattered through the letter-box, and offers of week-ends in Devon and Lincolnshire (train fare unpaid) accumulated in heaps.

Sylvia, Blanque read (if his wife was too smart to be made to read it for him), had an ammunition dump four miles north and something funny in a field five miles east: where should the children go? Arthur (who may have been the fat one at Sylvia's wedding) had wedged up his storeroom floor himself and wanted to know what to do about a monstrous bill for replacing floorboards. Blanque, and all architects who believed in helping others, need never have had an idle moment from July on. At week-ends there was always a new shelter to see and during the week Blanque was better informed about the effect of the war throughout the country than ever he would have believed possible. And unless Blanque managed to vanish without trace, he certainly built some shelters for relatives and friends—shelters which had a good deal in common. None of them was properly damp-proofed—the owners, disregarding standing water all around, were certain it was not necessary. All of them were a tight fit for the household they served. ("Nanny is leaving soon and James is away in the daytime.") And the owners of all of them were so crippled by taxation that the payment of full fees was absolutely out of the question.

It is warming to think that now, at the beginning of a wet winter, Blanque does not lack reward for his exertions. If Blanque lives near Hampstead it is very clear to him that from the way Hitler is crouching about to spring on Bideford, Alnwick, Guildford, Grantchester, West Wycombe, Harrogate and Musselburgh, that the Blitz on London and Merseyside cannot be long continued.

Nor does the reward of his labours and all the letters his wife has written stop there. When the sirens have wailed over London, Blanque can think of Sylvia flocking to the coach-house, Arthur wriggling through his hatch and all the groups at Guildford, Harrogate and the rest going through motions which he had so largely prescribed. The sense of power is tremendous.

And at thoughts of Alice, a vulgar woman, choosing between the terrors of a Cambridge night and two feet of water in her shelter, and of Rupert (who married money) skidding to his costly but bunkless funk-hole through 80 yards of landscaping, Blanque's sense of power grows greater. They had all been warned.

The Architects' Journal
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NOTES & TOPICS

SHELTERS AND HEALTH

LORD HORDER'S Committee on conditions in shelters collected its evidence and made its report* with a speed that was greatly admired by the public. And that admiration was increased by somewhat tart reminders from Lord Horder during the following weeks that unless the Committee's recommendations were carried out at once much of their value would be lost.

*

Last week a statement was issued that most of the recommendations had been put into operation "several weeks ago," and that the remainder were being vigorously followed up. That this statement should have been something of an *apologia* shows how efficient a committee can be when its members know their job and will stand no nonsense. And one must also remember that the Government appointed Lord Horder's Committee.

*

The recommendations of the Committee—which were concerned mainly with questions of health—fall into two divisions: those which deal with the avoidance of conditions which are specially dangerous to health, and those which are aimed at minimising the dangers where they are unavoidable.

*

The Committee's chief concern is to avoid large gatherings of people in any shelter. They suggest this should be done by improving the equipment and amenities of small shelters and by vigorous propaganda to induce people to use them. Bunks, curtaining, lighting facilities, some measure of privacy for families, and the reservation of a particular position for each family are methods advocated for popularizing communal surface shelters. It is suggested that the reason for the declining use of Anderson shelters should be examined.

*

Second, the Committee advocates the evacuation of the aged and sick and children—including those under five. Third, they urge a survey of all self-chosen shelters, and the scheduling of them according to their degree of safety, and of all other buildings which might provide additional shelter accommodation at night.

*

To diminish the risks to health in large shelters already in use, the Committee puts forward a number of recommendations, covering bunks, sanitation, heating and ventilation, medical aid and personal behaviour and cleanliness, which would immeasurably improve present conditions.

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THE NEXT STEPS

There is no doubt the Committee has set the Government a tough job. And this job is worth examining, for it closely concerns building.

*

The reason why the inhabitants of closely populated districts don't like Anderson or brick surface shelters is chiefly because they don't feel safe in them. Apart from stories of direct hits, this feeling of insecurity arises from the noisiness of such shelters. This is obstacle No. 1 to any scheme for popularizing them.

*

Obstacle No. 2 can be appreciated by anyone who tours Anderson or surface shelters on a dull afternoon after heavy rain. The shelters are very damp, very dark, very cold, piercingly draughty and have no facilities for sleeping.

*

Both these obstacles must be removed if people who have to put up with the Blitz every night are to prefer surface shelters to the safety, warmth, light, dryness and gaiety of Tubes or places which they think are as safe.

*

The first obstacle cannot be removed. There is no practicable means by which existing surface shelters can be made sound-proof. But the potential occupants of such shelters would be much more inclined to grin and bear Blitz noises if the shelters were lighted, had bunks and were dry.

*

It is dryness which is going to be the most difficult achievement. Mr. Herbert Morrison's recent remark—"I have yet to meet the man who can cure damp in shelters"—invites the rejoinder that damp is likely to be present in any structure where no precautions whatever have been taken to exclude it. And this applies to all surface shelters.

THE CHILDREN AND EVACUATION

Just before the Horder Report was published and at a time when several newspapers were commenting on the 50,000–100,000 London schoolchildren (no one knows exactly how many) who are now running wild without attending any school, I visited one of the school camps of the National Camps Corporation.

*

It was a Sunday at about 3 p.m. when I arrived, and parents who had come down for the day from north-east London were loading back into charabancs, attended by sons who showed all that painful awkwardness of attending on parents in circumstances of such publicity which one remembers so well. It was a sunny day and the Canadian cedar buildings, picked out in white and blue, may have

* Published last week as a White Paper. H.M. Stationery Office. Price 2d.

looked their best. But, when one recollected what the war is now costing each day, it seemed both tragic and ridiculous that only about thirty of these school camps have been built.

*

The accommodation at this camp is not, of course, ideal. There is sleeping room in double-tier bunks for about 300, but only four class-rooms. And the lack of cover between buildings results in 180 boys getting themselves unbelievably moist in wet weather. But none of the staff expected ideal conditions and they have adapted both teaching methods and subjects to the new conditions.

*

For instance, the boys came from an urban district, and in order to interest them in their new surroundings the staff organized a local survey. A model of the adjoining small town and surrounding countryside was made to scale, every farm and field was plotted, its history was read up and recorded in pictures, and all its local industries were sorted out. It says something for the imperturbability of local householders that a good proportion of them took part in this new education to the extent of filling up a questionnaire which included such questions as : " What do you dislike most about living in —— ? "

*

By this survey, which has most justifiably won a national prize, the school has accumulated enough material for really interesting history and geography and many other lessons until the end of the war.

*

It may now be impossible to build camp schools for children who are evacuated or have still to be evacuated. But it might be possible to build " school centres," each of three or four large huts, at which urban children billeted in rural areas could obtain some, if not all, of the benefits of a camp school—and in particular be properly introduced to a rural life. They can obtain neither when playing Box and Cox with other pupils in some overcrowded rural school, nor when playing in London Tubes.

RECORDS OF BUILDINGS

Last week the R.I.B.A. held a meeting to consider how best to collect drawings, photographs and other records of buildings of merit which either have been, or are very likely to be, damaged by enemy bombing.

*

A large number of interested societies were represented and a sub-committee of the President, R.I.B.A., Sir Kenneth Clark, Mr. Walter H. Godfrey, chairman of the Architectural Graphic Records Committee, and Mr. J. E. M. MacGregor was appointed to draw up a scheme and submit it to Lord Reith.

*

The desirability of a record of the kind contemplated is beyond question. Its immediate usefulness for purposes of propaganda is obvious : for it would enable the news photographs of the Ministry of Information to be supplemented by Before and After photographs for the generality and by informed obituary notices, accompanied by all relevant illustrations, for architects and others interested throughout the world.

*

But it would also be a collection both of great historical and great architectural importance. Skilled photography soon after damage occurred would reveal many details of constructional method and technique which might be no longer there when architects in general have again time to think of them.

*

The immediate problem is how the necessary organization can be set up. To cover all the buildings and groups of buildings which architects would like to include is clearly impossible. But it ought to be possible to compile a record of the best which has been damaged or is in greatest danger. Towards this, one man possessing knowledge and enthusiasm could go a great way with the aid of a very modest grant. And most architects would find no difficulty in agreeing who that one man should be.

HOUSES

On the brow of a hill I met an acquaintance gazing wistfully at the pink sprawl of residential neighbourhoods and other built-up areas, to which the names " town," and even " city," are still misappropriated. " It must be hard," he said, " to resist dropping a bomb in that." He then launched against the small house in general a verbal salvo or " stick " of greater penetrative power than I have met for some time. When I mildly remarked on the convenience for children to be able to be in a garden within easy reach of their mothers, he replied : (*a*) That with proper flats there are special people to look after children in the common garden, though at present only wealthier or lucky parents have such flats ; (*b*) that even in terraces of small houses and gardens, the children play in the streets. The field of those who really need a garden next the house thus seems to narrow down to those children between the ages of one and three or so whose mothers' care the community cannot or will not at present afford to replace for a few hours in the day. This class should disappear in time.

*

I make no apology for pointing out again that the proportion of people requiring different sorts of housing need be no longer a subject for speculation or dogma. It is one of those questions which an old-fashioned engineer-builder friend of mine calls " a matter of opinion." He applies this phrase in a voice of unanswerable wisdom to any question which neither has been answered in his practical experience nor can be answered *a priori* : but which could in fact be settled in most cases without difficulty by, say, the Building Research Station. The methods and apparatus required for the investigation of the housing question are more elaborate and need some co-ordination. But they exist.

NEW DEPARTURE IN DESPERATE REMEDIES

" Though Bristol has not yet secured sanction for the erection by the Corporation of timberless houses, efforts are still being made . . . to find a design of which the Ministry of Health will approve.

" A design submitted some while ago, with pitched roofs, was turned down, apparently on the question of cost.

" It is now hoped to meet this with a flat-roofed type.

" While this design might not find favour in normal times, so urgent is the need for houses becoming in Bristol, that it is felt something will have to be done."

Bristol Evening Post. 4/10/40.

*

Sad, when we were getting so rapidly away from those abnormal times which affronted this city with the clean-cut skylines of Clifton and the earlier squares and terraces to which Bristol owes much of its character.

ASTRAGAL

NEWS

WORKS AND BUILDINGS: PARLIAMENTARY SECRETARY

The King has approved the appointment of Mr. George Hicks, M.P., as Parliamentary Secretary to the Ministry of Works and Buildings, of which Lord Reith is Minister. Mr. Hicks, who has been general secretary of the Amalgamated Union of Building Trade Workers since 1921, has been released from these duties to undertake the new appointment.

HEALTH IN THE SHELTERS

The recommendations of Lord Horder's Committee regarding "the conditions in air-raid shelters with special reference to health and a brief statement of action taken by the Government thereon" were published on November 19 as a White Paper (Cmd. 6234, price 2d. net). Urgency limited the inquiry of the Committee, in the first instance, to London. The recommendations have been accepted by the Government and were put into operation several weeks ago. Those of special interest to architects are printed below, followed by notes on the action taken.

