

This is a repository copy of *The Mosques of Songo Mnara in their Urban Landscape*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/125495/>

Version: Accepted Version

Article:

Horton, Mark, Fleisher, Jeffrey and Wynne-Jones, Stephanie orcid.org/0000-0002-3005-8647 (2017) The Mosques of Songo Mnara in their Urban Landscape. *Journal of Islamic Archaeology*. pp. 163-188. ISSN 2051-9729

<https://doi.org/10.1558/jia.35272>

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

The Mosques of Songo Mnara in their Urban Landscape

Mark Horton, University of Bristol

Jeffrey Fleisher, Rice University

Stephanie Wynne-Jones, University of York

Abstract

The 15th century Swahili town of Songo Mnara (Tanzania) had six mosques – an unusual quantity for a town of only 7 hectares and a population of 500-1000 people. Large-scale archaeological investigations of two previously unstudied mosques, and detailed survey of the remaining four structures has suggested a complex dynamic of Islamic practice in the town, including a dynamic relationship between mosques and burials, an emerging sense of social difference within the town, and the active signalling of Islamic faith to visitors through the construction of monuments intended to be seen on approach to the town. We commend a holistic approach in which mosques are studied not as isolated structures but part of a wider urban landscape.

Mosques on the Swahili coast

The study of mosques within their urban landscapes has hitherto received little attention in Islamic archaeology. Studies of individual structures are numerous, and go back to the beginnings of Islamic architectural archaeology (Creswell 1989). In addition, a series of classic studies have explored the structuring of space within the mosque as an index of social structure and power strategies (Grabar 2006a, b). Yet, the role of mosques within the wider urban fabric has generally been left undiscussed in archaeology. Mosques performed a range of different functions, not just as places for daily and weekly prayer; their foundations, often through individual piety or remembrance of holy individuals, played an important social role in the development of the urban fabric. The foundation of a religious institution is a central defining act for a community of believers, offering both material and immaterial presence in a social landscape. Around the Indian Ocean, religious communities were identified by both outsiders and insiders through this material landscape. The oceanic context also had some particular ramifications for the links between sovereignty, religion, and Islamic law, as societies like the Swahili existed at the edges of Islamic political formations (Lambourn 2017, 758). This led to a greater degree of religious autonomy, and the physical existence of

the mosque was an important aspect of the ways that dispersed Islamic communities demonstrated and experienced their existence as part of the community of believers.

On the Swahili coast, the ruins of ancient mosques are often the only remaining structures from before the 16th century, and have enduring importance as sacred locations (Abungu 1994). Swahili mosque architecture was once understood as evidence for Arab/Persian colonization; more recently Swahili mosques have been recognized as a unique, local, contribution to Islamic architecture (Garlake 2002:175), and indicators of particular Islamic sects (Horton 1996:419-423). The ruins of mosques at Swahili sites have served as a proxy measure for the size of Islamic communities within the town; their prominent positioning suggests that Islam became central to the daily life of east African towns by at least the 11th century AD. Evidence of earlier structures, some of earth-and-thatch, suggests that the practice of Islam at coastal sites may date back as far as the 8th century CE (Horton 1996; Insoll 2003).

The study of mosques in the urban fabric has often focused on the congregational or 'Friday' mosque, which at many sites is the earliest and occupies a central position (Horton 1996, Pradines 2010, Wilson 1982, Wright 1993). This has been interpreted as a literal mapping of the centrality of Islam to urban life, and a representation of the unity of the community (Gensheimer 1997; el-Zein 1974: 14-15). Archaeologists have also suggested that mosques had a symbolic role within a larger landscape, as a focal point for a regional population (LaViolette and Fleisher 2009). At many sites it has been suggested that the construction of the Friday mosque was linked to elite power, often drawing on the ability of a ruler to fund construction and mobilise labour, and serving as an important statement of his or her authority (Chittick 1974; Kirkman 1964; Sutton 1998; Garlake 2002).

Less attention has been given to secondary mosques in Swahili towns, although these arguably have a greater contribution to make to our understanding of social negotiations and urban structure. In the 14th century, as Swahili towns expanded in size, many were elaborated with smaller, neighbourhood mosques. Initially, a small number of these mosques were added - 14th century Shanga, Jumba la Mtwana and Tumbatu had two smaller mosques added; Kilwa had four mosques added in the 14th and 15th centuries. By the 18th century, Swahili stone towns contained multiple mosques –Lamu has at least 22 (Allen 1974), Pate contains 12 mosques (Chittick 1967, fig 11) and there were 50 in Zanzibar town (Sheriff

1992). Ethnographies of Lamu emphasize the role of these institutions in social life, describing the ways that interpretations of Islam are played out through local power relationships, material contexts and social interactions all revolving around membership of particular mosques (el-Zein 1974; Ghaidan 1975). The 14th – 15th century is therefore a period of interest, marking this period of transition in East Africa. The proliferation of smaller mosques mirrors events elsewhere in the Islamic world, linked to a changing relationship between religion and sovereignty and a relaxation (in practice if not always in theological principle) of the monopoly of the Sultan to legitimise a single Friday mosque (Johansen 1998, 99). In the Indian Ocean world parallels may be found among the many small mosques at sites like Siraf (Whitehouse 1980), in Arab Sind (Flood 2009) or on the Malabar coast (Lambourn 2017). Through a relaxation of the legal relationship between the ruler and a particular mosque, smaller mosques could become the focus of competing claims among local elites, a practice that may be observed at sites on the Swahili coast, including Songo Mnara.

