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Taung hut with pebble mosaic decoration.

SOUTH AFRICAN PEASANT ARCHITECTURE

SOUTHERN SOTHO FOLK BUILDING

By James Walton, B.Sc. (Lond.), Dip. Ed. (Leeds).

Sheltering beneath the rocky scarps of the barren but colourful Drakensberg and Maluti Mountains the Sotho homesteads and cattle kraals merge imperceptibly into the background; only curling columns of blue smoke betray the presence of a village. The horizontally bedded strata of this region have given rise to a series of step-like escarpments and the villages are usually perched on the shelves, backed by steep walls of rock and tumbled boulders. They are a part of the land to which they belong. Melting-pot of Bantu cultures from north, east and west, the Southern Sotho village presents a composite picture of primitive architectural types the origins of which become increasingly difficult to trace with the passing years.

* * * * *

The traditional Sotho dwelling in Basutoland is the *mohlongoa-fatse*; literally, a house made of sticks stuck in the ground. In its fundamental form this type is still employed for the tiny field shelters, *lephephe* (1), erected during harvest time and for the large temporary huts used at initiation schools. It consists of a number of pliant saplings stuck in the ground in a circle and bent over to meet at the apex. These are held in position by a ring of twisted wattle, *sehlohlolo*, placed a short distance below the apex inside the framework (2) and by a series of hoops parallel to the ground. The covering is a loose thatch secured by a network of plaited grass rope, *thapo*.

A framework of identical form is employed by the Vundle of South Basutoland and adjoining areas and a hut type in the Ngora region of Uganda appears to belong to the same class. The bee-hive shaped huts of the Natal Nguni, although having some apparent affinities with the *mohlongoa-fatse*, differ in fundamental structure. The framework of the Nguni hut consists of two sets of semi-circular arched ribs arranged at right angles and the *mohlongoa-fatse* appears to be most closely related to the huts of the nomadic Bushmen who formerly occupied this region.

"In 1823 Veldt-Cornet A. Venter saw on the left bank of the Orange River between Aliwal North and Herschel an abandoned village of 1,133 huts. These huts were like baking-ovens in shape, with doors about 18 inches high. They were said to belong to Bushmen of the clan Red Kana, who had fled from the west. Bushmen huts were about 4 feet in diameter. They were made of branches of trees planted in the ground in a circle with the top ends bent inwards and bound together with withes so as to form a kind of dome; round these smaller branches were inter-laced horizontally, and grass thatch was laid upon them, fastened with grass ropes. When possible, the entrance faced the east, so as to catch the first rays of the morning sun" (Stow, Geo. W.: *The Native Races of South Africa*, 1905, p. 546). This description would apply equally well to the *lephephe* still in use in Basutoland which conform in size and in their method of construction to the Bushmen huts described by Venter. Circular depressions of approximately 4 feet diameter, associated with Bushman flint implements, have been noted by the writer at Qalabane, in the Mafeteng district, and near Fort Hartley, in the Quthing district.

In Basutoland this simple hut type was enlarged and ultimately developed into the *mohlongoa-fatse* which, as early as 1860, was considered by Casalis as the typical Sotho dwelling. In the mountain regions particularly these are still fairly common and, although much larger, the framework is identical with that of the field hut already described (2). It differs only in having a long tunnel-like porch, the *mathule*, which was devised to provide warmth and shelter from the winds during the colder months but also served as sleeping quarters during the hot weather. The *mathule* consists of a series of arched saplings joined together by horizontal rods and is a definite addition to the original framework (3). The outer opening of the porch is much larger than the interior doorway and it often assumes the horse-shoe shape which Stow regarded as typically Kwena (6) (Ellenberger, D.F. and MacGregor, J. C., *History of the Basuto*, 1912, p. 10).

"In the traditional examples, this framework is covered entirely with thatch neatly sewn to the timbers with plaited grass rope (Plates 4 and 7). I have not come across a single instance of thatch being secured by a network of grass rope such as is used for the *lephephe*, and in a neater manner for the huts of the Vundle, Pondomise, Gcalekas, Fingo, Ngwane and other tribes east of the Drakensberg. Two photographs in *Livre D'or de la Mission du Lessouto* (1912), pp. 59 and 64, indicate that the method was, however, formerly employed to some extent in Basutoland. These two distinct methods of thatching are among the most fundamental features to be considered when classifying primitive African architectural types."

At a later date mud or stone walls, approximately vertical, were applied to the bee-hive framework up to a height of four or five feet. In such cases the outer walling

1. Field Hut (*Lephepe*) Qwani

2. *Mohlongoa-fatse* framework Teyateyaneng

3. Framework with *mathule* Phamoug

is separated from the stakes by a layer of brushwood. Surviving examples of the earlier type, in which the thatch reaches to the ground, as at Molotoaneng near Teyateyaneng and Simon near Leribe, are all quite large, often measuring between 20 and 30 feet in diameter. The more recent examples with stone or mud outer walls are usually smaller. The interior of the *mohlongoa-fatse* is plain and simply furnished—a saddle quern and grinding stone, a few hides and rush mats and maybe a chest to hold the more treasured possessions.

Opposite the entrance is a raised ledge of mud, the *mohaoloane*, on which rest the various household pots (Fig 1). This is the most revered part of the hut and children are never allowed to sit upon it. When the site of the hut is determined two places, the doorway and the *mohaoloane*, are marked out by the medicine man with forked twigs of *mofifi* wood. These protect the inmates from evil influences for they shroud the interior of the hut in darkness, *lefifi*, and evil spirits are unable to see the objects inside. A third *mofifi* prong is placed in the apex of the thatch when the hut is completed to ward off lightning. The inside walls are covered from floor to apex with a coating of mud and cow dung which is coloured with natural ochreous pigments and the floor is similarly smeared. Often the wall is decorated with geometric and floral patterns.

Even in the larger huts I have never seen a central pole supporting the ridge although I am informed by the older Sotho that they were formerly used and that short lengths of branches, on which clothes could be hung, were left attached to the pole. Casalis illustrates the interior of a *mohlongoa-fatse* having a number of upright poles which do not reach to the roof and are merely clothes hangers (Fig. 1).

The hearth does not appear to have the same significance among the Southern Sotho as it does amongst the Nguni and other tribes, where it ranks in importance with the doorway and the pottery shelf and is equally protected from evil influences. Most cooking is done outside and when a fire is required inside the hut either for warmth or cooking during cold and rainy weather it is often placed directly on the floor. Sometimes, however, a circle of pebbles or a flat stone constitute a primitive hearth, *leifo*, in the centre of the hut.

Each Southern Sotho household usually comprises two or more separate dwellings, one of which is the main living room and the other is the "fire-house," or *mokhoro*. Among more conservative elements, who still respect and treasure their tribal traditions, both these huts may be of the *mohlongoa-fatse* type but with the gradual diffusion of the "rondavel" and rectangular dwellings the *mohlongoa-fatse* is usually relegated to the more lowly role of *mokhoro* and it is customary to find a household consisting of a "rondavel" or rectangular living room associated with a *mohlongoa-fatse mokhoro*. In more "Europeanised" families even the "rondavel" serves as a *mokhoro* and the actual dwelling house is rectangular. The *mohlongoa-fatse* framework is not confined to the Southern Sotho. Without a porch, an identical framework may still be found in use amongst the Vundle of South Basutoland, and amongst the Gcalekas, where it is known as *Ngqu-Pantsi*. 'The *Ngqu-Pantsi* is sometimes to be met with at the kraal of the chief. These men are the most conservative element among the Xosa, and endeavour to perpetuate the things which reflect a past age, but time and changed conditions of life are against them, and the *Ngqu-Pantsi* will soon be only an indistinct memory of the past' (Soga, J. H. *The Ama-Xosa, Life and Customs*, 1931, p. 409). A hut type employed in the Ngora region of Uganda bears a still closer resemblance to the *mohlongoa-fatse* for it has a porch as well as the same framework (Jones, Thomas Jesse. *Education in East Africa*, c. 1925, Plate XX A)."

