

A legacy of rondavels and rondavel houses in the northern interior of South Africa

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The rondavel has become synonymous with the settlements of the black people of South Africa but has also become a characteristic building type of European (white) folk building in white vernacular architecture. Although this building type was never considered a typical building type on farmsteads and of farm architecture of the Boland, it has become such a common phenomenon that it can now be considered part of white vernacular architecture. The occurrence and distribution of the rondavel in the northern part of South Africa reflects its popularity over the last hundred years. The rondavel occurs in six configurations: (1) as single isolated cone on cylinder structure, (2) as a conglomerate of separate rondavels, (3) as several rondavels connected to each other with foyers and passages, (4) as an independent annex to a larger rectangular dwelling unit, (5) as an addition built onto an existing rectangular dwelling unit or (6) as a single dwelling unit with the characteristics of an elongated rondavel with two of its sides parallel to each other (lozenge shape). The use and function of these buildings also varied depending on the needs of the landowner, tenant, housewife or workers.

Key words: rondavel, vernacular architecture, cone-on-cylinder buildings, huts, farm buildings

'n Nalatenskap van rondawels en rondavelhuise in die noordelike binneland van Suid Afrika

Die rondavel het sinoniem geword met die nedersettings van swart inwoners van Suid-Afrika, maar terselfdertyd kenmerkend van wit volksboukuns op beide plase in die landelike omgewing en as stedelike fenomeen. Alhoewel nie tipies van die oudste plaaswerwe en plaasargitektuur van die Boland nie, het die rondavel in die binneland so algemeen geword dat daarna verwys kan word as 'n tipiese geboutipe van wit volksboukuns. Die voorkoms en verspreiding van die rondavel in die noordelike gedeelte van Suid Afrika weerspieël die populariteit van die geboutipe oor die afgelope honderd jaar. Die rondavel kom in ses vorme voor: (1) as enkel geïsoleerde rondavel, (2) as 'n groep van enkel rondavels, (3) as 'n groep van rondawels wat aanmekaar gekoppel is deur portale en gange, (4) as losstaande anneks tot 'n reghoekige groter wooneenheid, (5) as 'n aanbouing tot 'n reghoekige wooneenheid of (6) as enkel wooneenheid met die kenmerke van 'n uitgerekte rondavel waarvan twee sye ewewydig is. Die funksies van die geboutjies varieer ook, afhangende van die doel waarvoor die grondeienaar, sy vrou of arbeiders dit benodig.

Sleutelwoorde: rondavel, volksboukuns, hutte, plaasgeboue

Contrary to Western architectural perceptions and a general preference for rectangular and square buildings and rooms to accommodate our similarly square furniture and lifestyles, the rondavel as circular building type has survived. In a world of square furniture, interiors and household equipment, the rondavel is still erected and used. Why this contradiction? From an interior design point of view, the rondavel is impractical but still considered a practical (perhaps a 'quick-fix') solution to some spatial and shelter problems. There must be some logical explanation for the re-occurrence of the rondavel: is it easier to construct or is it merely the last remains of a romantic perception of living in a small cosy shelter, or is there some deeper emotional and intimate relationship between a created living space and prenatal experiences trapped in our primeval memory?

According to architect Franco Frescura,¹ "This is possibly the most universal of South Africa's house forms". He refers to what he calls the 'cone-on-cylinder' house type. His term is technically more correct and descriptive of what became popularly known as the 'hut' or the 'rondavel' house type. Elsewhere in the world, similar cone-on-cylinder buildings are referred to as 'huts'.² They can still be seen in European open-air museums where the different types of shelters found all over Europe during the Iron Age are represented. Huts are probably the most universal house form in Africa.

Even though the article highlights the occurrence of the rondavel phenomenon in the northern interior of South Africa, trips exploring the southern parts of the country have exposed the existence of rondavels elsewhere. It also occurs on farms in the Karoo and has become a

popular residential solution when families who live in the interior had to set up beach accommodation along the south coast of the Cape Province. The assumption is that farmers and families who live in the interior extended this building tradition from the South African interior to their newly acquired beach properties.

Another observation not discussed in detail is the extensive use of rondavels as housing model for 'lodge' architecture, both as contemporary 'style' and as historic solution for housing on game farms.

The Afrikaans word 'rondawel' as a contribution to architectural vocabulary

The word 'rondavel' is foreign to the English language but has become part of the indigenous Afrikaans terminology describing the cone-on-cylinder hut type.³ Language specialists for Afrikaans agree on the architectural and technical characteristics of the type: that the rondavel is a circular single room building, associated in the past, with a thatched roof and used as milk, storage, bed- or living room.

The second association with the word relates to a small fort or related structures also referred to as a bastion(s) or block house(s). Some of the earliest examples in South Africa of the latter type of structures were erected by Jan van Riebeeck and named 'Kijkuyt', 'Keert-de Koe', 'Houdt-den-Bul' and 'Koornekop'. In Dutch, these structures were also referred to as 'ronde wacht-' or 'waerthoorns' (structures in which guards were placed to guard over property).⁴

Another possibility may be that the word originates from Portuguese: 'rodavallo' (roda - wheel, circle) and 'vallo' (wall or berm). It is also mentioned that the word 'dewals'(referring to small pyramid shaped buildings and) common in the Far East, may have some relation to the origin of the word 'rondavel'. The word could have been imported from the east when early Cape Malayan builders and masons started erecting huts and dwellings in the Cape. The authors are of the opinion that the rondavel was first associated with slavery and used as slave housing, confirming the probability that the word originated in the Far East.⁵

The date when the word was first used (verbally) remains unknown. The first date when it was used in written form occurs in 1837. Dr Eduard Kretzshmar who lived in the Cape (region) between 1837 and 1852 wrote a little book called *Sudafrikanische Skizzen* in which he used the word 'rundtafel'.⁶ In the 1884 publication *Practical Dutch Grammar*, the author Hubertus Elffers spelt the word 'ronddawel'.⁷ In South Africa, G.S. Nienaber wrote extensively about the possible origins of the word and where it occurred in literature.

The possibility that the word 'rondavel' has become part of the international architectural vocabulary is suggested when it appeared in the 1914 edition of the Dutch Dictionary *Van Dale's Groot Woordenboek der Nederlandsche Taal*. The word, spelt 'rondavel', is noted (as of South African origin) and described as: 'trechtvormige leemen kafferhut' ('conical clay hut of black people'). As the word is recognised as standard term for what we know as a rondavel in 1914 it may indicate that no other word for the building type existed in Dutch and that it is one of the oldest published references of the word rondavel in an international dictionary.⁸ The word may join other Afrikaans words such as 'stoep', 'stoepkamer' and 'voorkamer' on the list of common terms used in other languages.

Occurrences of the rondavel elsewhere in the world

The circular dwelling and, to a lesser extent, the cone-on-cylinder house type is not unique to South Africa and no claim can be laid that it originated in South Africa and that the concept

spread to the rest of the world from here. The building type also concurrently occurred elsewhere in the world. The use of the cone roof and cone-on-cylinder is widespread and the rondavel is but one variation in a series of cone-on-cylinder types.

The oldest examples of similar buildings can be traced to an early dwelling type 'Banpocun' ('pan-p'ots'un') in China around 4 000 BC. A Banpocun consisted of scores of circular semi-subterranean wattle and daub dwellings about 5 m in diameter, slightly submerged about 600 mm into the ground (Figure 1). Each had a central hearth defined by four centre posts that supported a conical wattle and daub roof⁹ Similar buildings were excavated at the contemporary site of Jiangzhai, also in Shanxi Province where all the dwellings opened towards the centre of the village. This building type was also found at Dahezhuang (ca. 2 000 BC.) in Gansu Province.¹⁰ In form and shape the cone on cylinder type building looks similar to the rondavels common in South Africa. The two main differences are that the floors of the China examples were excavated and timber columns situated inside the hut supported the roofs. It is unknown whether the walls were load bearing, whether timber posts were the only supporting elements of the roof and whether the interior spaces were only later enclosed by clay walls.¹¹



Figure 1

Artist's impression (reconstruction) of a Chinese dwelling exposed by archaeologists. Note the similarity in shape and floor plan but the difference in scale of the floor plan (Musgrove, I. 1987. *A History of Architecture*, p. 550).