Songo Mnara

The Swahili stonetown of Songo Mnara lies in the Kilwa Archipelago, Tanzania. It dates to precisely this interesting period of the 14th and 15th centuries, with a short-lived but intensive period of construction and occupation. The site's extensive standing architecture earned it an inscription on the World Heritage list in 1981; it has been considered one of the finest examples of Swahili coral-built architecture (Garlake 1966, 91-4). The town has been the subject of a detailed seven-year archaeological study (2009-2016) and this paper comes out of this research, focusing on the six unusual mosques found there (fig 1; Fleisher and Wynne-Jones 2012; Wynne-Jones 2013; Wynne-Jones & Fleisher 2010, 2011, 2016). Two were completely excavated by the project, while four were surveyed and reassessed from their upstanding masonry. The wider project examined the stone houses, burials and several daub buildings that were visible only through geophysics and excavation (Welham et al. 2014). This study of the mosques is therefore not an attempt to create a typical model of a Swahili townscape, as Songo Mnara is exceptional in several ways. It is, however, an unusual opportunity to understand the role of mosques within a well-studied townscape of the 15th century, the peak of the precolonial stonetown tradition.

Songo Mnara covers around 7 hectares and was surrounded by a town wall (fig. 1). Within the town there are around 48 houses, and an unknown number of daub houses over a further

30% of the site. The town plan of Songo Mnara was organised to create a series of open spaces. In the 'central open area' are found as many as 1,000 burials; many marked by masonry tombs and/or head and foot stones, but also unmarked graves and multiple interments known only through excavation. This space is an interesting one in the daily life of the town, as although its main function was as a cemetery it was a focal point for domestic life and for ongoing and public commemorative acts over many years (Fleisher 2013, 2014). The archaeological evidence from the excavations and sondages suggests a relatively brief occupation, beginning in the late 14th and ending in the early 16th century. Architectural evidence suggested reoccupation and rebuilding of the houses in the 17th or 18th centuries (Garlake 1966), yet archaeological support for this has been elusive. The town was however fully abandoned and overgrown by the time of a visit by Lt. Prior in 1811 (Prior 1819; Freeman-Grenville 1962a, 209).

Songo Mnara is only 11 km from the better known and much larger town of Kilwa Kisiwani, whose own origins lay in the 9th century, and which underwent a boom in prosperity between the 13th and 16th centuries (Chittick 1974). In 1331 CE Kilwa was visited by Ibn Battuta, from whom comes the intelligence that the population was of a Sunni Sha'afi denomination; the ruler that he met – al-Hasan ibn Sulaiman – is linked to numerous pious acts such as the construction of the domed extension to Kilwa's Great Mosque, and completion of the pilgrimage to Mecca (Sutton 1998). The arrival of the Portuguese, under Pedro Alvares Cabral in 1500 (Freeman-Grenville 1962a, 60), and the construction of a stone fort at Kilwa in 1505 may have precipitated the decline of the stonetowns in the archipelago and the abandonment of Songo Mnara. While Kilwa itself was well-described by the Portuguese (Chittick 1974, 247-251), Songo Mnara was not mentioned in any detail. Only a single, 17th-century reference describes a secret meeting between an envoy of the (female) Sultan of Kilwa and a party of Portuguese, held at the palace on Songo Mnara (Vernet, pers. comm. 2017). It may be that by this time the site was already a ruin. A garbled origin tradition was collected by Burton (1872 ii, 361), apparently a version of the Kilwa tradition. More recently, an anthropological study on the island concluded that the current population is so changed by slavery and migration of recent centuries that historical memory relating to the early history are not preserved (Bacuez 2009). Oral histories collected by the current project did include a series of traditions relating to specific buildings and tombs, but more general understandings of the history of the site are inextricably tangled with the Kilwa historical narrative (Freeman-Grenville 1962; Chittick 1974).

Our reconstruction of the mosques and their roles thus relies entirely on archaeological and architectural evidence, as there is no historical evidence to help us in attributing their foundation or use. No inscriptions have yet been found either at the mosque or indeed elsewhere on the site. The elaborate architecture of the houses suggests this was an important place, yet its relationship with the Kilwa polity remains somewhat of a mystery. Nonetheless, we can position the mosques of Songo Mnara within the same ecumene as those of Kilwa, and might likewise imagine a role for pious and public acts of construction by individual sponsors.

