worst a third party could be commissioned to do the building. The cost for this varies from region to region, being recorded as R50 at Mount Frere, Transkei; R120 at Silverkrantz, Bophuthatswana or, reportedly, two cows (approximately R180) at Ndumu, KwaZulu. As however, door and window frames, and later roof timbers and cladding began to signify a capital outlay, so then they became objects to be recovered from the old dwelling and revalidated in the new. A four-roomed house may mean a financial outlay of up to R600, most of which is recoverable in a move to another location.

This chapter marks the end of vernacular architecture in the purest sense. Henceforth the rural builder ceases to look exclusively to his immediate surrounds as a ready store for his materials. Perhaps such a development was to be expected of an architecture notable for its resilience, adaptability and ability to integrate new materials into its forms. Yet this chapter to a certain extent also marks a certain loss of innocence, for already it is apparent that the aesthetics engendered by the Soweto house prototype are becoming manifest in many of our rural areas. This is an insidious infiltration which is occurring under the false pretext of modernization. It is also a house form which becomes part of an international genre called "affordable housing", and as such has no place in a study such as this. Therefore also marks an end to this study of the evolution of house form.
CHAPTER 16: THE VERANDAH HOUSE

The verandah house may be considered to form a definite and separate genre of house-forms which, although falling within the general framework of the Southern African rural vernacular, can none-the-less be considered as an entity which has undergone development in its own right.

It is a house form typified by the fact that the roof eaves extend beyond the dwelling walls and are supported by an external perimeter of columns or posts which may or may not be fully load-bearing of the roof structure. It is found generally amongst the rural people of Bophuthatswana, Venda and Gazankulu although some variations have also been recorded among the Ndebele. As a genre, it has been noted to include the cone on cylinder, the cone on cube and the ridged and hipped house forms.

The earliest pictorial records we have of the verandah house originate from the work of Burchell and Daniell who travelled the areas today known as the northern Cape, western Transvaal and Botswana during the pre-Difaqane years of the last century. The painting by Daniell of “A Boosh-Wannah Hut” appears to indicate that at some stage the Tswana verandah house comprised of a conical beehive dwelling topped by a conical roof which in its turn was supported by timber posts, thus forming a verandah. The full structural implications of such a structure and the exact stage of development that it may have represented are today unfortunately a matter of conjecture. By 1812, when Burchell visited these areas, we know that the verandah house consisted of an internal circular drum topped by a conical roof whose eaves were supported by a series of posts set at the house perimeter, a form which has remained essentially unchanged down to the present day.

Archaeological evidence based on research conducted in Zimbabwe indicates that verandah houses were being built in that area as early as 1100 A.D. This is confirmed to a certain extent by the records of travellers to this region during the seventeenth and eighteenth centuries who also recorded such dwellings there.
a. Ridged-roofed dwelling with front portico: Ndalini, KwaZulu.
b. Dwelling with front verandah: Moruleng, Bophuthatswana.
c. Dwelling with perimeter verandah: Morokweng, Bophuthatswana.
d. Dwelling with perimeter verandah: Pala, Bophuthatswana.
Current research however seems to indicate that a basic division exists between the Tswana and the Venda/Thonga verandah homes, based upon structure and the use of inner spaces. The differences, briefly, are as follows:

- The Tswana conical roof frame is brought to a central crown where it is loosely secured before the battens and thatch cover are applied.

- The Tswana thatching at the apex is seldom fully resolved and is often left open to a certain degree to the elements.

- The Tswana roof often has a central supporting post.

- The Tswana roof frame is fully supported by the external perimeter of columns and the internal wall plays no part in bearing the load.

- The Tswana verandah is usually shallow and it is rarely shelved to provide a seat.

- The Tswana house interior is often divided into two or three rooms.

- The Venda/Thonga conical roof frame is resolved in high detail, the beams being brought and secured to a central crown which is then finished off, usually with a finial, before the battens and thatch cover are applied.

- The Venda/Thonga thatching at the apex is fully resolved and waterproofed by means of a grass capping piece.

- No central roof supports have to date been recorded among the Venda/Thonga.

- The Venda/Thonga roof frame load is carried equally by the internal drum and the external perimeter of columns.

- The Venda/Thonga verandah is deep and shelved to provide a seating perimeter about the dwelling and below the eaves.