The circular hut also occurred in Europe during the Neolithic Period and Bronze Age. At Butser Hill Ancient Farm in Britain, historians and archaeologists have reconstructed a village with circular huts based on data recovered from archaeological excavations on the British Isles and Wales. At Butser Hill, they do not refer to these circular dwellings as 'rondavels' but as 'roundhouses'. Two main roundhouse types were reconstructed at the site: the so-called 'great roundhouse' and the 'small roundhouse'. The model used for the reconstruction of the smaller roundhouses was based on structures excavated at Moely Gerddi, Dyfed in Wales and represents a typical working farmhouse. The diameter of this house is about 9m with a floor area of about 67 sq m. The two smallest houses in the village were reconstructed based on excavations done at Glastonbury lake Village in Somerset. The researchers at the site are of the opinion that three of these structures would have formed a household, each operating as a single room. One of the buildings may have been used to accommodate the livestock during winter.¹²

The so-called Great Roundhouse at Butser Hill was based on the evidence revealed at the excavations at Longbridge Deverel Cowdown in Wiltshire. The house is about 15 m in diameter

with a floor area of about 176 sq m. It was constructed with a double ring wall. The inner wall seems to be load bearing supported by six major rafters forming an apex. It is also suspected that the space between the inner and outer walls could have formed a number of small rooms, bedrooms or storerooms.¹³

Reconstructions of the huts in which Iron Age people lived in Britain indicate that they were not that different from our own rondavel hut types. A unique feature of these huts is the roof structure and supporting diagonal rafters. They stood on the ground, each member based on a flat stone (a similar building tradition as in China and Japan).¹⁴

Other circular structures excavated in the region include shallow circular working pits. When exposed they were found filled with clay, soil and straw. They were constructed for making the daub mixture that was plastered onto the house walls. Other hollows were constructed to operate as Iron Age clamp kilns.¹⁵

Similar building types also occur in the Netherlands and some are still used. An example of such a rondavel was published in the magazine *Landleven* and indicates that it was used as the butter room ('karnmolen') (Figure 2). The little building is used as a single room where butter is churned ('karn') (although the building demonstrated in the publication is contemporary, the name of the farm was not mentioned).¹⁶



Figure 2

Cone-on-cylinder building type used as 'karn molen' or 'butter room' in rural Netherlands (Drawing: Karnmolens in boerderijen. *Landleven*, Des. 2005, vol 10, p. 54).

A typology of rondavel types

The history of the rondavel is scattered with various applications of the circular floor plan. It was not always used as a separate or independent building but has been used in a variety of ways. A series of six types of rondavels can be distinguished (Figure 3):

1. A rondavel functioning as a single 'hut' relating to no other buildings and operating as the only dwelling on a site.
2. Several rondavels operating as separate units but each one supporting the other in its setting with no other. None of the units are linked with another. The building is used as single separate room and can occur anywhere on the farm or any other property type - even in urban settings.
3. A cluster of rondavels consisting of two or more circular units connected to each other and performing as a single autonomous building. This often happened when the need for a second room occurred and was merely added to create more space.

4. A single rondavel erected separate from a rectangular building, the latter performing as the main residential unit on the site. In this case the rondavel is a supporting building and supposed to accommodate additional non-core household activities.
5. A rondavel as connected space or addition to a rectangular building or vice versa: a rectangular space added to a rondavel. Where the rondavel is applied in this way it becomes part of the formal household and performs a full-time role as room in the dwelling.
6. Lozenge-shaped building operating 'fused' rondavels but without the full circle of the rondavel. It occurs in this form as private residence and has also been applied as solution for official housing, sometimes part of black housing and sometimes as holiday accommodation.

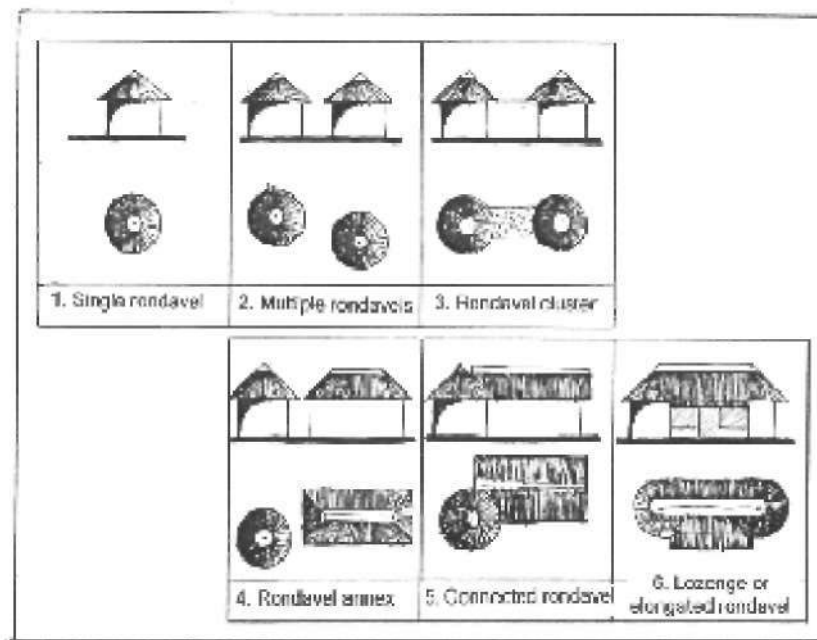


Figure 3

Diagram indicating the various configurations in which rondavels occur in the vernacular architecture of both rural and urban traditions (Drawing: M. Naude).

Several varieties occur within each type and these still need to be investigated, identified and recorded by extensive fieldwork. Most of these types will be highlighted in this paper.

Rondavels as an indigenous building tradition in South Africa

The oldest Iron Age sites containing circular structures that may have had conical roofs date to about 200 AD.¹⁷ The circular tradition of building dwellings should not be perceived as mere museological artefacts but have to be contextualised in their social matrix. These indigenous building traditions flowed from particular social frameworks, 'worked' and will continue to 'work' because of the socio-economic processes involved.¹⁸ The circular form of the dwellings relates to the circular and semi-circular form of the settlements of which they were part. The rondavel is merely a component of the phenomenon of settlement and its form relates to the individual and residents' interpretation of their 'place' (socio-economical and socio-political) in their micro and macro social contexts. The older settlements in Southern Africa have always been circular. Individual lapas, cattle kraals, court areas and dwellings were also circular. It is the result of a process of 'place-making' - pinpointing the spot by driving a peg into the ground

and using it as a centre point to draw a circular outline along the circumference of a new dwelling.

The circular tradition in Southern Africa predates European habitation and is associated with the people of the Stone and Iron Age. The San people of Southern African are associated with the Stone Age lifestyle. They still use circular dome-shaped shelters, which cannot be called rondavels but in some areas in Botswana (near the Tsodilo hills) they have also adopted the use of rondavel huts. The circular settlement tradition can be traced back to the Early Iron Age. The earliest dates of Iron Age sites south of the Zambezi are 180 AD for Mabweni in Zimbabwe and 270 AD for Silver Leaves in the northern Transvaal (Limpopo Province).¹⁹

Frescura is of the opinion that the 'beehive' house form preceded the rondavel dwelling type.²⁰ The beehive house form includes the primitive shelter, the beehive cone, the beehive dome and all "subsequent developments that see the dome raised on drums of varying height" (Figure 4).