The six mosques at Songo Mnara (figs. 2, 3 & 4) include: (1) the Northeast Mosque, the largest mosque at the site located in the north east corner of the settlement, adjacent to a large house complex (House 34)¹; (2) the Central Mosque, located in the central open area surrounded by an extensive cemetery; (3) the Necropolis Mosque, a structure set up on a bluff just outside the south west corner of the site, with an attached, walled cemetery; (4) the Small Mosque, a small, simple structure on the western shoreline of the site; (5) the Town Wall Mosque, a long thin mosque connected to the town wall, also on the western shoreline of the site; and (6) the Mnara Mosque, a structure set on a rectangular coral platform within the tidal waters of the western shore.

Visits and Investigations 1777 – 2004

The site has long been known through its famous ‘tower’ or Swahili, *mnara*, first recorded in the 18th century. M. Morice included a little sketch of a three-storied tower, which he calls La Pagode, on a chart of Kilwa bay, dated to September 1777 (Freeman-Grenville 1965, 207). M. Crassons de Medeuil, a French slave captain, noted in 1784 that the pagoda had recently fallen (Freeman-Grenville 1962a, 196). On a chart, drawn by A. Dalrymple, also published in 1784, but based on Morice’s original sketch of 1777, the mnara is shown as a slender tower (<http://gallica.bnf.fr/ark:/12148/btv1b7759855g>) but with a Muslim crescent as a finial, possibly indicating a minaret. In 1811, HMS Nisus visited the Songo Mnara, and Lt. J. Prior and Captain Philip Beaver described houses, tombs, ‘Saxon’ arches and what they thought was a mosque, but were unable to find the ‘pagoda’ (Prior 1819, 76-8; Freeman-Grenville 1962a, 209). They did however leave a detailed description of the Necropolis

¹ All house numbers follow Garlake 1966.

Mosque (Freeman-Grenville 1962a, 208). Richard Burton visited in 1859 (Burton 1872, ii, 358-9), and first came upon the 'Nabahani Mosque' (which is most likely the Necropolis Mosque) through a well-cut gateway, and noted the mihrab decorated with 'Persian tiles'². Around it lay the tombs of the 'Shirazi sheiks', and he noted the custom of placing waterworn pebbles on graves – a practice that is still in evidence on many of the Songo Mnara graves. He also observed the mnara in the mangroves, which he correctly identified as a mosque.

The first archaeological description was by M.H. Dorman (1938), who compiled a reasonable plan of the site, showing the location of four mosques (he describes one) and the 'lighthouse'. Dorman may well have cleared some of the buildings of rubble, but does not state so. Around 1949, the 'hitherto unknown site of a ruined city on Songo Manara (sic.)' was discovered and excavated, and the photographs published by the adventurer F.A. Mitchell-Hedges (1954, plate opp. 238). A more serious account of the site was by Rev. Gervase Mathew (1959), who conducted small scale excavations. He left a decent description of the Northeast Mosque which he described as the 'Nabahani' Mosque and recorded that some elements of spirit worship continued there. He believed the mnara was a watch tower, built in 'zigurat fashion' (Mathew 1959, 157). In 1955, James Kirkman and Greville Freeman-Grenville (Kirkman 1958; Freeman-Grenville 1962b, 174) undertook some small scale investigations, that included the discovery of a piece of herringbone-carved coral, and a white porcelain bowl with mortar attached. Kirkman believed this came from a mosque while Freeman-Grenville (1965, 73) later claimed that the mnara was a 'tower kiosk for the purpose of enjoying the evening breeze on what is a hot and sticky island'. In 1961 H.N. Chittick undertook considerable archaeological and conservation work on the site, which included emptying wells, and conserving the Northeast Mosque (Chittick 1963, 7). He observed that the mosque had already been cleared out 'probably in the 1930's'. He also cleared the remains of the mnara and found celadon bowls with mortar attached, which he adduced would have originally have come from the domed roof of a mosque (Chittick 1963, 5). He also worked on the Necropolis mosque clearing the southern part of the prayer hall, and finding many pieces of Persian glazed bowls set into the vault.

The most serious study of the mosques (and indeed town) was undertaken by Peter Garlake in 1962-4 (1966). He drew the Necropolis, Mnara and Northeast Mosques (Garlake 1966, figs.

² Most likely a confusion for the many turquoise-glazed fritware bowls set into the roof, and recorded by Chittick (1963, 5).

18, 48) and thought the other two mosques along the shore were likely to be 18th century (Garlake 1966, 91). He located the Central Mosque on his site plan, but did not describe it. In 2004, Stéphane Pradines excavated below the prayer hall of the Northeast mosque, observed that there was a late 14th-century level at the base of the mosque, and suggested its construction dated to the early 15th century (Pradines & Blanchard 2009, 49-50).

