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SOUTH AFRICAN ARCHITECTURAL RECORD

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AN ITALIAN HILL-TOWN. PHOTO: BERNARD COOKE

CENTRAL COUNCIL NOTES

In addition to the Annual Reports of the President-in-Chief and Chairman of the Executive Committee, covering the Session 1941-1942, already published in the "Architectural Record," the following is a summary of matters dealt with by the Central Council at its recent Annual Meeting.

The Institute's special committee authorised to deal with all questions of Education and Examinations, known as the "Standing Committee on Education and Examinations," has been reconstituted and will henceforth be known as "The Board of Education." Local Education Committees of the Board of Education have been appointed in Bloemfontein, Cape Town, Durban, Johannesburg and Port Elizabeth.

It is essential that the matriculation subjects of any student wishing to take up Architecture or Quantity Surveying must include Mathematics. It has been decided that, with effect from January 1st, 1943, no further applications for exemption from the University Entrance Qualification will be granted, or considered, in the case of students who have not matriculated in Mathematics.

It has been decided that the cases of Architectural and Quantity Surveying students who join units other than the S.A.E.C. (and who have still to account for the twelve months' practical experience required in terms of Sections 11(1) (a) and 14(1) (a) of the Act) shall be considered on their merits; and that a decision be given on the nature of the work done rather than on the title of the military unit concerned.

Members of the Institute, trained overseas, who have obtained registration in South Africa by virtue of passing the "Special Qualifying Examination," may now qualify for election as Associates, R.I.B.A., on the following two conditions: (1) that they are British subjects; and (2) that they comply with the Additional Design Requirements prescribed by the Central Council's "Board of Education."

The draft Syllabi and Regulations for the new courses in Architecture and Quantity Surveying of the University of Pretoria, have been approved by the Board of Education and by the Central Council.

The Architects' Registration Council of the United Kingdom has granted official recognition to the following South African

statutory examinations, viz., the Degree and Diploma and Certificate Examinations in Architecture of the Universities of Cape Town and the Witwatersrand.

The Central Council has decided to subscribe to the policy of allowing Professors and Teachers of Architecture and Quantity Surveying to carry out private practice, provided that the teaching of students is not in any way impaired thereby.

Representations have been made to the authorities that the fee at present prescribed by regulation, for the approval of factory plans, be reduced to the flat rate of 5s. per 1,000 square feet, and that the minimum fee be reduced to £1.

Because of War conditions, there will be no issue of the Institute's Year Book for the Session 1942-1943.

The Executive Committee of the Central Council will give the most serious consideration to the possibility of approaching Parliament for the protection of the practice, as well as the title, of Architects and Quantity Surveyors.

During the Session 1941-1942, the following new Registrations and Enrolments were effected:

As Architects: F. O. Muller, J. F. Brinkman, G. A. Smith, T. H. Murgatroyd, L. G. Cohen, T. B. Silburn, D. E. H. Osborne, A. Stamelman, J. B. Dey, Miss P. A. Spilhaus, R. Schmickl, J. G. Green, F. J. Tribelhorn, G. Davids, T. van Niekerk, U. Tomaselli, N. O. Jackson, W. I. Willies, and R. C. Callahan.

As Quantity Surveyors: Mrs. S. M. Borckenhagen, N. R. Law, A. R. Willcox, D. W. V. Hall, W. T. Welsford, A. R. D. McIntosh, A. T. Jones, O. L. Ward, and G. E. Beckwith.

The following are the Central Council's office-bearers appointed for the Session 1942-1943:

President-in-Chief: Mr. B. V. Bartholomew, A.R.I.B.A., of Durban.

Vice-President-in-Chief and Chairman of the Executive Committee: Mr. C. L. F. Borckenhagen, F.S.I., M.C.Q.S., of Johannesburg.

SOME NOTES ON THE POSITION OF THE ARCHITECTURAL PROFESSION IN GREAT BRITAIN IN RELATION TO THE NATIONAL WAR EFFORT

The following is a brief account of the part that has been, and is being, played by the Architectural Profession in this country in the struggle for Victory and the establishment of Order out of Chaos.

It is impossible to compress into two or three columns all the happenings and the tremendous activities of that number of years, but the following brief outline may be helpful as forming a summary of, and guide to, the matters referred to in the general and technical press.

Naturally a large number of Architects are serving with the Armed Forces—actually nearly 3,000 members and students of the R.I.B.A. out of a total of 11,000. Nearly 50 per cent. of these are serving with the Royal Engineers, where their technical training and qualifications are utilized. Others are serving with such units as the Survey Section of the Royal Artillery. On the other hand, many have selected, in preference, the purely combatant units.

Of the remainder, practically all those who have the opportunity, or are fit to do so, give all their spare time to Home Guard, Observer Corps, or Civil Defence duties.

Before war began, members of the profession took a leading part in the formulation of the policy for structural air raid precautions. The services of several architects have since been utilized in a whole-time capacity by the Ministry of Home Security, the Department primarily charged with Civil Defence.

At the outbreak, and during the early months of, the war, the Royal Institute did its utmost and exerted every power to urge the Government to make fuller and better use of architects and the service that they, both as individuals and as a professional body, could render to the State. The R.I.B.A. pointed out directions where architectural skill and knowledge in planning, in co-ordination, and in the harmonizing of details or difficulties to conform with a general plan could have done much to promote efficiency and economy. They urged that skilled architects, who in many instances were employed only in a subordinate capacity, should be allowed to exercise their talents to the full in the interests of the Nation.

After a while the Government began to employ architects in private practice on various forms of war work and, with the

creation of the Ministry of Works and Buildings, which itself absorbed the services of a number of architects recruited from private practices, there has been a very considerable further expansion of this policy.

At the beginning of the war there was the anticipation that air raid damage would require the full services of the profession and architecture was, therefore, a "Reserved Occupation" for all over 30. This caused a certain amount of temporary hardship for those men of 30-40, many of whom found themselves unemployed but unable to join the services.

Consequently this limitation was removed and architects were not reserved again until the spring of 1941 when the age of reservation was fixed at 35. Now, since the beginning of 1942, with the adoption of the system of individual reservation rather than reservation by professions, architects are being progressively de-reserved, although all those who are engaged on work of vital national importance are granted deferment of military service. Previous to this, however, men over the age of 35 were free to join the services if they were physically fit and many are so serving.

When, in the summer of 1940, heavy bombing began, the earlier anticipation was fulfilled and most architects found themselves fully occupied in dealing with war damage work for their private clients or helping the Local Authorities and Government Departments on "first aid" or permanent repairs.

At one time when the bombing was most severe in autumn and winter, there was an acute shortage of technical men for this work in some of the larger towns.

As an inevitable result of war conditions, enforced by the strict Licensing system for the Control of Building, which came into operation in October, 1940, the only work that can now proceed is either repair work or work forming a direct part of the Government programme.

The latter is carried out either directly by the Ministry or Department concerned or through the medium of private architects referred to above. As far as possible, local practitioners are employed and this causes, in some parts of the country, a distinct shortage of architects and particularly of assistants.

At the same time, however, there are many practitioners, particularly among the older men, who have no work and no opportunity unless they take a post in a Government or Local Authority or Regional War Damage Commission office, in a comparatively junior capacity and at a low salary.

The salaried posts in Government and other public offices have largely been filled through the medium of the Central Register. This is a register of all members of the profession compiled by the Professional Institutions and administered by the Ministry of Labour and National Service in consultation with the institutions.

In connection with the employment of private architects on the various branches of Government work—hospitals, factories, housing for workers, military camps, etc., special scales of fees have been agreed between the R.I.B.A. and the Ministry and Departments. In many cases the Government have issued to the architects stock plans so that the architect's work consists largely of lay-outs and supervision. This work involves the reconciliation of a standard plan to the requirements of site and available material and the co-relation of a variety of instructions from the various Departments in order to produce as quickly as possible a complete and efficient entity.

Architectural education is continuing and all the Schools of Architecture, realising the work that lies before them in the future, have kept open. The number of students, especially those over military age, has, of course, decreased, though the admissions of younger students have in some cases actually increased.

Similarly, the number sitting for the R.I.B.A. external examinations, though diminished, are much greater than could have been anticipated when war began.