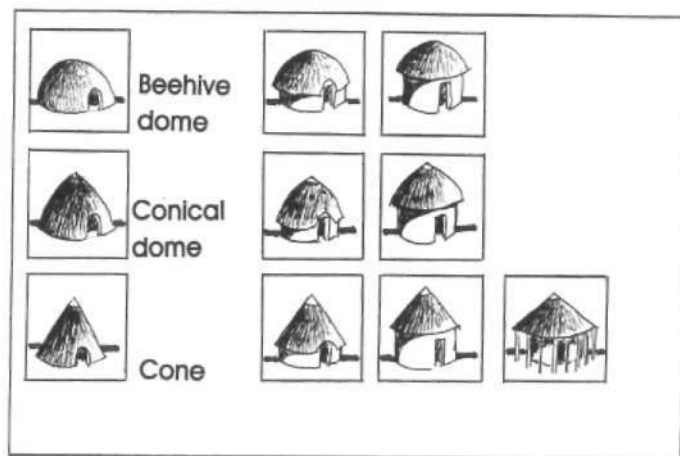


Figure 4

Diagram indicating the hut types that preceded the rondavel in the architectural building traditions of the south-east Bantu speaking peoples of South Africa (Drawn by M. Naude from the theoretical model created by F. Frescura).

The rondavel has not always been the stereotype for constructing dwellings among the different ethnic groups of South Africa. It was preceded almost everywhere by other building forms such as domed timber frame huts, conical domed timber framed huts and circular domed stone huts. Between the earlier hut types and contemporary flat roofed rectangular huts and dwellings a variety of circular and rectangular hut types occurred.

One of the best examples of this evolution from circular to rectangular hut types occurs in the history of huts of the South Ndebele people (the past 100 years). This change is even more evident in the past 50 years and several architectural historians and anthropologists recorded it. During the 1940s Prof A.L. Meiring surveyed and recorded the Ndebele village of the Msiza family along the northern slopes of the Magaliesberg. This family was eventually relocated to the farm Klipgat after they refused to move to a new site designated at Vlakkfontein (later to become Mamelodi). Klipgat is located directly adjacent to (the farm) Winterveld. The Ndebele family moved to Klipgat between 1952 and 1955 where they erected a new village based on the same spatial and architectural principles as the villages they lived in along the northern slopes of the Magaliesberg (Figure 5). Part of this architectural vocabulary was the use of rondavel huts set in rectangular walled enclosures. The village at Klipgat now consists of about 54 units with enclosures but only four of the original cone-on-cylinder huts have survived. The rest of the more contemporary dwellings are rectangular with flat roofs.²¹

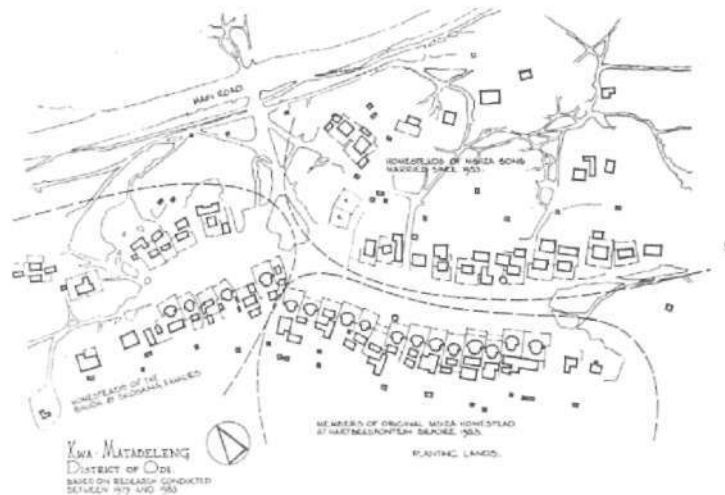


Figure 5

Site plan of Kwa Msiza (South Ndebele village of chief Msiza) on the farm Klipgat adjacent to the farm Winterveld north of Pretoria (Drawing: F. Frescura).

Even though the rondavel includes all variants of the cone-on-cylinder and cone-on-cube house forms including the verandah house, this article only highlights the cone-on-cylinder type. The roof and walls are separate and identifiable structural elements and the roof has deliberate eaves. In the vernacular African tradition the roof consisted of a timber frame supported by timber posts. Timber post constructions later became less popular and in some areas were replaced with load bearing walls because of a shortage of timber.²²

The rondavel as a rural building tradition

Rondavels occur in both rural and urban contexts, but are more often associated with the rural landscape. Between 1813 and 1822 early travellers like Burchell and Campbell observed examples of huts on their travels through the interior of South Africa and mentioned them in their travel reports. The rondavel was first considered as a typical house type of the indigenous peoples of Southern Africa and only later became part of the vernacular architectural heritage of the white settlers on dispersed farm settlements.

Travellers, adventurers and prospectors

The rondavel has also become an accepted dwelling type associated with adventurers, renegades and individuals who lived alone in various locations in the South African interior. The author, Moerschell recalled that a personal friend of his, simply referred to as Adler, who lived in the most northern part of the Limpopo River lived in a rondavel. They served as members of the border police corps. Moerschell remembers that Adler had two rondavels built for him by one of the local Africans, one as a dwelling in which he lived and the other housing a friend, ill with fever. The walls of Adler's rondavel were decorated with tens of pictures taken from magazines and pasted onto the wall, almost as if the entire interior was decorated with wallpaper.²³

A picture (Figure 6) taken in the 1880s by the well-known Pretoria photographer, Henry F. Gros depicts a prospector in the Eastern Transvaal (now Mpumalanga Province) in front of

his dwelling.²⁴ The picture was later published in *The old Transvaal 1834-1899*.²⁵ According to Cartwright and Cowan, the hut was part of a prospector's camp in the Woodbush area near Pietersburg (now Polokwane) in the north-eastern Transvaal. The prospector's dwelling is a small rondavel, about 2 m in diameter with a single door and no visible windows. The conical thatched roof extends over the door forming a veranda to repel rainwater from the entrance. The eaves reached down to a height of about 1,2 m from the ground. Using the size of the hut as a measure, one can assume that it was only used as a sleeping facility and food was prepared outside. The fact that the building was whitewashed suggests that it was more than a temporary shelter.

On farmsteads

Rondavels have become synonymous with the vernacular architectural heritage of Transvaal farmsteads, either as worker housing or as an outbuilding near the farmhouse (of the landowner). The reason why white landowners used the indigenous rondavel hut can perhaps be explained by the fact that it can be built without having a formal plan and it is easy to delegate the construction to local black labourers who have been constructing them for decades.

The roofs are usually thatched and the walls either built with stone or brick. In the eastern Transvaal highveld (Mpumalanga Province) stone instead of bricks was used more often as the area is known for its lack of sufficient firewood (for burning bricks).²⁶

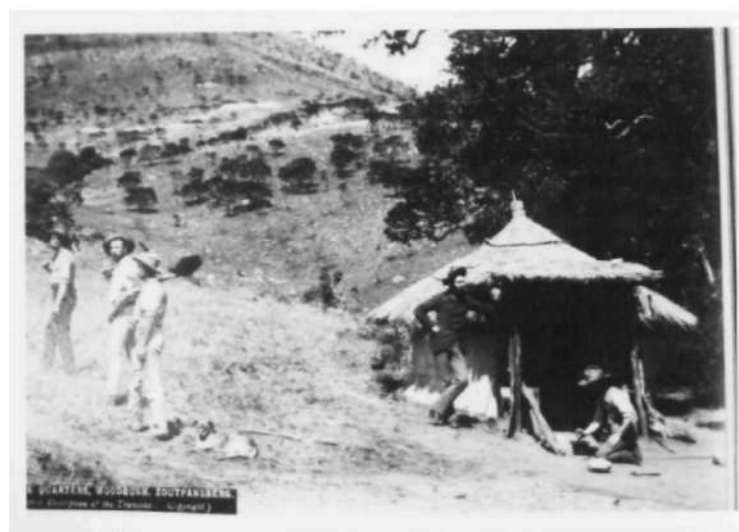


Figure 6

Small prospector's hut near Woodbush in Mpumalanga Province (Photograph: Gros collection of the National Cultural History Museum).