The "Kwena Migration," approaching Basutoland from the north and west, brought with it the cone-on-cylinder hut type for which the widely-used term "Rondavel" is the most convenient. In its most primitive form it still survives around Mpharane, in the Mohale's Hoek district, where it consists of a circle of upright stakes, one to two feet apart, capped by a conical roof framework (9). The interspaces between the upright stakes are filled with wattle which is covered both externally and internally with a mixture of mud and cow dung (10). In later examples this wattle wall is often cased with turf or rubble (11).

In no instance is the roof extended to form a verandah, supported by an outer circle of upright posts, such as is found amongst certain Sotho tribes to the north and west. Examples do occur in the Mpharan district where the roof projects over the doorway to form a porch supported by two uprights, probably a relic survival of the former use of a complete encircling verandah.

Usually, however, the walls are of mud, unburnt brick, rubble bonded with clay or more recently of dressed stone. The wall is built as a cylinder on which the conical thatched roof rests. Where the walls are of rubble the part around the doorway is smeared with clay and dung and coloured with ochreous pigments (13). It is often decorated with *litema* patterns consisting of parallel grooves arranged in a variety of forms which the Sotho have likened to a ploughed field, *tema* (15). In many cases the entire hut is smeared and patterned in this way whilst the floor and raised platform, *lebali*, outside the door are sometimes similarly treated.

An unusual form of decoration is displayed on the huts of the Taung who are concentrated in the Mafeteng district. Their huts are built of mud, unburnt bricks or blocks of turf. The doorway, which faces the sheltered side, is surrounded by a *litema* border, but the remainder of the hut, which is exposed to the prevailing wind and rain, is protected

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4, Traditional *Mohlongoa-fatse* with thatch reaching to the ground. Near Teyateyaneng. **5,** *Mathule* with traditional reed door. Qwani. **6,** *Mohlongoa-fatse* with mud walls. Qualabani. **7,** A traditional *Mohlongoa-fatse* at Simon. **8,** *Mohlongoa-fatse* with stone walls. Ntho.

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by small stones embedded in the mud surface (Frontispiece and 12). Different coloured stones, usually brown and white, are chosen and arranged as mosaic patterns consisting mainly of various combinations of ellipses (Fig. 2). Timothy Kabi, headman of a Taung branch in the Quthing district, informs me that these patterns were formerly employed in beads for their shields and and that when the shield became obsolete they applied the same patterns to their huts.

The patterning of huts is widespread among Sotho tribes (for illustrations of Kxatla examples see Schapera, I.: *The Bantu-Speaking Tribes of South Africa*, 1946 Edition, Plates XI(*b*) and XII(*b*)) and it is apparently traditional, for several early instances are recorded by Stow. "These people (Batlapin) were found to be more advanced than the Kaffir nations east of the Colony. Their huts were not only larger and more carefully constructed, but the walls were painted and adorned with various patterns. Mr. Campbell found that the wife of Salakutu had decorated the walls of her house with a series of paintings, being rough representations of the camelopard, rhinoceros, elephant, lion, tiger and steenbok. These were done in white and black paint (1812-13 at Old Lithako). On the occasion of his second visit Mr. Campbell saw some similar paintings among the Bahurutsi (1820) in one of the chief houses at Kurrechane; and among the Basuto, in Basutoland, where a house was at one time ornamented with the figures of animals in like manner.

As these cases are unique in the several tribes where they occur, viz., among the Batlapin, the Bahurutsi, and Bakuena of Mosheh, all widely separated from each other, and whose national mode of painting, when they indulge in it, is confined to the representations of lines, spots, lozenges, curves, circles and zig-zags, it becomes an interesting subject of speculation whether the attempt to represent animal life in these isolated cases was a spontaneous development in the artists whose handiwork they were, or whether, as was frequently the case in those days, these men had taken Bushman wives, or were half-caste descendants of Bushman mothers, and thus the hereditary talent displayed itself in their new domiciles among people of either the Bachoana or Basuto race" (*op. cit.*, p. 435).

Of the Bahurutsi the same writer observed, "Some of the principal houses were of considerable size. One described by Mr. Campbell (1812-13), was circular, like all the others, having not only the walls plastered within and without, but likewise the inside of the roof. The wall was painted yellow, and ornamented with figures of shields, elephants, camelopards, etc. It was also adorned with a neat cornice on a border painted of a red colour. In some houses there were figures, pillars, etc. moulded in hard clay, and painted with different colours, that would not have disgraced European workmen" (*op. cit.*, p. 522). Internally the "rondavel" type displays the same features as the *mohlongoa-fatse* but it is sometimes provided with small windows and the doorway is always high enough to allow comfortable entrance without stooping.

The rectangular homestead, which is becoming increasingly popular, is the result of European influence. It assumed two well-defined forms; the gable-ended and the hipped. The former is comparatively rare, possibly because of the difficulty in constructing a complete gable wall which is apparent among all primitive peoples. Very often the end wall is of stone up to eaves level and above that it is of unburnt brick. The roofing is of thatch or corrugated iron and this is held down at each end by an added course of the gable wall which thus projects above the general roof level (Fig. 1). The hipped roof is more easily constructed by people accustomed to thatching round huts.

The interiors of the rectangular huts conform more closely to European forms. They have a doorway in the centre of one side with a window lighting each half and the hut is divided into a larger living room, into which one enters, and a smaller sleeping apartment or store room. Wooden chairs, table and shelves may be found in more wealthy families, but they are of inferior quality and lack the homely cleanliness and beauty of the clay shelves with their spirals and pendants (18). Similar clay pot shelves are to be met with in "rondavels" and even in *mohlongoa-fatse* where they occupy the same position as the *mahaoloane*, facing the entrance. They are an interesting attempt to interpret a European feature in a traditional medium and they represent a more recent development of the *mahaoloane*. In the rectangular hut the shelves have often lost all connection with the earlier simple pot shelf for they are placed against a gable wall or in some position not facing the entrance. Even so, they form a delightful feature of the interior furnishing for they are usually gaily coloured. The partition may be just a curtain or a wooden wall, but often it is a richly ornamented clay screen (16 and 17). The fireplace is occasionally a gable fixture after the European pattern when it is provided with a chimney stack running up the outside of the wall.

A hut type of particular interest is the oval hut, with rounded ends and straight sides, predominant around Teyateyaneng and very rarely seen elsewhere (14). Two examples in a tiny village near Mafeteng and one from Quthing are the only ones known to the writer other than those at Teyateyaneng. The place of the oval hut in the evolution of primitive architectural types is not yet decided. Innocent contends that after the circular house "the next development was to make it oblong in plan, straight sided with rounded ends and the builders were at once faced with a difficulty in supporting the tops of the poles which formed the framwork of the straight sides of the building. . . . They overcame this difficulty of a support for the slanting poles by the use of a horizontal pole against which the poles might be leaned or to which they might be fastened" (Innocent, C. F.: *The Development of English Building Construction*, 1916, p. 11).

9. Framework of "rondavel" type with circle of posts. Qwami

10. "Rondavel" type with wall infilling Qwami

11. "Rondavel" type with stone wall

Examples of oval huts formed by the union of two circular huts are not uncommon. The bark-peelers' huts from the High Furness area of the English Lake District were of this type (Cowper, H. S.: *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, xvi, 1901), as are the *capanna* of the Roman Campagna herdsmen and charcoal burners (Erixon, Sigurd: "Some Primitive Constructions and Types of Lay-out, with their relation to European Building Practice," in *Folkliv*, 1937, pp. 124-136). Discussing the *clochans* and *bothans* of Lewis, Ake Campbell states, "there is, however, one oval or oblong form of building which may have its origin in the stone-built domed-roofed bee-hive house. To get more room he must put two or more circular bee-hive dwellings together, or he must go over to the oval or oblong form" ("Notes on the Irish House," in *Folkliv*, 1938, p. 174).

The association of hipped roofs and roughly oval plans in certain existing Irish houses is commented on by the same writer. "The houses with thatched gables sometimes have rounded corners so that the base foundation may have an almost oval shape on the outside, while the inside room may be rectangular in form. It is evident that the oval house form and the thatched gables complement each other. They could have existed together from a very early stage in building traditions. In a windy district the rounded and thatched gables are suitable, as the house will be more streamlined.

