

MOORCHEH KHORT HISTORICAL FORTRESS: THE ENTRY GATE OF IRAN’S ANCIENT CAPITAL

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Theme 5: Local and Regional Knowledge, Intangible Heritage and Social Impacts

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Abstract

Moorcheh Khort historical fortress is a much valued but lesser known historical site located on the Iranian Central Plateau. This article attempts to develop a model by utilizing an archeological and architectural research methodology framework with spatial analysis to study the interaction among existing spaces with consideration given to the outcomes of social changes, which have occurred throughout the various historical periods in Iran with a focus on local significance. Moorcheh Khort is used as the model in this study due to its historical significance as one of the largest clay construction complexes on the Iranian Central Plateau and its possession of unique architectural features characterized by the material used in its construction.

1. INTRODUCTION

Research programs on the Iranian Central Plateau and on Moorcheh Khort have been conducted in a coordinated fashion since 2008 under the supervision of Sherkat EhyaeH Bafteh Tarikhi Ghale'h Moorcheh Khort (Renovation Company for Moorcheh Khort Historical Fortress). Academic and scientific centers, including Shahid Beheshti and Tehran University, are contributing members to the research programs. The Moorcheh Khort site remains unknown to most of the architectural and renovation community because of dispersed and limited documentation. Due to the unique architecture, documented historical background, and strategic location, the establishment of short- and long-term interdisciplinary and intra-disciplinary research programs on the subject is required to deal with the numerous unanswered questions and vast issues involved. These research programs receive government support and are in compliance with all international charters as is requisite for its registration as a World Heritage site. Moorcheh Khort can be considered an example of a manmade fortress with different applications fashioned after the cultural setting in Iran during that period (Sotoodeh, 2001).

1.1 Regional geography

Moorcheh Khort village is located 45 km north of Isfahan on the way to Tehran. This village with a population of 1,761 is located 1,760 meters above sea level at a coordinate of 6’ 36° North Latitude and 29’ 51° East Latitude, and is sited on an open plain surrounded by highland areas to the north and

northeast. The most important factor in the settlement of humans at Moorcheh Khort has been the existence and availability of water resources in the area. A sufficient water supply for the community provided by aqueducts and wells has made abundant agricultural and plantation output possible for hundreds of years to the residents of the community and surrounding area. The history of Moorcheh Khort goes back to 980 AD (4th-century lunar hegrī). The original settlement was formed along a route made for commercial caravans. The residents made their living by providing services to the commercial caravans and passengers. Service provision expanded when Moorcheh Khort village was established (Azari Damirchi, 1974). The interments of Imam Zadeh Ali and Imam Zadeh Qasem (Imam Reza’s brother, 8th Imam of the Shia Moslems) resulted in an increase in the population due to immigration into the area.

1.2 Nomenclature

The origin of the name of Moorcheh Khort is not clear. The late Professor Mehryar (professor of Persian literature, 1918-2010) wrote the following: “This name is commonly used in two ways. Some call it Moorcheh Khort and others call it Moorcheh Khar”. Moorcheh Khort is made of two words: Moorcheh and Khort. Professor Mehryar pointed out that the Arian civilization used the word “Moor” meaning “ant” in naming places and villages because the Zoroastrians believed that exterminating ants was a holy act.