Farmers (single persons or entire families) who settled on a new farm for the first time probably used rondavels as a first dwelling. In the *Carnegie Report* of 1932 a photograph was published of a white cattle herder (Figure 7) living in a rondavel.²⁷ Of special significance are the size of the rondavel and the occurrence of a second (but rectangular) building nearby - probably an outdoor kitchen. In this case the main dwelling unit is circular while the annex is rectangular (contrary to the rule of thumb which is vice-versa).

Rondavels are common on the farmsteads of white landowners. It remained for many years the dominant type of dwelling of farm labourers. On the farm Slagveld in the Bronkhorst-spruit district, a row of new (ca 1991) dwelling units for farm labourers was constructed almost similar to the traditional thatched rondavel type, only with an elongated (lozenge) floor plan.

The building type was not selected by the labourers themselves and the linear configuration of the settlement clearly indicates that it was laid out by the landowner.

Rondavels located near the farmhouse were used for a multitude of purposes such as a meat or a milk room for the housewife, an office for the landowner, a storeroom or as an additional bedroom for guests or children. In an article in *Die Boerevrou*, Gerard Moerdijk refers to a farmhouse built in the Klerksdorp district where individual rondavels were used to house the garage, the milk room and bedrooms for the children and the housemaid. The main house on this farmstead consisted of two lozenge-shaped rondavels connected by a central voorkamer.²⁸

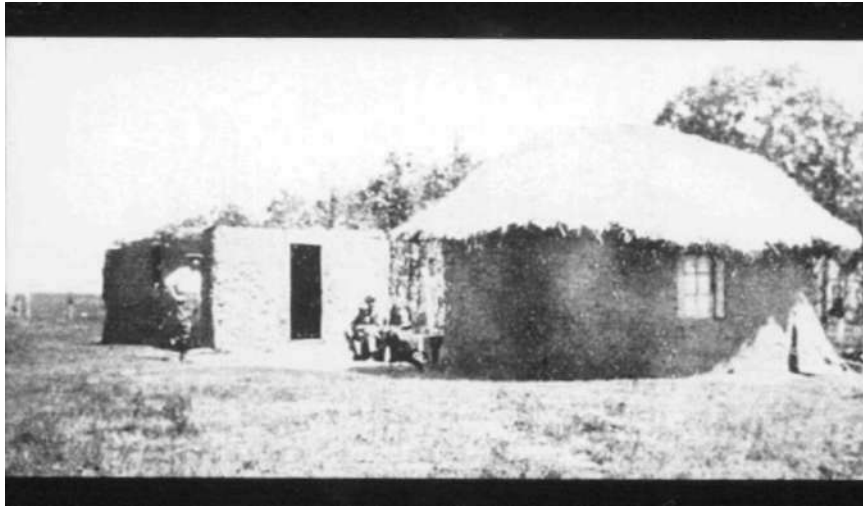


Figure 7

Rondavel shaped 'bywoners' hut recorded by researchers who were involved in the fieldwork for the Carnegie Report (Photograph: Carnegie Report, 1932).

In 1929, the well-known folk artist, Erich Mayer recorded three pencil drawings²⁹ of a small homestead behind the Soutpansberg (Limpopo Province) where the main dwelling consisted of two rectangular hut-like buildings connected with a single rectangular flat roofed space (Figure 8). A single rondavel was part of the farmstead complex but set about 10 m away from the residence. The use of this rondavel was not indicated but it may have been a guestroom (where Mayer stayed over for the night or longer).³⁰



Figure 8

Erich Mayer's recording of a dwelling of a white farmer. The drawing is merely called *Agter die Soutpansberg* (Behind the Soutpansberg). The small drawing of the farmstead indicates the location of the rondavel in relation to a multiple room dwelling (Original drawing: National Cultural History Museum, Pretoria).

On some farms complete dwellings were built consisting of several rondavels linked together to form a multiple rondavel-house like the one mentioned by Moerdijk and another example on the (seasonal) farm Koedoesrant (Figure 9), of the Bosman family of the farm Roodepoort in the Middelburg district in the Mpumalanga Province. The Bosman family used Koedoesrant as a winter farm and they had to move their stock and cattle from the cold and frosty nights of the Highveld to the warmer Bushveld region. They would stay on the Bushveld farm during the winter. The residence on the farm Koedoesrant was only used as temporary dwelling while the permanent dwelling and farm remained (the farm) Roodepoort.³¹



Figure 9

Rondavel dwelling on the winter farm Koedoesrant that belonged to the parents of Mr Daan Bosman who resided on their permanent farm Roodepoort in the Middelburg district, Mpumalanga Province (Photograph: National Cultural History Museum, Pretoria) .

Farmhouses were seldom built to fulfil all the needs of the residents and rooms were added as the needs of the family changed. Many farmhouses still consist of a core with numerous additions that were added at the sides, back and front. In such cases rondavels were added to the existing rectangular house. In the case of the farmhouse on the farm Rietvlei in the Bronkhorstspruit district (Mpumalanga Province), a rondavel was added to each side of the front stoep (Figure 10). The stoep was later covered with a corrugated iron roof and closed off with louvre glass windows as the residents had to enter the new stoepkamers via the stoep. Both were used as additional bedrooms.



Figure 10

Farm dwelling on the farm Rietvlei in the Bronkhorstspruit district with its large covered front stoep and two rondavels added as stoepkamers and defining the south eastern and south western corners of the main facade (Photograph: M. Naude) .

On the farm Leidenburg (28 JT) in the Lydenburg district (Mpumalanga Province), a rondavel was used as an outside kitchen (also referred to as a 'detached' kitchen). It was situated about twenty metres from the backdoor of the farmhouse with the kitchen door opening towards the house. It had a lockable stable door as well as a wooden frame screen door that had to be kept closed to keep insects out. A 300 mm gap between the wall and the eave was covered with a fine wire mesh. This assured that fresh and cool air could cross-ventilate without letting in insects. The same principles were followed with milk and meat rooms, as most farms did not have electricity for cold storage purposes and food had to be protected from insects.

Examples on a mission station

Mission stations were among the first (core) settlements where vernacular African and European architectural traditions came together and to some extent forced to either fuse or co-exist. The role of the missionaries in the spread of the rondavel should thus be mentioned. Frescura (1981: 55) states that: "Part of the 'civilising' gospel of these holy men was to persuade their 'heathen' parishes that building a 'decent' house went with wearing clothes and paying taxes". Living in a 'decent' house was interpreted as living in a rectangular dwelling with a thatched roof and not in a circular-conical hut, a rondavel or cone-on-cylinder dwelling. According to legend, Africans constructed rectangular dwellings only after they have been baptised and have become Christians. The shape of their dwellings became a way of expressing their status at the mission station (geographic place) and also placed them in a social-religious hierarchy within the missionary paradigm.