I. To effect the utmost degree of dispersal so as to deal with the crux of the problem, which is overcrowding, domestic and communal shelters should be popularized by :—

(i) Publicity as to the degree of security afforded in comparison with that provided by the larger shelters ;

(ii) Demonstrations in every borough of the possibility of adapting them to the use of family life, and especially during the night, again with due publicity ;

(iii) Similar demonstrations and publicity in respect of the Anderson shelter. Since the Blitzkrieg it has, quite unjustifiably, lost some of its popularity. In this connection the borough should see that these shelters are properly covered.

Publicity on all these points has been secured by Ministerial broadcasts, statements in the Press, and demonstrations. Instructions on the subject have been issued to all Regions. A widespread publicity campaign will shortly commence.

(iv) The provision by the borough of such amenities as light and the means of hanging entrance curtains on doors. The possibility of some form of "bunking," especially for infants, should be explored.

Lighting, bunks, and sanitation are now being provided in communal (as well as public) shelters. In the Anderson shelters measures are being taken to encourage the installation of bunks.

(v) Allocating the communal surface shelters to specified residents who should be entitled to regard them as their own (and who, if there are doors, should be provided with keys).

All Regions have been informed that local authorities should encourage residents to use communal shelters regularly as their own, so that certain families resort regularly to the same shelter. In many districts this is now the regular practice.

II. Examination should be made of self-chosen shelters with a view to scheduling them if the standard of protection and hygienic safeguards can be secured.

Regional technical staffs have been asked to make a special point of such examination, and active work is far advanced.

III. A re-survey should be made in all boroughs with a view to finding further shelter accommodation likely to appeal to the people ; e.g., basements, railway arches. In this matter the possibility of pooling the resources of adjacent boroughs should be examined.

This survey is at present being undertaken, and much additional accommodation has already been secured.

IV. In cases where the shelters of factories and commercial buildings are not in use at night, these should be requisitioned by the local authority for public use during the hours of closure.

A new Defence Regulation has been made to give the necessary powers to ensure that this is done ; and a considerable number of shelters has already been made available for night use by the public.

V. The possibility of using the Tube system for shelters during the night should be considered, provided that this does not interfere with traffic.

The Tube system is now widely used for shelter.

VI. In order to reduce the strain upon shelter accommodation certain classes of persons whose inclusion adds to the difficulty of supervision and increases the risk to health, and who are a serious encumbrance in the presence of an incident should, as far as possible, be evacuated. These classes include the aged, the infirm, and the bedridden.

Some 4,000 aged, crippled, and infirm persons frequenting the London shelters and requiring active medical attention or nursing have already been transferred to Emergency Medical Service hospitals in the country, and more will be so transferred.

VII. The Government schemes of evacuation now operating should be vigorously pursued and should be extended to include children under five.

These schemes are being operated with vigour and have been extended to cover mothers with children of school age or under in the County of London and the county boroughs of East and West Ham. In addition, some 4,500 children under five who could not be accompanied by their mothers have been accommodated in residential nurseries in the country, and billets with householders have been found for about 1,500 more.

VIII. Shelter marshals should be appointed as part of the Warden Service. They should be whole-time paid officials, women and men, with duties defined by the Regional Commissioners.

A number of paid shelter wardens have been appointed in London and elsewhere. Many shelter wardens are serving voluntarily.

IX. The local authorities should be authorised to provide adequate sanitary equipment within the shelter and where necessary, to engage extra staff for the regular and proper cleansing of the shelters and for the disposal of the contents of the containers.

Instructions have been given to provide adequately equipped shelter closets and to employ extra staff, where necessary, for the regular and proper cleansing of large shelters and for the disposal of the contents of containers.

X. Regular inspection of the shelter should be made by the Medical Officer of Health and his staff.

Instructions have been given to the appropriate authorities in the London Civil Defence Region for the regular and frequent inspection of shelters to be carried out by the Medical Officer of Health and his staff. Where necessary, additional staff is being engaged for this purpose. Similar instructions have been issued to the Regions outside London for the application of these arrangements where required in their areas.

XI. The provision of first-aid points in large shelters should be encouraged.

Instructions have been given to the appropriate authorities in the London Civil Defence Region to provide for the attendance of doctors and nurses in the large shelters ; and for the provision of medical aid posts in these shelters. Similar instructions have been issued to the Regions outside London for the application of these arrangements where required in their areas.

XII. Simple instructions should be posted in every shelter covering ventilation, proper usage, personal behaviour, and cleanliness in order to evoke a sense of personal and corporate responsibility from every individual.

Local authorities in the London Civil Defence Region have been asked to issue instructions to shelter wardens. A leaflet of advice and instruction for persons sleeping in shelters has been prepared and will shortly be issued.

XIII. (*a*) Beds and bunks should be allotted to the medical aid post at the rate of two beds and three three-tier bunks for every 500 persons in the larger shelters. These bunks should be placed so as to allow expansion of the post if necessary. There should be the same allocation for a group of contiguous smaller shelters.

(*b*) The medical aid post should be large enough to allow of screening-off patients for simple medical examination.

The foregoing recommendations, together with a schedule of equipment and drugs for medical aid posts which was prepared by the Committee, are incorporated in a circular of instructions which has been issued to the appropriate authorities in the London Civil Defence Region. Similar instructions have been issued to the regions outside London for the application of these arrangements where required in their areas.

XIV. Bearing in mind that the most urgent part of the shelter problem is the need to find adequate protection for the people at once, it is utopian to expect that the standards of cubic air-space per person usually quoted can be fulfilled, at least to begin with. Moreover, any standard to be aimed at is known to vary with the degree and type of ventilation, heating, etc. Wherever possible, however, the standard which the Ministry of Home Security is at present advising, viz. : 50 cubic feet per person for naturally ventilated shelters, might be followed until the present position of overcrowding is eased ; the whole question should then be reconsidered.

The hygienic risk attaching to the acceptance of a lower standard of air capacity than is desirable would be mitigated in proportion as full use is made of whatever means of ventilation exists. This involves the issue of specific instructions to shelter marshals and adequate control of these persons by the authorities responsible for their appointment.

The Committee is of the opinion that a dominant factor making for general discomfort and air pollution by smell is the presence in the shelter of closets, and recommends that wherever possible the men's closets should be placed outside the shelter proper.

Steps already taken to mitigate overcrowding and to improve the sanitary conditions of shelters have been noted under I, II, VI, IX, and X above.

XV. The two questions of ventilation and heating are closely inter-related. The ideal solution would be "air conditioning," but as

this is not practicable, ventilation by natural means must be assumed.

There are objections to heating the majority of shelters during their occupancy which outweigh the advantages. The use of coal and coke entails dangers from fumes. Gas and electricity are subject to interruptions, and have their own special dangers.

These recommendations are accepted and further investigation is being made into the possibilities of heating surface shelters.

ERIC GILL

An Appreciation
By John Gloag

ERIC GILL was the happiest man I have ever known. He was also one of the clearest thinkers, and a most talented artist. He was an accomplished master in many fields of creative work ; and his diversity expressed a fundamental simplicity of purpose ; for it could be said of him what can be said of few men in this age, that he lived a full life, devoted wholly to the pursuit of truth and beauty. About most men, such a statement might merely seem a sententious or conventional tribute ; but those who knew Eric Gill, even slightly, will acknowledge that it represents no more than the facts.

His time was occupied with congenial, creative work ; he was spiritually reinforced by a philosophy in which, many years ago, he had discovered an answer to his spiritual needs. His beliefs were perhaps the secret of his great serenity. With the wickedness and woes of the world at least accounted for in his own mind, he was free to give his whole life to making, with hands and brain, contributions that would help to restore to his fellow men their waning appreciation for beauty and simplicity.

As a sculptor, he was a true descendant of those mediæval artists who could be devout, fierce, exciting or light-hearted, in stone. His work occasionally provoked controversy, but it was never attacked by people with any pretensions to intelligence or education. The silly storm of protest aroused by some male Mrs. Grundy over his delicately-beautiful group, Ariel, above the entrance of Broadcasting House in London, was based, not on any fancied crudity or ugliness in the sculptor's work, but upon the fact that one of the figures was not wearing trousers, or at least a loin-cloth.

As a type designer, Eric Gill has left a permanent mark upon contemporary typography. He invented the clean, austere sans serif type which is associated with his name. He also created Perpetua and Bunyan. His first love was lettering, and for nine years all his time was occupied in the cutting of inscriptions. He was, in fact, a monumental lettering craftsman.

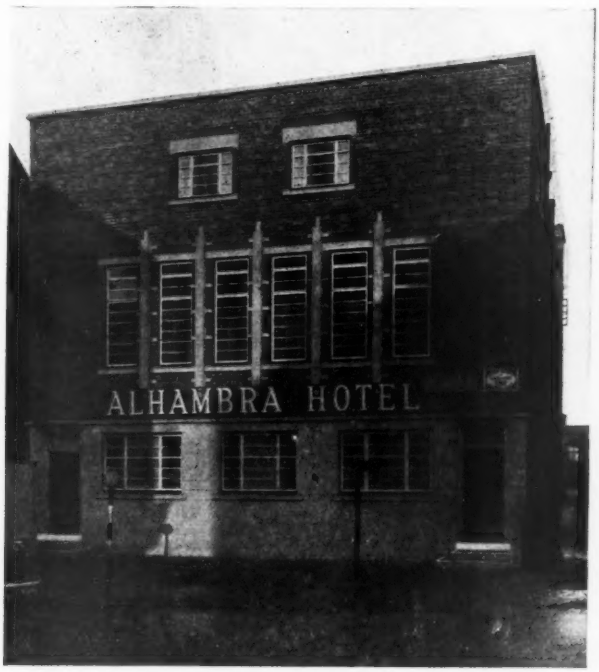
He was an incisive, vigorous book illustrator, producing the most vivid woodcuts and line engravings. As a writer, he had a crisp, robust style. As a man, he was intolerant of all the hooey that is talked about art, and his book of essays on *Art Nonsense* is a grand tonic, and an antidote to the poisonous tosh talked by some professional critics. This also applies to one of the best books he ever wrote, *Beauty Looks After Herself*.

He was an A.R.A. ; one of the first R.D.I.s ; and an Hon. A.R.I.B.A. His gifts, and the position that he held in contemporary art, were unique. No one now living even remotely resembles him in character or capacity. His array of accomplishments suggest the mediæval, or rather the Renaissance artist-craftsman ; for he was one of those rare men of genius who can achieve distinction in many of the arts, not because of any slick facility, but because of innate greatness, infinite patience, and shining faith.

ALHAMBRA HOTEL, BARNSLEY

DESIGNED BY
J. COULSON BACKHOUSE

Before and after alteration.



GENERAL—This was an old, but busy, hotel in a bad state of repair. The brewery company therefore decided to rebuild it and to change the name from "Melbourne" to "Alhambra." Clients' requirements included : a large concert room, with stage and artistes' room, a lounge on the first floor, seven bedrooms and two bathrooms. The Corporation stipulated that no windows should be placed in the west wall, which adjoins a 3-ft. passage.