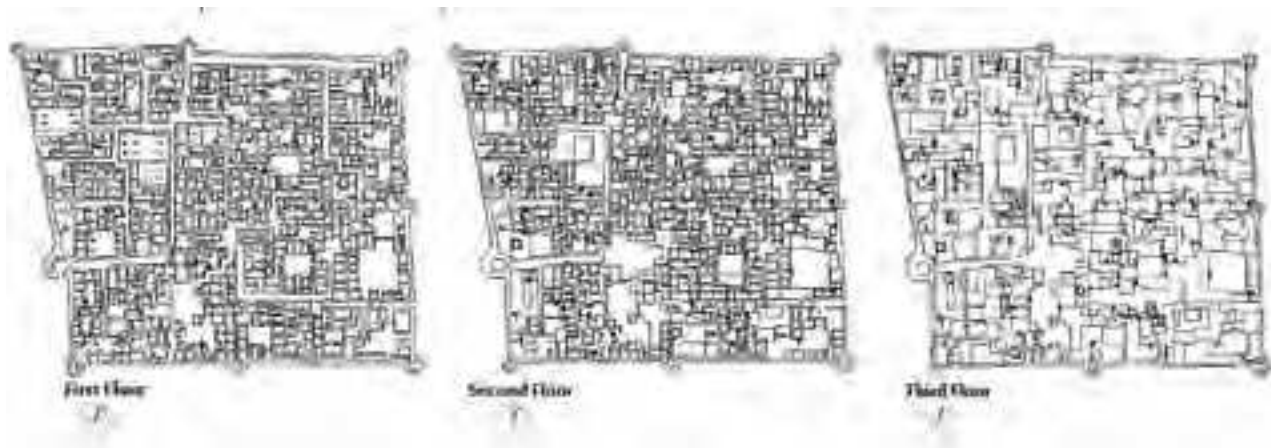


Fig.1 Floor plans of the historic site of Moorcheh Khort (credits: Renovation Company for Moorcheh Khort Historical Fortress, 2008)

1.3 History of conflicts

The important point in the history of Moorcheh Khort is the battle between Nader Shah Afshar and Ashraf of Afghanistan in this area resulting in the conflict making the name of this part of Isfahan well known in Iranian history. This battle, which started in the early hours of the 11th of November 1729, was the final victory of Nader Shah, which resulted in the conquering of Isfahan and the prevention of the Afghans from making advancements to take over Iran. It concluded with the destruction of the Ashraf artillery. Nader Shah freed the Ottoman prisoners held by the occupiers. Laurence Lockhart (English historian, 1890-1976) mentioned Moorcheh Khort as a decisive battle with evidence viewable in the northeastern section of the fortress.

1.4 Early architecture characteristics

Moorcheh Khort is located on a plain of the same name with strategic, security, economic and locational significance throughout history. Numerous micro-spaces were gradually formed in Moorcheh Khort based upon different applications and activities defined for the area. Preliminary studies and historical documentation show that this fortress was originally built in the form of a non-equal four-sided shape as a defensive point. The presence of guards and fighters in the fortress mandated building certain forms to meet the requirements for the early defense of this part of Isfahan against any foreign invasion. Low covered passageways accompanied by a complicated layout were intended to make this fortress unconquerable against possible onslaughts. This fortress with its four main caravansaries (Madar Shah, Chapar Khaneh, Chal, and Maimeh) became a trading and storage point for goods received from nearby or faraway lands after Isfahan became the capital during the Safavid era. Moorcheh Khort was also known as Shahr-e Karbas, so named for the cotton plantations in the surrounding area made possible because of the productive land and abundant water supply.

Moorcheh Khort gained economic importance in addition

to its defensive capabilities after its surrounding walls were extended to include the main spaces. The formation of a bazaar during this period, with its many stores, textile workshops, and warehouses attracted new traders and residents. The forms of covered spaces are indicative of the extended economic activities in this period. Changes in living conditions made the available space in the fortress unable to meet the requirements of the increasing population resulting in residents gradually moving out into the surrounding areas or to other cities and communities for better convenience and availability of services. Moorcheh Khort was eventually abandoned after the area experienced many periods of drought and once Isfahan lost its place as the capital toward the end of the Safavid era.

For a period, Moorcheh Khort became the central activity point for brigands looting commercial caravans passing through this area. It became important once again after the Qajar gathered strength and gained control of the country. The area was once again populated by people moving from nearby or faraway lands. The shortage of living space inside the fortress resulted in the need to accommodate an increasing population and the addition of new public spaces, such as a Grand Mosque, an expansion of the bazaar, and bathhouses.

1.5 Physical structure

The new private residential areas in conjunction with passages, covered passageways, and public spaces have created an integrated and complicated ensemble, which is difficult to segregate. The high concentration of buildings inside the fortress can be attributed to the high value of the surrounding land. The complicated vertical and horizontal integration of the adjoining structures in this fortress has created numerous physical layers and different proprietary systems. Architectural and historians have referred to Moorcheh Khort as “Iran’s thousand-inner architecture” (Noorbakhsh, 1995; Falamaki, 2007b). Family relationships created a social system, which governed the formation of a complicated system for occupying residential spaces within the fortress (Zoka, 1995). Every single private living space and every covered or open space inside



Fig.2, Fig.3 and Fig.4 Historical structures in Moorcheh Khort, Iran (credits: M. R. Manouchehri, 2008)

the fortress had a proprietary and period title. Each room had separate property documents issued based on social status and family relationships (i.e. father, son, brother, and so on).