- No Venda/Thonga dwellings have been recorded where such internal divisions have taken place.

It would appear therefore, that whilst certain variations in structure may have arisen purely as the result of regional differences, this does not explain the divergence in basic approach to the overall structure which exists between the Tswana and the Venda/Thonga verandah house. Such a difference could be interpreted to mean that, historically, the verandah house form developed in the north of the country and only spread south and westward by contact and cultural cross-pollination at a much later
a. Dwelling with perimeter verandah: Xigalo, Gazankulu.
b. Reconstruction of Venda chief's dwelling with partially enclosed perimeter verandah: Thoho-ya-
ndo, Venda.
c. Octagonal dwelling with perimeter verandah: road Sibasa to Donald Fraser Hospital, Venda.
d. Aerial view of Ndebele household showing collapsed cone-on-cylinder dwelling with perimeter verandah KwaNdebele.
stage.

Architecturally, the verandah house appears to be ideally suited to its environs. The wide, low verandah found predominantly in the hot northern Transvaal keeps the interior cool and shady whilst creating outdoor spaces suitable for social gathering and conducting many of the everyday chores of the rural household.

The form of the verandah house is however not limited to the circular plan. In some parts of Bophuthatswana, in the northern Cape, the basic conical roof supported by perimeter posts has been retained whilst the inner circular drum walls have either been flattened out at the doorway or have moved to a square plan. At Saulspoort and Silwerkrantz in Bophuthatswana, in the western Transvaal, the principle of perimeter columns has been done away with altogether and here rectangular plan houses have ridged and hipped roofs whose front eaves have been extended forward. The projecting eaves are supported by a series of columns thus creating a verandah within which many of the functions of the household, such as the cooking of meals and the grinding of corn, can take place.

Today it would appear that the verandah house, having managed to survive largely unchanged through many centuries, is for the present moment secure as a rural house form, being threatened only in the more urbanized settlements of the western Transvaal and Matikeng in the northern Cape. Its relative longevity can probably be attributed to having achieved in time a high degree of sophistication in construction and in being an efficient house form ideally suited to its environment and the needs of its builders.
CHAPTER 17: OTHER RURAL STRUCTURES

Rural architecture's repertoire of buildings does not stop at the dwelling unit but extends into other spheres of rural activity from animal husbandry through to recreation, from stores to initiation lodges. It is however true that the buildings which result often fall within the range of house-forms described thus far and the casual visitor will be unable to differentiate between the functions of various buildings unless he either has specialized knowledge or is informed to this effect by the residents. This chapter will therefore use the rural house form as a basis for comparison between it and the functions of the various structures encountered within a rural settlement.

The father's house or "great hut"
This will usually be identifiable either through its central position within the homestead, as is the case in the Zulu kraal, or through the elements of decoration, as is the case in Venda society. In some societies however the man has no house of his own but shares those of his wives on a rota system.

The wife's house
In Zulu society where two or more wives are involved then a differentiation in status is made between the first or Head wife and subsequent wives, each having their own place within the hierarchy of the settlement.

The cooking area
Although in many instances little if any difference could be found between the cooking hut and the form of other dwellings within the same settlement, in other cases the kitchen unit had a definite form which made its function readily identifiable.

Cooking areas defined in plan but open to the elements were recorded in Bophuthatswana, some parts of the Ciskei and among the Sotho of the
a. Kitchen unit: Xikukwana, Gazankulu.
b. Kitchen unit: Morokweng, Bophuthatswana.
c. Kitchen unit: Xigalg, Gazankulu.
Transvaal and Orange Free State highveld. Such areas usually made use of low screen walls formed in either earth, reed matting or buffalo wood. In a few cases the screen walls were cleverly incorporated into the wall defining the household limits whilst in at least one example recorded at Saulspoort the cooking hearth was built into the floor of the front verandah. In Gazankulu, the hearth is formed into the floor shelf raised above natural ground level which extends before the main hut.

Kitchen huts of identifiable form were recorded in Venda, Gazankulu and Bophuthatswana. Such units usually followed the general form of the dwellings in the settlement, normally the cone on cylinder, but the walls were not raised to the full eaves but were built up to half or three-quarter height thus allowing a ventilation gap between walls and roof-frme. In many households on the highveld where the dwellings are in the main roofed in corrugated iron, the kitchen is usually identifiable, being the only thatched unit in the homestead.

