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## The Adaptable Landscape Architecture of Africa's Historical Monuments

The history of landscape architecture as told by American and European authors too often omits African contributions outside of Egypt. The reasons for these omissions are complex, although the history of European colonialism and Eurocentric ideologies, Euro-American enslavement of African peoples, and American institutionalized racism are at the core. As environmental design in the 21<sup>st</sup> century acknowledges the need for more inclusive and environmentally sustainable landscapes, we can look to the historical precedents set in Africa of adaptable, yet monumental landscape architecture made with existing local materials and natural systems. To be able to create inclusive, sustainable, and community-driven landscapes, it is up to us, as landscape architects, to do the work to dismantle the forces that uphold systems of oppression. By educating ourselves and including what has been historically omitted, we can better equip ourselves to design adaptable landscapes, and better understand the forces that shape our global

community. The granite city of Great Zimbabwe in southern Africa, the 12<sup>th</sup> century rock-cut churches of Lalibela, Ethiopia in northeastern Africa, and the continuously reconstructed adobe clay Great Mosque of Djenné, Mali in western Africa are three iconic examples of African monumental landscape architecture (Fig.1). These landscapes are each unique in their histories, scales, materials, and experiential impacts, and their distinguishing features and forms should be as

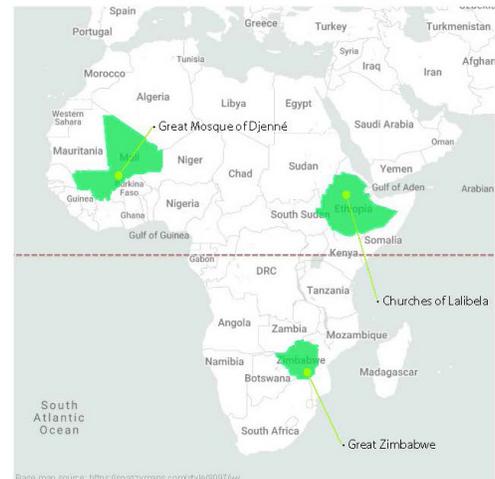


Fig. 1. Map of Africa showing our subjects' locations.

easily recognizable to American landscape architects as the forms of indigenous American, Greco-Roman, Chinese and Japanese landscapes (if not *more* easily recognizable, considering how closely linked America's prosperity is to African slave-labor and natural resources). Because these monuments utilize the existing natural systems, local materials, and concepts of adaptability, they are valuable examples of environmentally sustainable landscape architecture, and thus should be studied so that we can appropriately apply the concepts of adaptability to modern American landscapes. Today, these landscapes are all inscribed as UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage Sites and the impacts these

inscriptions have on the local communities must also be part of the conversation. Although this introduction to these three examples will in no way complete one's education, it is an invitation to learn more, and an acknowledgement that it is no longer acceptable to omit the African continent (outside of Egypt) from our understanding of landscape architecture history.

Great Zimbabwe was built by the Shona<sup>1</sup> civilization in southern Africa in what is present-day Zimbabwe (Fig. 2). Dates of origin vary widely and are difficult to narrow down because 19<sup>th</sup> and 20<sup>th</sup> century looting and poor archeological practices damaged the site so badly (Ndoroh 98), but sometime between the 9<sup>th</sup> (Elleh 209) and 16<sup>th</sup> centuries (Ndoroh 96) the Shona empire constructed the complex in the center of the region's gold trade route. The location of the complex, as well as archeologists' findings of artifacts from China and Persia (Ndoroh 98), suggest that the Shona had developed control of the gold trade at the time (Ndoroh 96). The word *zimbabwe*, ("stone houses" in Bantu) (Elleh 191) perfectly describes the forms: a group of large, granite-stone enclosures in curvilinear forms with narrow passageways and rounded entrances. Within the city lived 10–20 thousand people in round houses made of mud and thatched roofs (Oliver 111). None of the walls use mortar, but are freestanding, between 4–17 ft thick and up to 32 ft tall (Elleh 209). The lack of mortar is unusual for constructions made of stone, and evokes a sense of impermanence to Great Zimbabwe. As the stones fall, and walls need repair, the complex requires caretakers (originally the Shona, later European colonists, today UNESCO) to continuously interact with the landscape. The process of continuous interaction through rebuilding, skill and knowledge sharing, and the experience of age and decay, is practiced across cultures in rural areas of tropical Africa (Denyer 92) and is aligned with the concept of adaptability: as societal needs change, forms change.