PLAN—It was decided that the bars on the ground floor must be centrally placed with access from one to the other, and that the concert room entrance should be planned on the public bar side, with the lounge and snug on the other side. The living-room and kitchen are on the wrong side for sunlight but, owing to the restrictions on windows to the west, it was decided to waive this. The clients also required the lounge to be a large room with access from the living quarters as well as the public entrances.

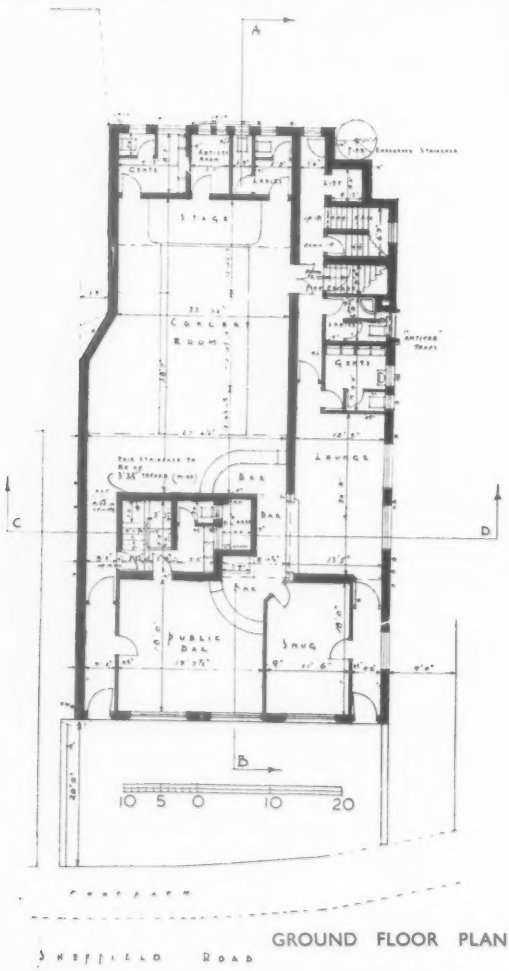
CONSTRUCTION AND EXTERNAL FINISHES—Brick and concrete foundations with 18-in. walls, and 14-in. and 11-in. brick walls, rustic faced, above ground level on the east, west and south sides. The internal walls are 9-in. and 4½-in. common brick walls, and in places steel stanchions. Floors are concrete with B.R.C. mesh and carried on girders. Partitions are of concrete slabs. Roofs are of concrete with asphalt finish. External walls are faced with multi-coloured bricks; mullions between the first floor windows were carried out in Girling stone.

INTERNAL FINISHES—Paint is used throughout for decorations—in bright colours—with designs painted on the walls of the concert room and lounge. Floors of public rooms, staircases and passages are of rubber; elsewhere, they are finished in linoleum. Bars have woodwork to match counters. The first floor lounge is carried out in sycamore, the ground floor in mahogany and the public bar in oak. The snug walls are lined with ash with ebony strips, with concealed lighting at the cornice level. The shelves behind the bars are glass with a peach backing with floodlight effects. Settees and chairs are used in the place of seating in the upstairs lounge. Each bar has roller shutters and removable mullions.

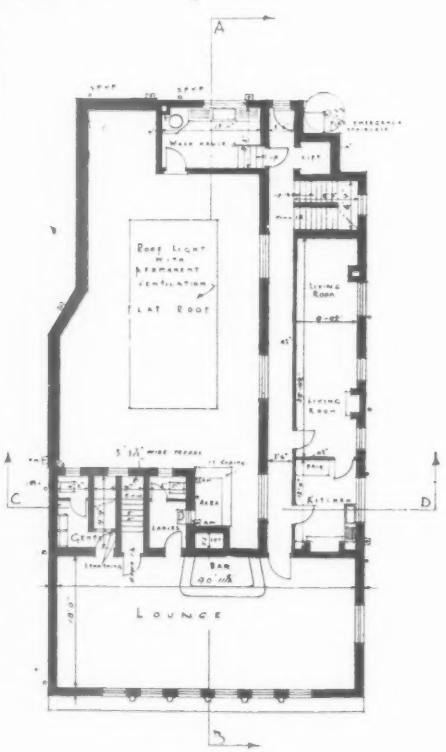
SERVICES—Beer cases are brought from the cellar on the service lift behind the public bar and lounge. A passenger lift is installed. Heating is by radiators from a Beeston boiler and domestic hot water boiler. Mechanical ventilation is used in all rooms, the plant being fixed on the concert room roof. Coal fires are fitted in the kitchen and living-rooms. A gas refrigerator is used in the kitchen for tenants' food and beer cooling plant is in the beer cellar.

COST—£14,000.

General contractors were C. W. Squire and Son, Ltd.; for list of sub-contractors see page xii.



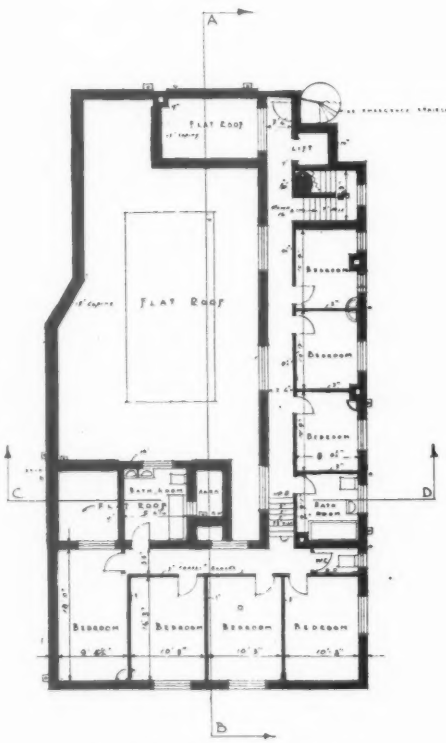
GROUND FLOOR PLAN



FIRST FLOOR PLAN

ALHAMBRA HOTEL, BARNSLEY

Above, the lounge, first floor; right, top, concert hall; centre, "snug" bar; bottom, ground floor lounge.

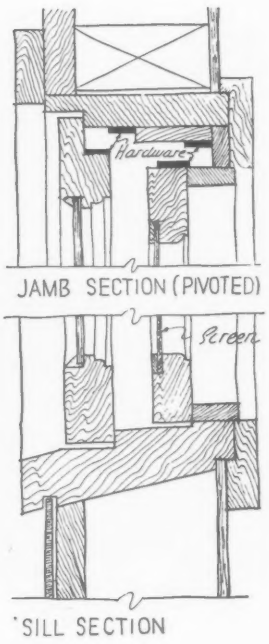


SECOND FLOOR PLAN

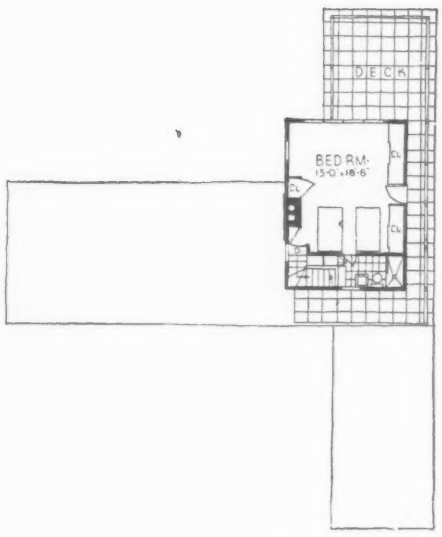
BY J. COULSON BACKHOUSE

HOUSE, HOBE SOUND, FLORIDA

View from the east



GROUND FLOOR PLAN



FIRST FLOOR PLAN

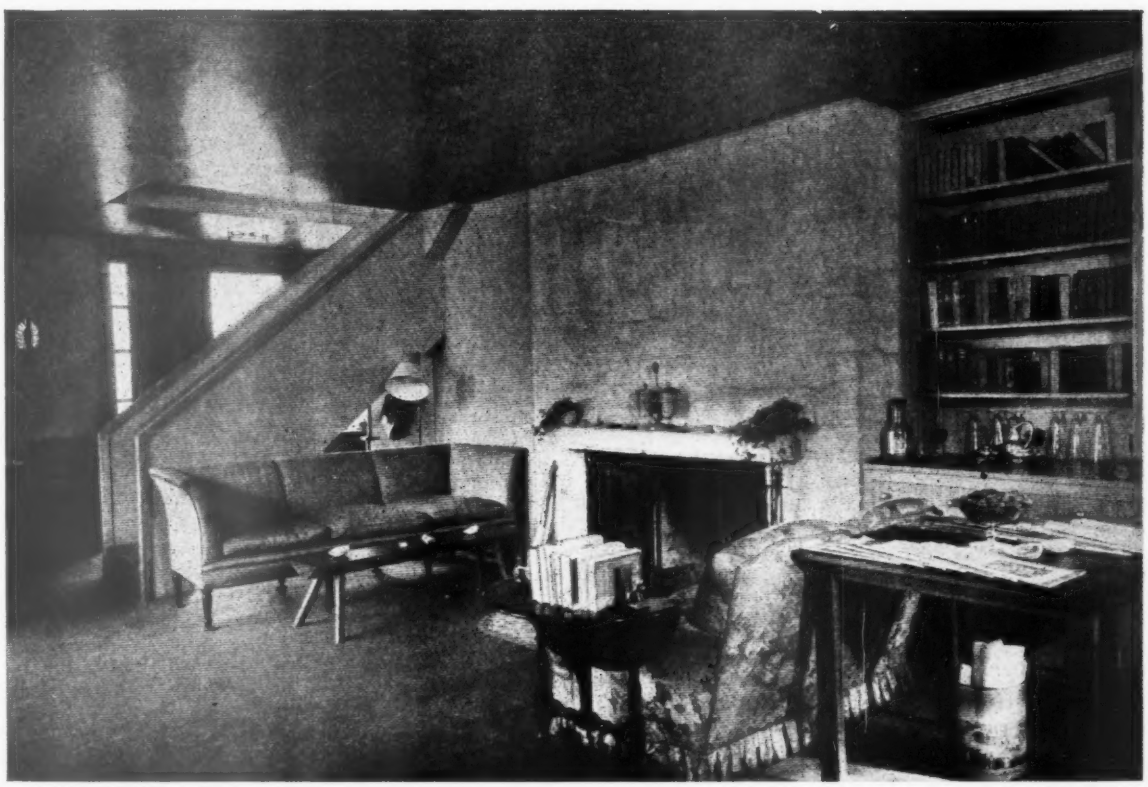
CONSTRUCTION AND FINISHES—Foundation : concrete blocks. Structure : timber framed, sheathed with boarding and finished with overlapping asbestos-cement strips. Floors : wood joists ; sub-floor, pine finish ; ceiling, plywood. Roof, asphalt. Windows : sash-top hung, cypress.