2. MORPHOLOGY

2.1 Type of spaces

The complexity and concentration of physical spaces resulted from an increased population and defensive requirements that created architecture on which it is difficult to differentiate private spaces from public ones. This makes it necessary to study the inner spaces based on their applications and identify existing spaces as residential, religious, public and private services, or production and commercial unites.

A) Residential Spaces including:

- Single-family unit including one room plus the required conveniences;
- Multi-level, multi-family unit consisting of several rooms and the required conveniences;
- Multi-family unit with a courtyard consisting of several rooms on multiple levels built around a courtyard plus the required conveniences;
- Large residential unit with shared conveniences consisting of several rooms on multiple levels built around a courtyard in penthouse format or over passages plus the required conveniences.

B) Production-Commercial Spaces including:

- Production and commercial spaces built along the bazaar area or scattered throughout the fortress in a more or less systematic way;
- Production and commercial spaces built along high-traffic inner passages in the form of shop-residence or store-workshop combinations.

C) Religious Spaces including Hosainieh, Grand Mosque, and holy shrines. The religious spaces are scattered around

a central focal point and along the main pathway. They have orderly plots with irregular boundaries.

D) Service Spaces include male and female bathhouses built around the central point of fortress. These bathhouses are built underground and their roofs serve as passages connecting religious spaces to the bazaar area. Their plans are similar to traditional bathhouses in Iran.

2.2 Spatial characteristics

Residential units within Moorcheh Khort have special characteristics. They are constructed on multiple levels with courtyards as their focal points. The courtyards are usually built on one side of the living quarters. Residential units have private conveniences, which are connected to a central sewage system with water wells being built in one corner of the courtyard under staircases. The size of the well would depend upon the total area of residential unit.

Staircases are considered one of the main characteristics of the residential units in Moorcheh Khort fortress. They attract the attention of visitors from an aesthetic point of view. Each residential unit has a separate cooking space equipped with hearth and oven. The position of each element of a residential unit relative to the positions of the rooms on different levels forms a contiguous space.

2.3 General concepts approach

Influencing factors on the formation, development, and expansion of Moorcheh Khort historical fortress were the following:

A) Cultural Factors:

The traditional Iranian architectural characteristics present at Moorcheh Khort are also prevalent in other structures throughout the Iranian Central Plateau. High walls surround residential units, with all rooms opening out onto a central courtyard.

B) Local Conditions:

Residential fortresses around Iran are created conforming to the local conditions and are representative of the local architecture. The availability of construction material depended on the natural and geographical conditions of the area. A limited water supply forced settlements to form around springs and streams. Community living was required because living and cultivation in higher lands and plains are only possible as group activities.

C) Security-Strategic Factors:

The formation of fortresses in mountainous and plains areas, as well as along the main and side commercial routes and near major cities was due to the high importance given to the security concerns of communities. Welfrom Klays in his studies on the formation of fortresses along the main roads and caravan routes concluded that perhaps Moorcheh Khort was one of these fortresses originally built for security concerns. He wrote that the fortresses built on caravan routes were for protection of caravans and their merchandise. These fortresses had military and defensive applications and were built close to caravansaries (Klays, 2001).

D) Economic Factors:

The formation of these types of residential fortresses had roots in the land-ownership system prevalent in Iran. The feudal system (the system of landlord and peasants) was common in the area throughout history and was enforced by the local rulers, as well as other people of power. This system required a central location near agricultural land to facilitate its management and protection. This requirement led to the type of land ownership and the special architecture prevalent during this period. The result of centralized feudalism was the creation of a strong relationship between settlements including cities and villages. The development and expansion of cities and villages increased the number of access roads and commercial routes to facilitate the exchange of goods and services between communities. The location of settlements along commercial routes may not have been the only reason for formation of communities. However, it can be considered as the main reason for their survival, development and prosperity.

E) Social Factors:

This type of architecture may be attributed to the specific tribal social system of patriarchy, which promoted community living and that has been prevalent in the area throughout history. This may be considered as another factor in the formation of fortresses. Fathers and elderly men have high positions in such a system and are the leaders and possessors of the rest of the tribe. Members of such a community are dependent upon and perform under a power center. This relationship resulted in related and intertwined residential units.