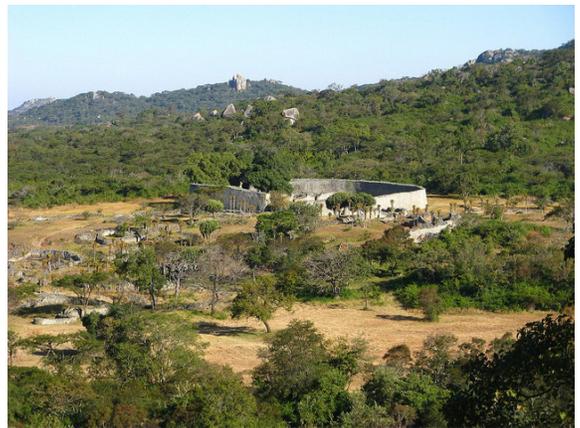


Fig. 2. Great Zimbabwe in its rocky landscape



Fig. 3. Ruins at Great Zimbabwe

The complex of Great Zimbabwe is a collection of walls (some topped with ornamental chevron patterns), passageways, houses, terraces and platforms “weaving in and out of the giant granite boulders placed there by nature” (Fig. 3) (Oliver 111). The Shona's use of locally-sourced granite as the main building material could be attributed to their indigenous religion which was based in ancestor

worship and prohibited believers from cutting down trees for wood (Mapara 84). Within the largest enclosure of the complex stands a tall conical tower that the ancestors of the Shona people call *Mumbahuru* (“House of the Great Woman”) (Elleh 209) suggesting its symbolism in fertility. Another distinguishing feature of Great Zimbabwe are the narrow passageways that force people to walk in single file (Fig. 4). While this could have been used as a way to thwart potential attackers, the experience it creates for visitors today is one of an intimate connection with the stones, and with the surrounding landscape. The walls are close and there is very little space between you and the rock. In this way, one is forced to connect with the surrounding granite landscape.



Fig. 4. Narrow passageways at Great Zimbabwe

Great Zimbabwe provided its residents with not only protective walls for their homes and livestock, but perhaps also for their gardens as local oral histories tell of “endless supplies of ripe tomatoes and *chechete* fruit at the ruins” (Fontein 778). Central to the complex was also a public gathering space, a *kgotla* (“getting together” in Tswana) (Fig. 5). The *kgotla* form, used in village planning in Zimbabwe, Botswana, Namibia and Zambia (Elleh 202), is popular because of the need for outdoor living and ceremonial spaces in the subtropical climate. The central *kgotla* is surrounded by many households of one community and is used for everyday coming together, as well as special ceremonies (marriages, funerals, and theater) bringing the spiritual practice into everyday living, rather than designating a separate, distant building for worship (as in Christianity and Islam).

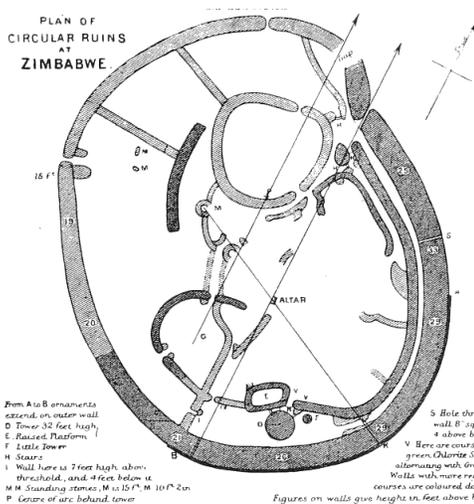


Fig. 5. Plan showing central *kgotla* in Great Zimbabwe

In the mid-15<sup>th</sup> century, the complex at Great Zimbabwe was abandoned by the Shona (Oliver 112), yet remained mostly intact until the British colonized Zimbabwe (naming it Rhodesia, after the multi-millionaire politician Cecil Rhodes) (Oliver 181). During the time that Great Zimbabwe was under British colonial rule, several instances of mis-management, looting, and poor archeological practices destroyed any chance of accurately dating the complex. Colonization was also the beginning of a long-lasting political debate regarding the origins of the site. The British government claimed it

was too sophisticated to have been built by indigenous Africans therefore must have been the work of Israelites or Phoenicians (Ndoroh 98). The government even funded projects in pursuit of this racist theory, but was

never able to prove it. When the country gained independence in 1980, The Zimbabwe African National Union chose the name Zimbabwe in reference to the many stone houses found in the region, and the historic complex of Great Zimbabwe built by the indigenous Shona people (Oliver 238).