The roof with a thatched gable can easily have replaced the stone, or cyclopic roof, in cabins and huts. This fact and certain similarities would seem to indicate that the oval house form in the above-mentioned houses with thatched gables, may have developed from the round or beehive house type, Parallels may be found among the stone-built huts with similar roofs in Estremadura and elsewhere. On the other hand, houses with stone-built gables represent quite clearly the rectangular house type, as in such constructions the gables are never rounded" ("Notes on the Irish House," in *Folkliv*, 1937, p. 212).

It is probable, as Campbell suggests, that the hip-roofed oval or rectangular dwelling resulted from an amalgamation of two circular frameworks but the hip-roofed rectangular form used by the Southern Sotho is a direct European introduction. The oval house, on the other hand, is the product of a local evolution, but it is a late development. It has resulted from a desire for increased living space on the part

of people accustomed to building circular huts, but in contact with rectangular forms which they desired to emulate. The owner of the Quthing example actually converted two "rondavels," situated close together, into an oval dwelling.

The Teyateyaneng oval houses consist of two half-rondavels joined by straight sides and their roof framework confirms their origin (Fig. 1). I was informed by one woman occupant of such a house that the mud in that district would not bind well enough to make right-angled corners and, therefore, they were compelled to make rounded ends. In these cases, then, the oval house originated in an attempt to apply "rondavel" building technique to a rectangular plan. Generally the oval house is built by people accustomed to a round dwelling who come into contact with the rectangular form. Support of this is afforded from other countries.

In India the rectangular type is dominant but round huts do exist, occasionally in association with oval types, as in the Deccan (Walton, James: "The Village Homes of India," in *Modern Review*, March, 1943, pp. 193-7, and Piggott, Stuart: "Farmsteads in Central India," in *Antiquity*, September, 1945, pp. 154-6). Tolstov, in describing a neolithic oval dwelling from Khwarazim, states that "ethnographical observations suggest that the oval dwelling occurs where contact is made between people living in rectangular houses and those living in round houses. In South America, for instance, the oval-shaped house is found amongst the Arawak-Yemanadis on the Amazon Tributaries, amongst the Caraib-Bakairis of the upper Shingo—that is, amongst tribes living to the south of the chief region in which the rectangular 'Maloca' occurs, and to the north of the region in which the round house predominates (the Matto Grosso and the Brazilian highlands). In Africa we find oval houses amongst the Mangbattu who live on the borders between the Sudan, where the round house predominates, and the Congo where most of the buildings are rectangular" (Tolstov, Sergei, P.: "The Early Culture of Kwarazim," in *Antiquity*, June, 1946, p. 98).

The dimensions of the Teyateyaneng oval houses are always such that the house is almost exactly twice as long as it is broad (Fig. 1), dimensions which would result from placing two circular huts side by side. Two factors are outstanding in the evolution of the oval house:

(1) It resulted from the fusion of two circular frameworks.

(2) It represents the desire for increased living space on the part of a people accustomed to building circular huts *after* they have come in contact with rectangular frameworks. It is an attempt to apply circular building technique to a rectangular plan.

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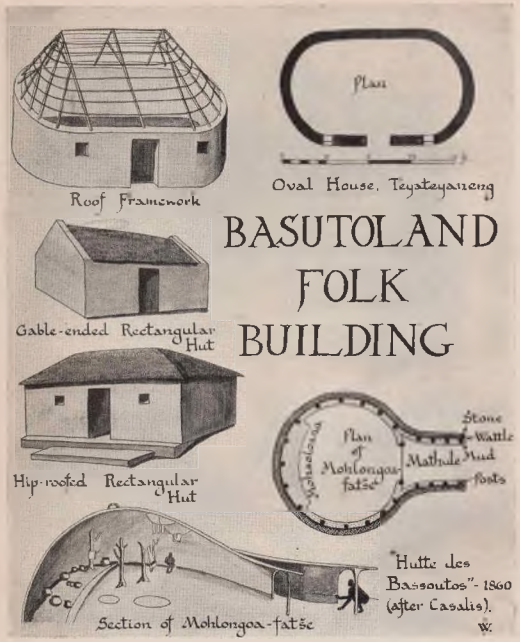
12. Taung hut Qalabani

13. Household group Nakhakhe's

14. Oval house Teyateyaneng



BASUTOLAND FOLK BUILDING TYPES

Innocent's theory that the rectangular house developed from the circular through the intermediate stage of the oval house is not supported by existing evidence. This all points to the fact that the rectangular gable-ended form and the circular came first and that the oval house resulted by adapting the circular form to the more spacious rectangular form, a result achieved by joining two circular houses together. As Ake Campbell has suggested, the hip-roofed rectangular house most probably originated in this way.

In Basutoland, however, this chronology is reversed. The circular hut came first, to be followed by European introductions of both gable-ended and hip-roofed rectangular dwellings. Then the builders of the circular huts, desiring to emulate the rectangular, evolved the oval type by joining two circular frameworks together. In one instance near Teyateyaneng a third circular hut framework was added to the middle of one side, giving a T-shaped plan (14).

Thatching of all these huts is usually extremely neat and effective. Bundles of reeds, *lehlaka*, are sewn to the roof framework as a foundation for the bundles of grass which are sewn both to the framework and the reed foundation. Grass rope, *thapo*, is plaited from *moli* grass and threaded through a curved wooden needle, *lehlabo*, about three feet long. With this the thatch is sewn down before being finally smoothed with a corrugated block of wood, the *thetho*.

The door displays considerable variety. Originally it consisted of a reed screen or a hide stretched on a wooden framework, either of which could be placed behind the doorway and barred from the inside. Then hinged reed screens (6) or doors consisting of a number of lengths of thin timber fastened one above the other came into use. Commonly, however, it is a halved door of boards attributable to European influence and eminently suitable. By opening the upper half only light and fresh air may be admitted whilst poultry and other livestock can be excluded. The threshold is a rectangular space in front of the doorway set with peach stones or pebbles but more often it is a raised platform of mud, the *lebali*, (12, 13 and 14) which, in rectangular houses, extends almost the full length of the front and is often decorated like the walls and floor with *litema* patterns.

Among the Southern Sotho the houses are grouped in

SOUTHERN SOTHO HUT PATTERNS

villages which comprise a number of family units slightly separated from each other. Whenever possible the village is backed by stony scarps in which case the houses look out across the open country in front. Where the villages are sited along the sides of a valley the houses all face into the valley but where they are situated in open country they face in the direction of the prevailing sunshine. Each household normally comprises at least two huts (13), a fire-hut, *mokhoro*, and a living hut which are sometimes surrounded by a circular reed screen, the *seotloana* (4) or a low stone wall (Frontis). The courtyard so enslosed, where cooking and other domestic duties are performed, is known as the *lelapa*, but very often to-day such a boundary is lacking.

Apart from the dwellings the only other structural features of a Southern Sotho village are the *Khotla*, a circle of stakes and brushwood where justice is meted out and the important business of the village is discussed, and the cattle kraals. The latter, shelters of the most treasured possessions of the Sotho, are probably more important than the homes themselves. Each family unit has its own cattle kraal which is of rubble masonry and either rectangular or circular in

15. Women making *Litema* patterns Bolokoe's

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17

16. Hut interior showing clay screen — Masianokeng

17. View from a bedroom through a clay screen — Potsane's

18. Hut interior showing clay side board — Ha Ramarumo

shape. The entrance is defined by two upright forked posts with a number of cut-off branches on which horizontal poles rest to close the kraal at night. In front of the entrance is a hallowed space, the *lepatlello*. Here cattle are kept at night during wet weather when the interior of the kraal is muddy and here they are given salt.

Building a kraal, like threshing, wood-gathering and hoeing, is a communal task, *letsema*, rewarded by a liberal supply of beer. Great precautions are taken against evil influences. The sites of both kraal and *lipatlello* are sprinkled with water containing some powerful antidote against evil and cattle sickness and tiny pieces of wood, smeared with a mixture of fat and an ashy drug, *mohlabelo*, are driven into the ground at various points. The wife of the owner of the kraal is the only woman allowed within the precincts of the kraal and even then only for a short time in the morning when she collects cow dung which may usually be seen stacked on the top of the wall drying in readiness for burning.

In concluding this short study of Southern Sotho folk building I would like to thank the many Sotho in Basutoland who have supplied me with information. Only when details of the peasant architecture in different parts of South Africa have been thoroughly studied will it be possible to accurately define the main trends of this branch of folk culture, their broad types and relationships. In subsequent papers I hope to publish further localised studies.