The special economic requirements of the family required continuous and rapid contact with paternal properties. In such a setting, a family residence consisted of a large house, a large stable, a main barn, and many multi-level residential units built above them.

Family settings required a closed living arrangement to prevent intrusions from non-family members. All these requirements are the formative elements of residential structures in a residential fortress. The effects of various factors on the formation, development, and prosperity of a residential fortress and the roles those factors played during different time periods are sometimes vividly evident and sometimes not so obvious. The cultural, social, and economic structures that have prevailed throughout the existence of Moorcheh Khort fortress plus other influencing local conditions have formed the available physical-space arrangements inside the complex turning it into a city structure. This structure includes residential units; a central area consisting of a fortress, bazaar, and Grand Mosque; and city-service spaces, such as male and female public bathhouses, public drinking fountains, and other such places. The fortress also had prayer quarters, shrines, and Hosseiniehs providing religious services.

All spaces within Moorcheh Khort historical fortress were built relative to each other and connected by passages, covered passages, and gates. The structural relationship and connectivity evident within the fortress resulted in turning it into a real city or township structure. Such structure required accommodation for a defensive force, means for feeding the population through cultivation on the surrounding lands, and possibility for future expansion. The fortress was also required to facilitate working spaces at different levels for tradesmen, craftsmen, and merchants. Different construction materials were used in building fortresses in the desert and lowland areas depending on the local conditions and characteristics. Studies and observations reveal that most of the fortresses were built by using clay materials. They were seldom built with brick and stucco. Fortifications in fortresses were generally made of stratified or thick clay walls.

2.4 Studied elements

Variations of building structures and the ways different elements were built next to each other in a fortress stemmed from the complicated social structure prevalent in the community, plus the various applications defined for the fortress including military, security; commercial, economic, cultural, etc. The building elements behind the construction of a fortress along with a review of historical drawings and historical events will define the ways to define a study on the subject and provide a theoretical framework. A study of the physical structure, a review of all hidden and evident historical dimensions, sociological studies of different periods, the recreation of unique mores, and a study of cultures and micro-cultures surrounding the complex will assist in uncovering the facts about the fortress architecture.

A complete study on the subject will require a multi-disciplinary knowledge base, which includes:

- Identification of physical forms including dimensions and number of levels, and their relationships to adjoining units.



Fig.5 General view from above the historic fortress (credits: M.R. Manouchehri, 2008)

- Identification of structures including spatial arrangements in architectural units and their relationships to the land (structural and load-bearing elements).
- Identification and recording of the relationship between surface and volume based on the main applications and recognition of changes that may have taken place.
- Identification of family and tribal sociological relationships.
- Identification of social and cultural strata.
- Identification of micro-cultures existing in the surrounding environment.

3. BUILDING SYSTEMS

3.1 Forms

Historic architecture found on the Iranian Central Plateau reflects a traditional tendency of Iranian people to adapt to their local environment. Local architects formed structures conforming to the requirements of the local climate. They effectively used local construction materials to block the influence of hot and dry weather in summer and extreme cold during winter. Covered passageways built inside the city structure pleasantly connected neighboring units and were representative of the interaction among various city elements. High walls and supporting doors provided privacy for families.

3.2 Construction materials

Many factors have influenced architecture on the Iranian Central Plateau. Residential complexes in hot and dry climates

were built using local construction materials, such as clay, stone, etc. The physical forms of the surrounding environment and the selection of a land influenced the building of architecture. Earth and stone, with their strengths and weaknesses, were the most available construction materials in any place in Iran. Local architects and builders cleverly and effectively used local materials to build structures and create spaces. Good examples are earthen structures built in desert areas by using locally available soil. Local architects used a technique for building large residential fortresses wherein they excavated earth from a large area and used that earth for building the structure. A good example of this technique was the digging of trenches around the site and using the earth for building fortifications and walls. Indeed, digging trenches were prerequisite for building a fortress. The availability of water resources has long been an influencing factor on settlements in desert areas. Settlements were formed and caravansaries were constructed where water resources could be found. With the special geographical position of the Iranian Central Plateau and the situation of major routes (such as the Silk Road) connecting faraway civilizations and different countries, sometimes it became necessary to create communities where water was scarce. Dry weather and limited precipitation prompted the creation of irrigation systems for agriculture and other cultivation. These irrigation systems extracted water from deep underground reservoirs and brought it up to surface level with water flow based on land incline and earth-gravity pull. Irrigation consisted of a network of irregular water channels taking on geometric shapes dictated by their location within agricultural land and cultivation areas situated around these systems.