In view of the inevitable shortage of architects which must be felt when the work of reconstruction begins, the R.I.B.A. has urged that students be granted as long a period of deferment as possible so that they may advance as far as

possible their technical qualifications before being called up for military service.

With regard to the future, the R.I.B.A. set up a year ago a Reconstruction Committee with the widest possible scope and terms of reference. This Committee, having divided itself into a number of groups to study and report on the various aspects of post-war reconstruction, has been working intensively. Reports from the Committee are submitted direct to the Minister of Works and Buildings, to the Ministry of Health, and to the Press.

The R.I.B.A. has also contributed its evidence and assistance to the Government on the whole question of Land Ownership and the problems of Compensation and Betterment which are being studied by the Expert Committee set up by Lord Reith under the chairmanship of Mr. Justice Uthwatt.

One of the chief objectives of this Institute, in conformity with that Committee, is the early establishment of a National Planning Board and the production of a truly National Plan for the controlled utilisation of the natural resources of the country to the best advantage both for war and the subsequent peace.

These notes give but a brief and inadequate description of the part being played by the R.I.B.A. and members of the profession in the prosecution of the war. Many of us cannot help regretting that, in spite of all the efforts made by ourselves and the other sections of the great Building Industry, better use has not been made of the industry as a whole and the profession in particular.

It is felt, however, that as a result of our persistence, a more enlightened policy has been adopted by the Government and for this we are grateful to the Ministry of Works and Buildings. We have every hope that in the future we shall be enabled to play a greater and fuller part and one which approaches nearer to our ideal.



ARCHITECT:
BERNARD COOKE, B.A.RCH.

T H E N O R T H F R O N T

A HOUSE IN MORNINGSIDE, JOHANNESBURG

The house is situated on a large piece of ground in gently undulating open country sloping to the North towards a fine view of the Magaliesberg Mountains in the distance.

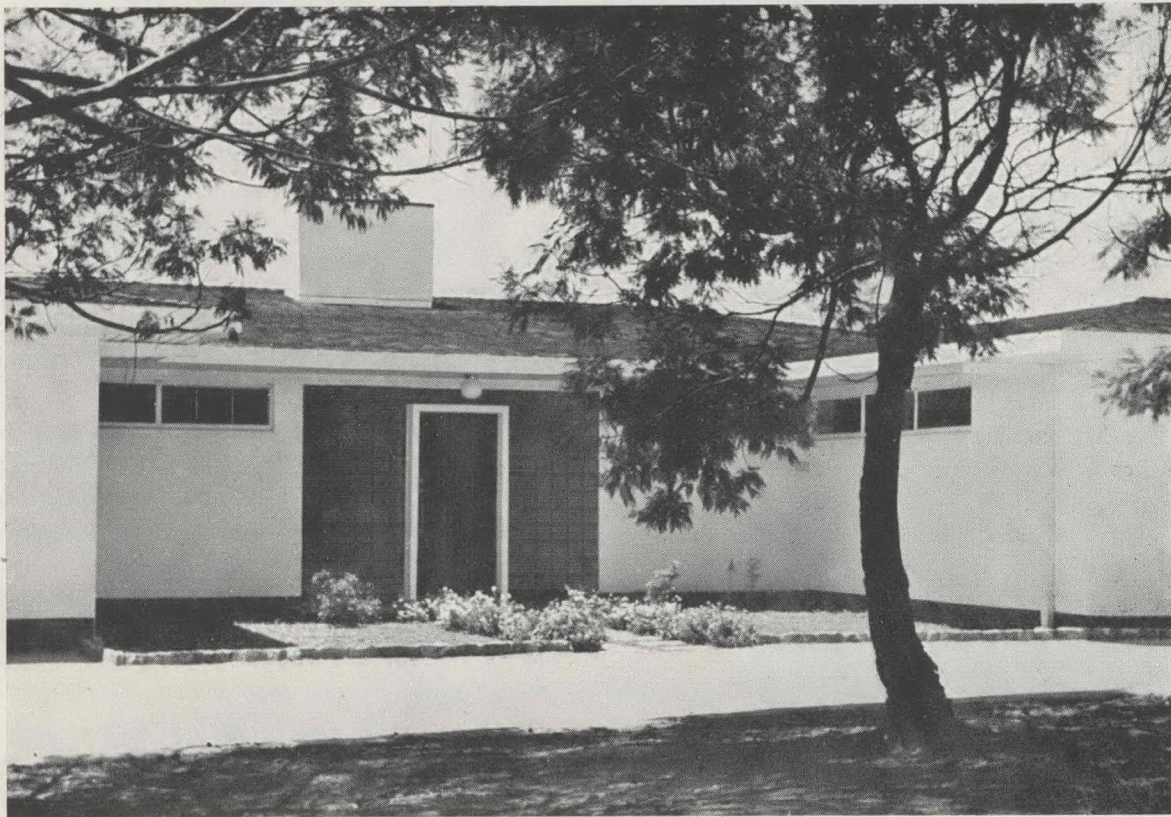
The clients expressed their general requirements of the house as follows. The house must be single storeyed and must spread itself over the site in the manner of a rambling country house instead of the more compact type of house usually found in the suburbs.

The accommodation was to include a very large lounge, which would be of suitable size to entertain visitors without making use of the additional space which would have been provided by a dining room included in the same volume or planned en suite. They particularly wished these two rooms to be detached and without an interleading door, so as to completely separate the dining room from living area. A study was then required which would serve also as a living room of more intimate proportions for the owners when alone in their house. The remaining requirements were normal for a house of this type.

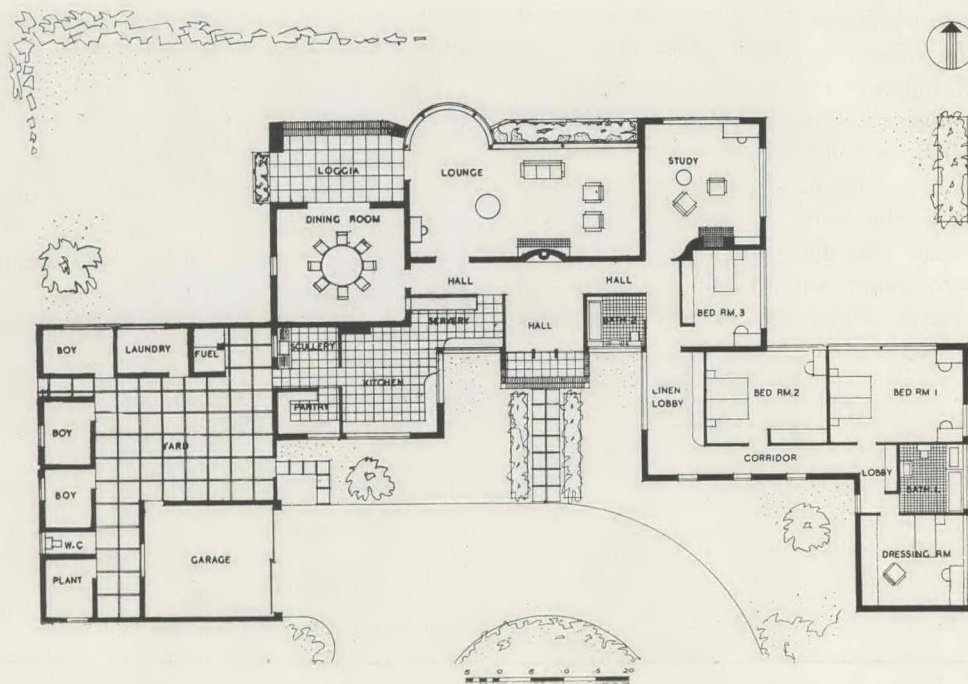
It will be seen that these particular requirements, together with the clients' strongly preconceived idea of a plan form

and a predilection for bay windows in all formed a rigid framework within which the house had to be designed. Requirements such as these, springing as they do, from the definite needs of the clients have to be satisfied just as would the problems of a building bye-law or an awkward site, in order that the building shall fulfil its functions as a suitable home for the people who will live in it.