Photography.
Frontispiece and illustrations 1 to 14 by James Walton
Illustrations 15 to 18 by H. V. Meyerowitz

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RURAL NATIVE HOUSING AT NDABAKAZI

A REPORT OF ARCHITECTURAL INVESTIGATIONS OF A FINGO VILLAGE AT NDABAKAZI, NEAR BUTTERWORTH, TRANSKEI

By G. Herbert, B.Arch. (Rand), M.I.A.

In the summer vacation, 1947, a unique event occurred in the history of South African student affairs. The National Union of South African Students organised an expedition of University students to carry out a field survey of the social, economic and cultural aspects of the life in an African rural community. This research project was carried out by students from all centres and from all fields of study related to the social, economic, health, housing and agricultural problems of African life.

Mr. Gilbert Herbert, a lecturer at the Witwatersrand School of Architecture, and himself a graduate of the school, who in the past has always displayed a keen interest in student activities, was invited by Nusas to lead a small group of architectural students into the field, to carry out a survey of housing in the native location of Ndabakazi, in the Butterworth district, Transkei. Although this survey was a range-finding project designed to give students some insight into the methodology of field research, the architectural group, in the three weeks at their disposal, was able to derive a fairly detailed picture of housing in the area. This picture is contained in Mr. Herbert's paper below, which, together with a paper on Research Methods and Procedure, was presented at the Nusas Congress at the University College, Pietermaritzburg, in July, 1948.

Monty Sack,
National Sec. Architecture, N.U.S.A.S.

I feel it necessary at the outset to give you some picture of the district of Ndabakazi, before embarking on a discussion of housing in the area, for some regional picture of the area is an essential prerequisite to a study of its individual characteristics.

* * * * *

Ndabakazi is what, in the Transkei, is called a rural location. It is a district in the sense that it is an area marked off by boundary lines on the map, and certainly not in the sense that it is a geographical or racial unit, differing in geography or race, or in any other attribute, from its immediate neighbours. Its boundaries are the Toleni River to the South, and two motor roads to East and West, converging in the North at the Ndabakazi Station. For administrative purposes the location falls into the Butterworth Magisterial District, Butterworth being the nearest town of any consequence. It has such facilities as a town hall, which also serves as the local cinema, several hotels, and a post office. From the Ndabakazi point of view perhaps its most important feature is that it contains the only hospital in the district. This is a small combined European and non-European affair, inadequate for the large area for which it caters, but plans are under way for the erection of a bigger and better hospital. Butterworth is in many ways a typical small South African town, and is a centre of European population.

Immediate administration is centred in Butterworth, but Government is resident in Umtata, the capital of the Transkei, and the seat of the Bunga, or Native Consultative Assembly. A councillor to this Assembly is resident in, and represents the interests of the people of, Ndabakazi. He is a person of some influence, and ranks in riches and in social standing far above the local headman or chief.

The main artery of the area is the motor road to Umtata. This road, from Umtata via Butterworth to Ndabakazi, is an untarred road of not too good a quality. It winds its corrugated and uncomfortable way as far as Khomga, where a macadamised road branches off to East London, the metropolis of the area, while another road leads into the hinterland.

Wheeled traffic in the area is confined to these two boundary roads, the main Umtata road on the West and the secondary road on the East. The only other motor road in the vicinity is the road to the Cunningham mission. Between the enclosing arms of the two roads lies the body of the location, criss-crossed by narrow, ill-defined tracks.

Bisecting the area of Ndabakazi is the railway line from Umtata to the coast, and this, plus the telegraph in the tiny post office adjoining the station, completes the means by which Ndabakazi is linked with the world outside.

The road from Khomgha winds through wild hilly countryside, ascending sharply to fall in long, sinuous sweeps, with long vistas over mist-filled valleys to further peaks rising in the distance. Vegetation is thick and richly green, though before the recent rains came to break the longstanding drought, the countryside presented a less attractive aspect. But now tropical plants and cacti grow in rich and beautiful profusion. Then, as one passes beyond the

Toleni Bridge and enters the Ndabakazi area the topography changes suddenly—the rocky outcrops vanish, the hills flatten out and give way abruptly to long rolling downs, sweeping green meadows like the fields of Agincourt. Through these fields wind the Toleni and Ndabakazi Rivers, small streams which become raging torrents when it rains in the uplands.

* * * * *

In this setting live the Fingo people. They are not what are commonly called red-blanket people, that is to say, the Africans in their original untouched natural state. The people of this area have some contact with and conception of the European way of life. This is not to say that they are a sophisticated people, but merely to point out that they are not living their original pastoral and agricultural life in the manner of their forefathers, untouched by European influence. They are living a life which has been coloured in many respects by contact with European civilization. This contact with Europeans is brought about to some extent by missionary activity in the area, but more actively and vitally by the system of migratory labour which obtains in the Union, and which has such lasting effects on the people of the Transkei.

The principal pursuits of the local population are agricultural and pastoral, there being no industries in the area. However, owing to the scarcity of land, and the overpopulation and overstocking which exists throughout the Reserves (a fact commented on by the Mine Wages Commission in its report), farming alone cannot support the population. So usually a member of the family departs for the city, to seek to supplement the family's meagre income by selling his labour in the fields of commerce or industry. The family thus gains contact with the European's way of living.

A word about the communal facilities which exist in the Ndabakazi area. It cannot be said that full provision is made for an integrated social life in the Location. There is a school which provides a centre of congregation for the younger generation, and a church and a trader's store for the older generation. But there is nothing approaching a proper community centre, no proper focus for the communal activities of the district. Health facilities just do not exist.

If lack of some well-defined community centre does not make for an integrated community, the grouping of houses does nothing to rectify the position. There is no evidence of grouping on village lines, no signs of communal organization of life. Houses are scattered in disorder over the rolling landscape. I must, however, not give a false picture. There are no isolated huts, but these exist in groups of four or five huts, with sometimes two or even three groups in close proximity; but that is the total extent of grouping, of hut interrelationship. The group of huts is called an *umzi*, and as each hut in the *umzi* corresponds to a single room, the *umzi* itself is the corresponding domestic unit to the house: that is, the *umzi* is the normal dwelling unit of the family. So by saying that two or three groups of huts are sometimes closely grouped all that is implied is that sometimes two or three houses are found near each other. It is advisable to see the relationship clearly at the outset. The individual hut is not to be equated to a house, but rather to a room in the house. The *umzi* or group of huts is the equivalent to a four or five roomed house, but each room is a separate structural entity.

What are these *umizi* like? Picture if you can a group of four or five circular or rectangular mud-huts, thatch covered, or occasionally sporting a rusty corrugated iron roof, strung out in a straight line, their doors opening onto a yard or enclosure formed by a girdling wire fence. In one corner a palisade of sticks forms a paddock for the beasts. Pigs root about in the yard in a ceaseless forage for food, the many dogs bare their teeth at the sight of a stranger, at whose approach children flee in shy terror, until curiosity gets the better of fear. Through a screen of trees one can see the vegetable garden stretching away from the fence in ordered ranks.

* * * * *

Let us sharpen our focus and bring one of these *umizi* into clearer definition, for to know one of these *umizi* in its typical form is to know in detail the aspect of housing in most of the district. We shall look closely at the *umzi* built upon a stretch of land owned by Nkumanda, and housing his family of eight souls. It consists of four huts, the first being used as a store. Next there is a hut which serves as bedroom to the old man, the head of the family. The adjoining hut houses three persons, a woman and two children. Leastly there is the son's hut, where he, his wife and their two small children live. This son built all the huts himself—as a matter of fact, he has set himself up in business as the local building contractor, and is doing quite well. He has been to the city, and has seen the houses of the European. However, he learnt his craft locally, and uses local building techniques. There is little European influence evident in his work. This *umzi* is set in the usual enclosure, with the usual animal paddock or kraal. Water comes from a nearby dam—and in answer to our queries regarding sanitation, we received the laconic reply—"the valley down there"!