Fig.6 Historical structures in Moorcheh Khort, Iran (credits: M.R. Manouchehri, 2008)



Fig.7 Historical structures in Moorcheh Khort, Iran (credits: M.R. Manouchehri, 2008)

3.3 Construction methods

Large fluctuations in temperature between days and nights in different seasons and limited availability of heating materials, such as wood, prompted construction using local materials with high thermal properties. Clay is one construction material with a high thermal property found in abundance and at a very low cost in most of Iran. Its usage goes as far back as the construction of ancient site of Persepolis near Shiraz.

3.4 Physical structure

3.4.1 Main Structure

Walls: Moorcheh Khort, with an area of 33,000 square meters, has a protective wall with a thickness of 2 meters and a height of 6 meters. The inside of this wall is made of stone surrounded with stratified clay materials.

Towers: The fortress has eight sentry towers, which were important in providing security to the residents.

Entrances: The fortress has two main entrances with one being on the southeast side and the other on the northwest. They are positioned in two orthogonal directions connected by the main inner pathway. Each entrance is built inside a tower. The entrance doors are wooden structures of 25-cm thickness with reinforcement provided by thick metal sheets nailed to the wood. The entrance on the southwest opens into a huge vestibule, while the other entrance opens directly into the main pathway.

Emam Zadeh Ali: The burial site of Imam Zadeh Ali is located next to the main entrance on the southwest side and features a conical dome of turquoise and azure tiling. It has a courtyard with a portico that is surrounded by the monument, as well as service rooms, which were also used as a burial site.

Bathhouses: Bathhouses were located at the centre of the fortress along the main pathway. The eastern bathhouse was for males and the western one was for females. They were

built two meters underground with a stone foundation, brick walls and lime ornamentations. Each bathhouse had a portal, a twisting entrance corridor, a changing room, a connecting entrance, a hot room, a pool, a hearth, and a main well for the water supply. Light and ventilation were provided by ceiling vents and skylights. Catwalks underneath the stone floor provided a means for the distribution of heat from the hearth throughout the bathhouse.

Grand Mosque: The Grand Mosque was built on the main pathway. It has two porticos, one portal, one central courtyard, one summer-prayer area, and one winter-prayer area with stone columns. Clay is the main construction material used in the Grand Mosque. The interior and exterior of the Grand Mosque are decorated with bricks, tiles, and stucco works.

Bazaar: Bazaar is a Persian word. Its Pahlavi root is Bahachar, meaning a place for prices. From a historical point of view, a bazaar was a place where sellers and buyers met to exchange goods and services. Bazaars were originally formed during the Sasanian era in cities where commerce was the main activity, and were considered the socio-economic element of a community. The main bazaar was usually formed next to a city's main entrance and would normally expand inward along the main access ways as trading increased. Their formation, development, and organization were dependent on increases in trading volume by which their dynamism influenced the interaction and coordination of the various elements.

The major elements of a bazaar were a main pathway, side paths, corridors, crosses, squares, and shops. Most bazaars in Iran formed in a linear format with the shops on the busiest line creating the main part of the bazaar. The main bazaar in Moorcheh Khort was located on the main pathway between two entrances. These shops provided the daily staples required by residents and played an important role in fortress commerce.

Prayer Quarters: Prayer quarters were located next to bathhouses and fashioned after the religious beliefs of the residents. These were an important element in the fortress structure.

Main Pathway: The main pathway in Moorcheh Khort extended from the southwest to the northeast connecting the two main entrances. Side pathways branched out from the main pathway based on the positions of neighboring residential units, their relationships, and possibility of intrusion from other units.

Covered Passageways: Covered passageways were considered important in Iranian architecture from ancient times and were arranged in such a way as to provide continuous shade from the sun and heat during summer days. They also helped to provide protection from seasonal winds. Many covered passageways ended at residential units and were helpful in building a sense of solidarity and neighborliness among residents, as well as providing extra security. This type of passageway is referred to as a locked passageway.