Northeast Mosque

The largest and most elaborate mosque at Songo Mnara is located, not in the centre of the town, but in its north-east corner. It was described as the Main Mosque by Garlake (1966, fig 48) and the Great Mosque by Chittick (1963, 5). Its attribution as the Friday or Congregational mosque relies on its overall size, rather than specific evidence for a minbar, which could have been made of wood. Clearance of the mosque in the 1930's and further work in the 1960's and 2004 removed all the floor deposits and the critical area of floor where traces of a minbar might have been seen. Remains of the ablution area were not visible in 1964, and were probably exposed in 2004 as part of the conservation work on the site. While on the edge of the town, the mosque lies opposite one of the most elaborate monumental entrances for a domestic house in the town (House 34)³.

Our plan of the mosque (fig. 2) is the most complete, as previously published plans have included only the main prayer hall (Garlake 1966, fig 48). The main prayer hall is nearly square (7.75 x 7.68m⁴), on a *qibla* of 20 degrees. It would have accommodated around 75-80 worshippers. The flat roof was supported on four octagonal columns on square column bases, that formed a double transverse arcade with engaged columns on the side walls, leaving the mihrab open to view on its central axis (plate 1). The southern arcade is partially intact showing the fine-cut *porites* coral, and broad arches with the typical apex nick. The floor was raised on a 2m level of sand (Pradines & Blanchard 2005, 45). East and west were side rooms or verandas, reached via side doors, and which could have increased mosque capacity to around 115 worshippers. The prayer hall was entered via a southern room, reached by three stone steps and an impressive triple transverse arcade, and two arched doorways. In the south-west corner is the well, tank and rubbing stone, and two steps to enter the southern room from the west. North of the mosque is a cemetery in two parts, a smaller and larger

³ All house numbers follow Garlake 1966.

⁴ Measurements given in this article are internal, north-south followed by east-west.

enclosure, with at least 27 grave memorials including large sandstone slabs set as head and foot stones.

The mihrab (fig. 5) which survives in part, was particularly elaborate, with an inner trefoliate arch, six jamb orders decorated with double herringbone and an apse with carved blind niches, supported on an arcade with a fluted semi-dome. It has elements found in the 12th-century Kizimkazi and Tumbatu mihrabs (Horton forthcoming), but also Kisimani Mafia and Kua (Garlake 1966, figs. 49, 51) that may date to the 13th or 14th centuries (Christie 2013). Garlake (1966, 69) argued that the mihrab at Songo Mnara was later 16th century on typological grounds, but this is probably too late, as there is no other evidence for occupation on the site at this date.

Central Mosque (SM030)

Located within the central open area of the site, this small mosque was left unexcavated in the earlier clearance of the site and so provided the opportunity to examine a structure in detail (fig 3). Its central position in the site might suggest it as the earliest and original mosque. The pattern of the floor wear to the right of mihrab could suggest the location of a wooden minbar, suggesting it was the Friday mosque.

Before excavation the mosque was visible as a mound of collapsed rubble, a well, and low walls that enable a rough plan of the mosque to have been estimated, shown on earlier site plans (Garlake 1966, fig 74). A spoil heap located on the western side of the mosque was probably from the emptying of the well in 1961. The prayer hall was rectangular (6.72 x 4.66-4.75m) on a *qibla* line of 004 degrees, with a flat masonry roof supported on four circular wooden columns, set into the floor on large stone foundations below the floor (fig 3). One was revealed in a sondage (SM 029), that indicated the makeup of the floor. The mosque walls were dug into a basal orange red sand. The area was then infilled with light brown occupation / midden level 35 cm deep, with ceramics from the 14th and early 15th century, including imported black-on-yellow and blue monochromes. As this midden was redeposited fill, it may be the primary occupation of the site redeposited in the mosque, but it may also have been brought in from outside the site, a theory discussed below. Over this were two levels of white sand (as in the Northeast Mosque) a subfloor of broken coral stones, and a plaster floor. The column supports were placed in pits dug into these fills. The plaster floor was preserved around 30% of the total area although much cracked. Adjacent to the mihrab

were the collapsed *qibla* stones. These were a pile of stones, with only one piece of herringbone capital and two arch fragments, suggesting that the mihrab had been deliberately taken down when the mosque was abandoned and the more useful pieces removed. What was left – lying on a thin humic layer – was the discard heap. Much of the roof fell inside the prayer hall, and ceiling rubble was found directly on the floor, suggesting the collapse took place on a clean floor, and probably shortly after its abandonment. Carved coral spouts for collecting rainwater were also found. The unusual ceiling tiles found in the internal roof collapse comprised flat sandstone slates squared off and set into the lime. Square blocks of porites coral were also employed. The very heavy roof was remarkably supported on only four timber columns, probably explaining its collapse.

There were three doors to the mosque on the south, east and west sides. Those on the sides (which were probably arched) lead via three steps of shaped sandstone to open side verandas – a patch of plaster floor was found in the south east corner. The main entrance was however to the south via a ramp and steps, with two tanks on either side and a low bench (plate 2). The tanks were connected by a trough, flowing via a channel below the steps from the western tank adjacent to the well. The western tank has an unusual arrangement of two steps at one end, presumably to assist entry in order to clean the tank out). The eastern tank has a robbed bowl inset, but a base sherd of Chinese celadon with mortar attached was most likely used in this position. The bowl on the western cistern was remaining; a shallow longquan bowl with a diameter of 370mm and a depth of 54mm (plate 3).