Today Great Zimbabwe is a national icon (the conical tower is printed on the one dollar coin), and a tourist attraction. However, since its UNESCO inscription, it has entered into a new era based on a kind of preservation that does not necessarily support the local community. Local narratives largely consider foreign archeologists' tools and the removal of artifacts into museums just as destructive as the colonial looters and thieves, and tell of "the Voice" of Great Zimbabwe that has been silent, out of anger, since the arrival of the colonizers (Fontein 776–780). It is important to consider how a landscape interacts with its surrounding community, before and after it is adopted for the purpose of historical preservation. While we absolutely should learn about these iconic monuments (and it would be difficult for Americans to do so without the work done by archeologists and scientists, publishers and translators) the preservation should also serve the community with which it shares the landscape. Great Zimbabwe is unique in its scale and iconic status, and yet representational of indigenous African landscape styles in the use of locally sourced materials, the incorporation of a place of worship into the central gathering space, and the form's connection with the surrounding environment.

Connecting forms to the surrounding environment is not exclusive to African design, it is an international practice, though some remarkable examples can be traced back to Egypt in the landscape architecture of Queen Hatshepsut, where the rock-cut, sandy-colored temple, carved from the surrounding mountain, seems to rise out of the mountain itself. Two borders, and 1600 miles to the south, another

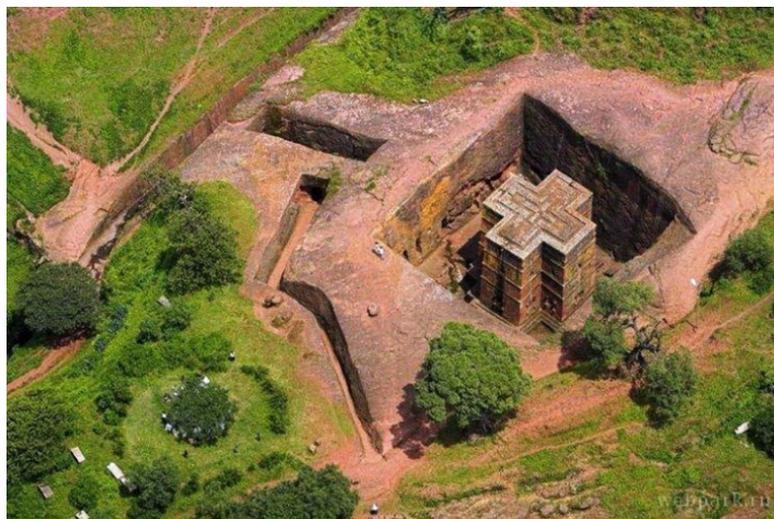


Fig. 6. Aerial view of Beta Giorgis Church in Lalibela.

mountains. Beta Giorgis, and the rock-cut churches of Lalibela, Ethiopia, built in the 12<sup>th</sup> century by the Aksumite King Lalibela are unique in their connection with the landscape (Fig. 6). To enter, one must physically descend down into the earth. The churches, carved from single pieces of the soft, pink basaltic scoriae rock (Bosc-Tiessé 144), adopted the form of the Christian basilica church, and so, it is

not their shape that connects them with the surrounding environment, but their material, and the fact that they are carved out of the rock on which they stand. Ancient Aksumite landscapes used rectilinear forms, and took inspiration from Egyptian stone-carving techniques used for obelisks and temples.

After the Aksumite kingdom converted to Christianity in 333 C.E., they began to incorporate the new Christian forms with the indigenous forms they had used for their palaces and cities. When Islam arrived in the 7<sup>th</sup> century (Elleh 243), Ethiopian Christians did not convert, but instead moved their places of worship



Fig. 7. Lichen on the exterior of Beta Giorgis Church in Lalibela

to the isolated Ethiopian Highlands, 3,000–8,500 feet above sea-level. The churches of Lalibela, like Great Zimbabwe, are also a type of complex, or a community of structures, as they are connected underground through narrow passageways and tunnels. Within the complex, one continuously experiences different rooms and hallways, openings and enclosures, and even “a baptismal cistern with algae and reeds, fed by a rainwater channel” (Dimond 04). The journey through the interior of the complex is just as much a part of the landscape experience as is traveling to reach Lalibela through the remote Ethiopian Highlands.