Nkumanda's own hut is typical of many in the area of the rectangular type. The adjoining hut is circular, and is the prototype of most of the huts in the district. It is a dirty dark grey colour externally, with a yellow ochre border around the windows and door. The exterior is pleasantly simple, and is matched by an equally pleasant interior, with an interesting pattern in salmon, terracotta and white worked in coloured clays on the walls.

Furniture is unpretentious—an old dresser, a bucket, a wooden box, reed sleeping mats, and a cooking pot constitute the complete equipment for living which the three

A group of rectangular huts which together form an *umzi*. Note the ochre decorations to doors and windows.

A circular thatched hut, the type most frequently met with at Ndabakazi.

The net of plaited grass rope securing the thatch is found on isolated examples only. The fan-pattern visible on the plaster is common to all buildings in the neighbourhood.

Photos by permission of N.U.S.A.S.

occupants of this hut possess. The hut is lit by two small windows and the door when open, and it is interesting to note the reading of a light meter taken in the centre of the hut. With the windows open but the door closed a light intensity of ½ foot-candle was obtained. When the door was opened the corresponding figure read two foot candles. For reading a book a light intensity of 15-20 foot candles is recommended, which is an index of the inadequacy of the lighting. Ventilation is achieved through the door and windows. The only means of heating is by open fire, for which a raised hearth is formed in the centre of the hut; but no flue is provided, and the smoke must find its way out as best it can. The underside of the thatch is pitchblack with soot.

The construction of this hut gives a detailed picture of local building technique.

There are no foundations to this hut, and the wall is built directly on the ground. We did come across many huts where stone foundations had been laid in a trench excavated for the purpose, but it seems that the stone foundation is indicative of slightly better class work. Around the outside perimeter of the hut is a semi-circular rainwater channel. The walls are of sods cut from the turf and laid in courses one upon the other. They are often reinforced with vertical twig strips. We were told that these "bricks" are not as good as proper mud bricks, but being cheaper, their use is widespread. When mud bricks are used, they are made of stiff clay placed in a mould and allowed to dry out in the sun. When hard and dry they are used to form walls of fine weather resisting properties. We inspected examples which had been standing for some ten years, and showed no sign of crumbling, and no water stains. All walls, whether of sods or bricks, are plastered internally and externally with mud, and the sweeping arc-like movement of the hand as it smooths the plaster traces interesting fanlike patterns on the walls.

The floor is made of stamped earth and cowdung, rammed very hard indeed, and worked to a fine smooth finish. It gives a hard durable surface resembling unpolished granolithic, and almost as hard. I tried scratching the surface with a sharp piece of metal, and made little or no impression.

All door and window openings have plastered jambs, and are lined with wooden frames. This is usual practice—where the lining is of sufficiently heavy a section, it acts as a lintol to the opening. Where this is not sufficient, a gumpole is introduced to take the superimposed load. The windows are wooden boards pivoted at the centre to a small timber frame. Actually they serve as shutters, for, not being translucent, when closed they admit no light at all. However they are more practicable than the glazed windows which we saw in several of the huts, for these usually were fixed sections which, though admitting the light, provided no ventilation at all. These solid windows were home-made, but the door was purchased secondhand from the trader. It is a ledged and battened door hung to a door frame, and held in position when closed by a primitive wooden swivel. These doors are usually in bad condition and, lacking a coat of paint, deteriorate very rapidly.

Roof construction in the circular hut is very simple. 3 in. gumpoles are laid radially from wallplate level as rafters to a central kingpost, and are joined by concentric rings of twig battens. These are covered by a 4 in. to 5 in. layer of thatch, the grass for which is obtained from the fields hard by. In the rectangular type of hut hipped ends are used, and trusses are constructed out of 3 in. gumpole rafters and collar ties. Battens as before are formed with twigs. Normally the thatch projects to form an eaves overhang of about 9 in., but a few huts have introduced corrugated iron sheets at wallplate level to form the eaves. I don't believe that this has any structural significance, but rather an aesthetic and social one—aesthetic because it provides a neat trimming for the thatch, a border as it were, and social, because it seems that the African associates corrugated iron with European housing and consequently with a higher status and a higher standard of living. It is surprising the number of huts completely roofed with corrugated iron, considering the many practical drawbacks which its use involves. Firstly it is more expensive than thatch, and expense is a very important item for the needy Africans. Secondly, being secondhand when purchased and usually unpainted, it deteriorates rapidly, and rusts through to allow the rain to pour in. Thirdly, without ceilings, these iron-roofed huts are terribly hot and uncomfortable. Thatched huts on the other hand are so pleasantly cool that it is difficult to understand why people are abandoning it in favour of iron, but the motivating power of prestige which the iron gives must be borne in mind.

All materials used are obtained from the fields about, except the timber and joinery, which comes from the trader's store.

Let us look at costs. The estimated costs of the huts which we examined are necessarily approximate, but we feel that the margin of error is not too large. One factor is usually neglected, however, and that is the cost of labour. In the particular case we are examining, for instance, though we obtained a fairly detailed statement of the costs of materials, yet no allowance has been made for the time spent by Nkumanda's son in its erection.

The turf sods for the walls cost nothing—if mud bricks are used they cost about 15s. to 18s. for a number sufficient to erect the hut. The gumpoles for the roof cost between £1 and £2, the door about £1. When glazed windows are used, they cost up to 45s. a pair. Grass for the thatching adds another £3. Altogether this typical type of hut can be built for a total of between £6 and £8.

These two huts, the one circular and the other rectangu-

lar, are, as I have said, typical of housing throughout the area. There are other more sophisticated versions to be found, which are of interest as indications of the trend which rural African housing is taking when more money is available, and the African gains a fairly intimate knowledge of the European mode of life.

Mfanga's hut is a case in point. Mfanga is an old gentleman who insisted on leaving his sick-bed on our arrival to do his guests honour. We learnt from him that he had spent some twenty years as a builder in Capetown, and was now putting his knowledge to good use as a builder of huts for his neighbours. His own hut, although basically the same as those previously described, shows touches of European influence, and greater sophistication. There is the corrugated iron roof, and that rarity in Fingo huts—a ceiling, constructed in this case out of hessian strips. The door, of good quality, is painted, and sports a real brass handle. Furniture is more elaborate—a bed, a wardrobe, tables, chairs and open shelving. This house costs nearly £12, and includes an item labelled "10s. to helper to make bricks," one of the few labour costs that we encountered.

It is noteworthy that verandahs are something of a rarity in Ndabakazi. We came across only three or four huts with this provision in the whole area. It seems that for people who in fine weather habitually live out of doors, and use their huts for shelter in inclement weather, there is little need for a verandah, i.e. for an area devoted to outdoor living. The sky and the fields define their outdoor living spaces, and the trees provide shade against the heat of the sun. As the African moves along the scale of westernization, however, he sees in the porch a symbol of social status. So the porch is attached to the house, but this does not necessarily denote the way of life of the African has changed to the extent that he now uses the verandah—of that we saw no evidence at all.

One of these verandahed examples was a simple hut with a lean-to, supported on gumpoles, covering the verandah. This belonged to the brother of the Councillor, of whom more later.

Another was a more complicated structure, L-shaped in plan, and containing three separate rooms. This is a breakaway from the single cell unit we have discussed. There are not many of these multiple cell houses, and where they do exist, there is usually evidence that some of the occupants have more than casual acquaintance with city life. This L-shaped house contains three rooms, and the Europeanization evidenced in the multipe cell layout is repeated in the furniture, which includes the following: A chest, beds and a chair in the bedroom. Tables, bench, a coal stove and a primus stove, and a sewing machine in the dining-living room. A table and a dresser in the kitchen.

Here live the father, an ex-miner suffering from phthisis, his wife, who was employed in Johannesburg, and two children. The house, complete with corrugated iron roof, cost in the neighbourhood of £12, and was built by the owner and his wife. With its three rooms, iron roof, verandah, ceiling and, wonder of wonders, a stove and flue, it is one of the most westernized of the local houses.

Most multicellular houses are merely rectangular huts divided internally into three rooms by two low partition walls. This type of house can be seen by visiting the Councillor's ex-brother-in-law, a Jack-of-all-Trades, who has been policeman, soldier and mineworker. No single cell for this personage, but a well built house of three rooms, two bedrooms and a dining room, well equipped with furniture and costing every penny of £35.