INTERNAL FINISHES—Stairs : risers, pine ; treads, oak ; balustrade, plywood. Floors : bedrooms and halls, pine ; remainder, linoleum.

The illustrations of this house are reproduced from the September issue of "The Architectural Forum."

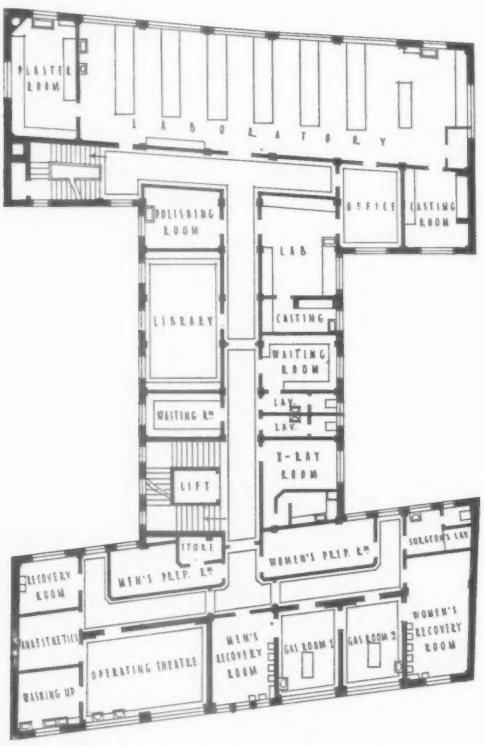
DESIGNED BY WILLIAM NAMBY

The garden front from the east

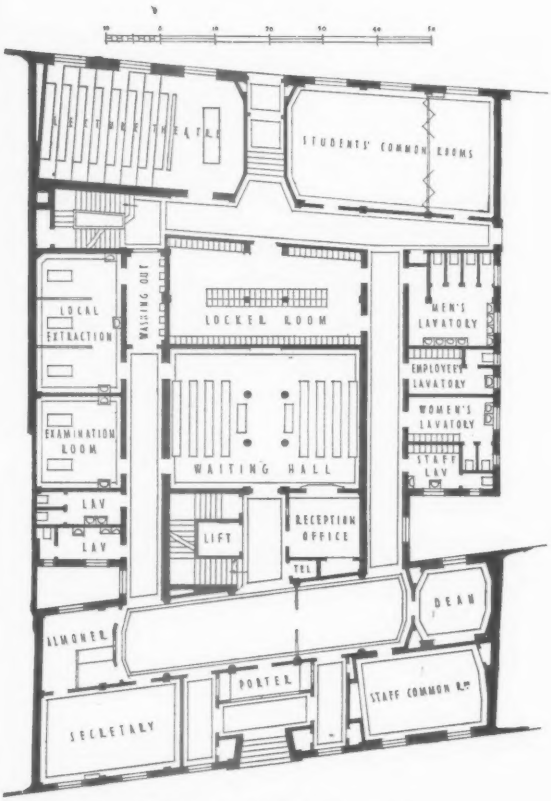


Living-room

DENTAL HOSPITAL,



FIRST FLOOR PLAN



GROUND FLOOR PLAN

PROBLEM.—Building to house the Dental Department of a college.

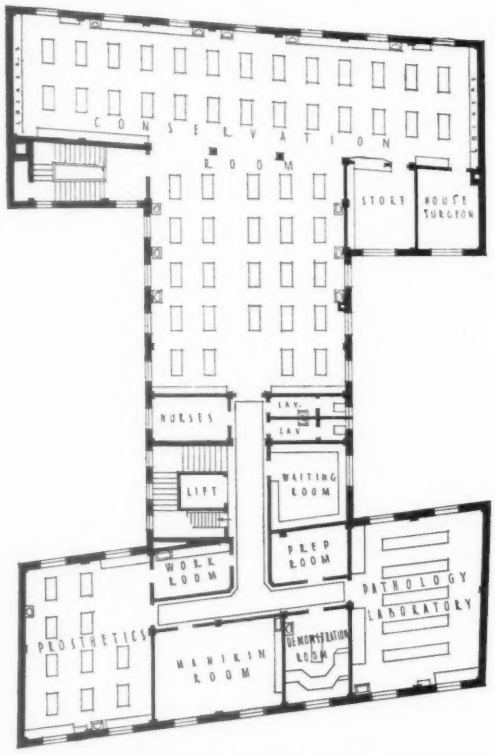
FINISHES—The exterior is faced with multi-coloured bricks, with Portland stone dressings on the front elevation. The entrance has anodised aluminium lettering and grille. There is a car-park and an air-raid shelter. The interior has been designed to provide well-lit accommodation which will afford a cheerful atmosphere for patients. Corridors are floored with rubber composition for quietness and the walls have terrazzo dados. There are flush teak doors throughout and teak floors to rooms.

SERVICES—Heating is by low-pressure hot water with automatic stoker coal-fired boilers.

General contractors were Willcock & Co., Ltd.; for list of sub-contractors, see page xii.

GLOUCESTERSHIRE

DESIGNED BY EUSTACE H. BUTTON



SECOND FLOOR PLAN

Photographs show—1 : local extraction room ; 2 : entrance hall ; 3 : conservation room ; 4 : patients' waiting room ; 5 : staff common room ; 6 : lecture theatre ; 7 : students' laboratory ; 8 : students' common room ; 9 : operating theatre.

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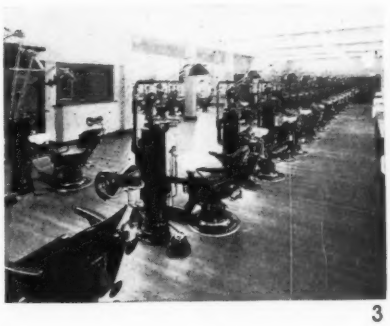

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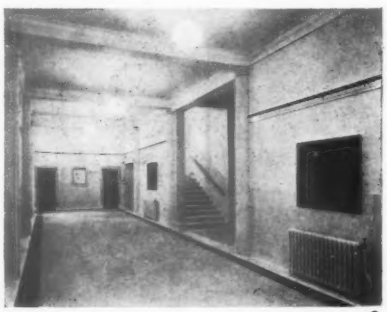

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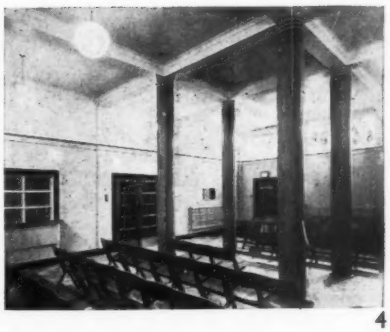

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LETTERS

C. A. BRANSGROVE
ERNEST A. NEWTON

Public Relations

SIR,—It has been said that it takes a common antagonism to produce in men that unity of purpose which makes for collective action. This war (or any war) conceals behind its dark ugliness the proverbial silver lining — the common denominator! The problem that is even now being solved is social revolution in a nation temperamentally adverse to change and thereby obstructive of evolution. No thinking person will deny the existence in our present social system of far too many evils. Tolerated by an amiable community in times of peace, these evils become a veritable thorn in the side of a war-angered nation.

This general observation is analogous with the affairs of the profession. It is only now under the chastening lash of war that the temperate, sham-efficient respectability of the R.I.B.A.'s policy has penetrated the apathy of many of its members. It has provoked even the lenient pen of THE ARCHITECTS' JOURNAL to open condemnation. While endorsing the allusion in the Editorial of November 7 I would go further, and assert that that section of the Royal Institute which is entrusted with the safeguarding of its members' interests has for years quite nullified its influence. For many members the Institute's only real significance is an excellent library. How much less significant is its position likely to be after the war. In spite of endeavour by the enlightened section of the profession to redeem architecture from its Victorian stigma, our statesmen are still unaware of the meaning of the word architecture, and Mr. Attlee yet finds himself vaguely disposed to dissociate architecture and good building.

On each new issue the R.I.B.A. displays an ever-increasing impotence, an ever-diminishing initiative and an everlasting complacency. Is it not intolerable that the principal representative body of a profession so necessary to social service should be so impotent that the country can find no place for it at a time when the science of building is of such vital importance to the survival of the nation? When, faced with the urgent necessity for the services of architects, the Government broadcast an appeal to the profession, why was the R.I.B.A. unable to ensure proper remuneration or any guarantee of continuous service for its members?

The President's pathetic letter to *The Times* on October 7 apropos the Ministry of Building is a pungent example of the ineffectual flounderings of an anæmic, albeit learned, society in a violently struggling world. It doubtless provoked many a cluck of approval from the marble busts (and their living counterparts) at Portland Place; perhaps a reproving frown or two at the shocking allusion to the immortal Acropolis; but for the earnestly-sweating, third-year Student, wrestling with the theory of structures amid their chaotic destruction, to the still uncrushed "Architect in Exile" assaulting with patriotic fervour the stone wall of the Civil Service—it produced a sensation akin to nausea!

Even the ill-conceived *Journal*, published at the expense of three-dozen-odd pages of advertisements, is received by members so infrequently that its intentions (sic) and announcements are often out of date before their publication.

A closer relationship with the structural and civil engineering professions has always been urged by those of us who are clear minded enough to see the absurdity of this "splendid isolation." Is it not eminently possible that these professions will ABSORB us? Is the R.I.B.A. aware that this absorption has, in fact, already taken effect in certain Government Departments? Can it appreciate the significance of this, with its head in the clouds, deliberately refusing to concern itself with mundane necessities of its members?

These are questions which we must be prepared to answer—and answer quickly. We must not stigmatize ourselves in the eyes of posterity by permitting a continuance of the musty traditions of the present R.I.B.A. policy. The architecture of the future is in our hands. Don't let a bewhiskered pedantry come between us and our opportunity!

C. A. BRANSGROVE

[*From Mr. Bransgrove's letter it does not seem to be clear whether he writes as a member of the R.I.B.A. or not.*—ED., A.J.]

Shelter Policy

SIR,—Is it not possible, nay, probable, that the differences of opinion between the JOURNAL and Messrs. Tecton evident in your issue of October 31 are due to such concentration on both sides as to lead them into a forest where wood cannot be seen for trees?

The true solution of any problem must by its obvious and apparent simplicity gain universal approval, and anything less than this true solution, or any differences between experts, must be caused either by omission, or misinterpretation of part of the programme of factors involved.

If this present Government policy is agreed to be inadequate, or has been allowed to slip into chaos, as alleged by Messrs. Tecton, the experts must accept a large proportion of the responsibility; for, where experts differ or produce solutions which are incompatible with one or more of the factors involved, how can the politician legislate on Civil Defence, which is just as scientific a department of war as any other?

Thank Heaven, for instance, that experts were sufficiently in agreement to produce the "Spitfire"!

Any consideration of a Civil Defence shelter programme must reckon with, among many others, the factors of "deep or submerged," "dispersion groups," "time distance to shelter," and these three items must be considered in relation to each other.

Only when "submerged" or otherwise "adequate" shelter is provided may one justifiably concentrate persons in groups, or decide the degree of dispersion, and this consideration is in turn very definitely limited by the "distance to shelter" within raid warning time.