On Botshabelo, a mission station of the Berlin Mission Society near Middelburg (Mpumalanga Province) conical-domed huts were among the first buildings to be erected by the black refugees fleeing from Sekhukhuniland. A fort was built on a ridge overlooking the Little Olifants River and the new arrivals arranged their huts directly around the fort in an effort to be able to flee to the protection of the fort if and when attacked by Sekhukhuni's impis.³² More huts were later constructed lower down into the river valley around the churches and parsonages of the German missionaries. Some of the later huts were conical-shaped thatched structures with roofs reaching down to the ground while others were proper rondavels with a conical thatched roof on top of a cylindrical wall structure.³³ A new settlement, called the Motse, consisting of cone-on-cylinder-type huts eventually developed in the valley between the church and the Klein Olifants River. It was the result of the rapid arrival of new refugees from Sekhukhuniland who fled in fear of persecution by their own people.

Early drawings of the settlement show that the huts were also arranged in a circle (Figure 11) - the shape common among the indigenous peoples of the region at the time. Over time the circular domed huts were replaced with walled structures eventually becoming cone-on-cylinder huts. They were eventually replaced with rectangular stone walled and thatch roofed huts, some of which are still intact. Fisher also confirms the legend that the "Blacks who occupied the circular huts were considered the unconverted, while the converted occupied the rectangular houses".³⁴

Black Africans were not the only people who lived in rondavels. The rondavel has been 'vernacularized' when this building type became part of the vernacular European architectural typology. The European 'master' also had rondavels built for their own purposes. Next to the main parsonage is a rondavel that the German missionaries used as a smoke room. Meat was an important part of their diet and smoked meat considered to be a delicacy. Meat was tied to the beams inside the hut and smouldering leaves from different shrubs, on the floor directly underneath the suspended meat, were used to smoke the meat. The rondavel had no windows,

only a door and the smoke had to escape through the thatch and through the voids left between the wall and the roof.



Figure 11

Rondavel type huts erected between 1863 and 1875 by Swazi refugees (from Sekhukhuniland) around the fort on the Botshabelo mission station during the first years of settlement in the Little Olifants River valley in the (later to become) Middelburg district (Artist of original painting unknown).

Rondavels as an urban building tradition

The rondavel is also an urban building tradition and in many of the (Transvaal 'platteland') rural towns, rondavels can still be found in the backyards of individual properties. Sometimes these rondavels occur with other symbols of rural lifestyle such as large circular concrete dams and windmills. In many of these towns, water used to be reticulated via open water-furrows used for irrigating vegetable and flower gardens.

Rondavel houses can still be found in residential urban areas and the 20th century suburbs of Pretoria such as Arcadia, Muckleneuk and Brooklyn. These residences were designed and according to the principle promoted by the architect G. Moerdijk with floor plans containing several rondavels or rondavel shaped clusters and pitched conical and similarly shaped thatched roofs.

One of the first attempts to design ethnic-oriented housing units in the mid 20th century resulted in the application of rondavels as a solution. In the black township of Mamelodi (east of Pretoria), the Pretoria City Council erected rondavels for new residents. Officials were sent to Botswana (then Bechuanaland) to investigate the possibility of erecting typical native housing suitable for the new housing scheme at Vlakfontein (Figure 12). The settlement and the buildings found at a settlement called Mochudi (Botswana) were selected as the best role model for the houses to be built near Pretoria. A three-rondavel and two-rondavel unit with a lapa linking each unit was decided on. The rondavels had extended thatched roofs wide enough to accommodate a stoep that surrounded the house. About fifty rondavels set in 'traditional' yards were built at Vlakfontein (by 1947).³⁵ The building style was known as the 'Alapa' system, named after the indigenous term Alapa, which referred to the circular walls defining the front and back enclosures around a single hut. The central theme in this system consisted of a single rondavel. Each family had at least three rondavels and the entire settlement was organised in a horseshoe configuration.³⁶ Unfortunately, the residents condemned them as being 'primitive kaffir housing...' which caused considerable racial conflict and feelings of hostility.³⁷ About 2000 residents threatened to take the day off for mass prayer if the township manager did not resign. The scheme was abandoned and most of the rondavels were demolished after a few years. In the new housing scheme of 1953 the only element that was retained was the central open area.³⁸

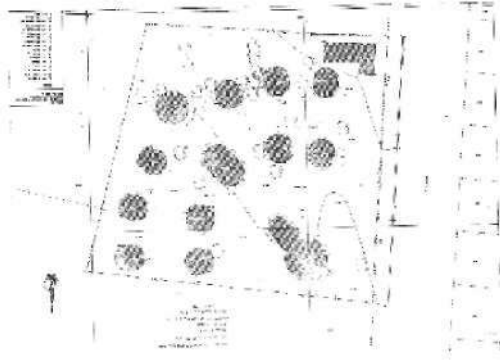


Figure 12

During the 1950s the local government (Pretoria) decided to erect an official housing settlement using rondavel type structures as housing units to accommodate newcomers to the location of Vlakkfontein (later known as Mamelodi).

The case of the officially erected rondavels is of interest because it mirrored the ideologies and approaches of educated civil servants at the time. The initial idea was to develop the area as a traditional tribal 'Bantu' village with thatched round huts to form a lapa around an open space. It was considered moreover that such a layout would induce sociological patterns parallel to the tribal system and so minimize the sometimes disastrous effects of the removal of a tribal authority in urban areas.³⁹

One of the unique occurrences of a rondavel set in an urban context is the rondavel that was erected as an annex to the kitchen of the Melrose House in Pretoria. Melrose House was erected between 1886 and 1890 and is an excellent example of a high-style Victorian residence in the historic city centre of Pretoria (Figure 13). At the time, Victorian residences were designed and constructed with all the necessary amenities and services under one roof. A kitchen, bathroom, conservatory and billiard room were common phenomena and part of the floor plan of such a residence. However, in 1903 a rondavel was built next to the dwelling as a separate building. It was used as a cooler room for the vegetables and meat. The circular building was subdivided into two rooms: a meat and vegetable room. Each room had a separate entrance with work surfaces fitted along the inside of the curved exterior walls (about 90 cm wide). The surfaces were made from slate and were cut to fit the curved walls. The metal hooks from which the carcasses were suspended are still intact.



Figure 13

Rondavels were also erected in urban contexts. One of the unique examples is the rondavel erected behind the Victorian Melrose House in Pretoria. It was used as an annexure to the kitchen (Photograph: M. Naude).

What makes the Melrose House rondavel unique is the fact that even though Victorian houses were designed with pantries and larders, these functions were never located in a 'traditional' rondavel. Even though the Heys property (Melrose House) was not located on a farm and did not form part of a farmstead, they kept horses, chickens and cows on the premises. The property has always been located in an urban context and one would not have expected a rural vernacular building type such as a rondavel as an addition to this type of high-style Victorian house.

In Government Avenue in upper Arcadia (Pretoria) a double-storey rondavel house is obscured by an Embassy. The house is set at the back of the property at the foot of the upper ridge of Meintjieskop. Mrs Bayliss, the current owner claims that the artist, Pierneef, built the house for himself in about 1910. A study and kitchen were added to the original design in 1940. The additions were designed by the firm Burg, Lodge and Burg (now known as Burg, Doherty, Bryant and Partners).⁴⁰

During the first part of the 20th century a number of well-known Afrikaans-speaking 'ideologists' including Jacob Hendrik Pierneef (painter), Gustav Preller (author), Coert Steynberg (sculptor), Gerard Moerdijk (architect) and P.J. Schoeman (author) lived in Pretoria. Among them the existence and perhaps the creation of a typical Transvaal building tradition was often debated. The rondavel and rondavel house represented part of that tradition. It was also during this era that an Afrikaans magazine, *Die Boerevrou*, was published. The ideas of the group were published and as the magazine was widely read, it is believed that numerous farm and urban houses were built according to the recommendations promoted by the authors (indirectly the result of discourses among the members of the group).