However, the last word in Ndabakazi housing is undoubtedly the Councillor's. His is an orthodox suburban brickbuilt villa of the less attractive type, built by a builder from Butterworth, with materials imported from East London, and costing the local dignitary something like £200.

Evaluation

In making any evaluation of the housing position at Ndabakazi it is necessary to draw to some extent on a knowledge of sociological and other data. It was necessary to include in our questionnaire some questions covering this field. We have used the results so obtained to assist us in making this assessment (although we know that they are not the last word on the subject), for though we anticipate that the experts may enlarge upon the data we have obtained, we do not think that their import will in any way be altered.

The assessment and evaluation of the results of the survey present many difficulties. Assessment always implies a standard, a basis of evaluation. Now on what basis are non-European rural dwellings to be assessed? Should they be compared with European rural housing?—or with non-European urban housing?—or best of all, not with existing housing at all, but with requirements established by investigation to be essential minima for non-European housing? Unfortunately, even in respect of urban housing, such established criteria do not exist. We have such figures as 70 sq. ft. as the minimum area for a habitable room, and a window area of 10 per cent of floor area, etc., etc., set down in building by-laws, but these are hardly established figures, but rather arbitrary figures based on very flimsy suppositions. A scientific attempt is being made by the National Building Research Institute (a branch of C.S.I.R.) to establish absolute criteria in terms of both human requirements and the particular social conditions on which to base local building codes. Such investigations, whose results are to be published in the near future, give some basis of comparative evaluation. But even were those results now available, yet we know little of the range of social conditions of the Ndabakazi African, and evaluation without such knowledge is dangerous.

The N.B.R.I. in its programme includes research into the

functional efficiency of buildings: that is, heating, lighting, ventilation, sanitation, psychological and physiological aspects. Now in many respects the functional efficiency of Ndabakazi housing is very low, low by any standards. But the difficulty is to estimate how low efficiency in terms of say lighting would effect the efficiency of the home in its psychological and physiological aspects. That depends surely upon the pattern of cultural and physical requirements of the people inhabiting the home.

As far as this pattern is concerned, there is little homogenity in the people of Ndabakazi. The Fagan Commission Report states: "One of the things which makes the Native question in S.A. so difficult and complicated is the fact that the Natives do not by any means form a homogeneous group, but that today, in addition to many other differences, they are found in all stages of development, from the primitive blanket Native in the kraal to those who have completely adapted themselves to the European's manner of life and thought."

Thus there is a sliding scale of Europeanization, and the attitude of a man to his house must vary according to his position on that scale. What may be a fairly satisfactory environment for a red-blanket Native would be totally inadequate for a person who has experienced years of city life. It is with an eye to this difference in personal background that we must make our assessment. We must realize too that this differentiation of background does not only occur between different families, but within the family itself, from generation to generation. Thus if we are to make an evaluation in terms of the grandparents, that evaluation would hardly be applicable to the younger generations.

These difficulties are apparent; yet we must attempt some assessment.We would therefore state the following:—

The normal typical hut that we have described seems an adequate shelter for the African whose Western contacts are limited. The building is proof against the elements, and provides effective shelter, which is its primary function. Overcrowding to a point of physical discomfort is never met with—2-3 people seem to be the normal complement of a hut of approximately 250-300 sq. ft. in area. Differentiation of function as far as cooking, living, sleeping, eating are concerned does not exist, but this does not seem to be a great drawback as most functions except sleeping appear to be performed in the open air. Privacy is ensured, with separate branches of the family occupying separate huts, and separation of the sexes the normal procedure. The son and his bride, occupying a separate hut in the *umzi*, are ensured a high degree of seclusion and privacy without forfeiting the companionship of family life. Sanitation is primitive, yet does not seem to have drastic consequences, for the incidence of diseases usually spread by inefficient sanitation is reported to be remarkably low. Lighting has been demonstrated to be poor, yet if the hut is to be merely a shelter, bright sunlight is not essential and perhaps not even desirable.

But the needs of the people of Ndabakazi are beginning to outstrip the amenities of their houses. The Fagan Commission says: "Among the rising generation of Natives there are a great many who will by no means be able to return to the old standard of living of the Reserves." Their lives are beginning to become more complicated, their needs more diverse, and the hut has not kept pace. Subdued lighting is not satisfactory for the child who does homework or the woman who uses her sewing machine. The elementary system of isolated cells rather than a unified house, this system with its poor communication from room to room becomes inadequate, and an attempt is made to evolve the multicellular house. With the introduction of specialized items of furniture, the need for differentiation of rooms according to specialized function arises. As long as one room serves all purposes it can physically be separated from its neighbours. When it serves only a specialized function, it must, for efficient working of the house group, be related intimately to other rooms serving complementary functions. Thus the need for function-differentiation leads to a consequent need for a multi-cellular dwelling, a dwelling housing all the different functions, as the single room had done. I have pointed out earlier how embryonic attempts in this direction have already been made, especially by families which have had some contact with European ways of life.

It can be stated therefore that the isolated hut system is satisfactory up to a certain point, but once the pattern of living changes, this system becomes unsatisfactory and inadequate, and, if the family has the resources, there is some tendency to replace the single unit with a more complex form. Recognition of this tendency can be seen in the experimental house built of traditional materials at the Teco agricultural college, which, though shocking architecturally as far as both design and planning is concerned, nevertheless does attempt to provide for the African a unified dwelling. Another attempt at integrated housing has been made by the Railway Administration, and which we examined from an interest point of view, though strictly speaking they were outside the survey area. Though providing rural housing facilities of an advanced standard, the scheme as a whole seems predestined to failure, because of the neglect of one very important factor, namely, that the wage of an African railway worker is not sufficient to keep his family, who have to remain on the farm in order to obtain the means of living. Therefore the anomaly arises where there are four-roomed family houses of good quality being occupied by one solitary African worker. This is a factor of considerable importance, for it implies that, unless there is a large increase in family income, any family housing scheme that is envisaged for this area must be related to the pastures and the fields, and that any regrouping of houses on village

or communal lines might entail drastic reorganizati :n of the whole farming system.

Generally the problem of rural planning is a very complex one. Town planning theory today as exemplified in the writings of Thomas Sharp and Patrick Abercrombie stresses the need to plan in such ways as to promote social integration and communal unity. In urban planning today the neighbourhood unit, with its social centre or focus, has become the unit of large scale planning on a cellular basis. The principles and advantages of the neighbourhood unit are embodied in a concept of neighbourliness and mutual co-operation. Now evidence of a social attitude to the problems of living is not evident at Ndabakazi. Scattered housing with little in the way of communal facilities and no communal centre or focus does not make for an integrated community. Now we do not suggest that the neighbourhood unit as applicable to urban planning is the necessary solution to the problem of rural housing, and indeed without a much greater knowledge of the needs and outlook of the African people, we would be incompetent to suggest any detailed solution of that problem, but we do feel that some solution based on the broad principles of the neighbourhood unit would best achieve a more closely knit community. Whether the establishment of such a community is desirable, and what the effect of such a regrouping would have on the farming system and the economics of the area are matters that would be fruitful fields for further investigation.

Urbanization of the African population since 1921 has been a rapid process, but nevertheless the rural African population has increased as well. Fagan report figures show that in 1921 the African urban population was 587,000, and by 1946 had reached 1,794,000. However, during the same period the African rural population had also increased from 4,111,000 to 6,011,000—so that in 1946 there were approximately 4,250,000 more Africans in rural areas than in urban. This indicates that despite the immediate and pressing problems of the urban Africans, there is need to devote much study and research into the affairs of the 6,000,000 rural Africans who form so large a part of our people.

Without this study of the problems of our rural areas, both as separate regions and in their relation to urban districts, it is difficult to analyse the problems of Ndabakazi,

Photo by N.U.S.A.S.

and see them in correct perspective. Nevertheless, in terms of the data which we have amassed, we would sum up as follows:

The housing of Ndabakazi is of a basic, minimum sort. The social conditions of the inhabitants are, however, far from static, and there is every evidence that the housing position is not keeping pace with the changing pattern of life. Westernization is coming to the rural African at a rapid rate, but the means at his disposal do not permit him to adjust his physical environment to that new pattern. It seems that the stage is soon arriving when a rural housing problem of some magnitude will arise, a problem not necessarily of a quantitative character, but rather of a qualitative nature. To assess the likelihood of that problem arising, and the form and character that it will assume, one must, as I have stated, have a wide and deep knowledge of the economic and social processes which are changing the forms of rural life, and an understanding in all its aspects of the scene where that change is being enacted. We are of the opinion that the recent survey did not achieve this knowledge and understanding, but assumed rather the role of a pilot survey, pointing the way and indicating the scope of the work in all fields still to be done.