The mihrab could be reconstructed from the surviving elevation, the plan, and the analysis of 56 worked pieces of coral from the rubble pile on the north-east corner (fig. 5). The mihrab was unusually flat and concave, with four jamb orders. The upper sections reconstructed from the blocks comprised a capital decorated with double herringbone and an arch of two orders with a double apex nick, the whole framed in a plain architrave. Some of the fragments had mortar patterns to suggest they had been reused.

The mosque was originally free standing with its washing area, but during its life, some additional walls were added. South of this washing area, an enclosure wall was added, and the area was used for burial. This wall abutted a demolished tomb, that itself abutted an earlier tomb, suggesting that this addition was late in the sequence. An additional western plinth built that abutted a low cemetery wall that enclosed further graves on the north side.

Town Wall Mosque (SM050)

Garlake (1966, 81, fig 74) shows the Town Wall Mosque as a simple small prayer hall with an upstanding mihrab, close to the shore, and suggests it was 18th century in date. The town wall was attached to its north-west corner. The excavation of this mosque however revealed a more complex and interesting story, showing that the building went out of use and its masonry was reused for the town wall, most likely in the early 16th century. The mosque is 2m above high tide level and about 4m from the current beach.

The original mosque was a long and thin two-roomed prayer hall (14.25 x 3.30m) on a *qibla* line of 350 degrees (fig 4, plate 4). A large fire ended the mosque's life, and burning marks could be seen on the floor and in doorways as well as indentations in the floor where masonry and timber had fallen to the ground. The west wall largely fell into the prayer hall, but the east wall fell outwards towards the town in a single block, and may well have been deliberately pushed over breaking along a line of layered construction. The ceiling fell on the floor, and many pieces of square porites coral tiles were found, separated by mangrove poles.

The northern room is 2.9 x 3.3m, with its mihrab, and the southern room 9.75 x 3.3m, the two rooms divided by an internal wall. This wall originally at full height (the wall scar is visible both on the fallen wall and the east wall, as well as a plaster lip), but was taken down level to the floor when the town wall was constructed. There is no evidence of any doorway between the two rooms. The northern room was entered from the west, via a sandstone step and a sandy ramp that led to the beach. By the step was a plaster plinth and an inset ceramic water pot. As there was no well at this mosque, it is assumed that ablutions were undertaken in the sea, with the water pot serving as a final washing point before entering the mosque. The plaster floor in this room was well preserved at the southern end, but quite worn around the mihrab. The mihrab has a very simple elevation of a narrow arch, without any capital. The base was semi-circular, but at the springing level it was rectangular.

The southern room (10.3 x 3.25m) had three doorways, two on the west wall and a further one in the centre of the south wall. A single fragment of arch was found nearby. Detail of the threshold is only visible in the northern doorway, the position of the other two inferred from scorch marks in the masonry. The east wall had no opening and would have been a blank wall to the town. The floor was less well preserved than the northern room, with small

patches of original floor by the dividing wall and at the south end. The rest of the floor-surface comprises sandy and ashy spreads, and even an area of worn bedrock. These levels were comparatively rich in finds, including 29 glass beads, a spindle whorl, and quantities of local pottery that may have derived from underlying pre-mosque occupation or midden levels along the beach. The bedrock sloped to the north, as a sondage in the north-east corner of the mosque reached bedrock 1.0m below the floor, with the floor here resting on fills of white and grey sand.

After the fire, the ruined mosque was turned into a section of the town wall. At the northwest corner the town wall abuts the mihrab wall, which then acts as part of the town wall. An L shaped section of new wall, around 50-60 cm wide, with very little mortar, is built inside the mosque (and over the plaster floor with its burnt patches) along the whole length of the mosque and south wall. No trace of the wall was found south of the mosque, but in line, 5m beyond the south wall, was what appeared to be a town wall guard house or gatehouse and this section of town wall between mosque and gatehouse was most likely robbed out.

Small Mosque

This small mosque is 80m south of the town wall mosque and was not investigated by excavation (fig. 2). The plan is the best guess from the surface indications. A free-standing prayer hall is visible (6.0 x 5.0m) on a *qibla* line of 010 degrees. The back of the mihrab apse is still standing, but no trace of its front was visible. On the west wall is an engaged column; a fallen column by the east wall suggests that there was a single transverse arcade supported on a central pillar – echoing a similar arrangement in the Northeast Mosque; the span between each pillar being an identical 2m. Little else can be said about this structure except for some details of its location. It lies to the south of the main entrance to the town from the sea, forming the southern side of the gap in the town wall; the town wall mosque and gatehouse mark the northern edge of this entrance (fig. 1). This small mosque also lies adjacent to an area of daub houses at the site, and may have acted as a neighbourhood mosque for this part of the community.