Structures which were not readily perceived as kitchens but could be identified as such through their position in the settlement were recorded largely in Lebowa and KwaZulu. In Lebowa the kitchen area is usually situated to the rear and side of the central dwelling and usually comprises of a cone on cylinder unit giving onto a small kitchen court which in its turn leads off the main or central court. In KwaZulu the cooking hut is sited traditionally to the right of the Great Hut.

Granaries

Grain may either be stored in bins placed into the ground, as in some Zulu examples, or placed above the ground in specially elevated baskets or structures. The latter has been recorded widely in Venda and Gazankulu and only in isolated cases in KwaZulu and KaNgwane.

Generally three types of granary structures have been recorded during the course of this study. In the first, a specially woven basket is placed upon a wooden trellis raised off the ground by means of stone or timber legs. A conical roof supported by timber posts at its periphery is then built to cover the whole. This type was only recorded in Gazankulu although the Ovambo of Namibia are also known to build such granaries.

The second type involves a structure not dissimilar in either form or construction from that of the dwellings about it but somewhat scaled-down in size. As in the first type the granary bin has been placed upon a trellis raised up from the ground. Such examples recorded in Gazankulu and Venda were usually circular drum walls topped by a
a. Beehive Granary; district of Melmoth, KwaZulu.
b. Granary; Beuster Mission Station, Venda.
c. Granary road Makonde to Sambandou, Venda.

Figures 116 and 117 a.

Conical thatch roof and stood at about a man's height. The example recorded in KwaZulu near Melmoth was a miniature replica of the traditional beehive hut, but also raised off the ground on a trellis on wooden legs.

The third type was only recorded at the Tshonga Open Air Museum at Eiland and is no longer believed to be in current usage. It consisted of a large timber bin, some 5,000 m in diameter, placed upon a trellis and raised some 1,500 m above the ground on timber posts. The conical roof extended outwards and towards the ground where it was supported by timber posts at its circumference. The perimeter of the hut thus formed was then walled up to the eaves leaving only a narrow ventilation gap.

Granaries formed in earth have also been recorded among the Tswana by Daniell but their structural implications are not fully known.

The position of granaries within the settlement is usually just without of the homestead near the cooking hut although in many Thonga examples the bins were positioned giving onto the main court as would a normal dwelling unit.
Animal enclosures: I. Cattle

The cattle enclosure or kraal was usually formed in scrubwood or timbers too thick and gnarled to be suitable for other building and in most rural societies in Southern Africa was located central to the settlement. Archaeological studies have also shown that many of the stone and iron age settlements on the Highveld region created their enclosures with dry-stone walling. During the course of this present study, kraals were recorded in most rural areas but very few proved to be of any substance. Timber or scrubwood enclosures were recorded in Venda, Gazankulu, Bophuthatswana and KwaZulu whereas stone walled examples were found in Qwa Qwa, Thaba 'Nchu and one isolated case in the Transkei.

Animal enclosures: II. Goats, sheep and pigs

Goat and sheep enclosures were often incorporated into the body of a larger cattle kraal and several such examples were recorded in Bophuthatswana and KwaZulu. Generally however smaller and separate enclosures were provided, mostly built in scrubwood although in a number of cases, existing dwellings which had fallen into disrepair were also converted to this use. The intimate relationship that exists between the rural dweller and his livestock was at times rather aptly illustrated by the provisions he made to shelter them. In one Transkeian example previously discussed, an "L" plan dwelling had been extended to the rear, by an additional two rooms; one was the master's bedroom, the other a...
a. Cattle enclosure: Genesa, Bophuthatswana.
b. Cattle enclosure and barn: Witsieshoek, Qwa Qwa.
d. Goat pen: Thonga Open Air Museum, Eiland.
room for his three goats. In a second example in Gazankulu, the usual scrubwood enclosure had been provided but within it stood a conical thatch roof supported by posts beneath which the goats could shelter. In yet a third example recorded in Venda, a large square-plan unit of some 8,000 m across with a complex system of internal roof supports was devoted entirely to the function of housing goats.

