

## Chapter 10

# Exploring the Science of Vhavenda Traditional Architectural Design and Building Technology

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### ABSTRACT

*Before now, historiographies and archival accounts of African innovations have often been told from mainly a Western and Eurocentric perspective. This chapter aims to expand this argument. It does this through a philosophical appraisal of the trajectory of progression in the traditional architectural designs and building technologies in the pre-colonial Vhavenda communities. This means exploring the scientific bases behind the progression of the different shapes and forms of the architectural designs and the building technology in the traditional Vhavenda communities. What counts is not whether these progressions have followed a Eurocentric notion of science, but rather unearthing the local rationale within which they are justified, and are hence ought to be regarded as “science.” Following these objectives, two questions are very important: (1) What are the major changes in the traditional Vhavenda architectural designs and building infrastructures? (2) How are these changes justified within the Vhavenda indigenous knowledge system?*

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## INTRODUCTION

Historiographies and archival accounts of African architectures and building technologies have often been told from mainly a western and Eurocentric perspective (Horton, 1967; Shizha & Emeagwali, 2016; Verran, 2001). For this, there seems to be a conscious cultural or political resistance to accepting any evidence that these indigenous technologies and archival edifices were built on sound science, like those in the Western cultures (Shizha & Emeagwali, 2016). Building technologies, physics and mathematical principles used in constructing indigenous structures such as the ruins of the capitals of the Great Zimbabwe, Khami and Dzata are viewed with suspicion and as such dismissed as primitive and non-scientific (Brownlie, 2005, Main & Huffman 2020). Great Zimbabwe ruins is a massive set of stone architectural buildings, a state estimated to have covered an area of about 90, 000 square kilometres and could have sustained a substantial number of people. Today, the remains of Great Zimbabwe stand in a landscape of wooded grassland, studded with granite kopjes, some consisting of massive rounded boulders. The ruins are divided into three parts: The Hill complex, the Valley ruins and the great enclosures (Main & Huffman, 2020). It is only when such innovations are embedded in Eurocentric structures, do such scholars regard them as ‘real science’ (Shizha & Emeagwali, 2016). Excavation at Great Zimbabwe revealed metal arrows, axes and gold workings, as well as ceramics of Chinese and Middle East origin. Theodore Bent concluded that Great Zimbabwe could not possibly have been built by the indigenous Shona Speaking community (Main & Huffman, 2020). Apart from southern Africa’s architectural innovations, North Africa hosts great African architectural examples, which showcase African understanding of mathematical precision which could be seen from stone quarrying and constructions of the Egyptian Pyramids. These were no ordinary structures but religious structures compartmentalised into burial chambers where ruling or elite families and associated religious priests were buried in association with their belongings in preparation for life after death. Africans produce structures that were functional, with geometric shapes to provide maximum use and pleasing appearance. These structures served as African memorabilia (in honor of their rulers, kings and chief priest’s). Subsequently, both pyramids and prehistoric capitals are functional components of a structural plan embedded in African culture.

Some of the few Eurocentric-thinking scholars and historians (Callahan & Leeson, 2006), who have reluctantly acknowledged the ‘science’ in Africa’s innovations when discussing African scientific innovations, such scholars seem to have projected an exclusively diffusionist hypothesis that perceives such innovations as built merely on spirituality and primitive thinking. African technological innovations such as metal production and indigenous medicines have been silenced by colonial powers and were relegated as the generation of superstitions. This colonial mindset was mainly based on the Christian belief system. This view point put African innovations as backwards and diabolical.

The argument is that African communities may have developed impressive technological advancements, however such developments do not fit smoothly into the Western epistemological worldview that prevails in science. Hence, these innovations and advancements are seen as more primitive and less valuable to the euro-centred based architectural innovations

These assumptions are, of course, inaccurate and inadequate for many reasons. Firstly, being ‘primitive’ does not necessarily make African indigenous building technologies unscientific. Through the unearthing of impressive cultural innovations in different African cultures, many studies have in the last three decades, shown how different African communities evolved their own explanatory frameworks and knowledge systems that developed building architectures and technologies in their communities (Bocoum, 2004; Hughes, 2012; Gennaioli & Rainer, 2005; Shizha, 2016). Among these is the existing

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