All three considerations are influenced by the factors of "economic balance," "availability of sites," "congestion of areas," "night accommodation" or "daytime accommodation."

Over-ruling or unduly influencing the factors of the programme are the considerations within the sphere of economics; "degree of protection," "conservation of materials," "speed of erection," etc.

I believe that if these factors mentioned, and many others relative to the problem, are assessed in their true proportion of contribution to the whole, it will be found that many of the influences which appear to be directly in opposition to each other are really not incompatible with a balanced solution.

ERNEST A. NEWTON

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DOMESTIC ELECTRICAL REFRIGERATORS

The British Standards Institution has added to its list of standards for domestic electrical apparatus by the publication recently of B.S. 922, Domestic Electrical Refrigerators. The Standard is based largely on the household electric refrigerator standards prepared by the American National Electrical Manufacturers' Association, the national test code for domestic refrigerators issued by the Standards Association of Australia, and the provisions of the Canadian electrical code issued by the Canadian Engineering Standards Association. It comprises methods of computation of cabinet volume and food-storage surface area, certain constructional details, clauses covering the rating of the motor, requirements for the electric circuits and a section on testing. Copies can be obtained from the British Standards Institution, Publications Department, 28 Victoria Street, London, S.W.1, price 2s. each (2s. 3d. post free).

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SYSTEMS AND PRACTICAL APPLICATION OF STEEL ROOF TRUSSES (arrangement of filling members):

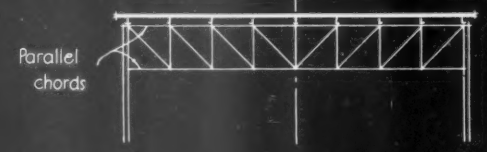

FIGURE 1 : falling diagonals (tension)

FIGURE 2 : ascending diagonals (compression).

FIGURE 3 : alternately falling & ascending diagonals.

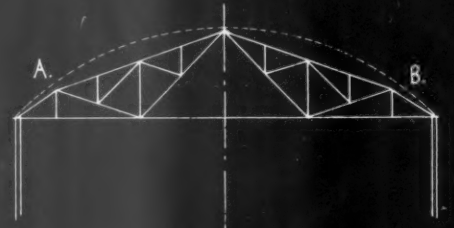

FIGURE 4 : arrangement of diagonals all in tension.

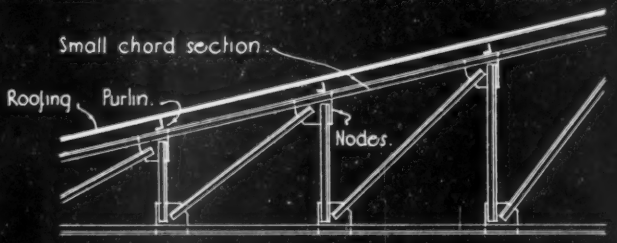

FIGURE 5 : nodes spaced with purlins.

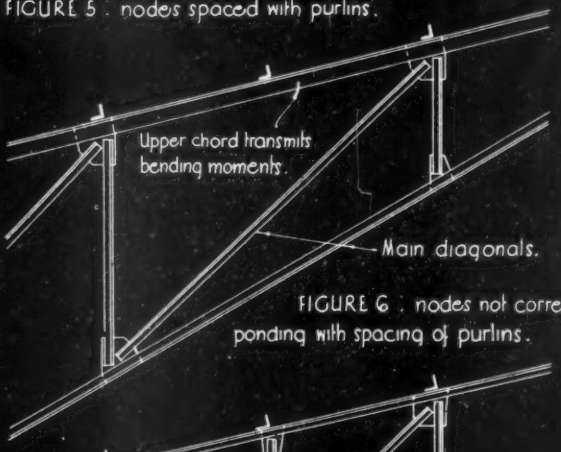

FIGURE 6 : nodes not corresponding with spacing of purlins.

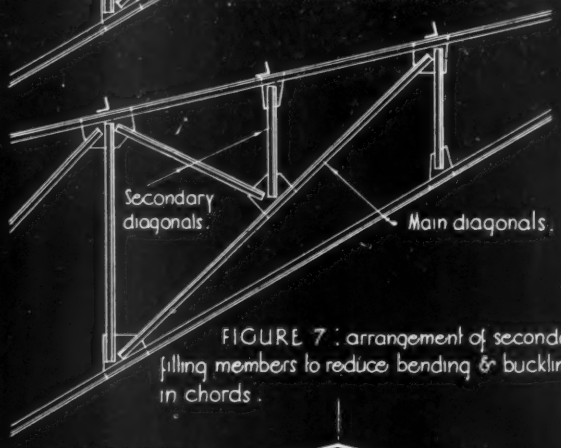

FIGURE 7 : arrangement of secondary filling members to reduce bending & buckling in chords.

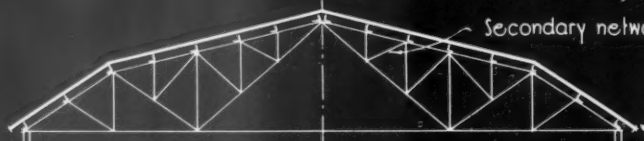

FIGURE 8 : introduction of secondary filling members into long-span trusses to retain tensional diagonals.

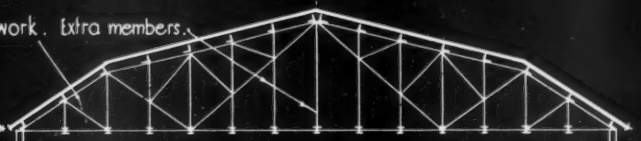

FIGURE 10 : construction for truss carrying heavy load at lower as well as upper chord.

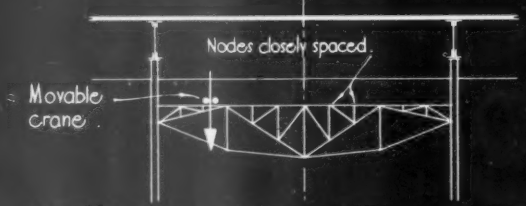

FIGURE 9 : heavily loaded crane girder constructed as truss shown in figure 8.

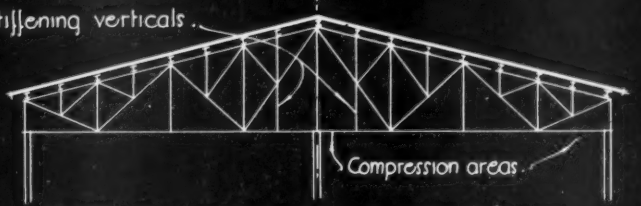

FIGURE 11 : secondary stiffening verticals for continuous or cantilevered trusses.

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INFORMATION SHEET : STEEL FRAME CONSTRUCTION : N° 38.
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INFORMATION SHEET

• 810 •

STRUCTURAL STEELWORK

Subject : Steelwork for Roof Construction, 6 : Systems and Practical Application of Steel Roof Trusses (arrangement of filling members)

General :

This series of Sheets on steel construction is not intended to cover the whole field of engineering design in steel, but to deal with those general principles governing economical design which affect or are affected by the general planning of a building. It also deals with a number of details of steel construction which have an important effect upon the design of the steelwork.

Both principles and details are considered in relation to the surrounding masonry or concrete construction, and are intended to serve in the preliminary design of a building so that a maximum economy may be obtained in the design of the steel framing.

This Sheet is the thirty-eighth of the series and is a continuation of the previous Sheet dealing with systems and practical application of steel roof trusses, the emphasis here being on the arrangement of the filling members.

Shape of Truss :

The bending moments which a truss has to transmit are taken by the chords, but the shear forces can be transmitted by these members only if they are shaped exactly as the bending moment diagram. (See Figure 1 on Sheet No. 37 of this series.) In all other cases a percentage of the shear force has to be taken by the filling members, and the more a truss deviates from its most economical form—or the more variable the load—the greater is the proportion of the shear taken by the filling members and diagonals, and hence the more important these become. In a truss with parallel chords (see Figure 7, Sheet No. 37, referred to above) the whole of the shear force has to be transmitted by the filling members, the chords not participating at all.

Disposition of Diagonals :

The arrangement of the filling members can be varied considerably and depends on :—

(*a*) Whether the diagonals are ascending or descending, Figures 1, 2 and 3 ;

(*b*) The distance between the nodes, Figures 4, 5 and 6 ;

(*c*) Whether a secondary net of diagonals is arranged, see Figures 7, 8 and 9.

At (*a*), except where very heavy forces are concerned, the filling members should be shaped in such a way that there are only few compression members, and that these compression members are as short as possible in order to minimize buckling. It is, therefore, better to arrange diagonals as shown in Figure 1 (descending diagonals) instead of as in Figure 2 (ascending diagonals) as in the latter case the diagonals, which are longer than the verticals, would be in compression.

Sometimes descending and ascending diagonals are used alternately, as in Figure 3. The advantage is that the forces need not be transmitted through the verticals, which can be constructed with small sections, while more material is used for the compression diagonals. The greatest economy can be found only by comparison.

In some cases, particularly with the arrangement of chords as shown in Figure 2 of Sheet No. 37, it is sometimes possible to arrange the diagonals so that they are all in tension although alternating (Figure 4). To secure this effect it is necessary to keep the nodes *A* and *B* slightly under a line of thrust which passes through the supports and the apex.

With long spans the truss in Figure 4 would lead to widely spaced nodes, and in order to keep the advantage of the special position of the diagonals, namely to retain tension, secondary filling members may be introduced. (See Figure 8.)

(*b*) Unless the purlins are very close together, a node should correspond to each purlin, as otherwise the upper chord has to transmit bending moment due to the load of the purlins in addition to direct compression. This is explained in Figures 5 and 6. In general the following observation can be made. The closer the nodes the more material and labour is used for the filling members, but the upper chord can usually be lighter due to a reduction of the buckling length. As a rule, a distance between nodes about equal to the depth of the truss will be found practical.

(*c*) In some cases this does not fit into an otherwise suitable arrangement of diagonals and then a secondary system of filling members may be arranged.

Figure 7 explains the principle of the arrangement of such secondary filling members. The truss would be preferably triangulated without them. As the arrangement of these secondary diagonals and verticals increases the number of triangles which make up the truss, they do not make it statically indeterminate. Their main effect is to reduce bending and buckling length of the chords and in every case it is to be decided whether the additional weight and labour is sufficiently compensated by the saving in the weight of the chord.

Special Requirements :

Figure 8 shows a long span truss constructed so that chords and main diagonals are similar to that in Figure 4, but with secondary filling members, and in Figure 9 an example of a truss carrying a crane girder is given, constructed in the same way. As the load may occur at any point, it is particularly important to keep the nodes of the upper chord as close together as possible.

Where loads occur at the lower as well as the upper chord of a truss, the arrangement given in Figure 10 will be adequate.

Where trusses are continuous or of cantilever form, compression forces occur in the lower chord in the neighbourhood of the supports, and it is, therefore, reasonable to arrange the secondary verticals in such a way that this lower chord is stiffened, a construction which leads to the arrangement in Figure 11.