In the process of excavation, the debris removed by the carvers was mounded into piles outside the cavities, eventually creating large mounds, which were later used as burial grounds by local people (Bosc-Tiessé 156). The tradition of using sacred landscape spaces as burial grounds is common in both Christianity and in indigenous African cultures as a way of connecting with one’s ancestors. When the carvers would hit a harder substrate of rock, they would stop carving, or change course, suggesting that the siting of the churches

on this type of especially soft rock was strategic and intentional (Bosc-Tiessé 145). With an understanding of the geological forces that would make possible carving an inhabitable structure 38 ft deep into the rock, it is reasonable to assume that they also understood the relative impermanence of such soft rock once exposed to the wear of natural elements, and human use. Indeed, the churches are now in considerable disrepair, some covered with lichen (Fig. 7) and “rock diseases”, heavily



Fig. 8. Section of Beta Giorgis Church in Lalibela

damaged by existing salt within the rock, clogged with mud and debris and suffering from wind erosion (Kidane 211). Like the landscape they are physically connected to, the churches change and decay over time, but in contrast to the complex at Great Zimbabwe, the churches of Lalibela are still used by the Christian community. The churches of Lalibela were inscribed as UNESCO World Heritage Sites in 1978, creating an influx of foreign visitors to the landscape. Today, there are small towns with hotels nearby that host the Christian pilgrims and the tourists who come to see the lichen-covered wonders. Landscapes of sunken rock-cut structures do not exist in this form in any other part of the world, but are unique to Ethiopia. The churches of Lalibela can be compared to other African landscapes by their use of local materials, their connection to the surrounding landscape, the presence of ancestral graves and link to indigenous cultural practices, and their inherent impermanence through the intentional use of the soft basaltic scoriae rock.

The concepts of inherent impermanence and adaptability are visible too, in the traditional adobe structures of West Africa and take on monumental scale in the Great Mosque of Djenné in Mali (Fig. 9). Here, the current mosque is the third reconstruction since its original 13<sup>th</sup> century form, and every year local

community members participate in the *Crépissage de la Grand Mosquée*, (“Plastering of the Great Mosque”). The Great Mosque of Djenné, as well as other adobe mosques in the region are built in Sudanese style, a West African style characterized by the use of adobe clay, rectilinear forms and central courtyards (Elleh 24). The Great Mosque of Djenné is the recognized model of Sudanese style



Fig. 9. Adobe walls with monkey-head protrusions at the Great Mosque of Djenné.

(De Jorio 102), and its distinctive features can be traced back to ancient Egypt. In both places we see landscape architecture that uses adobe clay from the surrounding environment to create cities that visually match their surroundings. We also see details like rooftop openings for light and ventilation, enclosed courtyards, cone-shaped obelisk-like protrusions topped with Ostrich eggs (Fig. 10) (Denyer 118) (a form of the obelisk repeated in Italian Renaissance gardens such as Boboli) (Fig. 10.1), as well as the characteristic “horizontal timber reinforcements and outward projecting wooden stumps known as monkey-head” (Elleh 46). The monkey-head provide reinforcement, ornamentation, and a permanent scaffolding system for reconstruction work to the



Fig. 10. Ostrich Eggs at the top of the Great Mosque of Djenné

Fig. 10.1. The obelisk at Boboli Gardens, Italy.

exterior façades.

There are a great variety of Sudanese style adobe houses, mosques, cities, and ancient ruins in Mali. UNESCO has inscribed the Great Mosque of Djenné, well as four nearby archeological sites dating back to the 3<sup>rd</sup> century B.C.E.

into one cultural heritage site called The Old Towns of Djenné (UNESCO, 116), recognizing the link between the Islamic Sudanese landscape architecture and the indigenous Sudanese landscape architecture. The city of Djenné, the lesser known but older sister to Timbuktu, was an important center in Sub-Saharan Africa for over 1600 years (Bourgeois 54). When the 26<sup>th</sup> king of Djenné, Koi Konboro, converted to Islam in the 13<sup>th</sup> century, he was instructed to first plant a tree, and then build a mosque (Bourgeois 54). The life of, and control over the mosque went through various stages including the early 19<sup>th</sup> century fundamentalist Muslim leader Sekou Amadou who, after seizing control of the city, closed the mosque in an attempt to stop people from gathering in resistance to him. Because his fundamentalist beliefs prohibited him from destroying the mosque, instead, he made the process of repairing it illegal so that it would be at the mercy of the seasonal rains (Bourgeois 55).