Animal enclosures: III. Poultry

In many instances chicken runs and goose pens were found to be no more than dwellings which, having fallen into disrepair, had been converted to this use. In Venda and Gazankulu specialized chicken coops were however recorded, consisting of a square or circular shaped timber frame some 1,200 m wide and 0,800 m high roofed over by a thatch cone and standing upon timber stilts or legs at a height of 1,200 m. A timber post or small ladder led from the ground up to the entry point allowing the chickens access but keeping out small predators.

Public places

Places of public gathering where many of the social functions of a settlement were fulfilled were found in most rural societies, usually doubling up with the cattle enclosure when not in use. Such spaces served as gathering places when the community was addressed by its leaders, when the chief or headman held public audience or dispensed justice, or when celebrations, or dances were held. In Venda, the “Khorø” or gathering place of the fortified village of Mukumbani had a stone podium or stage built up about a large mopane tree and it was from there that the local chief addressed his people and presided at functions.

Entertainment

Although it would appear that the settlement’s central gathering place also served the entertainment functions of the community, these need not necessarily be formalized within any enclosure and, in theory anyway, any open piece of land would serve this purpose. In practice however it was found that the intimacy engendered by a space defined by territorial statements such as a low earth wall, a reed screen or even a low raised earth kerb made the courtyard, the lelapa or the kraal enclosure suitable for such functions. However, although during the course of this study numerous social occasions were recorded and even partaken in, no formalization of leisure activities into architectural forms could be recorded.

Dancing has always had the dual functions of education and
Hypothetical disposition of traditional Zulu theatre: after Credo Mutwa.
Hypothetical disposition of traditional Zulu theatre: after Credo Mutwa.
entertainment within traditional rural society and many of the dances of
the various tribes reveal much of those people's history, customs, military
tactics and sexual morality. More important, where a society does not
possess a written language the narration of traditional folk tales serves the
very real role of handing down a folk's history from one generation to the
next. Often the narrator would emphasize the more exciting passages of
his tale by means of dramatic gestures and enactments. Despite this
however the arts of dancing and story telling have generally not become
subject in the past to the limitations of place and thus do not appear to
have found architectural expression in rural society.

Initiation lodges

It is probable that all of Southern Africa's rural groups which do perform
initiation or manhood rites also built structures to accommodate such
activities. Because of the nature of this ceremony, lodges are usually of a
temporary nature and are burnt down once their function is fulfilled. It has
not therefore been possible to record these buildings during the brief
course of a study such as this, with the fortunate exception of one found at
Vhufuli, Venda. This differed from the construction of other cone on
cylinder units in its vicinity by virtue of having a seating shelf for initiates,
running the internal perimeter of the wall and the presence of two doors,
the first being functional for the duration of the lodge and the second
being used only upon graduation and obviously being symbolic of the
graduands transition into adulthood.

Anthropological records of Xhosa initiation lodges reveal that these are in
the form of a beehive hut, a structure which has not been recorded in
normal residential use in the Transkei for over sixty years.

Stilt houses

There do not exist too many records of stilt houses having been built in the
Southern African region in the past and certainly none were discovered
during the course of this present study. From what few records we do have,
it would appear according to Barrow and Campbell that stilt houses were
in fact built among some Tswana groups during early years of the last
century although the exact details of construction are somewhat sketchy.
Reports that the Thonga of Mocambique also built stilt houses at one
stage are to date unconfirmed. The function of such dwellings in the
former case was for the residents to escape the nightly depredations of
lions whilst in the latter, to raise the house above the level of the region's
seasonal flooding.
CHAPTER 18: A SURVEY OF TRADITIONAL BUILDING METHODS

This section has generally been discussed during the course of the preceding chapters dealing with the house form. For the sake of comparative study it will be worthwhile however to consolidate this information into one chapter.

Structural Systems

Generally speaking three major types of structure have emerged from this study.

a. The beehive frame made use of resilient saplings which had the facility to bend to the demands of the structure. The Zulu beehive consisted of a double set of arches laid at right angles to each other and secured at each place of crossing. The Sotho frame came radially from the external perimeter at the ground to a central apex where the members were fixed. Hoops set parallel to the ground and fixed at various heights of the frame decreasing in circumference as they advanced towards the crown, served to brace the structure.

b. The timber-framed structure made use of posts to transmit the roof-load into the ground. The walls consisted of either timber posts closely spaced together or of timber columns set at intervals varying between 0.500 m and 1,000 m, with the intervening wall panel acting as a non-structural infill.

c. The load-bearing wall does not usually make use of timber posting to either reinforce the wall or take up the roof-load but is rather a monolithic structure made out of stone masonry, sun-dried bricks or cut turf blocks, which carries the roof directly.