In an article published in *Die Boerevrou*,⁴¹ Moerdijk discussed the benefits of building a rondavel house. He commented that the rondavel house will never be practical with its circular rooms and was of the opinion that it will never become part of serious architecture. The author suggested that multiple rondavels of different sizes should be used and linked to form a single dwelling instead of building one large rondavel. The general impression of the elevations of such a multiple-rondavel house is reminiscent of the freestanding rondavels of the Africans, who linked the individual buildings together (and extended the 'African' concept horizontally) by adding (lapa) walls of different heights. The author also mentioned that the rondavels should not be of the same size, to prevent the general feeling for proportion and scale from becoming 'boring'.

The well-known Pretoria sculptor, Coert Steynberg's house, in Berg Avenue in Pretoria North (along the northern slopes of the Magaliesberg) does not consist of multiple rondavels. Instead, a single rondavel was added onto the original studio in 1940 when he married Betsie Steynberg. The studio and rondavel later formed the core of the family residence (Figure 14). The rectangular double volume studio first existed as an independent building and the new rondavel added a lounge and a kitchen. The furniture (a couch and bookshelves) was adapted to fit the circular walls of the building.⁴² The space between the rondavel and the rest of the house was used as a foyer and scullery. The additions changed the existing studio into a home consisting of a lounge, foyer, kitchen, studio and general workroom. It was constructed with second grade Kirkness bricks except for the fireplace, which was built with face bricks. A lot of attention was given to detail. The roof trusses of the rondavel were designed to depict a spider's web and the air vents were designed and moulded by Steynberg himself.

Steynberg also built a rondavel called *Isakaya* for his daughter, Isa in 1942. It was located in the garden and she used it as a playroom. The proportions of the building and the furniture were scaled down to suit the needs of a girl of about eight years old. The building was con-

structed from sandstone ('koppieklip'), had a thatched roof and a sculpted door. The sandstone was taken from the slopes of the Magaliesberg on which the site was set. Red coloured mortar was used consisting of a mixture of the local clay and sand types on the site. As the walls were scaled down, a leg-of-mutton gable had to be constructed above the entrance to allow ample height for the door to open and the building to be entered.

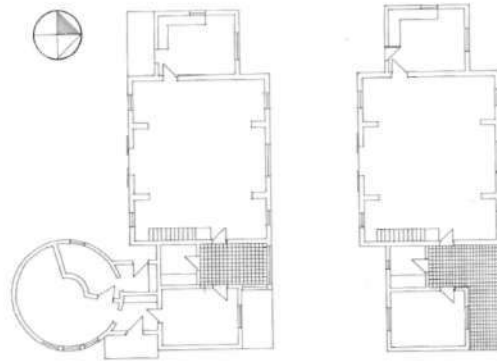


Figure 14

The South African sculptor Coert Steynberg added a rondavel to his original studio and bachelor's cottage to make provision for a kitchen and dining room, after getting married (Original drawing: H. Raath).

The Gustav Preller house (near Pelindaba and the Hartebeespoort Dam) has two storeys and the entire house is thatched. The main house is rectangular with a porte-cochere in front and a rectangular paved lapa at the back (southern side) of the house. The lapa has four rondavels, two at the southern corners and two in between the corner rondavels and the main house. The lapa exits to the south through a centrally placed exit, which is similar to the configuration of the exits of the *kgotlas* and *isibuyas* of the Sotho and the Ndebele kraals. The rondavels are connected to each other with a rectangular lapa wall. Originally, they were separate buildings but the north-eastern rondavel was later linked to the main house by a bathroom. The rondavels were used as small 'buitekamers' or outside rooms. The creation of a lapa as additional semi-open space reminds one of the archetypal African village where secondary spaces are directly linked to the back and front of the main house.

Although Norman Eaton (1902-1966), the well-known Pretoria architect, was not part of the above mentioned Pretoria group he articulated under Gordon Leith who also published articles in *Die Boerevrou*. Eaton was nevertheless intrigued by the circular concept and consequently recorded what he called the King's Tomb (geographic location unknown).

Although the (Anton) Van Wouw house (1937-1938) in Brooklyn, Pretoria does not reflect the rondavel concept, the house resembles certain features associated with the "Pretoria group's" principles for an "Afrikaanse woning". Even though Eaton remained focused on the design of buildings that reflect the character of the region and project, the textures presented in local building materials, he remained an individualist. The application of curved walls reflected some of the characteristics found in Iron Age settlements and even later settlement types of the indigenous peoples in the northern part of South Africa. Harrop-Allin⁴³ is of the opinion that the curved walls and circular paving at the Little Theatre (1950) in Pretoria are reminiscent of the impact the African kraal concept had on Norman Eaton. He also noted that Eaton expanded on this tradition in his own way.

The rondavel or the cone-on-cylinder house type has a long history and perhaps up to now too little has been said, about the role this type has played in the South African vernacular architectural history. It should be interpreted in the wider African context of circular settlement

patterns and not only as a type of dwelling consisting of a cone roof on cylindrical walls. It is no more only a black African architectural tradition but has over the years become part of white vernacular architecture. We have vernacularised the rondavel to such an extent that the Transvaal landscape cannot be visualised without it. Although it is associated with the rural landscape, the sensitive and observant researcher of vernacular architecture will still be able to find the odd rondavel or rondavel house in some of the older residential suburbs of Pretoria or a rondavel in the backyard of properties in the smaller towns of the Transvaal 'platteland'.

Rondavels as temporary residences at interior holiday destinations

Some people interpret rondavel houses and rondavels as the prototype for the ideal holiday home. This perception probably originates from associating the rondavel with a rural lifestyle and the picturesque settings associated with rondavels in the romanticised Transvaal landscape. The ideal holiday home perception has very little to do with the practical shape of the building, especially in first world design where practicality is based on the use of the rectangular floor plan.

The rondavel seems to carry with it associations with 'life in the bush' and as temporary structure or dwelling only to be used for a short period of time. Rondavels and complexes occur all over South Africa and are not confined to the boundaries of the former Transvaal. In the early camps of the Kruger National Park, rondavels were the rule of thumb housing 'type' for visitors. This tradition has spread further south into other provinces and became a common occurrence on game farms and nature reserves. It even became popular as housing units at beach resorts.

Using the rondavel concept for overnight facilities at motels and resorts is probably based on the principle of 'separate-but-equal'. Visitors use the same facility without being impeded upon by its neighbour. Rondavels are equal in size, shape but set apart from another. Where a larger unit is needed two units are merely linked with a connecting passage without destroying the corporate image. One of the best examples of such an old-fashioned motel (now referred to as a bed and breakfast facility) is van Zylsvlei (B- and B-) located outside Colesberg on the road to Phillipolis in the Northern Cape. Rondavels were set in an L-shape around a central area and the entrance to each rondavel opens towards the periphery of the -L (Figure 15). Originally none of them had ablution facilities and visitors had to use a central ablution block. Toilets were eventually added to the back (towards the inner part of the L) of each rondavel.⁴⁴



Figure 15
Rondavels arranged in an L-shape as bed-and-breakfast accommodation on the farm Van Zylsvlei between Colesberg and Phillipolis (Photograph: M. Naude).

The fact that the rondavel was considered as a 'bush-dwelling' was endorsed and almost monumentalised when it was decided that the overnight facilities in tourist camps in the Kruger National Park would be rondavels. The perception was also reflected in the popularisation of rondavels and rondavel houses as weekend and holiday accommodation. In most of the older nature reserves and even in the Kruger National Park, the rondavel type of hut remained the dominating prototype for accommodation for years. There are still rondavels in Skukuza and Pretoriuskop with the square, semi-detached and elongated rondavel still found in camps like Lower Sabie and Punda Maria.