Necropolis Mosque

Located southwest of the site and outside the town wall, this mosque has drawn particular attention from travellers because it is the building first encountered from an accessible landing place. Chittick (1963, 5) and Garlake (1966, 38, 86, fig. 18) called it the Vaulted

Mosque, but we prefer Necropolis as it is associated with an extensive cemetery contained within its enclosure. Burton called it the Nabahani Mosque, but the authority for this is not known, and the Nabahani probably arrived in East Africa from Oman no earlier than the 16th century – at least 200 years after this mosque was built (Horton 2017a). The mosque is now very ruined and some ambiguities remain as to its original plan.

The mosque has a narrow prayer hall (5.4 x 2.75/3.25m) aligned on 347/340 degrees (fig 2). It was entered through a surviving arched doorway in the south wall. Two further arched doors either side of the mihrab led to two small rooms and an open courtyard beyond. This unusual arrangement is mirrored at the House of the Mosque on Kilwa and may have been related to the appearance of the imam as part of the prayer ritual, a practice recorded ethnographically in Lamu (el-Zein 1974). The mihrab has an apse but no arch (fig 5). The roof was barrel-vaulted with three transverse vaults supported on a cornice. In the vault Chittick (1963, 5) recorded numerous inset fritware bowls with turquoise glazes and under-painted black and dark blue decoration. These bowls are identical to those found at the House of the Mosque at Kilwa (Chittick 1974, 135, 306) and at Songo Mnara in the barrel vault of House 17, and probably date to the early – mid 15th century. Fragments of one are still visible in the rubble; no doubt others remain buried.

The mosque is located within an enclosure 16m square, containing numerous graves marked by sandstone slabs. The mosque and its enclosure seem to have been entered from the beach, where six steps are set against an external wall, leading to the doorway in the north-west corner. From here it was possible to enter the mosque through its two north doorways crossing the raised area north of the mosque. The graveyard was reached via six steps leading down from the raised area. South of the mosque is a large mound of rubble and masonry. Chittick (1963, 5) noted this as well, so it is unlikely to be the collapsed roof removed from the interior of the mosque. He suggested it was a collapsed minaret, and it is tempting to link this with the record of the collapsed ‘pagoda’ mentioned by Crassons in 1784 (Freeman-Grenville 1962a, 196).

Mnara Mosque

The sixth mosque, which gives the site its name, is located in a highly unusual position. It occupies a tiny island in the sea, around 30m from the beach. Reached at low tide by walking through muddy flats, it is surrounded by water at high tide. This area is now surrounded by

mangroves, although it must once have been the main harbour beach. There is no evidence for coastal erosion (indeed the mangrove has protected against this), so it seems the Mnara mosque was originally built in this location.

The building is a two-phase structure. The original construction is a rectangular platform, 9.3 x 5.75m, three steps on the north, east and west sides, and five to the south, the building's main entrance (fig 2). The building is made of coral, but the steps have on their upper surface slabs of sandstone. The prayer hall is rectangular (4.45 x 3.0/3.25m) on a *qibla* of 355 degrees with side-engaged columns. Chittick (1963, 5) noted 'numbers of celadon bowls which had been inserted in the masonry' when he cleared the mosque, and which he considered to be 15th century. Inserted bowls are found only in domed roofs, and twin transverse barrel vaults supported on the engaged columns are probable.

The mihrab has disappeared, but the pilasters for the framing architrave are visible, as well as several pieces of carved coral, including part of a capital and a faceted column (and Freeman-Grenville found a piece of herringbone on the site). There is no space for a projecting mihrab, so the apse was probably contained within the thickness of the wall – as it is in the nearby site of Sanje ya Kati (Pradines 2009; Horton 2017a).

The second phase involved the rebuilding of the external walls on the east, north and west sides, by the addition of a masonry skim. A curious feature of this is that it was not aligned to the original building, creating a new external *qibla* of 00 degrees – maybe the rebuild was intended to realign the mosque to the more correct direction of Mecca⁵.

Mosque	praying area	capacity	<i>qibla</i>	north door	east door	west door	south door	roof	ablutions	date
Northeast	59.52	80+35	020	0	1	1	2	flat	well and tanks	late 15 th
Central	31.58	36	003/005	0	1	1	1	flat	well and tanks	late 14 th /early

⁵ The true direction of Mecca from Songo Mnara is 0.56 degrees so this realignment was accurate.

										15th
Town wall	9.57 + 33.48	12 + 36	350	0	3	0	1	flat	sea	mid 15th
Small	30	36	010	0	?	?	?	?	sea	?late 15th
Necropolis	16.2	20	340/ 347	2	0	0	1	dome	sea	mid 15th
Mnara	13.8	16	355/ 000	0	0	0	1	dome	sea	mid 15th

Table 1. Size, layout and architectural data from the six mosques at Songo Mnara.