Building systems

The methods of the rural builder vary from location to location, group to group and even clan to clan. Were we to consider the full range of building systems employable in vernacular architecture's house forms, we could
arrive at a series of permutations almost impossible to describe fully.

For the purpose of this section therefore each element of structure is considered separately and on a comparative basis between the various regional groupings in Southern Africa.

**Solving out**

Circular plans are usually set out by driving a stake into the ground at the centre of the hut-to-be. A string or grass rope of the required radius is fastened to it at one end and, by means of a stick at the other, the dwelling’s circumference is scratched out on the ground which had been cleared of all vegetation beforehand. The circumference thus drawn is usually taken to be external to the wall-to-be.

Rectangular plans usually have their four corners marked out by timber posts set into the ground and connected by a length of wire, string or grass rope. Where the walls are to be load-bearing, the first few bricks or block courses are laid out up to the corner posts which are then removed allowing the corners to be completed in the normal manner.

**The foundations**

Foundation footings are seldom found in rural architecture, partly because they are not necessary where timber-framed structures are concerned. Where load-bearing walls are used however we find that foundation-less structures are especially susceptible to severe cracking and even structural collapse. Two types of footings were recorded:

a. **A masonry base** where a shallow trench is dug and levelled out; the wall is begun in stone to a height of 0.220 m above ground level and then completed to full height in sun-dried blocks (recorded at Silwerkrantz, Bophuthatswana). Alternatively the whole wall is built in dressed or rough stone (Qwa Qwa).

b. **The earth brick base** where no foundation trench is dug but the footing, made of sun-dried earth bricks, is placed upon the ground and built up into a plinth which is levelled out. The wall, usually also of sun-dried earth bricks, is then built up upon this base (Venda and Gazankulu).

**The walls**

These offer perhaps the greatest range of alternatives open to the rural builder:

a. **Sapling and thatch.** This usually consists of a sapling structure which
a. Laying stone foundations: Silwerkrantz, Bophuthatswana.
b. Raising the walls: Tshakhuma, Venda.
c. Sitting out on the verandah seat: Sambandou, Venda.

Figure 126. Detail a.
Figure 126. Details d and e.

has been clad over in thatch as is the case of the beehive form (central and northern KwaZulu and reportedly in Lesotho and Swaziland).

b. Timber and thatch. Only recorded at the Thonga Open Air Museum at Eiland where timber posts were set into the ground and brought to a central crown; concentric battens set parallel to the ground then carried the thatch cover. (Gazankulu).

c. Open-order timber frame with infill cavity. Timber columns which are ultimately to carry the roof load are set into the ground at intervals of between 0.500 to 1.000 m. Saplings are then fixed to the external and internal perimeters of the wall, spanning from column to column and parallel to the ground with spacings of between 150 mm and 300 mm. The cavity thus formed is then filled with either:

(i) earth (Transkei, KwaZulu, Highveld region, Ciskei, Lebowa).
(ii) rubble (KwaZulu, Lebowa).
(iii) stone or slate but fairface showing (KwaZulu).

Two variants are worthwhile noting. In Bushbuckridge, Lebowa, the settlement is large and rubble difficult to come by and some residents have resorted to making sun-dried bricks which are of inferior quality
Detail a: Beehive dome.
- sapling frame
- thatching

daga floor

daga packing

daga floor

Detail b: Beehive dome on minor cylinder.
- sapling frame
- basket weave core
- timber posts
- grass matting

Detail d: Timber posts, horizontal sapling bracing and earth packing.
- timber post
- horizontal sapling framework
- daga infill

Detail c: Timber posts with earth panel infill.
- timber post
- daga packing and plastering

Detail e: Timber posts, horizontal sapling bracing and earth packing.
- timber posts
- horizontal sapling framing
- daga packing
- daga plastering
- daga floor
as bricks go but good enough to use as rubble infill. In the squatter settlement of Malukazi (KwaZulu, south of Durban) there is again a problem of too many people after too little rubble and residents have been filling empty beer cartons with soil and using them as wall packing.