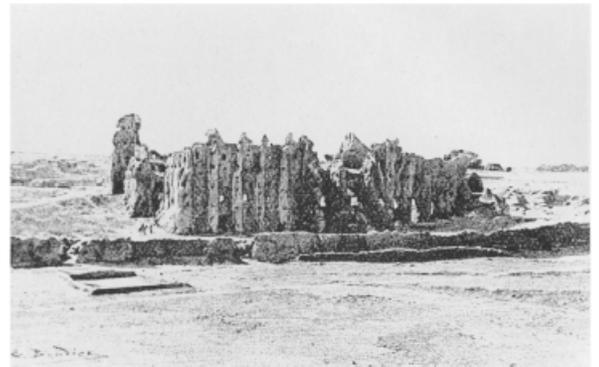


Fig. 11. 1895 photo of the original mosque in Djenné.

After 70 years of neglect, when European explorers began photographing, and writing about the Great Mosque of Djenné, they were unimpressed (Fig. 11). But they did not understand the life of the mosque, or the need for continuous interaction with adobe clay landscape architecture.



Fig. 12. Community re-plastering with new clay.

This tradition of interaction with the landscape architecture of the Great Mosque of Djenné now takes place each spring at the annual *Crépissage de la Grand Mosquée* (Fig. 12). Since 2016 the community has involved local youth organizations, experienced masons, and indigenous African music and dance performers, turning the re-plastering process into a cultural festival. Elder

mason Ibrahim Toumagnon describes the re-plastering in a 2016 interview by saying “Each year we dress the mosque...it’s like when a person wears clothes to protect themselves”<sup>2</sup>. By making this connection between tending to a person, and tending to the landscape architecture, it shows that the community considers the mosque to be, in a sense, alive just like we are. It needs regular attention, it changes, and it will decay without their intervention. It is adaptable, because if the community no longer needs it, it will disappear.

While the Great Mosque of Djenné is an example of monumental African landscape architecture that uses concepts of adaptability in its construction, its UNESCO inscription in 1988 has, like Great Zimbabwe and the churches of Lalibela, also come with its own set of issues, which culminated in a popular revolt in 2006 (De Jorio, 106). In her 2016 book “Cultural Heritage in Mali in the Neoliberal Era” Rosa de Jorio says of the restoration work at Djenne:

“Djenne’s inscription on the list of UNESCO World Heritage Sites has created a difficult situation for the city’s inhabitants, as the resulting museological approach in the handling of the city patrimony freezes a lived patrimony in constant transformation”. (pp. 103, 107)

De Jorio directly addresses the conflict between adaptable landscape architecture, its connections to the living landscape and culture, and the preservation of these landscapes as a single moment of their lives. The landscape becomes permanent and is no longer adaptable. While it is difficult to say that UNESCO World Heritage Sites do not benefit the local population at all, this type of historical preservation uses a top-down, rather than grassroots approach and rarely involves local communities in the decision-making process. Although it is possible that the abundance of information available to students in the United States is largely due to these inscriptions (and for information, I am always grateful), we must keep these realities in mind, as they are part of the lives of these monuments and the cultures that are part of the landscapes.

We can adopt the lessons found in adaptable, impermanent landscape architecture forms for our landscape architecture work in the United States. By understanding these examples of monumental, yet adaptable historical precedents in Africa we can apply these techniques to modern sustainable landscape architecture. As all living landscapes change over time, we see that with the management of historical landscape architecture and its relationship to the natural processes of decay, the local communities must be involved at a higher level in order for these landscapes to thrive. The relationship between the environments, forms and materials in Great Zimbabwe, the churches of Lalibela, and the Great Mosque of Djenné make these iconic examples of African landscape architecture valuable additions to our foundational landscapes in world history.

## Footnotes

1. All of the authors I cite use the term Shona to refer to the group of people that built Great Zimbabwe, however it is not a self-description, rather a description made by the neighboring Ndebele people (meaning “people who disappear”), and later made into popular use by the colonial authors and government in the 1930s. (Mapara, 80)
2. <https://youtu.be/mH2d5mNzbpk> While the interviews in this video are informative, it should be noted that the organization that created the video was founded by white Americans, not by local African community members.

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