Generally speaking, it is particularly in the field of domestic architecture, that the architect finds he has many individual and particular requirements to fulfil, as it is here that the personal elements of the clients are strongest, for the building is to serve as a setting for their lives. These limitations to the architects' complete freedom of design are thus stronger than in the case of less personal architecture, such as industrial or commercial work. This also applies to the question of aesthetics. Most people have a sentimental attachment to some particular period or style, which is often the outcome of early impressions gained from experience actual or literary of pleasurable atmosphere. These factors, though superficial, form to a greater or lesser extent the guide for the layman in his approach to the design of his home, however unsuitable



THE SOUTH (ENTRANCE) FRONT



and anachronistic may be the particular atmosphere which he chooses for it. This state of mind has been fostered by the series of revivals and the "battle of the styles," through which architecture has passed; it is a relic of the general eclecticism of the period which preceded the introduction of the New Architecture.

In these cases, however, the architect is often able to show that this choice is an arbitrary one with an uncertain emotional basis, and to guide the client into a broader outlook on design in general based on the just principles of present day needs of convenience, comfort and aesthetic satisfaction.

A few points of interest in the house may be mentioned. The lounge, which is thirty-five feet long, has glass for its entire length on the North and returning round the curved bay into the stoep. The glass extends from eaves down to about a two feet high cill. In order that the curved bay should be a complete semi-circle, but not project in front of the eaves line, the glass wall adjoining it is set back and encloses a broad flower box in the recess so formed. There is thus an eaves overhang over this portion of seven feet. The glass wall here is formed of plate glass squares six feet by six feet. Alternate squares slide open, hung from overhead tracking. The front of the curved bay projects to within six inches of the eaves line.

The normal eaves overhang of the rest of the house is four feet. The main glass area of the dining room is set back twelve feet from the eaves line of the stoep. It is interesting to note the varying qualities of lighting resulting from these zones of shade of varying width—twelve feet, seven feet, four feet and six inches. The lounge, as practically its whole north wall is glass is amply lit, but with a quiet, soft light due to the seven feet overhang, which also has the effect of subduing the lighting of the ceiling, as reflected light does not come into play. The curved bay, with its six inch overhang forms a very brightly lit area of the lounge as it catches the sunlight almost the entire day. The dining room lighting is quiet from the stoep with some bright lighting from the west. The lighting of the other rooms strikes a mean with large glass

areas and four feet overhang. The wide range of effects and resulting character in rooms due to the quality of light obtained by a varying combination of glass area and projection over it, as well as the quality of light reflection from surfaces adjacent to the glass area is a subject which is, I think, of great importance in a climate such as ours, with its very long hours of bright sunshine. It is interesting to notice how Mendelsohn, in Palestine, and Gropius, in America, have adapted their architecture to cope with the problems created by sunshine so much brighter than they were accustomed to in Europe. Possibly a parallel adaption of local modern architecture to conform with our climate will give it a national characteristic.

A minor aesthetic problem was presented by the treatment of the lounge fire place. It was desired that the chimney breast should interrupt the broad sweep of the lounge wall as little as possible and as it could not be projected out on the back, the lounge wall was swept forward in a gentle curve so as to include the flue and to soften the projection, merging it into the wall surface and giving it an interesting form. This curved wall forms a decorative recess in the hall and gives added support to the large chimney stack overhead.

The whole south wall of the hall is in six inch square glass bricks, reinforced in their joints with wire. The concrete door frame stands free in the glass brick wall with only two of its reinforcing bars projected vertically and set in the concrete lintol for added strength. The door is flush panelled in Kejaat.

The house is roofed with cedar shingles and the walls are plastered with a brushed surface to give a slightly rough texture.

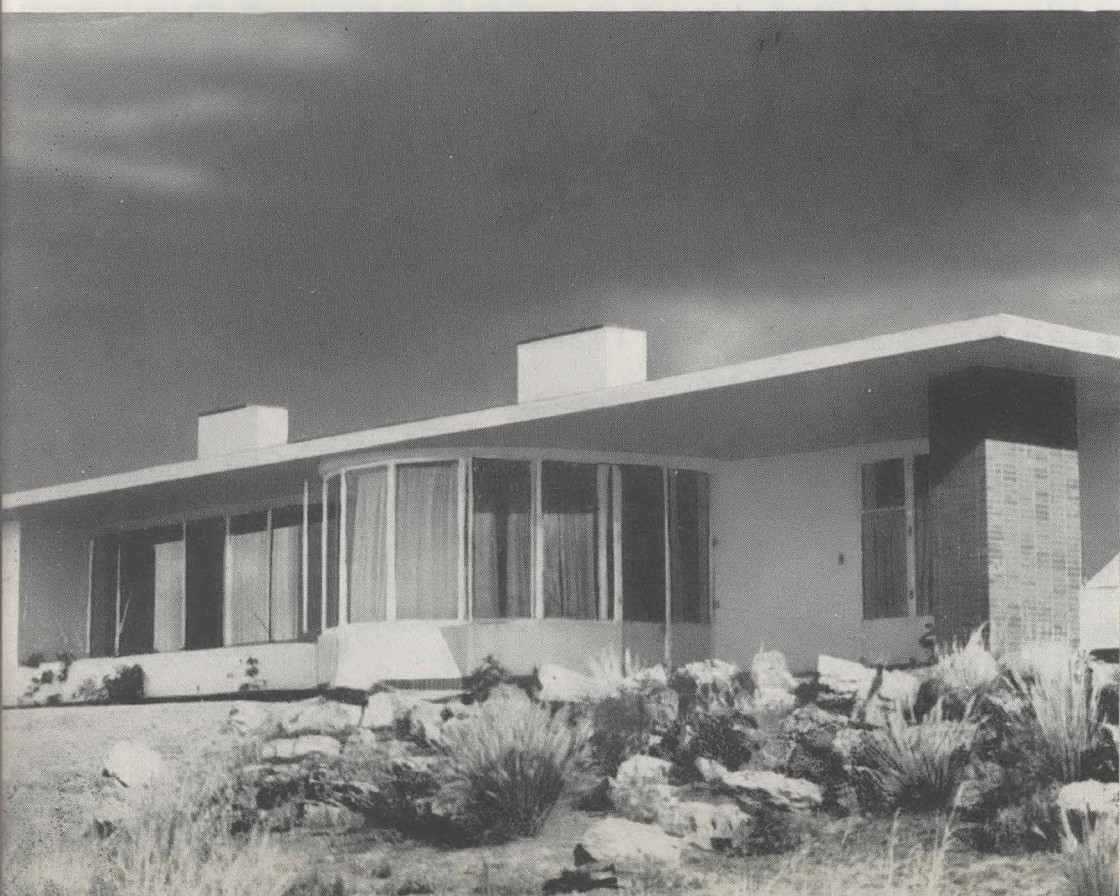
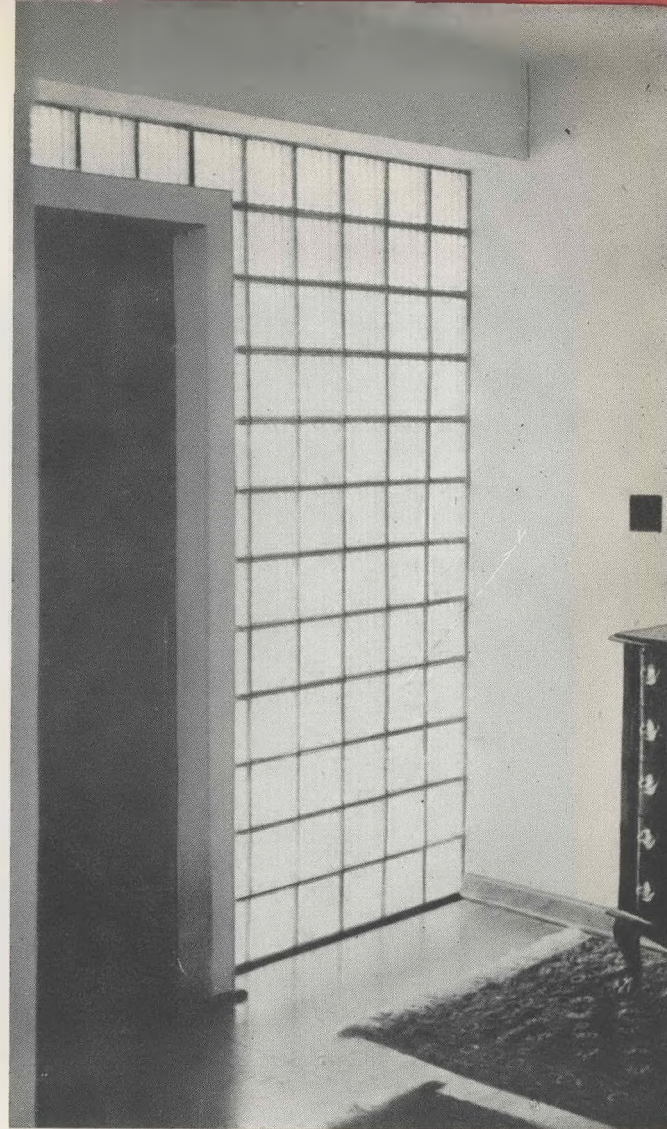
In general it may be said that the house represents in no way a contribution to the more advanced techniques of the present day, but rather an attempt to solve certain individual and unavoidable problems typical of the rigours of practice, in a contemporary idiom which is becoming very characteristic of this country.