Discussion

Table 1 summarises the data from the six mosques. They seem to span the period of Songo Mnara's construction and occupation over the long 15th century. There is considerable variation in *qibla* direction, which is surprising given that the mosques are so close in date. While *qibla* can be calculated using the *qibla*-day method, which was well known by the 15th century, it requires a knowledge of longitudinal position, which remained unknown to Arab seafarers, at least as far as East Africa was concerned (Tibbets, 1971, 273). As King (1995) has suggested mosques were in practice set out by a variety of folk astronomical methods and this was probably the case at Songo Mnara. The observation that the Mnara Mosque was realigned during its lifetime suggests that there may have been dispute in the community as to the true direction of the Mecca, and the final rebuild gets *qibla* exactly correct, unlike the near contemporary Northeast Mosque that was 20 degrees off. It is tempting to suggest that the precision of the Mnara Mosque might have been linked to its maritime location, with seafarers, with their greater geographical knowledge, informing its orientation

The dating of the mosques is purely indicative. One clue is the use of domes in two of the mosques and which we can compare to similar buildings at Kilwa – particularly the Palace Mosque, which has many points of direct comparison (Chittick 1974, 134). The revival of vaulting has been linked to the rebuilding of the Kilwa Friday Mosque c. 1421-1442 (Chittick 1974, 76; Horton 2017b). Vaulted domestic structures at Songo Mnara probably also date to this period, and are closely linked to the Kilwa tradition, even using similar types of turquoise-glazed fritwares (Chittick 1974, 162-4). Chittick suggested that these unusual

bowls may have been imported as a single lot (Chittick 1974, 308) and it may well be that all these structures belong to the second quarter of the 15th century. The bowls set into the Mnara mosque were apparently Chinese, similar to bowls found in the Eastern part of the Great House (Chittick 1963, 5; 1974, 121) and may be later.

The flat-roofed mosques present more complex arguments for dating. Pradines's excavations below the Northeast Mosque produced evidence for occupation at its base, suggesting that the mosque was not primary to the site. He noted a piece of 15th century celadon in the mosque fills (Pradines & Blanchard 2009, 46). Garlake (1966, 33,69) commented that the transverse arcade seems to have developed from the 15th century vaulting systems and therefore cannot be earlier than the mid or even late 15th century. He actually dates the mosque to the early 16th century on architectural ground (Garlake 1966, 69). Whether late 15th or early 16th, the mosque is certainly not primary to the occupation, nor is there evidence for an earlier mosque below the present structure. This raises the question of where was the original mosque?

The best candidate for this is the Central Mosque. The plan of this mosque is a very traditional rectangular structure that reflects the plan of earlier Shirazi mosques of the coast (Horton 2017b, 2017c) and with its wooden columns and plan echo similarities to the original Northern Mosque at Kilwa (Chittick 1974, 61-3). The sondage below the floor included an introduced occupation deposit with 9 sherds of imported blue monochrome pottery of a type recorded at Shanga from the late 14th century and early 15th century (Horton 1996, 148). Further evidence for an early date comes from the magnificent greenware shallow bowl set into the western tank. This is from a well-known group of Longquan bowls dating to the late Yuan and early Ming, which were widely imitated by Iranian potters in the 14th century. In its position, it is most likely an heirloom, brought into the site from elsewhere

The Town Wall Mosque may also be early 15th century. It rests on a shallow occupation level of the early 15th century – middens that formed along the shoreline. The absence of vaulting might suggest an early date, while it must predate the town wall which is most likely early 16th century. The burning of the mosque may date to the sacking of Kilwa in 1505. While there is no historical evidence to suggest that the Portuguese reached Songo Mnara, F. Monclaro claimed in 1569 that Kilwa was sacked twice 'because of the treachery of its inhabitants' (Freeman-Grenville 1962a, 138) and this second, otherwise unrecorded military activity might have included Songo Mnara.

Mosque Narratives

Six mosques in a town of this size is unusual, but our study allows us to understand both the dynamic and spatial aspects of mosque location. The earliest mosque at Songo Mnara would appear to be the Central Mosque, placed in the middle of the newly established settlement. It was consciously archaic in form, with its timber columns, rectangular plan, and possibly built with introduced midden material c. 1375 - 1400. The Chinese bowls in the tanks may have been heirlooms, possibly brought from elsewhere. Perhaps it was built by a community of merchants that deliberately left Kilwa during a period of documented internal disputes in the late 14th century (Freeman-Grenville 1962b, 118-20, Saad 1979, 186-7). There are similar midden fills beneath the floors in some of the houses excavated, and they remain something of a mystery. As the occupation of Songo Mnara is so short, there is little variation in artefacts that would provide tight chronological control, but these fills do contain some of the earliest artefacts found, including sherds of Husuni Modelled Ware, a Kilwa ceramic linked to the 14th century. It may therefore be that these houses and mosque contain redeposited materials from the first occupation of the site (or, more speculatively, from Kilwa itself), re-laid into the foundations as a gesture of continuity. In other houses, founding deposits took the form of valuables buried in pits, so there is some precedent for this idea (Wynne-Jones 2013).