THE STUDENTS' FORUM

ARCHITECTURE AND EDUCATION

By MONTY SACK, B. Arch.

It has been frequently asserted by our social diagnosticians that society seems to be entering a new era—an era of planning. This signifies an organised control, a co-ordinated direction, of our economic and material environment; it implies a skilful use of our science and technology for the mutual benefit and security of all men. Although it is probable that this assertion will be disputed by the dialectician, questioned by the moralist, and condemned by the politician, there appears to be much evidence in its favour. In fact, one might say that this "newly appearing order," is nothing more than a continuation of man's historic struggle to create order in a disorderly environment, but a continuation nevertheless, manifesting itself in terms of new forms, new demands, and new techniques. It is this assertion that generates Mumford's question "What are the possibilities for creating form, order and design in our present civilisation?"

However, it is a different, but not unrelated question with which this editorial concerns itself, namely, how adequately is the architect and the town planner equipped to meet the emergent demands for an ordered environment, and to add his contribution to a design for society? Moholy-Nagy offers us a point of departure when he writes that, "Art and architecture that fail to serve for the betterment of our environment are socially destructive by aggrevating instead of healing the ills of an inequitable social system." Consider this statement in terms of our present architectural milieu and you have in part, an answer to the question raised above. In spite of the realisation that foundations have been laid, and that sporadically fine achievements may be discerned about us, it seems that the high hope and exciting potential held out during the last four decades, by Sullavan, Adler and Wright, Behrens and Van Der Velde, by Gropius, Van Der Rohe and Le Corbusier, by the Werkbund and the Bauhaus, have not in fact been realised.

Our dwellings and cities mirror the awful image of a 19th Century hangover. It is a two-faced image reflecting on one side, a tremendous development in our material achievements, on the other, stagnation in our motives and our spiritual advance.

But these are conditions, and if impiricism and observation provides the answer to our question above, it is still important to trace causal influences that precede these conditions. It is proposed for the immediate purpose to single out one of these causes. Generally, education systems today accentuate rather than bridge the acute contradictions of society, failing to satisfy the requirements of the individual and society in a mutually complimentary way. The emphasis seems to be on single fields of activity, on unrelated specialisation, confining, rather than enlarging, the individual's horizons, in a narrow, unbalanced economic framework.

Narrowing down our field of enquiry, to consider architectural education, we are at once aware of a concept that crystalises architecture as a thing in itself, but dynamically and intimately associated with all realms of human activity; it is a concept viewed from many sides, freed from a narrow effete characterisation of the aesthete, liberating architecture as a broad and friendly servant of man. Yet it is a concept held more in the breach than the observance. It is a concept which rather than generating a rational and humanistic approach to architectural education, is in reality more often entirely dissociated from education. It would be absurd to maintain that current systems of architectural education are alone responsible for the non-translation of intellectual and technological achievements in architecture, into a reality visible in terms of beautiful and efficient dwellings, orderly and humane cities. It is true that the problem of education merges into the broader problems that underly societal maladjustment. However, it is reasonable to maintain that because education is basic, even if only in a limited chronological sense, an enquiry into direct causal relationships must necessarily give to it a primary and operative significance.

Having thus loosely traced the relationship between Society, Architecture and Education, and in this way having arrived at an assessment of the functional significance of Education, one must conclude, even in the light of this superficial enquiry, that there is an urgent demand for a stock-taking of architectural education systems. The challenge is clear. It is challenge to re-organise education so that it will generate a purposeful architecture able to meet the new demands of society, to use its new tools, to constructively further its specialised scientific culture, relating its products to all human activity, thus creating a framework for orderly and happy living.

One witnesses a growing awareness among students throughout the world, of the need for Education reform. The Architectural Federation Bureau, of the International Union of Students, domiciled in Prague, has expressed this awareness in their world-wide publications. There are signs too, that this need is being felt nearer home. It is, therefore, fitting, that this Students' Forum should raise its voice in the universal cry: "A new Education, to fit a new Architecture for a new Era."

By DONALD PILCHER

AFRICA

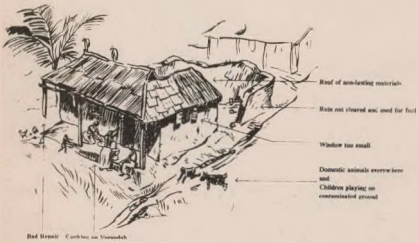
The previous articles in this issue have introduced two aspects of the rural housing situation in South Africa. The following pages show how this problem has been examined in another part of Africa and certain planning principles worked out as a basis for future developments. The architects responsible for this survey of housing in West Africa are E. Maxwell Fry, Jane Drew and Harry L. Ford.

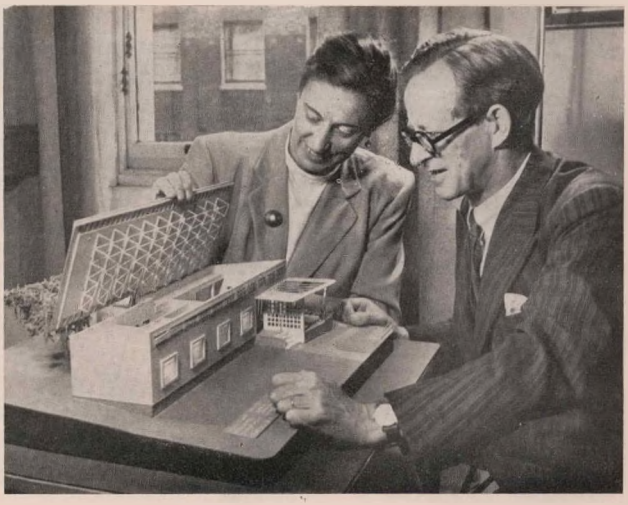
Before the war, Maxwell Fry designed a number of houses and blocks of flats which are well known as examples of the Functional approach represented in England by the MARS Group, of which he was a foundation member. The illustration on the right shows him with his wife and partner, Jane Drew, on the staircase of the Chelsea house which he designed in collaboration with Walter Gropius for the playwright Ben Levy and his wife Constance Cummings. Additions to this house have since been made by Jane Drew.

During the war, Maxwell Fry served with the Royal Engineers on the Gold Coast. Later he was seconded to Lord Swinton, then Resident Minister, as his town planning adviser and with Jane Drew and a team of young architects drew up plans for the principal towns and an organisation of planning for the four British West African Colonies. One result of this work was the publication of a small book, *Village Housing in the Tropics*, which tabulated recommendations for village planning in the West African Colonies. This beautifully-produced little book (the publishers are Lund Humphries, London) contains much that has a bearing on Native housing conditions in South Africa and the following pages attempt to give some idea of the architects' approach to the subject, together with some photographs of models of buildings which they have designed since the book was published. The drawing on the right, from *Village Housing in the Tropics*, shows the point of departure for the enquiry, a typical West African village house: a type apparently very similar to the Southern Sotho house described by Mr. Walton in his article.