BERNARD COOKE.

A DETAIL OF THE HALL

PART OF THE NORTH FRONT

ARCHITECT: BERNARD COOKE





A THATCHED
COTTAGE IN
THE NEW
FOREST

(with acknowledgments
to Messrs. B. T. Bats-
ford, London)

A METHOD OF FIRE-PROOFING THATCH

By BERNARD H. KNIGHT, D. Sc., Ph. D. (Lond.), M. Inst. C. E.

(Acting Head of the Department of Civil Engineering, Witwatersrand University)

Thatch is a material which offers many attractions to architects, since when used as a roofing material it is heat-insulating, relatively cheap, and of a pleasant appearance. It is, however, well known to be extremely inflammable, and this property is assisted by the extremely arid conditions prevailing in many parts of the Union of South Africa.

The writer was approached by Mr. James Corrigall, of Corrigall and Crickmay, Architects, Pietermaritzburg, with the object of putting in hand laboratory experiments having as their aim the rendering of thatch-grass fireproof. These experiments show that it is possible to attain this end by a simple method now to be described.

I. DESCRIPTION OF METHOD OF TEST.

In general, the method of test used followed British Standard Specification No. 476 of 1932 (Definitions for Fire-Resistance, Incombustibility and Non-Inflammability of Building Materials and Structures, including Methods of Test).

The test employed was that for Non-Inflammability of Materials, modified to suit the particular material under test. The thatch grass was supported on a hardwood frame with its upper edge covered with asbestos, carrying horizontal galvanised iron clips gripping the thatch grass. The frame was arranged so that the thatch grass formed a flat plane inclined at 45 degrees to the horizontal, just as it would when used as a roofing material. A single thickness of adjacent strands of grass formed the

model roof. Below the roof thus formed, a flat-bottomed brass cup 11/16 inch in external diameter and 9/32 inch high, thickness of cup about 1/32 inch was placed on a cork support in such a way that the centre of the base of the cup was 1 inch below the centre of the lower face of the thatch grass. Immediately before making a test, 0.3 c.c. of absolute alcohol was poured into the cup from a precise-measuring burette and ignited by a small gas bead. The tests were made in a draught-free fume cupboard, in a subdued light. After each test was made, the degree of burning and/or charring was noted.

2. PREPARATION OF SAMPLES.

Each sample of thatch tested was immersed for 20 hours in a known solution of possible fireproofing material, and after removal from the solution, left to dry in the sun in the laboratory at room temperature for 48 hours prior to being tested.

3. RESULTS OF TESTS.

Chemical Used.	Strength of Solution.	Results of Test.
Ammonium hydrogen phosphate	5 per cent. by weight	Inflammable.
Alum	3 per cent. by weight	Inflammable.
Sodium silicate	5 per cent. by weight	Inflammable but less so than the above.
Zinc sulphate	3 per cent. by weight	Slightly less inflammable than 5 per cent. sodium silicate.
Atlas "A"	Stated to be 25 per cent.	A hole 3½ inch x 2½ inch was burnt, then burning ceased.
Zinc sulphate	8 per cent. by weight	A hole 6 inch x 3 inch was burnt, then burning ceased.
Sodium silicate	8 per cent. by weight	A hole 1½ inch x 1 inch was burnt, then burning ceased.
Sodium silicate	10 per cent. by weight	No hole burnt, only slight charring.

CONCLUSIONS.

The Atlas "A" solution, although probably a fireproofing material, was rejected owing to the fact that it is known to be extremely poisonous owing to its arsenic content.

The 10 per cent by weight sodium silicate (water glass) rendered it impossible to ignite the thatch grass. This material is relatively cheap (6d. to 9d. a lb.), is obtainable in all parts of the country and is safe and easy to use.

Spraying may be suggested, but is not recommended, since it is impossible to say where the material will reach to under such conditions of use. Steeping is a thorough method of application, and is therefore recommended for new buildings.

It is, of course, likely that the outer portion of a thatched roof exposed to rain will in time lose its coating of water-glass, but rain does not penetrate through a good thatched roof, and it can therefore be assumed that the under portion of the thatch will remain fireproof as long as it remains rainproof. The chief danger of fire in ordinary circumstances is from below, and it is thought that the treatment recommended should prevent serious fires caused by the application of a flame to the underside of the thatched roof.

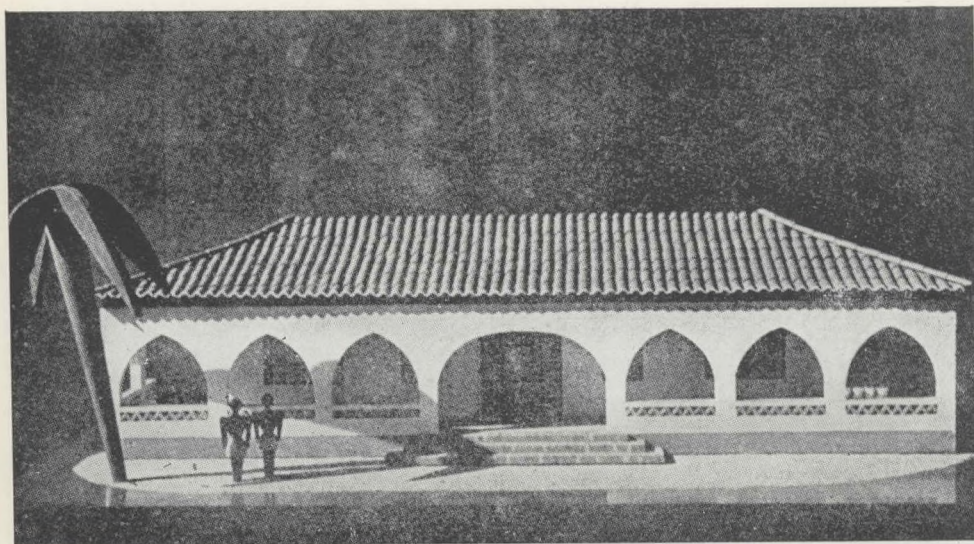


Fig 1. Model of the Colonial Home discussed in this study

COLONIAL HOMES

By V. de A. GARRETT Consulting Engineer to the Junta Nacional da Cortica

(Reprinted, with acknowledgments, from a publication of the Ministerio da Economica of Portugal)

The problem of housing white men and natives in sub-tropical and tropical territories in Africa, India and in the Pacific has for long engaged the attention of experts.

Worthy of mention are the reports submitted to the International Congress of Colonial Town Planning (1934) and to the XVIth International Congress of House Building and Town Planning, which was held in Mexico in 1939, by the initiative of the F.I.H.U. Various studies have been published in specialist revues, such as "Urbanisme" and "Architecture d'Aujourd'hui," by well known architects and engineers.

The problem is indeed very important in those lands where the white man directs and the native executes, since it is a matter of ensuring living conditions making for an efficient collaboration between the two.

It is, therefore, the duty of technicians to apply their science to studies of this nature so as to promote sound living conditions. Equally interested in this subject should be those whose business it is to work out systems of town planning in modern colonial centres, the organisation of industrial plants for native production, the lay-out of agricultural premises

and estates where sometimes hundreds and even thousands of native workers are housed.