Previous Sheets :

Previous Sheets of this series on structural steelwork are Nos. 729, 733, 736, 737, 741, 745, 751, 755, 759, 763, 765, 769, 770, 772, 773, 774, 775, 776, 777, 780, 783, 785, 789, 790, 793, 796, 798, 799, 800, 801, 802, 804, 805, 806, 807, 808 and 809.

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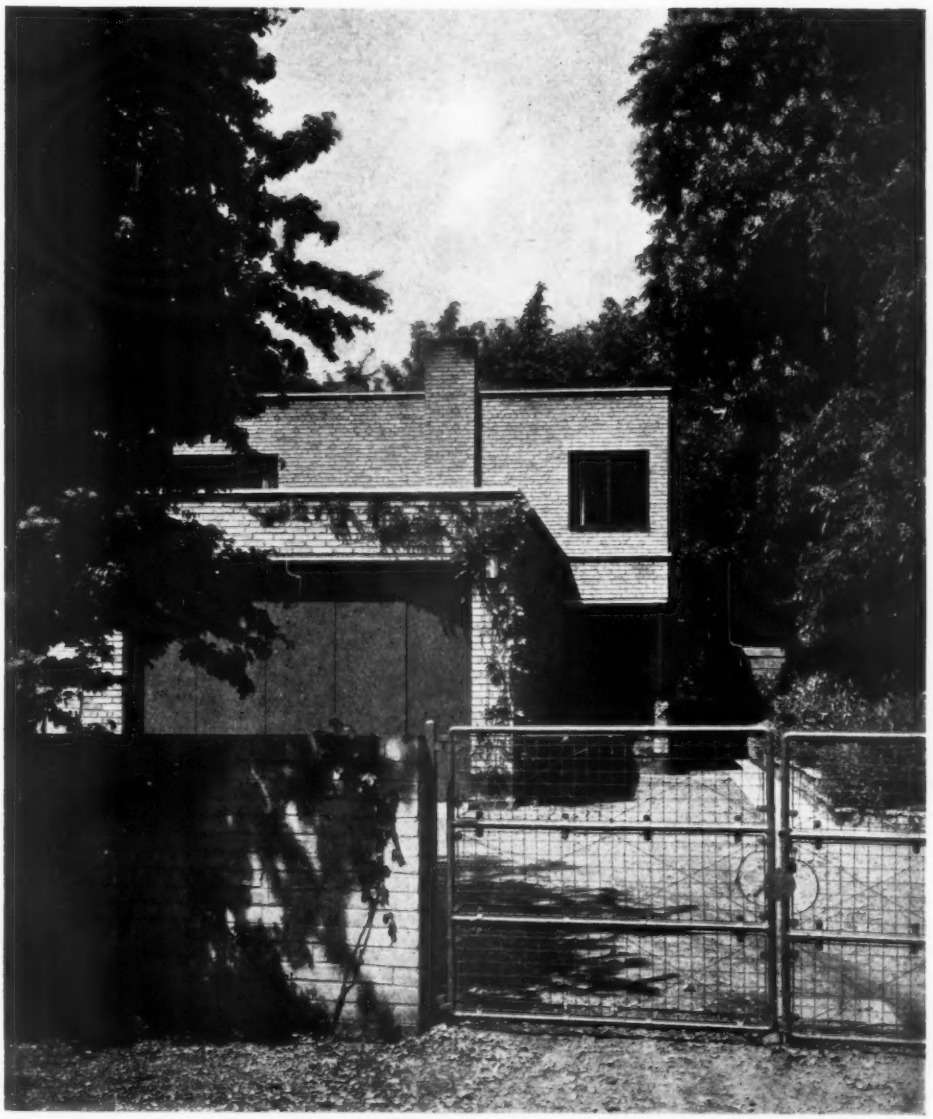


Above, the house from the road : right, view from the garden

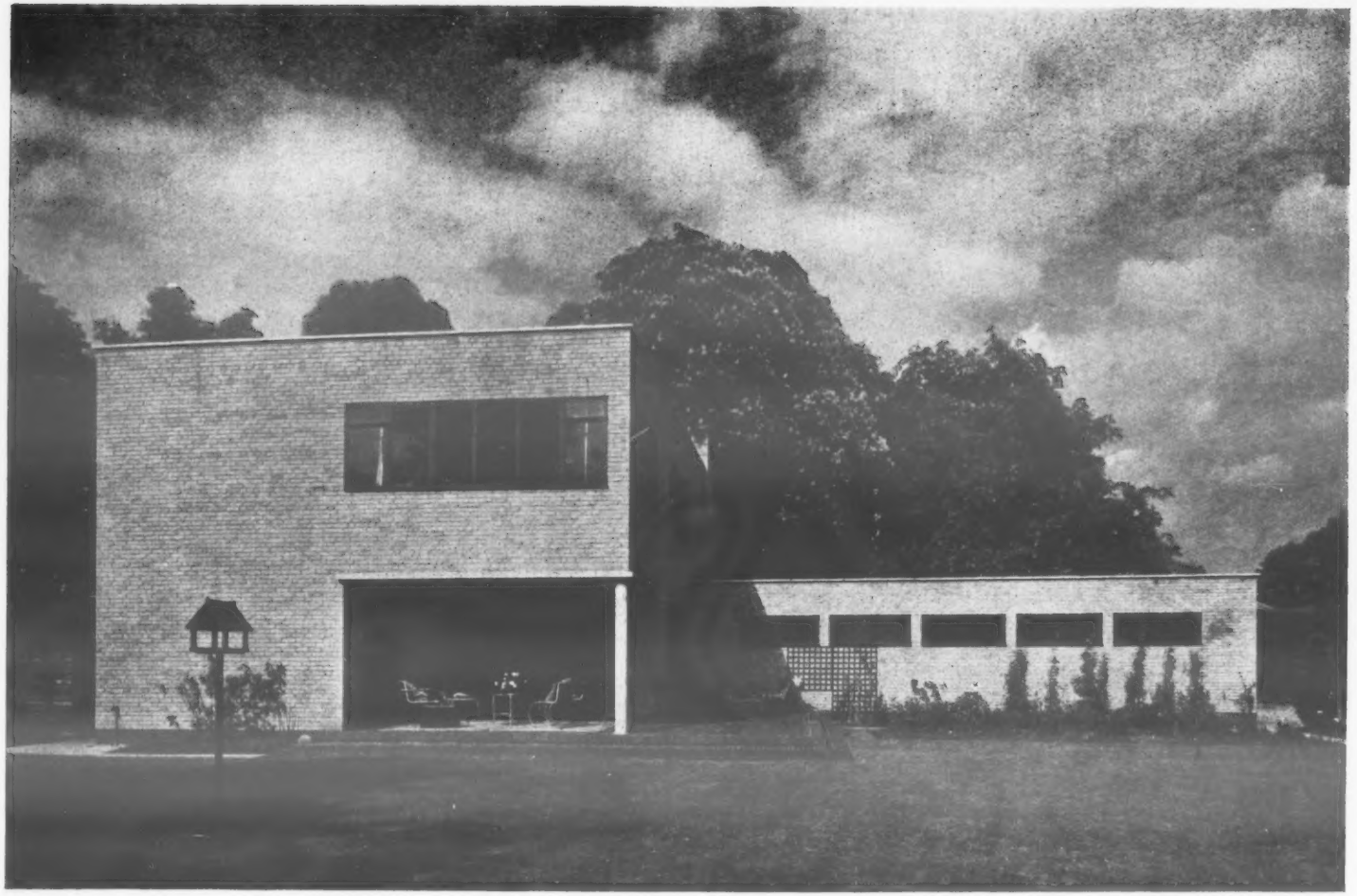
SITE—At Stanmore, Middlesex. The site was originally part of an old park surrounded with large trees and reached by a private road only. The building was placed in the north corner with large chestnut trees as background, leaving a garden well screened from the approach.

HOUSE AT STANMORE

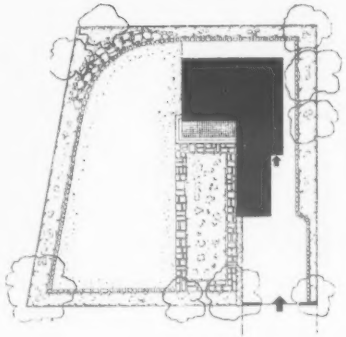
DESIGNED BY RUDOLF FRANKEL

HOUSE AT STANMORE, MIDDLESEX

DESIGNED BY RUDOLF FRANKEL



View from the garden



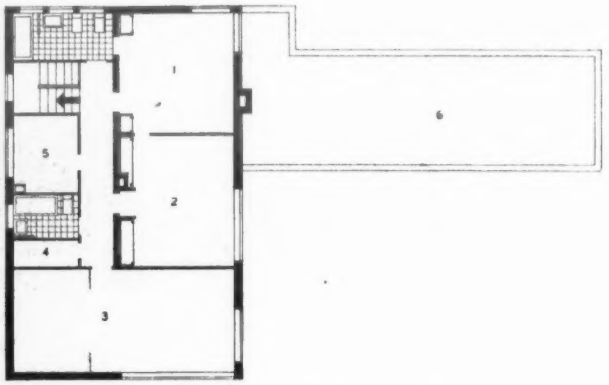
SITE PLAN

PLAN—All the living- and bed- rooms face south and west and as the house is placed in a corner they overlook the whole garden. To secure the utmost privacy a long single storey wing on the east side separates the road and entrance from the garden. This wing contains a garage for two cars, storeroom, a laundry with a bath for the servants, and the boiler-house for the central heating plant. At right angles to this wing are a large hall and living-room, which is joined to the dining-room by a sliding door. Both the latter rooms open on to a covered terrace facing the garden. On the upper floor, besides the bedrooms, there is a large nursery which is divided by a curtain into sleeping- and playing-space.

CONSTRUCTION AND FINISHES—Brick, faced with light yellow sand-faced bricks, but with plinth, entrance steps and terrace in dark blue industrial bricks and tiles. The parapet walls have thin stone copings. The specially made metal windows are painted grey-blue and have copper cills.

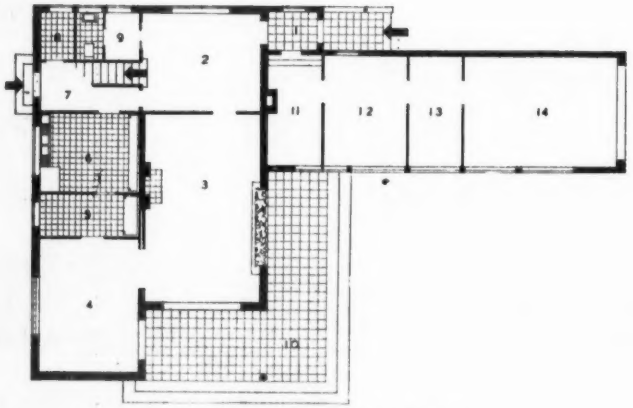
SERVICES—The equipment includes a central heating plant with automatic oil burners.