As **holiday homes and weekend retreats along the coast**

An incidental observation made over years along parts of the southwest Cape coast is the phenomenon of rondavels being erected as holiday homes, weekend retreats, beach houses and as tourist housing. Rondavels and rondavel houses occur at various locations such as the town of Wilderness, Klein Brak and Struisbaai (at Cape Agulhas).

Multiple rondavel houses can be found in the holiday town of The Wilderness (between George and Knysna) along the Garden Route. Most of them have thatched roofs and plastered brick walls with wooden window- and doorframes. Some of The Wilderness examples are holiday retreats but in all probability will eventually become permanent homes when their owners retire.

Three rondavel type residences were identified in the small holiday retreat of Klein Brak. Three of them consist of a single rondavel type structure, but as double volume buildings. They are residential units and all three are part of a larger building, the largest part having a rectangular floor plan. One of these double storey rondavels had an exterior staircase leading to the top (Figure 16). Comparing these dwellings with others in the surrounding village, it is evident that these rondavels were originally part of the first generation beach houses (or cottages), usually erected on the first dunes either next to the lagoon or where the lagoon exits into the sea. Originally, they may have been single storey structures but as the residential area around the sites was filled-in with more dwellings the view towards the sea became obscured. Adding another storey elevated the residents well above these rooflines and once again allowed the residents visual access towards the sea. The fourth example in Klein Brak can be categorized as a lozenge type. It was erected as the church hall ('kerksaal') of this little community and is still used. It has a thatched roof with a slightly modified conical roof but the association with the rondavel type is unmistakably evident.⁴⁵

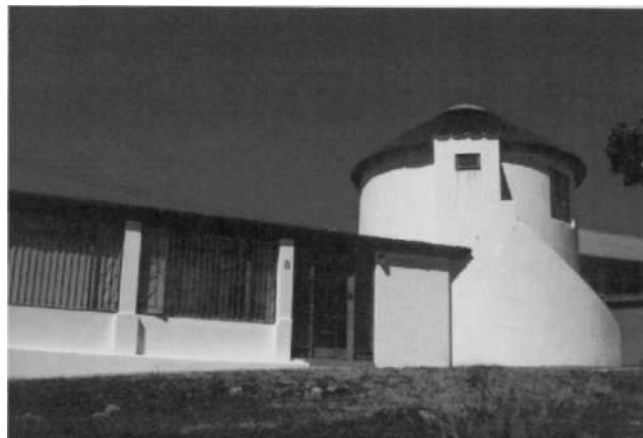


Figure 16

Double storey rondavel dwelling, originally a single storey rondavel before another floor was added to retain the view towards the sea after a dwelling was erected on an adjacent property obscuring the first rondavel's view to the sea (Photograph: M. Naude).

At Struisbaai, further south from Klein Brak, small independent rondavel houses were erected along the beachfront and also represent the first generation of beach houses and holiday cottages erected along this part of the coastline. It must have been during this first phase of 'occupation' that small holiday cabins, cottages or huts were built, copying and adapting to the architectural vocabulary of the existing huts of individual landowners in the neighbourhood - rondavels. The current resort was built to cater for families or individuals who rented the rondavels or clusters of rondavels during holidays. Here, the rondavels were connected to each other with passages covered with concrete slabs.⁴⁶

Why the continuous use and revival of the building form?

It still needs to be debated why this simple building form has been used over and over again, in various locations and over many decades. It may be that the hut type contains elements that remain obscure and difficult to debate, or that they are obvious.

Creates a perception of intimate space

Rondavels are usually fairly small buildings and consist of a single undivided space. However, the smallness is most of the time an illusion created by the circular sides when experienced from outside. Once inside the single space seems to be 'big' due to the complete lack of corners. Corners are places where distance and volume are neatly rationalised by the unconscious mind. The interior of a circular space cannot be rationalised by the unconscious mind and the mind tends to experience it as a larger than real (in mathematical terms) space. The complete absence of corners and the lack of experiencing the perception of 'near' and 'far' (as perceived in a rectangular room) set the mind at ease and creates a pleasing sense of place.

Practical and ideal as separate room

The rondavel is both practical and impractical and this seeming paradox has the benefit that it is difficult to classify the building type and to 'classify' its owner. In a world where furniture is designed and built to fit into a square and rectangular environment, the rondavel is a completely impractical container to live in. Practicality should be searched for elsewhere in the argument.

Simple in style and form

The circular form is simple though different in shape when compared to the rectangle and square. Both have a timeless quality but rondavels project a character of being understated, probably more casual and with a loci character. Having a rondavel on the yard has never been fashionable neither has it been a symbol of style or status. To some extent rondavels are timeless. The only time when it was considered fashionable could have been during the time when individuals such as Moerdijk, Pierneef and their contemporaries were promoting the creation of an 'Afrikaans' building style during the 1920s and 1930s.

Easy to design

In a rural environment on farms no or little effort went into the design of a rondavel. It was merely assumed that local black workers could construct it (on demand), as it was a common

building type among them. They have erected these dwellings without any design background or physical planning process prior to construction. Therefore, it was assumed that they would be able to do the same on demand of the landowner.

Constructed from materials available in the surroundings

Rondavels can be constructed with any material available in the surrounding area. The same is true for a rectangular building.

Easy to construct

Contrary to the construction of a rectangular or square building which has to be laid out square with corners oriented according to right angles, the rondavel does not have corners. The most basic way to create a circle with the appropriate diameter is to determine a point where the building has to be erected. If a peg is drilled into the ground and piece of rope is tied to the ankle, an almost perfect circle can be drawn by walking around the centre and drawing a line along the circumference ('boot in the sand' [BITS] method⁴⁷).

However, the construction of a rondavel is not always easier when compared with a rectangular building. Both can be constructed with the same building materials. If building materials such as dressed stone and bricks have to be manufactured the time and effort are the same. In cases where stone lintels are curved to fit the curve of the walls it takes more effort than using standard straight lintels. The only difference may be that a rondavel may use less stone or brick to create an equal quantity of square metres.

Little supervision is needed during construction as the workers used for construction usually know the building type well and have become accustomed to the applicable methods and techniques for construction, due to their exposure to the building type in their own traditional settlements.

Low maintenance

Even though farmers may use this argument as a possible rationale for erecting and keeping them, rondavels are no different from other buildings and also need the same maintenance sequences and regularity. The same workers used for the construction can be used for maintenance.

Easy to reconstruct

Applying commercial or standardised building and construction techniques, it is probably easier to construct a rectangular building than a circular building. To the uninformed and novice the construction of a rondavel or circular building is more complex, as all commercial building materials are designed and shaped to be used in a rectangular structure. The same workers who constructed the rondavel initially can be used for its renovation and reconstruction with little design and supervision of the building process.

The reason for building a rondavel rather than erecting a square building still eludes us, and it is believed that some other motivation ('romanticism') for the survival of this building type exists.

Conclusion

The rondavel phenomenon has not been studied in detail both from the construction sciences and architectural historical points of view. Until such time its 'mysterious' and other dynamic characteristics will elude us. The inclusion of the rondavel into contemporary design vocabularies of commercial architects has also not been investigated. Such studies would greatly contribute to unravelling the complexities of the building type, its ability to survive contemporary preferences for other form giving aspects of 'modern' architecture. The continuity of this form (cone-on-cylinder) seems to regenerate itself and 20th century architects in South Africa have periodically used it in their designs. Even though it does not have the same practical qualities and mathematical logic as the square and rectangular building form, it had survived against all odds and made a significant contribution to the vernacular architectural history of South Africa.