Being a colonial people, we must pay attention to the question of colonial habitations in our Overseas Provinces. It may be of interest, therefore, to set down the conclusions which I have arrived at on the subject of colonial housebuilding.

I shall not go into architectural details which concern only the specialists, but just discuss the technical conditions which I believe should govern house construction overseas.

With regard to the staple materials, obviously in districts where there is plenty of stone, masonry buildings should be used, with a cement-and-sand mortar in the proportion of 1/4, unless there is plenty of good lime available, in which case it is cheaper to use a 1/1/6 with lime, cement and sand. The sand used should be carefully washed and should have a rough not a fine grain.

Where there is a clay soil, it is as well to instruct the natives in the art of making bricks, since in that way one can employ the system of double walls for the houses. In the outer wall the bricks should be laid stretcher-wise; in the inner wall

tile-wise. The mortar employed should be as in the previous paragraph.

Care should be taken in the latter type of building to have top and bottom ventilators in the walls. The holes should be covered with fine mesh to prevent the entry of rats and pests which are carriers of disease.

At a small extra cost one can fill the hollow part between the walls with burnt granulated cork (re-granulated). The insulation properties of such a wall will, of course, be greatly improved, since there is no longer that air circulation which transmits heat, slowly but surely, to the inside of the building.

In districts where there is plenty of timber, wooden houses seem indicated. This type of building can be very attractive and of course wood is in itself an insulator. Unfortunately it is easily attacked by the white ant, though it is true there are in the market substances which claim to make wood invulnerable to those insects. Generally speaking, it is inadvisable to have wooden houses if white ants abound in the district.

One hears a great deal about reinforced concrete buildings for the colonies, but it should be remembered that such constructions require iron, which has to be imported, since the production of iron and steel in Africa is still in its infancy. Cement is for the most part an imported material, and it frequently happens that the sand and ballast available for mixing with the cement is of poor quality.

There is something to be said, too, for houses which can be sent out in parts and assembled on the spot. I would say that one of the first conditions of this type of construction is the creation of standard types and sizes, so that a given panel may be used indifferently for the walls, roof or floor.

This kind of house requires careful study, so that we may ascertain which is the best material to employ. I should add, that the dimensions of the houses should be such that they

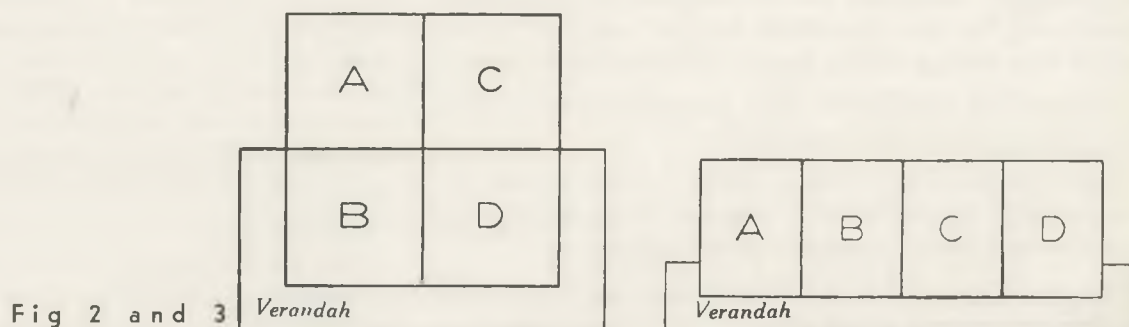
can be made up of standard panels without the latter having to be cut. Of course, for this kind of building, reinforced concrete frames can be widely employed.

Another point to be considered in the colonies, is the question of wind velocity which can be very high in those parts. For purposes of calculation in windy regions, one should consider the effect of the wind at one and a half times that usually taken, in order to ensure safety in tropical storms.

The colonial house should be roomy and well ventilated. It is preferable to arrange the rooms along a common axis (fig. 3), rather than group them round a centre (fig. 2). When there is a prevailing wind, the house should be orientated so that the main entrance faces that wind. If there is no such regular wind, the front should face south when north of the equator, north when in the other hemisphere. Light walls are advisable, to afford protection against the rays of the sun, but pure white should be avoided, owing to the glare. The study of the insulation of the outside walls is of foremost importance for the builder.

A wide verandah should accompany the line of living- and bed-rooms, but should not encircle the whole house. Since in the tropics there are heavy rainstorms, it is necessary that the sun should have a chance of beating upon the walls, so as to counteract the effect of damp. Colonial houses are usually raised above the ground, again to avoid rain and damp and also to afford protection against vermin.

In a small estate there should be near the residence a barn or store for the agricultural implements and a garage for the car or van there must also be premises for the accommodation of native servants, a detached kitchen and bath houses. It is very important to have the kitchen separated from the house and well protected against pests, which even more than in Europe are attracted by the smell of food.



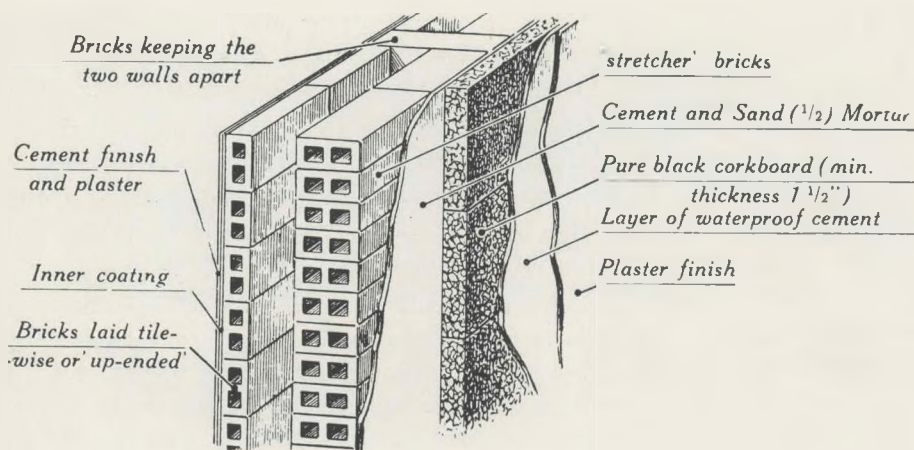


Fig 4. Section of double brick wall

The general appearance of the premises will be much improved by a garden.

Let us now consider the details of such a house.

Foundations.—The nature of the soil will naturally determine the character of the foundations. The usual trenches should be dug to the required depth and a masonry foundation should be made of hard stone and cement-and-sand mortar in the proportion of 1/4. If there is no stone or if the soil is weak, it is better to cast a concrete base-plate reinforced with iron if necessary. The foundations should take the form of a system of short piers rising at least 50 cm. above the ground. I should advise 80 or even 120, because in that way the part underneath can be cleaned out periodically. Care should be taken to ventilate this part well and to prevent it from being a nesting ground for every kind of pest.

The next step is to lay the floor beams on the piers, after which one begins the building proper.

Below the verandah, a brick curtain is often erected, to hide the ugly gap underneath. However, this must not interfere with the proper ventilation of the under part.

Outside Walls.—It is a feature of modern housebuilding to employ, for reasons of economy, much thinner walls than

were used in the old houses. A thick wall acted as an insulator and in order to secure the same results with a thin wall we have to insulate it.

It is only fair to point out that thick walls had the inconvenience of storing up a great deal of heat which lingered long after sundown and through the night.

Night coolness plays a great part in the comfort of life in the tropics, and house ventilation is an essential condition. It is important, therefore, that any heat accumulated during the day be got rid of at night. Hence the thin wall has its advantages.

We must now turn to the question of wall insulation, so that the walls may be thin but heat-proof. The next point is whether the insulation should be applied on the outside or the inside of the wall. The common practice is to place it on the inner face of the wall. This has the disadvantage of not proofing the wall, which becomes hot just the same and frequently sends its heat percolating through the insulating medium.

It seems better to apply the insulation on the outside. I venture to propose a way of doing this which I trust will be satisfactory, since it is based on a study of the materials employed and the climatic conditions.

After building the masonry or double brick wall (as I said before, the outer wall composed of "stretchers" and the inner wall of "up-ended") and finishing off the surface with cement and sand in the proportion of 1/4, we now apply a further layer of cement and sand mortar in the proportion of 1/2 and while it is still wet, lay against it the insulating sheets of pure black cork corkboard 1-1/2 inch thick.