Roofs, as well as rooms, were built over these passageways and were formed based on the positions of adjoining units, their relationships, and possibility of intrusion with considerations given to environmental conditions and the effective use of space.

4. CONCLUSION

Based on the first article of the Venice Charter (ICOMOS, 1964), a historical site not only includes single buildings but also urban or rural community complexes that represent a certain civilization, a recognized advancement, or a historical event. Historic classification can include major works of arts, as well as ordinary ones, which have gained cultural significance by passage of time. Rehabilitation works on historical sites create a working relationship between the historical site and workers (Falamaki, 2007a). Rehabilitation works are an undertaking that requires knowledge more than ingenuity; patience more than productivity; conscience more than enthusiasm; and pride more than financial gains.

Research on historical sites requires multidisciplinary studies involving the identification of construction materials and the interrelationship of structures. Protective rehabilitation programs based on guidelines provided by international charters require intra-project decision-making. Project supervisors can obtain funding for rehabilitation projects based on priorities. A detailed program was drawn up outlining the protective needs for Moorcheh Khort historical fortress. Meanwhile, a short

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LOCAL SOCIO-CULTURAL KNOWLEDGE SYSTEMS AND ASSOCIATED INTANGIBLE HERITAGE PREVALENT IN UGANDAN EARTHEN ARCHITECTURE

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Theme 5: Local and Regional Knowledge, Intangible Heritage and Social Impact
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Abstract

At this time, the subject of local and as well as regional socio-cultural knowledge systems, and associated intangible heritage prevalent in African earthen architecture is seldom regarded as a worthwhile focus to warrant attention of academics, professionals and public-private sector partnerships in Africa. Yet these knowledge systems and attendant intangible heritage proliferated productive impacts towards the sustenance of indigenous education and related social-cultural values, customs and traditions of pre-Colonial African societies. Apparently, African earthen architecture provided the medium for transmission of knowledge systems together with intangible heritage. Their resilience has continued to date but at a much-reduced level of significance. In this connection, African earthen architecture is among the continent's heritage fabric currently undergoing obsolescence and severe decline in enriching new generations with timeless knowledge systems.

In instances of the above-noted obsolescence, the connection between intangible heritage and the African people has likewise diminished and become increasingly confused. Concomitantly, uni-dimensional globalization has taken its toll and the new generations have been left adrift. They are increasingly disconnected, and attempting to understand themselves. Consequently, their cultural landscapes and earthen-built ensembles are also threatened with disintegration.

Hence, this paper highlights the compound threat to local African socio-cultural knowledge systems and associated intangible heritage prevalent in earthen architecture by means of a case study with Ugandan examples. Thereafter, the paper unfolds 'best-practice' pathways for mitigating against the vulnerability of these socio-cultural knowledge systems prevalent in the earthen architecture, so as to ensure their continuity.

1. INTRODUCTION

For background since time immemorial, African socio-cultural and ethnographic knowledge systems in their diverse artisanal, symbolical, mythological, magical, metaphorical, proverbial, and poetical configurations are profusely transmitted through oral and artisan traditions of rock art, textile design, infusion in ceremonial objects, decorative drawings, tattoos, rites, masks, figures, legends, fables, metaphors, proverbs, etc. Since the knowledge systems on their own are, in fact, invisible, African civilizations best converted some of them into tangible form by communicating, expressing, and representing them architectonically. In an investigative context, it is this category that is captured in this paper. In this regard, African earthen architecture, in general, and the Ugandan earthen ensembles, in particular, are customarily imbued with a good amount of these knowledge systems by means of artisanal inclusion in the walls of most traditional human habitations.

Semioticians make their reflections on this occurrence and applaud the artisans for this ethno-instinctive vocation synonymous with a corporate mouthpiece for indigenous knowledge systems and associated intangible cultural heritages (Cobley and Jansz, 2004).

Thus, apart from providing shelter, this merit makes Africa's and, case-specifically, Uganda's indigenous earthen architecture double as a materially energical and artifactual infrastructure for these knowledge systems to physically exist and 'live' on. This permits earthen architecture to gain an almost unparalleled status of one among the continent's biggest 'social resources' for communicating knowledge systems, sustaining indigenous education, related customs and traditions accumulated right from pre-Colonial times. In its intrinsic simplicity, Ugandan earthen architecture is, hence, a foremost material embodiment and reflection of people's values, perceptions, identity, aspirations, goals, etc.