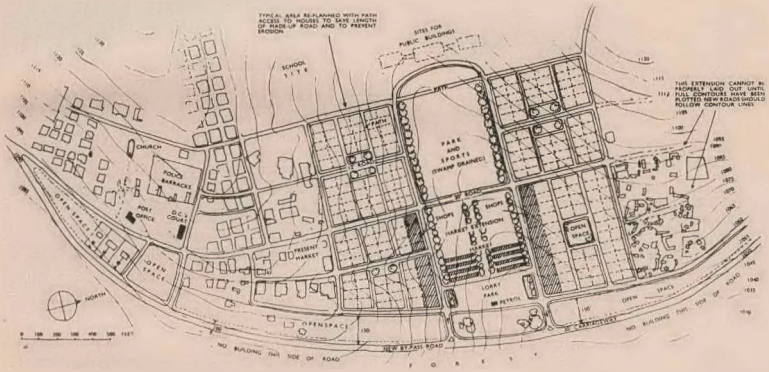
Only a very small area of the Union of South Africa lies, at present, within the tropics, so that some of the climatic considerations which weigh heavily with the authors of *Village Housing in the Tropics* will not apply in this country. The scene on the left is nevertheless as familiar a one in this country as it is in West Africa and it shows that the basic problem is the same in both cases: that in fact the problem of planning is very largely identified with the problem of hygiene. The book is concerned with making simple recommendations on this subject which can be followed by administrators concerned with village housing developments, methods for example of disentangling the human from the animal population in kraals and of providing adequate ventilation and sanitary arrangements. Numerous drawings are also included of relevant details of this sort. Below, the architects are seen with the model of a teachers' bungalow designed for the Gold Coast administration in which it can be seen that special consideration has been given to the system of ventilation.

On the facing page is a suggested re-development of the village of Mampong, Ashanti. Here the first step has been to segregate arterial traffic from traffic inside the village and a new by-pass road has been laid out with a preserved open belt, 150 feet across, acting as a buffer between through traffic and housing. The hub of the village is a lorry park and market, removed from, but directly accessible to the through road. This type of layout is recommended as being generally suitable for village planning and the system is illustrated diagramatically in the small drawing on the right.

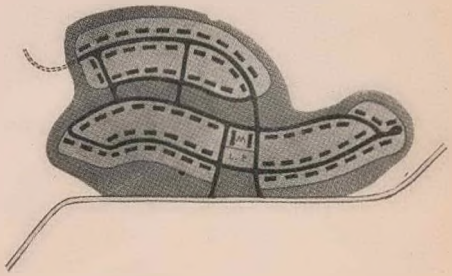


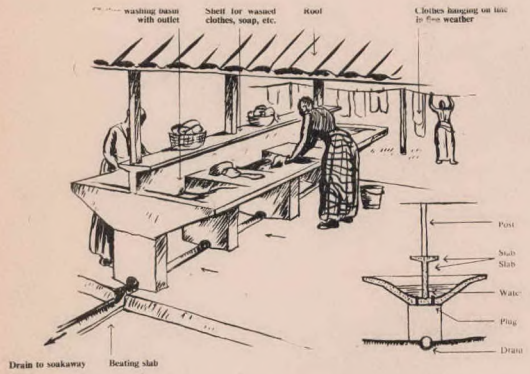


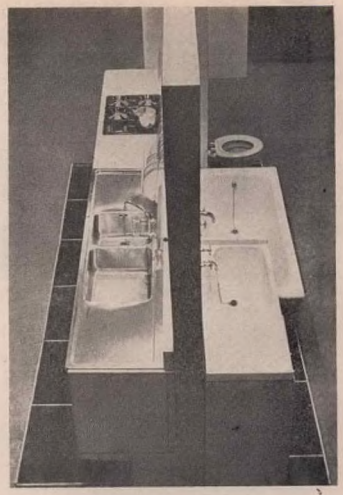
AFRICA

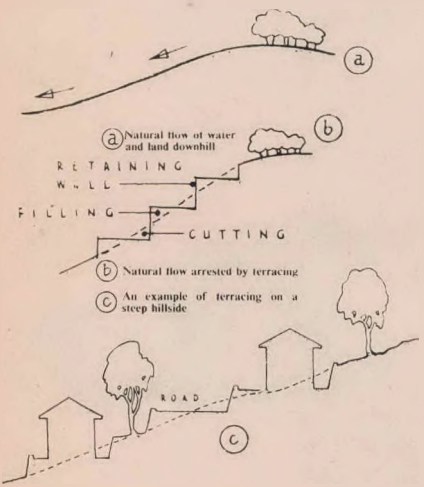


In West Africa there is a tradition of grid-iron planning, with the maximum number of street intersections and secondary access by a system of euphemistically termed "sanitary lanes." Means have been studied of breaking down the grid-iron by preserving the minimum of roads and giving access to many of the houses only by paths. The Mampong plan shows this system incorporated in the layout, with the consequent gain of secondary open spaces in the plan. From this point of view it is to be hoped that *Village Housing in the Tropics* will fall into the hands of those concerned with location layout in South Africa. Here generous provision is often made for roads, but the space involved could be far more effectively used if a system of access paths were introduced instead of the monotonous pattern of roads of uniform width.





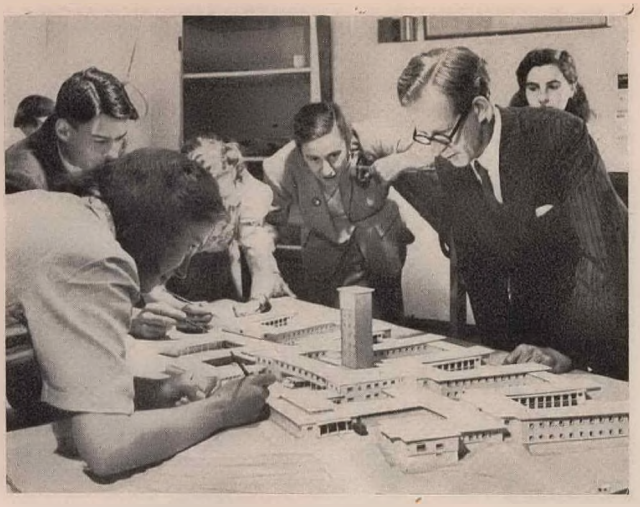


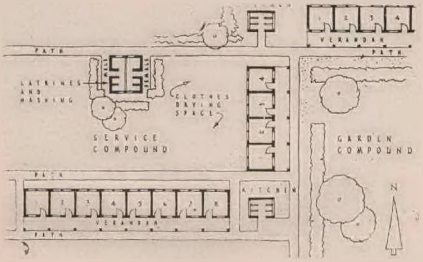


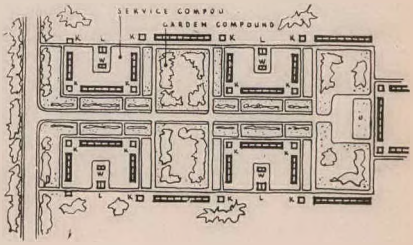
An important consideration in African Village planning is the avoidance of soil erosion. To build following the contours, instead of accross them, therefore becomes an important practical consideration as well as providing a means of obtaining a plan organically related to the landscape as against the monotony of the imposed rectangular pattern. The diagrams on the left illustrate further considerations in relation to contouring, the necessity for planting on the summits of slopes so that wind and rain will not erode the downward slope, and the need for consolidating or paving ground on the crumbling edges of terraces.

Above, left, is a simple and well-arranged type of wash house, the provision of buildings of this sort being very necessary to avoid the contamination of clothes by, for example bilharzia, if they are washed and laid out on the ground. The design is worth comparing with the illustration on the right of a mass-produced back to back all-gas kitchen and bathroom unit in pressed aluminium designed by Jane Drew. As neat a design solution has been found to the highly technical problem as to the essentially elementary one.

The architects have also studied the possibility of using communal kitchens in place of cooking in individual houses. The housing layouts above have communal kitchens of this sort and are particularly interesting in the principles of layout which they embody. The housing generally follows the principle of building blocks or individual houses with verandahs on the front and rear. The front verandah acts as







the sitting stoep and the back verandah as the stoep for washing and cooking, and this gives an effective zoning of the occupations which in West Africa are traditionally carried out in the dirt and confusion of the single verandah. The plans above show how this zoning has been carried into the exterior planning, with service compounds, containing latrines, wash-houses, etc., at the rear of the blocks and planted sitting compounds in the front. This gives an effective and flexible use of the extra space derived from a better organisation of the road system and again it has a possible bearing on the layout of locations and mines compounds in South Africa. There is no greater expense involved, and an immense gain in amenity, with this type of layout than there is with the all-over road plan or the barrack-square compound. Both in the broader principles which it establishes and in numerous details of planning and equipment which it illustrates *Village Housing in the Tropics* has in fact a considerable bearing on problems of planning in this country.

Since its publication, the architects have designed a number of buildings for different parts of the tropics. A model of one of these, the new Ahmadi General Hospital at Kuwait on the Persian Gulf is shown above.