The cork is in turn covered with cement and sand in the proportion of 1/2 with the requisite amount of any good waterproofing medium. A second layer is applied, this time containing as much tallow as the mixture will stand without curling (never less than 5 kgs of tallow to 60 kgs of lime and the mixture should be made when the latter is effervescent). This waterproofing layer is indispensable, to protect the walls from the heavy tropical rains.

Inner Walls.—The inner walls should be light and plain and made of whatever building material is current in the district, so as to keep down the costs. There is no point in insulating the inner walls, since all the proofing, as we have seen, is concentrated on the outer walls.

It is not unimportant to select good light washes for these inner walls, say cream, light pea-green or light pink.

Roof.—This is one of the problem parts of any house. In the colonies all kinds of roofing materials are used. Tiles are very seldom employed, the common covering being corrugated iron or fibrous cement sheets. Flat roofs are relatively rare, except in the north of Africa.

I shall not deal with the last mentioned form of roof which is a whole study in itself and, if properly done, is quite

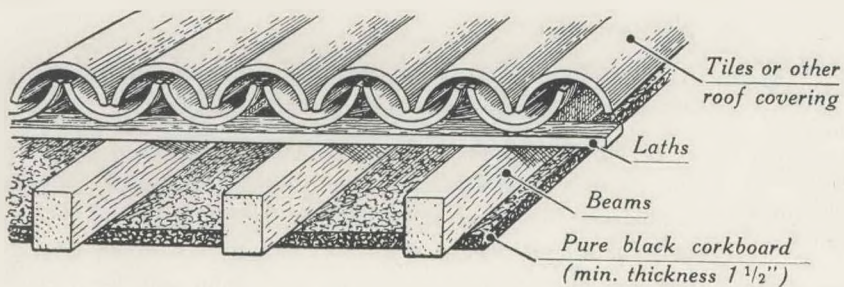


Fig 5. Section of roof

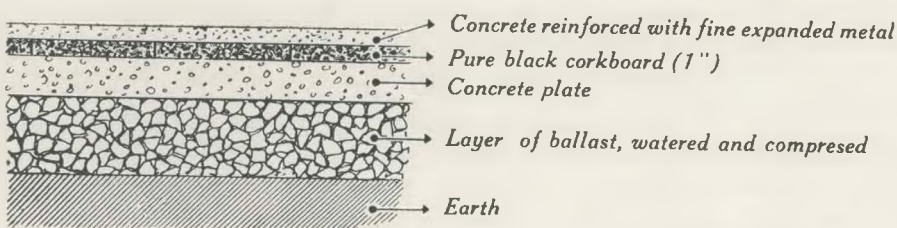


Fig 6. Reinforced concrete foundation

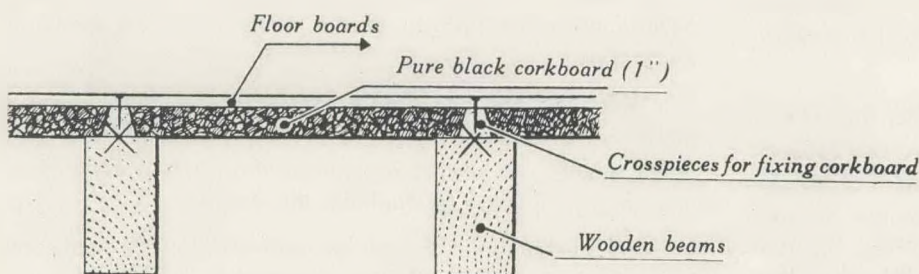


Fig 7. Section of floor

expensive. I shall discuss it in a monograph which the Junta Nacional da Cortiça will shortly publish under the heading of "Industrial Uses of Cork—Technical Considerations on the Insulation of Buildings." In the present study I propose to describe the other coverings in vogue.

The flat moulded Marseilles tile lacks character and it is very difficult to obtain good architectural effects with it.

In the Portuguese colonies we ought to employ, therefore, as much as possible, the round tile which is typically Portuguese and which is not difficult to make, provided proper care is used. The clay, of course, is readily obtainable. In the same way, in other colonies, it would seem desirable to use the tiles typical to each particular country.

With regard to corrugated roofs, whether of iron or of fibrous cement, they should be limited to buildings of a temporary character, since they always suggest a workshop rather than a residence.

But whatever type of covering is employed, one has to consider the question of insulation, without which the heat of the sun will invade the house and make it uncomfortable.

After the framework of the roof is made and the roofing material placed in position, sheets of pure black corkboard of at least 1-1/2 inch thick are then applied underneath.

It is very important to ensure the proper ventilation of the space immediately under the roof, which otherwise becomes intolerably hot and impairs the effect of the insulation. Air holes should therefore be placed just below the lower edge of the roof. With regard to the slope of the roof, that depends on the latitude and local conditions. One should bear in mind the need to get rid of rain water quickly.

As the rain water drips from the eaves, it falls on the ground all round the house and it is as well to have the ground cemented, where this happens, with proper exits for the water, so as to prevent it from undermining the foundations or making the house damp.

The roof may be extended, so as to cover the verandahs as well. The verandah covering should also be carefully ventilated.

Flooring.—According to the material available, the foundation of the flooring can be a large plate of reinforced concrete with brick tile lining or merely a strong arrangement of wooden beams. In the latter case, should there be danger of white ants, only timber which can resist these pests may be used. The floor proper rests on this foundation. Wooden floor

beams should be carefully proofed against damp, rot and pests. Care should be taken to make the floor fit accurately, so that it can be easily cleaned and also in order to prevent insects from breeding in the joints.

Ceiling.—It is not absolutely necessary to insulate the ceiling, if the walls and the roof have been insulated. However, if the owner can afford the expense, the ceiling may be provided with sheets of pure black agglomerate 1-1/2 inch thick. The sheets are fastened to the ceiling laths and therefore the space between the latter can be equal to the width of the sheets, plus about 3/16 in. allowance.

All the joints should be filled in and the surface of the ceiling coated with sisal plaster and stuccoed over in the usual way.

However, if one does not wish to incur so much expense, the surface of the cork sheets can be sponged over with a mixture of lime and tallow. This will produce a rough but rather pleasing surface.

When the ceiling is not insulated, ordinary local materials like palm matting, timber, etc., should be used.

Woodwork.—Steel frames are unnecessary, since there are fine woods available for this purpose in most overseas Colonies. The wood employed for this purpose and particularly for window frames and doors should be carefully selected and the dimensions ought to be in keeping with local conditions.

Windows should have outside adjustable jalousies, so as to ensure coolness and privacy. The window frame can be of the usual patterns, but plain and strong and, instead of glass, transparent plastic substances are advisable.

Doors should be made in three parts. The top part should be made like a jalousie with permanently open slats ensuring ventilation; then there is the middle section which can be transparent and here again it is better to employ glass substitutes rather than glass; the lower part is like the top and it begins about the height of the window sill. The door should be provided with an outside slatted frame, single or double according to the pattern of the door. The slats should be adjustable.

In this way one can obtain satisfactory ventilation and to make it more effective, I would recommend that the inner doors should also have a top panel with slats, so that the air may freely circulate throughout the house.