General contractors were Fairweather and Ranger, Ltd. ; for list of sub-contractors see page xii.



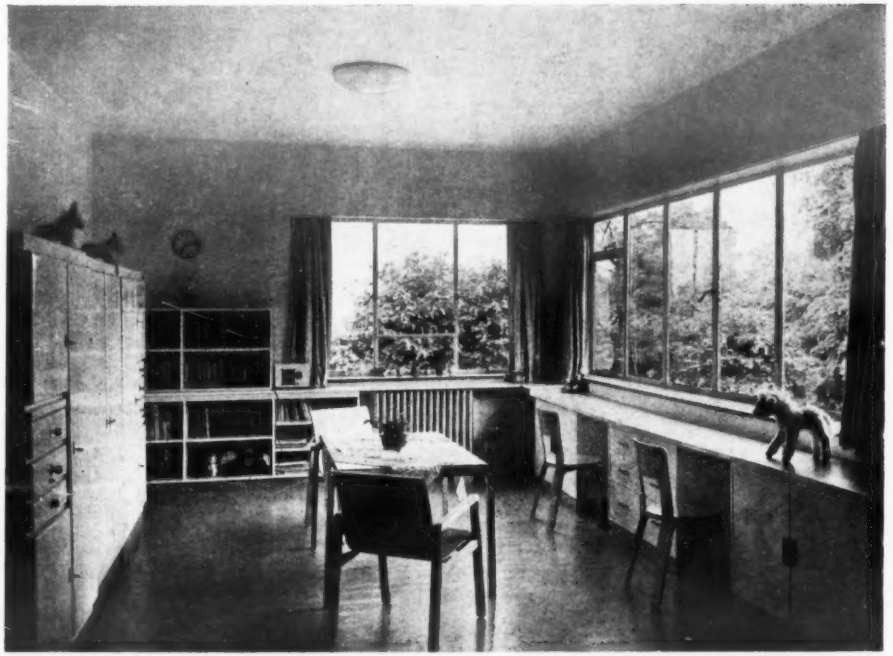
KEY
1 : Bedroom
2 : Bedroom
3 : Nursery
4 : Cupboard
5 : Maid's room
6 : Flat roof

FIRST FLOOR PLAN



KEY
1 : Entrance vestibule
2 : Hall
3 : Living-room
4 : Dining-room
5 : Pantry
6 : Kitchen
7 : Back entrance
8 : Larder
9. Cloakroom
10 : Terrace
11 : Boiler-house
12 : Laundry
13 : Store
14 : Garage

GROUND FLOOR PLAN



Top, nursery ; left, living-room ; right, staircase

SOME QUESTIONS ANSWERED THIS WEEK

★ *COULD you tell me of a correspondence course meeting the requirements of the R.I.B.A. special final examination?* - - - - Q601

★ *SOME rigid sheet materials suitable for canteen table tops are urgently required. These must be easily obtainable. Can you supply me with particulars of any suitable materials, the most important factors being speed and durability?* - Q602

★ *I SHALL be glad if you could inform me of the rates of wages for craftsmen and labourers in Grade A districts from February 1, 1930, to February 1, 1937* - - - Q604

THE ARCHITECTS' JOURNAL

INFORMATION CENTRE

THE Information Centre answers any question about architecture, building, or the professions and trades within the building industry. It does so free of charge, and its services are available to any member of the industry.

Questions may be sent in writing to THE ARCHITECTS' JOURNAL, 45 The Avenue, Cheam, Surrey, or telephoned direct to the Information Centre: Regent 6888.

Enquirers do not have to wait for an answer until their question is published in the JOURNAL. Answers are sent direct to enquirers by post or telephone as soon as they have been prepared.

The service is confidential; and in no case is the identity of an enquirer disclosed to a third party. Samples and descriptive literature sent to the Information Centre by manufacturers for the use of a particular enquirer are forwarded whenever the Director of the Centre considers them likely to be of use.

Finally, if an answer does not provide all the information needed, the Centre is always glad to amplify any point on which the enquirer wants fuller explanation.

Any questions about building or architecture may be sent to:

THE ARCHITECTS' JOURNAL
45 THE AVENUE, CHEAM, SURREY
Telephone: *VIGILANT 0087*

or ring the Architects' Journal Information Centre at

REGENT 6888

Q600 SURVEYOR, EXETER.—*We should be much obliged if you would kindly give us a reply to the following query:— In December last, a BUILDING which was then being completed and which cost £9,000 to erect was REQUISITIONED BY the MILITARY. The usual forms were filled in and passed to the proper quarter, the claim for rent being based on the cost. Later, we received an offer from the District Valuer of £50 per annum. Since then, we have been in negotiation with the District Valuer, and we have now been offered £300 per annum. We may say that the rent has not yet been agreed. On behalf of our clients, we have made an application for a payment on account of rent, plus interest at the rate prescribed by the Treasury. Upon application, we were informed that the Treasury rate of interest is 4 per cent. to January 31, 1940, and thereafter 2 per cent. to date. We have now heard from the District Valuer that because we made no application for rent until last week, no interest is payable on unpaid rent after the first quarter of occupation. We wish to know if the District Valuer's statement regarding no interest being payable is correct.*

The Information Centre cannot undertake the duties of a solicitor,

or give an opinion on the legal aspects of a particular case, but the following clauses in the Compensation (Defence) Act, 1939, appear to have some bearing on this case:

Clause 11: "No claim for any compensation under this Act shall be entertained unless notice of the claim has, in such form and manner as may be presented, been given to the prescribed authority within the period of six months, or such longer period as the Treasury may . . . allow, beginning with the date on which the compensation accrues. . ."

Clause 10: "Any compensation under this Act shall carry interest, as from the date on which it accrues due until payment. . . ."

It would seem that if the claim was made in the prescribed manner and within the proper time in accordance with clause 11, the claim as a whole is valid and should carry interest in accordance with clause 10. The District Valuer should therefore be asked on what clauses in the Act he bases his contention.

Q601 ARCHITECT, HALIFAX.—*I should be grateful if you could tell me of a correspondence course meeting the requirements of the R.I.B.A. SPECIAL FINAL EXAMINATION. In my case it is mainly revision that is required, as I passed examinations of approximately the same standard in New Zealand several years ago. I should also like to know if it is necessary to come to London for this examination, and if any concessions or exemptions are granted to members of the forces.*

We suggest that you should apply to C. W. Box, 115 Gower Street, London, W.C.1, or L. S. Stanley, St. Catherine's College, Cambridge, who both undertake correspondence tuition for the R.I.B.A. Special Final Examination. It is necessary to sit for the examination either at London or Edinburgh.

Q602 ARCHITECT, CHELTENHAM.—*I urgently require some rigid sheet materials suitable for CANTEEN TABLE TOPS. These must be easily obtainable, and as far as possible cut out the use of wood backing, framing, etc. I shall, therefore, be very much obliged for particulars of any suitable materials, the most importartt factors being ease of supply and durability.*

We suggest that the table tops should be made of glazed asbestos-cement panels resting on ½-in. heavy duty asbestos flat sheets, or ½-in. plaster board with edges of wood. These materials can be obtained from the firms mentioned below.*

Q603 SURVEYOR, HANTS.—*A few weeks ago a reply appeared in* THE ARCHITECTS' JOURNAL *in which it was stated that surveyors (quantity, measuring, estimating and building) were reserved from, I believe, 18 years of age onwards. On enquiring at the local Labour Exchange to-day I was informed that the RESERVED AGE FOR SURVEYORS is 23 years. As there seems to be some doubt, would you confirm what the reserved age for a surveyor is at the present time.*

According to the latest edition of the Schedule of Reserved Occupations (revision May, 1940), Building, Quantity, Estimating and Measuring Surveyors may not be called up for general service after they have reached the age of 18. Below the age of 23, however, they can be called up if they are required in their trade or professional capacity. As minor revisions to the Schedule of Reserved Occupations are not always published immediately they come into force, it is advisable to apply to the Labour Exchange for confirmation.

Q604 CIVIL ENGINEER, YORKSHIRE.—*I shall be glad if you will inform me of the RATES OF WAGES for Craftsmen and Labourers in Grade A Districts from February 1, 1930, to February 1, 1937.*

The Grade A standard rates of wages for Craftsmen and Labourers from February 1, 1930, to February 1, 1937, were as follows:—

	Craftsmen	Labourers
Feb. 1, 1930 ..	1s. 7d.	1s. 2¼d.
Feb. 1, 1931 ..	1s. 6½d.	1s. 2d.
Feb. 1, 1932 ..	1s. 6d.	1s. 1½d.
Feb. 1, 1933 ..	1s. 5½d.	1s. 1¼d.
Feb. 1, 1934 ..	do.	do.
Feb. 1, 1935 ..	do.	do.
July 1, 1935 ..	1s. 6d.	1s. 1½d.
Jan. 1, 1936 ..	1s. 6½d.	1s. 2d.
Feb. 1, 1937 ..	1s. 7d.	1s. 2¼d.

Q605 ARCHITECT, NORTHANTS.—*The department in which I am employed is engaged in supervising the erection of large numbers of ALL-BRICK DOMESTIC SHELTERS. They are constructed to Ministry specification—13½-in. walls, 4½-in. corbelled roof—a type with which you must be familiar, as I remember you illustrating the type some months ago in* THE ARCHITECTS' JOURNAL. *The shelters are built in most cases directly off the camber on the roads—no footings. My questions to you are:—*

1. Have you any first-hand information as to how these shelters stand up to air attack? Non-technical people whom I have spoken to have a very bad opinion of their degree of protection, some actually asserting that it is safer to stay in their homes.
2. Is it true that very many cases have occurred where the whole shelter has been moved off the road due to blast effect? Is this common?

From my own point of view I consider that theoretically the standard of protection given by the brick shelter is far better than just "staying indoors," but not having had any first-hand information, I am unable to refute the suggestion rife in this town that the shelters are "no good." If there are any defects that have been noticed in actual practice, I shall be pleased to know what they are, and any suggestion you may like to make as to improvements. Please note that I have studied results obtained by tests applied by the London Brick Co. What I require is actual facts.

All-brick surface shelters have been designed by the Ministry of Home Security to be as strong as any other type of official surface shelter. Their walls are intended to resist blast and splinters from a medium-sized bomb bursting 50 yds. away, and their roofs to withstand falling shrapnel and any probable amount of falling debris. Successful tests of the corbel roof's ability to withstand debris impacts were given publicity some months ago, and presumably the 13½-in. walls stood up to splinters at the distance expected. No official statement has been made on how these shelters have stood up to actual bombing. One would imagine that the damage done to them by a direct hit or near miss is considerable, but the likelihood of injury to persons sheltering in them is certainly less than it would be if they stayed in the type of houses which normally adjoin such shelters. In these houses, not only the one hit but its immediate neighbours may collapse and in addition there is the danger of flying glass and consequential dangers of fire and flooding. The Centre can state from personal observation that glass splinters, structural collapse and difficulty of extricating injured persons are three of the main dangers for those who stay in houses. Surface shelters avoid the first of these and greatly reduce the other two.