The interior and exterior wall faces, or in some cases just the interior, are then packed solid and plastered over with daga, a mixture of cow dung and mud.

d. Open order timber frame with laid brick or stone infill. Timber columns, which are ultimately to carry the roof-load are set into the ground at intervals of between 0,500 m to 1,000 m. The gap between columns is then built up with either sun-dried brick bonded in earth (Venda, KaNgwane) or slate stone laid edge face on (KwaZulu, near Pomeroy). The interior wall faces are then plastered over in daga.

A similar frame but with the infill panel built up in solid monolithic earth was also recorded at Silwerkrantz, Bophuthatswana.

c. Open order timber frame with timber infill. Timber columns which are ultimately to carry the roof-load are set into the ground at intervals of between 0,500 m to 1,000 m. Various alternatives are then possible:

(i) Saplings are fixed to the external or internal wall perimeter and span from column to column parallel to the ground spaced at 150 mm to 300 mm. Further saplings are then fixed vertically to the horizontal members thus creating a grid. Earth is packed on either side and the surface is finished off with a daga plaster applied internally and externally. (KwaZulu).

(ii) A reed screen laid vertically is sandwiched between two saplings laid at the top and the bottom of the panel and protruding on either side. The whole is then fastened to the timber columns and an earth packing and daga plaster is applied on both sides or, more usual, internally only. (Transvaal Highveld, Lebowa, KaNgwane).

(iii) Timber members are placed vertically and in close order in between the columns. Horizontal bracing front and back is then provided by similar timbers spanning between columns. The wall are packed with earth and plastered with daga either on both sides or, internally only. (KwaZulu, KaNgwane, Venda, Gazankulu).

f. Timber frame with “basket” infill. Timber columns which are ultimately to carry the roof load are set into the ground at intervals of between 0,500 m and 0,900 m. Timber posts which, however, will not be loadbearing, are set vertically in between the columns at intervals of
0.200 m to 0.300 m. Saplings are then woven horizontally between columns and posts thus creating a timber basket frame. Earth packing and daga plastering is usually applied internally only. (KwaZulu, Transkei, Gazankulu).

g. **Close order timber frame.** Timber posts (as against columns) are placed at close spacing to form the wall perimeter:

(i) In Venda and Gazankulu, the posts are then braced by running saplings horizontally about the internal and external perimeter of the wall and are fixed usually at eaves and door lintel height and sometimes at roughly the level of a man’s waist.

(ii) In KaNgwane the posts are usually somewhat more substantial than in the case of the Venda structure and where horizontal bracing is deemed necessary, then it usually occurs at the eaves, the lintels and the cills.

The structure is then packed with earth and plastered with daga both internally and externally, although in some cases recorded in KaNgwane, the timber was allowed to show externally.

h. **Non-load bearing packed earth.** These are usually the low perimeter walls found in Venda, Gazankulu, Lebowa, KwaNdebele and Bophuthatswana and are formed in wet earth plastered over with daga. Although they are not load-bearing they can none-the-less achieve considerable durability. In Bophuthatswana, in cases where the roof frame is carried by an external perimeter of columns, the wall containing the inside space stands proud of the column perimeter. It can achieve a height of nearly 2,000 m. Additional wall strength and thickness is usually achieved through seasonal maintenance and replastering. Although this wall type is essentially monolithic similar examples using a central reinforcement core of reeds or saplings have been recorded in Bophuthatswana and Lebowa.

i. **Load-bearing sun-dried bricks.** Wet earth is packed into a timber mould which can vary from just over the standard brick size to that of a sizeable block (350 x 200 x 150 mm deep). The mould is lifted leaving behind the brick to dry in the sun for at least ten days. Such bricks are known as “green” and are bonded with wet earth into walls which are then plastered over with daga. The use of this building form is almost universal throughout the Southern African region, except perhaps for central and northern KwaZulu where the beehive form is still predominant.

j. **Load-bearing kiln-dried bricks.** “Green” bricks are manufactured in the usual manner and after a drying period of seven to ten days, are...
Detail f: Timber posts, sapling grid and earth packing.

Detail g: Timber posts, reed core and earth packing.

Detail h: Timber posts, reed core and earth packing.

Detail i: Timber posts, reed core and earth packing.

Detail j: Timber posts set in close order.

Detail k: Timber posts with "basket" core.