Good quality paint should be used and for the undercoat, instead of oil, some anti-pest preparation is advisable,

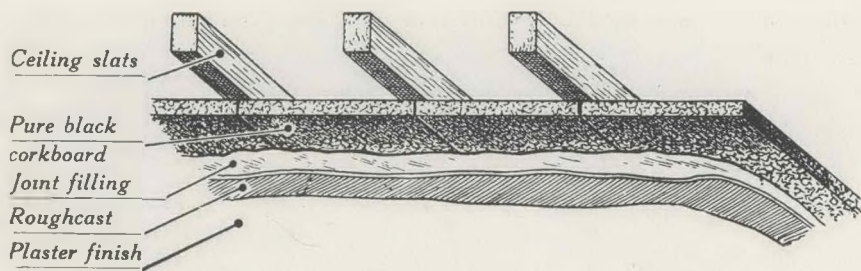


Fig 8. Section of ceiling

Fig 9. Specimen window
1.20 m x 1.30 m

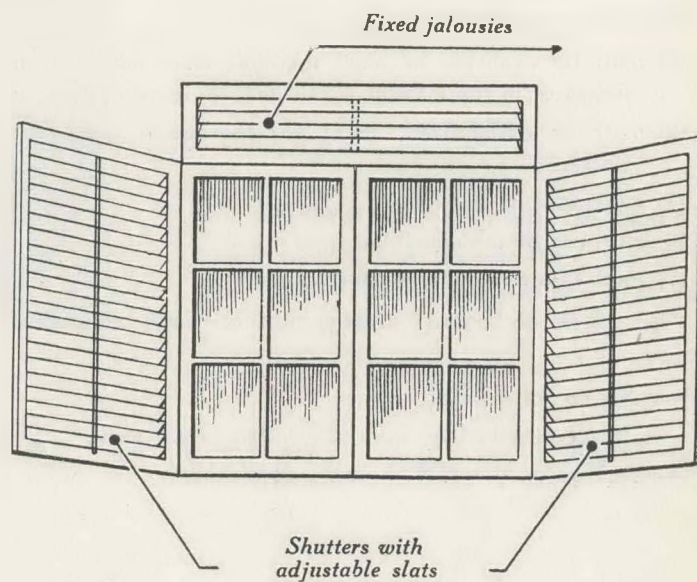


Fig 10. Specimen outer door
1.00 m x 2.20 m

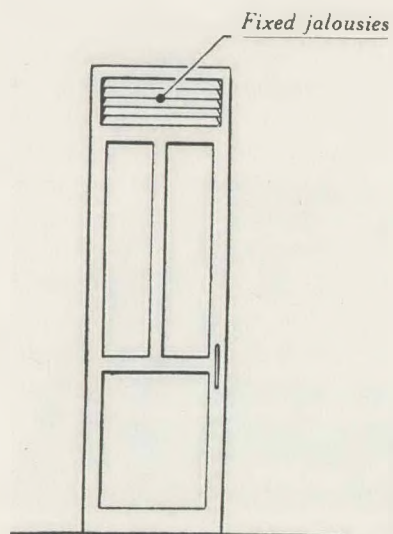
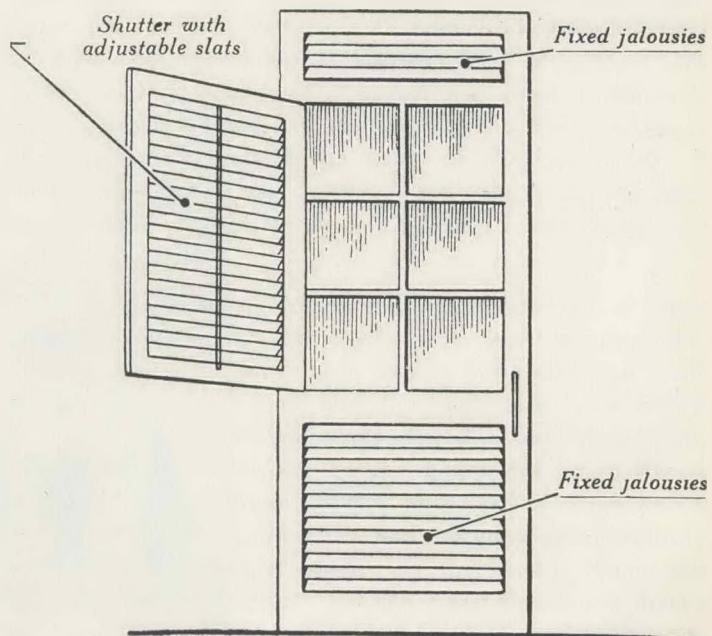


Fig 11. Specimen
interior door
0.70 m x 2.20 m



The reason why I have consistently advised the use of pure black corkboard for insulating colonial houses may be briefly stated as follows :

In order to satisfy the requisite conditions overseas, the insulating medium must have the following properties:

- (1) Low conductivity to heat ;
- (2) small specific weight on account of transport ;
- (3) must be able to withstand the attacks of pests and particularly of white ants ;
- (4) not damageable by tropical heat ;
- (5) must be available in small sections, since most of the transport in the interior is still done by bearers ;
- (6) must be easily fixed, so as not to require specialised workers ;
- (7) must have no smell ;
- (8) must not be inflammable ;
- (9) should be a national product.

Pure black corkboard entirely satisfies these conditions, since :

- it has no active smell ;
- it is not attacked by insects including white ants ;
- its consistency makes it easily applicable ;

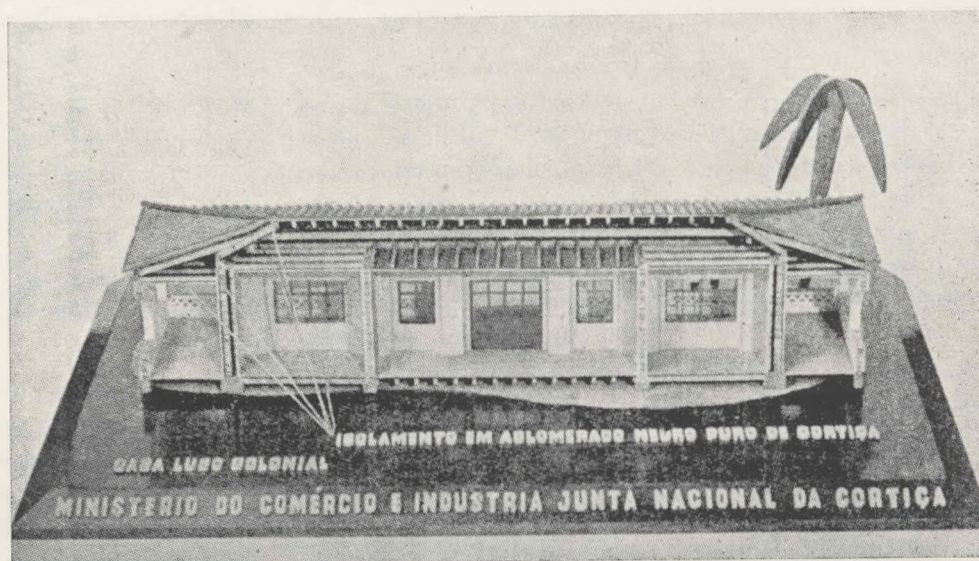
- a medium thickness of cork ensures the requisite insulation ;
- it is practically incombustible ;
- it does not wear away under the action of time if properly applied ;
- it can withstand damp if suitably proofed ;
- its cost is not excessive ;
- it is a Portuguese product.

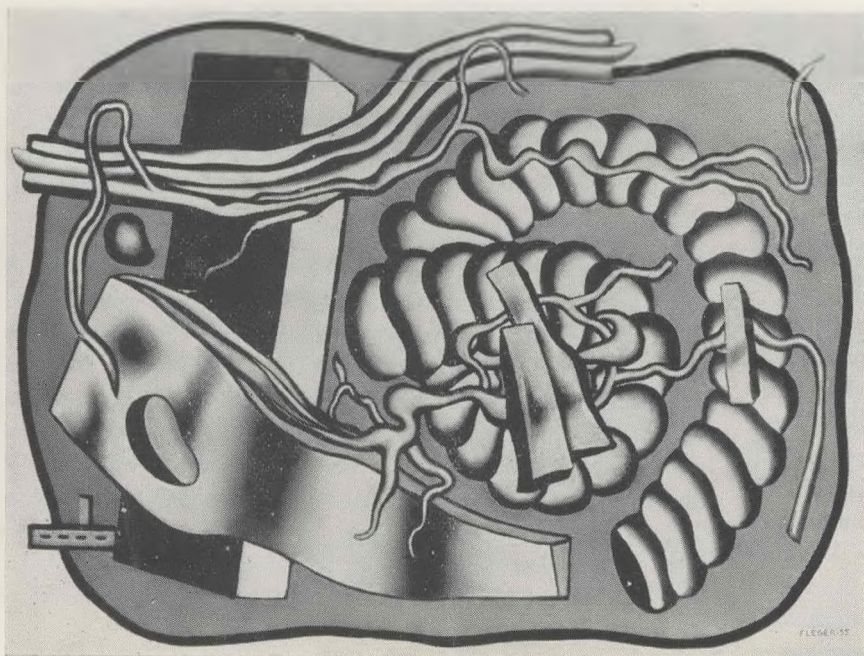
There may be rival substances, but none of them combines all the above qualities.