Where a so-called "land mine" (an

* *ASBESTOS SHEETS. The Turners Asbestos Cement Co., Erith, Kent. Universal Asbestos Manufacturing Co., Ltd., Handcraft Works, Tolpit Lane, Watford, Herts.*
PLASTER BOARD. The British Plaster Board, Ltd., Erith, Kent.

impact bomb of large size checked by a parachute) has landed near a surface shelter the latter may have been "moved off the road." The suggestion that such an occurrence is common is an old wives' tale.

The enquirer's questions touch on the much larger problem that a very large number of those for whom brick surface shelters are built believe them to be bombproof. Thus, when a direct hit occurs, it obtains enormous publicity at second or third hand; an occurrence which is aggravated by the fact that the inhabitants of poor districts have a much better knowledge of who lives in adjoining streets and what happens to them than is the case in other areas.

Q606 ARCHITECT, LONDON.—*I am considering the question of using precast concrete slabs for a building of national importance and for which I shall be able to obtain licences, etc. It has been suggested that I might use VIBRATED CONCRETE. Can you tell me something of the methods of producing Vibrated Concrete Units and the advantages, if any?*

The principal reasons for the use of vibratory methods are (1) that the concrete is more thoroughly consolidated and forced into contact with the reinforcement and moulds, thus ensuring a better surface, decreasing the risk of honeycombing and allowing lighter units of more complex sections to be cast; (2) that these results can be obtained with a concrete made with a low water-cement ratio and, therefore, having a higher strength than is obtained with a wetter mix containing the same proportion of cement to aggregate; (3) that vibrated concrete is less permeable to water than concrete tamped in the ordinary manner; (4) the dry mix enables the units to be turned out of the moulds very soon after placing, thus requiring fewer moulds. The units are usually produced as follows: (1) The fairly dry mix is placed in special collapsible moulds with loose bottoms in which reinforcement is held by clips; (2) the units are put on a vibrating table—a metal plate on the underside of which rotary hammers deliver a great number of blows a second—and the mix is thus firmly consolidated; (4) the moulds are slid off the tables and taken on hand trolleys to the covered drying sheds; (5) a short time later, varying from some hours to the next day, the sides of the moulds are struck and re-used for other units and the unit is left standing on the loose bottom to complete its set. For larger units that cannot be moved to set, vibrators can be used against the shuttering, which is left in position until the final set is complete.

REFERENCE BACK

[*This section deals with previous questions and answers.*]

Q550. *October* 17, 1940

The Centre has been asked by Messrs. Southerns, Ltd., to point out that inquiries in connection with Steelbestos should be addressed to their office at New Wolverhampton Road, Oldbury, Birmingham, instead of to their Manchester address, as otherwise unnecessary delay is caused.

Q582. *November* 7, 1940

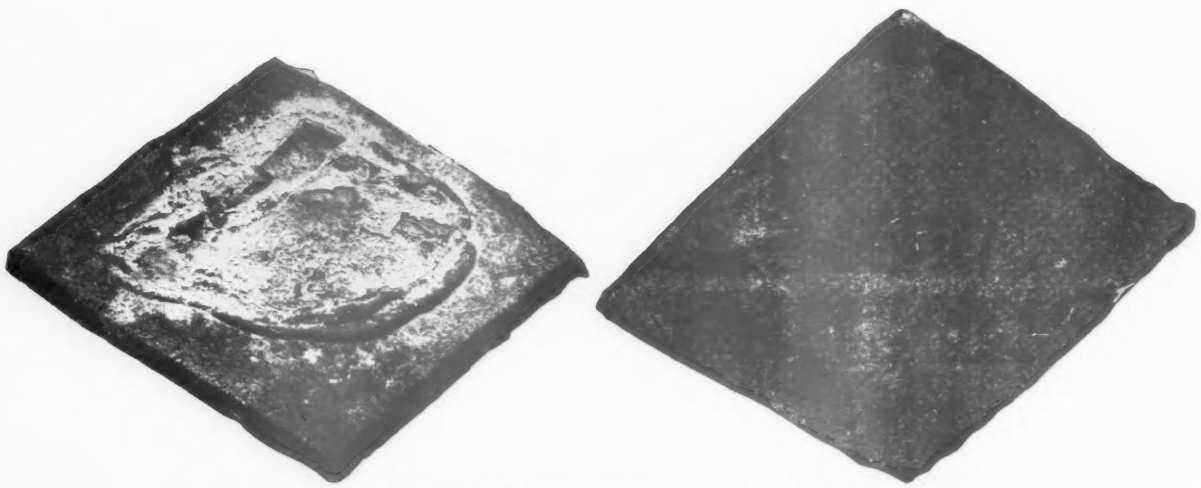
Tubular steel tiered bunks: The Centre has been informed by Messrs. J. and W. Shale that they can manufacture any special type of bunk required.

TRADE NOTES

Incendiary Bombs and Asphalt

The widely advertised claims made by The Limmer and Trinidad Lake Asphalt Co., Ltd., earlier on in the war, that asphalt in roofing construction would withstand the effects of incendiary bombs, have, perhaps unfortunately, been all too fully verified during the recent air attacks on this country. This is all the more remarkable when one realises that the heat engendered by these bombs amounts to over 3000 deg. Centigrade, but the fact remains that whilst they carbonise the surface, they do not penetrate the asphalt or make it permeable to water To illustrate this, we reproduce photographs of a two-foot square slab of Trinidad Mastic Asphalt recently removed from the roof of a well-known London building, one showing the upper surface, in which the shape of the cylinder containing the thermite is plainly distinguishable, and the other showing the under-surface of the slab undamaged. The form of construction was 1-in. of asphalt in two layers on felt, on concrete.

We are informed that, generally, severely damaged roofs of this nature, which have



Two-foot slab of Trinidad mastic asphalt. *See note on this page.*

escaped destruction, are easily repairable, and that the emergency repair units set up by The Limmer and Trinidad Lake Asphalt Co., Ltd., enable prompt attention to be given to urgent calls.

Paint

In our issue for October 24, we referred in these notes to "Ellicem" cement coating, marketed by the Cement Marketing Company. This firm writes to inform us that all the advantages claimed for "Ellicem" are also possessed by "Snowcem." Full details of this material are obtainable from the firm at the Club House, Coombe Hill, Kingston-on-Thames.

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INSTITUTION OF CIVIL ENGINEERS

Sir Leopold H. Savile, K.C.B., has been elected President of the Institution of Civil Engineers for the session 1940–41. He is a partner in the firm of Sir Alexander Gibb and Partners.

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GREEN BELT

The Civil Defence and General Purposes Committee reported at a Council meeting of the L.C.C., held on November 19, that a contribution was being made towards the cost of the acquisition, by the Surrey County Council and the Chertsey Urban District Council, of about 160 acres of land known as Chertsey Meads for addition to the Green Belt in Surrey. The land, surrounded on three sides by the Thames, would be used partly as a public open space and partly for agricultural purposes.

THE BUILDINGS ILLUSTRATED

ALHAMBRA HOTEL, SHEFFIELD ROAD, BARNSLEY (pages 431-433). Architect: J. Coulson Backhouse. General contractors were C. W. Squire and Son, Ltd. Sub-contractors and suppliers included: J. Hill and Son, Ltd., demolition; The Limmer and Trinidad Lake Asphalt Co., Ltd., asphalt; British Reinforced Concrete Engineering Co., Ltd., reinforced concrete; Brick Marketing Co., Ltd., rustic and pressed bricks; Master Builders Co., Ltd., stone; Girlings' Ferro-Concrete Co., Ltd., Girlingstone (artificial stone); Leonard Cooper, Ltd., structural steel; Celotex, Ltd., Celotex ceiling boards; Bradford Glass Co., Ltd., embossed glass; Mellowes & Co., Ltd., patent glazing; J. A. King & Co., Ltd., roof lights; Redfern's Rubber Works, Ltd., rubber floors; E. Broley and Son, Ltd., central heating, gas-fitting and plumbing; Building Materials (Barnsley), Ltd., stoves; Sheffield Gas Co., Ltd., gas fixtures; Beeston Boiler Co., boilers; W. Crabtree, electric wiring, fixtures and heating, bells; Keith Blackman, Ltd., ventilation; Twyfords, Ltd., sanitary fittings; Williams and Turpie, door furniture; William Goodyear and Son, rolling shutters, joinery; F. Fox, Ltd., iron staircases; A. Austin, plaster and tiling; British Vitrolite Co., Ltd., tiling; Civil Service Furnishing Dept., furniture and curtains; Pickerings, Ltd., lifts; Barnsley Corporation, water supply; W. Slater, painting and decorating; Gaskell and Chambers, Ltd., beer pipes and engines; J. and E. Hall, Ltd., beer cooling plant.

DENTAL HOSPITAL, GLOUCESTERSHIRE (pages 436–437). Architect: Eustace H. Button, F.R.I.B.A. General contractors were Henry Willcock & Co., Ltd. Sub-contractors and suppliers included: G. F. Tuckey, plumbing; G. N. Haden and Sons, Ltd., heating; Colston Electrical Co., Ltd., electrical work; Mellowes & Co., Ltd., windows, etc.; Horsley Smith & Co. (London), Ltd., teak floors; Marble Mosaic Co., Ltd., terrazzo; Collinson & Co., tiling; Veneercraft, Ltd., doors; Pickerings, Ltd., lift; G. Parnall and Sons, Ltd., panelling; Asphalte Specialists, Ltd., asphalting; W. Goldman and Son, glazing; Gardiner Sons & Co., Ltd., steelwork; Kleine Co., Ltd., reinforced concrete floors; James Gibbons, Ltd., door furniture and grille; Coxeter and Son, Ltd., anæsthetic gas installation; P. E. Gane, Ltd., A. Taverer, B. Maggs & Co., A. G. Matthews, Ltd., Smith's Systems, and Smith & Co. (School Furnishings), Ltd., furniture and fittings; Dental Manufacturing Co., Western Dental Manufacturing Co., Ltd., C. Hearson & Co., Ltd., Klaxon, Ltd., Unicam Instruments, Ltd., J. and E. Ferris, Ltd., Down Bros., Ltd., and C. and L. E. Attenborough, Ltd., dental equipment; F. Bromhead, epidiascope.

HOUSE AT STANMORE (pages 439-441). Architect: Rudolf Frankel. General contractors were Fairweather and Ranger, Ltd. Sub-contractors and suppliers included Haymills Ltd., air raid protection; Anselm Odling and Sons, Ltd., fireplace; Ruberoid Co., Ltd., roofing; W. N. Froy and Sons, Ltd., sanitary fittings; Brunswick Metal Casement and Engineering Co., Ltd., metal windows; Lenscrete, Ltd., glass concrete construction; Heal and Sons, Ltd., furniture; Gordon Russell, Ltd., curtains, carpets and furniture.