Notes

- 1 Frescura 1981, p. 53.
- 2 Shelter 1973 p. 9.
- 3 Fisher 1992, pp. 3-4. Fisher does not describe the origins of the word neither the origins of the building type. As it is a visual lexicon only two drawings of what is understood to be a rondavel occur in the publication: one merely called a 'rondavel' and the other a 'rondavel hut'.
- 4 Boshoff and Nienaber, p. 549.
- 5 Boshoff and Nienaber, p. 549.
- 6 Nienaber, p. 1.
- 7 Nienaber, p. 1.
- 8 Van Dale's, p. 1545.
- 9 Musgrove, p. 549.
- 10 Musgrove, p. 549.
- 11 Musgrove, p. 550.
- 12 Butser Hill Ancient Farm, Hampshire, is an open-air research laboratory researching the domestic and agricultural life of the Celtic Iron Age. It is the only place in Western Europe where ancient livestock and plants can be seen in context reconstructed with the appropriate fences, fields and domestic dwellings and buildings of the Iron Age. Information obtained from the website of this village: <http://www.butserancientfarms>.
- 13 Information obtained from the website: <http://www.butserancientfarms>
- 14 Bewley, p. 77.
- 15 Information obtained from the website: <http://www.butserancientfarms>
- 16 Anonymous, p. 54.
- 17 Personal comment: A. Pelsler, National Cultural History Museum, Pretoria. (2006/01/25).
- 18 Mills, p. 65.
- 19 Inskeep, p. 147.
- 20 Frescura 1981, p. 15.
- 21 Frescura 1981, pp. 12-13.
- 22 Frescura 1981, p. 16.
- 23 Moerschell, p. 123.
- 24 The photograph is part of the photograph collection of the National Cultural History Museum in Pretoria.
- 25 Cartwright and Cowen, p. 70.
- 26 Naude, 1994, p. 22.
- 27 *Carnegie Commission* pp. 181 and 185.
- 28 Moerdijk. G. 1920. Rondawelhuis. Die Boerevrou, p. 22.
- 29 The original drawings are part of the Erich Mayer collection in the National Cultural History Museum in Pretoria.
- 30 Naude 2002, p. 115.
- 31 Personal comment: Interview between Mr. D. Bosman and M. Naude (April 1990).
- 32 A drawing depicting the location of these huts in relation to the fort was published in a publication by Japha, D., Japha, V., Le Grange, L. and F. Todescini, introductory page.
- 33 Naude 1992, pp. 5-7.
- 34 Fisher 1994, p. 7.
- 35 Van Der Waal, p. 3.
- 36 Anonymous, p. 111.

- 37 *Pretoria News*, 1947 (6 September).
- 38 Van Der Waal, p. 3.
- 39 Walker, and van der Waal, p. 10.
- 40 Fisher 1994, p. 7. The publication was established by the Arcadia Residents Association, sponsored by the residents and printed by the *Pretoria News* newspaper during a period when massive commercial penetration threatened the residential character of the mature middle class residential area.
- 41 Moerdijk 1920p. 18.
- 42 Lugtenburg 1994.
- 43 Harrop-Allin. *Norman Eaton: Architect*.
- 44 Van Zylsvlei is a recommended bed and breakfast accommodation facility and set on the farm with the same name. The rondavels were erected in the 1940s and since then have been used as overnight accommodation for tourists travelling between the Cape and Gauteng.
- 45 The author visited Klein Brak consecutively since 1999. All the buildings are still used, well-maintained and even altered to sustain their existence. This means that these buildings are still considered useful to their residents (tenants) and owners.
- 46 Incidental observations when the author visited the area in December 2005 while on a research field trip investigating the possibilities for protecting of the vernacular farmsteads and buildings now included into the newly proclaimed Cape Agulhas National Park.
- 47 The term 'boot in the sand' was used by the architect Nina Maritz to explain the way farmers and workers would approach the design and construction of simple structures on farms in Namibia. This is done without any prior design on paper or any academic approach to the construction of a structure or shelter. In academic architectural circles this way of building would probably be referred to as 'folk' or 'vernacular' building. The acronym 'BITS' is the result of this authors own interpretation of the same type of architecture and the word somehow crystallizes and to some extent defines exactly how these structure are created: out of 'bits' of material and each worker contributing to an aspect of the building process.

Works cited

- Bewley, R. 1994. *Book of prehistoric settlements*. London: Batsford Ltd/English Heritage.
- Cartwright, A.P & Cowan, N. 1978. *The old Transvaal 1834-1899*. Cape Town: Purnell.
- Fisher, R. 1994. The suburban rondavel and rondavel house. Pretoria: *The Arcadian*.
- Fisher, R. 1992. *Visual lexicon of the South African dwelling*. Cape Town: Unibook publishers.
- Frescura, F. 1981. *Rural shelter in Southern Africa*. Johannesburg: Ravan Press.
- Frescura, F. no date. *Indigenous architecture: revising some old misconceptions*. Original source unknown.
- Harrop-Allin, C. 1975. *Norman Eaton: Architect*. Cape Town: Struik.
- Inskip, R.R. 1978. *The peopling of Southern Africa*. Cape Town: Philip.
- Japha, D., Japha, V., le Grange, L. and Todescini, F. 1993. Mission settlements in South Africa. A report on their historical background and prospects for conservation. Cape Town.
- Jonker, H.J. 1944. In harmonie met ons omgewing. *Die Brandwag*, 15 September.
- Lugtenburg, A. 1994. Unpublished communication guide for the Coert Steynberg Museum. National Cultural History Museum, Pretoria.
- Mills, G. 1988. The logic of design. *Architecture SA* (September/October).
- Moerdijk, G. 1920. Rondawelhuise. *Die Boerevrou* (December).
- Moerdijk, G. 1921. _Rondawelhuise. *Die Boerevrou* (December).
- Moerschell, C.J. 1920. Die Grenspatrolje. *Die Brandwag* (25 Oct).
- Musgrave, J. 1987. *Sir Banister Fletcher's A History of architecture* (9th ed). London: Butterworths.

- Naude, M. 2000. Vernacular stone buildings and structures on farmsteads in the southern districts of the Mpumalanga Province. *South African Journal of Cultural History* (Vol 14).
- Naude, M. 1999. Our heritage of smaller vernacular dwellings on farmsteads in South Africa. *The Veteran Farmer* (no 18).
- Naude, M. 1998. Oral evidence of vernacular buildings and structures on farmsteads in the Waterberg (Northern Province). *Research by the National Cultural History Museum*, vol 7. Pretoria: National Cultural History Museum.
- Naude, M. 1994. The use of stone on the farmsteads of the eastern Transvaal. *Yearbook 11*, Africana Society of Pretoria.
- Naude, M. (Ed) 1993. Dokumentasie van die Steynbergwoning (Pretoria-Noord) Unpublished Report to Jacques Botha Architects, Pretoria.
- Naude, M. 1991. *Botshabelo se Motse*. Le Roux S. and Fisher R. (Eds) *Botshabelo, 'n dokumentasie van die Motse en ander kleiner huise*. Pretoria: Universiteit van Pretoria.
- Naude, M. 1988. Opname van volksboukuns in enkele Transvaalse distrikte. Unpublished report to the Human Sciences Research Council, Pretoria: National Cultural History Museum.
- Nienaber, G.S. 1968. Rondawel. *Tydskrif vir volkskunde en volkstaal* (July-October). *Shelter*, 1973. California: Ten Speed Press.
- Van Dale's Groot Woordenboek der Nederlandsche taal* (5th ed). 1914. Leiden: Nijhoff and Sijthoff's Uitgevers.
- Van Der Waal. G-M. 1995. Rondavels were the first housing units in Mamelodi. *Muniforum* (June). Pretoria: City Council of Pretoria.
- Walker, J. van der Waal, G-M. 1991. A working history of Mamelodi. Unpublished report to the Human Sciences Research Council, Pretoria.
- Wilcocks, R. W. 1932. The poor white problem in South Africa. *Report of the Carnegie Commission* (Vol II) Stellenbosch: Pro Ecclesia Printers.

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