Such are the main principles to be taken into consideration when designing colonial houses, especially houses for white men, who direct the work of the natives and give their best years and abilities to the service of their country, doing their bit for the progress of white civilisation overseas in the Colonies.

The Junta Nacional da Cortiça is promoting the study of the ideal houses for the Portuguese Colonies, not only because by so doing they are encouraging the sale of a national product, but also because they are thereby contributing to the wellbeing and healthy conditions of those who by their labour honour the name of Portugal overseas.

Fig 12. Section of Model of Colonial Home Showing Structural insulation described





COMPOSITION AU CORDAGE
(1.30 m x 1.00 m.)

From a photograph of the original painting.

FERNAND LEGER IN PARIS — 1938

It is just four years since I climbed the rather gloomy but characteristically Parisian stair leading to Léger's studio in the Rue Notre Dame des Champs. From the Pension on the steep road that cuts through Saint Cloud we had set out to join Léger for lunch at La Palette. There were four of us. My wife and a Belgian girl—a student of his—sat on the opposite side of the table, and when language difficulties seemed likely to disrupt the conversation the Belgian student transferred Léger's questions to me in English, and conveyed my answers to him. Not that this process interfered with a more or less continuous conversation between us—Léger expressive and rapid, and tolerant of the staccato crudities of my French. It was a memorable experience in spite of the practical hindrances, and even the most casual remarks took on the colour of deep pronouncements after they had been sifted, received and acknowledged.

I have had a long attachment for Léger's groups of women in the canvases of the early twenties—rotund, sombre, and profoundly immobile. I conveyed something of this to the Belgian, and when it had been duly relayed to Léger he nodded considerably and replied "Yes, it was a good period—my

American friend, Sweeney, likes them as well—yes, they are quite good!" The young Americans seem to appreciate Léger and his visits to New York appear to produce a sort of rhythmical fluctuation in his work and attitude. "My friends in Paris," he said, "expect me, when I return to France, to be imbued with the rigidity and the precision of the machine, to reflect the new world in its delight in mechanisms—but on the contrary," and with an appropriately airy gesture, "I paint freely and lyrically, I wish to be light and gay in my work."

One becomes weary of the alleged explanations of Léger in books on modern art. It is unfortunate that the most understanding and intelligent remarks appear to be restricted to M. Tériade's monograph (and, alas, this book takes us no further than 1929) for the interpretations offered in English are mostly puerile and crude beyond belief. Léger not being Picasso does not have a warm blanket of adulation which having no critical apparatus worships—and worshipping romantically accepts without understanding. At the Galerie Simon one could compare the "prices" of Léger and Picasso; of Braque and Juan Gris. The changeable wizard of modern painting

topped the other three—the paintings of Gris are priced high, however, because he died in 1927. Picasso's work, though it pours forth in an (apparently) never-ending spate does not seem to drop in value through sheer quantity.

We looked at twenty or thirty large canvases in Léger's studio and paged interestedly through portfolios of studies, sketches and preliminaries in gouache for the large paintings. I hoped that the Johannesburg Art Gallery would have at least one Léger to freshen up its collection, and chose with Léger—it was really his selection—the magnificent canvas "Composition au Cordage" to submit to the committee. The cost of this painting was about £120, and a sketch and particulars were sent out to South Africa, but the picture does not to-day hang in the Johannesburg Art Gallery. Since that time I believe the Gallery has been enriched with one or two equestrian oils by the well known Mr. Munnings. It is difficult to understand what the Municipality means by Contemporary painting—when a man like Léger is not represented. The American galleries are not afraid of his work, and even if Johannesburg's civic conscience is a little nervous concerning the reactions of its self-appointed critics it seems a great pity that the younger sections of the community are not given the opportunity to enjoy and study work which does not stem from Augustus John or Sargent or Corot

One afternoon just before we were due to return to London, we learnt of Léger's exhibition in Brussels. Léger himself checked up the passport regulations and telephoned the Gare du Nord for train times and fares. The next morning we took the familiar train from St. Cloud to Paris, and from Paris were whirled in the express to Brussels. At the Palais des Beaux Arts the friendly director made arrangements to keep the exhibition open an hour or two longer to give us the opportunity of a reasonable time to absorb an unsurpassed collection. This visit will always remain one of the dozen experiences I have hoarded from the fleeting memories of travel. And in the train returning that evening to Paris across the desolate countryside of northern France I pictured history being made in Johannesburg with a Léger collection. For many of the canvases were priced as low as £60. For five hundred pounds—for the cost of two insipid offspring of the Royal Academy—the nucleus of a Léger collection could have been established in Johannesburg. The Johannesburg Art Gallery would then indeed have been on the map in the modern art world. But these were idle dreams; the pale aura of Renoir, the glint and gleam of Pissarro and Signac, steadfastly but tenuously guard the portals of acceptable art. When the paintings of Léger are virtually unobtainable a committee will probably

go into ways and means to raise an enormous sum to purchase one of his canvases—if pressure has been availing by that time.

It is Cézanne all over again, for we can be sure that the master of Aix would have found a cool reception in the Municipal galleries of the world if his work had to be accepted on its own merits, and not on an established market cash value

It was in 1938 that Léger suggested that I write a short book on his work for English readers—I imagine after the style of the small French soft-covered monographs "Peintres Nouveaux," or the collection "Les Artistes Nouveaux," which so admirably and cheaply bring to the reader a dozen or two monotone reproductions with a preceding explanatory essay on the artist's work. I was not able to embark on this at the time, and with the war later it was impossible to consider the publication of such a work. Nevertheless it is a project that appeals immensely to me, if Léger has not in the meantime (he is now in New York) made arrangements with one of his American friends to do this.

Apart from the small "Studio" publications costing a shilling or one and sixpence this type of monograph does not appear to exist in English. Books on modern art try to cover too much ground and wear threadbare when they attempt to deal with individual artists. A paragraph here and a categorical reference somewhere else in the text are not sufficient to give even the sketchiest suggestion of what the individual has contributed to the modern movement One feels at times that the information is so second-hand (i.e., third, fourth or fifth-hand) the taking in washing process is so involved that whole gaps appear in the so-called estimates offered of modern painters. Herbert Read, for instance, illustrates Léger quite generously in two or three pictures in "Art Now," but a newly published American book—stiff with illustrations—purporting to be on modern art does not even list Léger in its index. Such is the danger of mere book compiling.

In a letter written to me in June, 1938, Léger suggested that my essay take a dialectical direction, "une texte qui opposerait mon oeuvre a celle de Picasso avec un titre comme —De Picasso a Léger, q.q. chose comme cela," and indeed, the argumentative opposition of these painters by the critic may well provide a clue to the meaning and significance of their respective works.

It is interesting to note the recognition of Léger in quite another field of writing. In "The Scientific Attitude" (Pelican Books—1941) Dr. C. H. Waddington illustrates and discusses the work of Fernand Léger, and incidentally there

are references to men like Piper, Breuer, Martin and many others who do not usually appear outside the range of strictly art or architectural works. It is a healthy sign, particularly when one remembers that Waddington's book was written especially for the cheap and widely read series of Penguin and Pelican books.

But apart from these considerations of Léger's place in modern painting and the recognition of his work by scientific researchers and others, there are many smaller facets that one would like to recall of his personality and outlook. His comments on le Corbusier's work and the comments of the famous architect on the relative aims of both their outputs; his love of primitive Greek sculpture and Byzantine mosaics—I thought of Léger when I visited the tomb of Galla Placidia at Ravenna

with its glowingly rich colours in a compact sculpturesque setting; his impatience with anything insipid in painting whether it be "abstract" painters of the English School, or the pious painters that blossomed in Italy during the early Renaissance; his views on modern architecture; his objective evaluation of his own work; his feeling for the United States, his warm friendliness and generosity, and the delight of conversation in his studio in the joyous atmosphere of colour and in his burly cheerfulness. No doubt these things will not be set down in a formal study of his work, but for me they round out the picture of a great figure in modern painting, uprooted to-day, but marking by the sober weight of his work a valuable beacon in the frenetic instability of a world between wars.

Rex Martienssen

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