As the only mosque for around 40 years, the Central Mosque would have served as both the daily and Friday mosque. Songo Mnara underwent a significant expansion in the second quarter of the 15th century. Normally, this would involve the rebuilding of the mosque, but for some reason, this did not happen, and instead a site was found on the edge of town close to one of the largest houses – whose inhabitants perhaps may have funded its construction. The Central Mosque continued in use, but was converted to a cemetery mosque, with new burials around it (and even blocking the main southern entrance), although could have continued as a rival Friday mosque as is often the case in Swahili towns.

Only one mosque could be interpreted as a neighbourhood mosque – the Small Mosque that lies within the main area of daub houses. Surprisingly no small mosque has been found in the areas of the large stone houses, whose occupants must have used the Central and Northeast Mosques. The Town Wall Mosque is particularly interesting as it has two prayer rooms with independent entrances on the south and west sides – the east wall being blank to the town.

Mosques on beaches are sometimes suggested being for fishermen or seafarers and there was certainly a move to build mosques to be visible from the sea from the 13th century onwards (Fleisher et al. 2015). This mosque seems not to be a typical ‘fisherman’s mosque’ with its exceptionally large and distinct southern prayer room. An alternative suggestion is that it served as a women’s mosque with the small northern room being reserved for the male imam, and the larger (and heavily worn) rear room for the women – the blank wall to enable privacy for female devotion. Being located close to the daub-house section of the town, female space may have been more limited than in the stone houses, where devotion could take place privately.

The Necropolis Mosque located outside the town is associated with burials of a modest type marked by sandstone slabs rather than monumental construction. Although this would appear to suggest that these were humble graves, there are thousands of worn quartz pebbles littering the cemetery surface, indicating that this was an active and ongoing location of prayers and offerings. This positions these tombs very much within the ‘ritual territory’ of Songo Mnara (Wynne-Jones and Fleisher 2016), which encompassed a world of memorialisation activity across the many graves in the town. One grave in the central open area, marked only by a head and footstone, was excavated and on the former ground surface were found over 5,000 quartz pebbles, presumably left one by one as individual memorial acts. Local tradition today associates some of the graves in the mosque cemetery with sharifs or holy men, thus these may have been related to spiritual rather than worldly leaders.

The mosque is very like the Palace Mosque in Kilwa, which left both Chittick (1974, 134-5) and Garlake (1966, 38) wondering about the relationship between the two, and whether they represented structures linked to the rulers of Kilwa. When put in the context of the individual patronage of mosques in the 14th/15th century, this might instead be thought of as a link to a particular household, who may also have been connected to the contemporary House of the Mosque at Kilwa. A contemporary comparison might be with the Malindi Mosque on Kilwa, surrounded by a graveyard and consistently associated with a particular family/clan from Malindi. The mosque is also 15th century, although many of the graves are 18th century, and the Malindi link may also date to the latter period (Sutton 1998). Nonetheless, the idea of a family burial ground and associated mosque can be linked to the same period as at Songo Mnara.

The Mnara Mosque represents a most singular structure, located on a tiny islet surrounded by water at high tide, but is very substantial. It seems curious to build such a major undertaking, with domed vaults, for a praying capacity of around 16 worshippers and far beyond what would be expected for the use of fishermen – where a small mosque could have been built on the beach at a fraction of the cost. More likely is that it is part of the idea of an emerging sense of maritimity in which the sea-approach to the town was deliberately ‘Islamic’ so that seafarers were able to identify with a safe and friendly port (Fleisher et al. 2015). The Mnara mosque and the Necropolis Mosque with its possible minaret would have been visible from the sea on approach to the site, and upon landing the visitor would then enter the site through the gateway between the Town wall mosque and the Small mosque, with the Central Mosque directly ahead. The overall effect would be a very powerful image of the centrality of Islam at Songo Mnara.

The construction and use of mosques at Songo Mnara over time was not simply a matter of functional necessity or religious transformation. Starting from a single central mosque built in an archaic style (Central Mosque), Songo Mnara’s urban landscape grew to accommodate six unique mosques that marked both the growing size and complexity of the urban community as well as efforts to mark authority, difference, and Islamic piety within the town and the broader region.

The proposed shift from the Central Mosque to the Northeast Mosque for the main congregational structure surely occurred to accommodate a growing community, but it also indicates an increasingly complex political climate at Songo Mnara during the mid-15th century, where opposing great houses were constructed in the northeast and southwestern corners of the settlement. The location of the Northeast Mosque adjacent to one of these two great houses suggests that the private sponsorship of one of the most significant monuments in the town could have been a source of local power and authority, and an effort to counter a consolidation of power in a rival town family. The development of mosques at Songo Mnara also offers insight into the divisions between élite and non-élite communities in the town. With the development of two small mosques along the western shoreline, we can see the emergence of structures that may have served an emerging non-élite population, focused around a series of a dozen or more daub houses in the western open area. The evidence that the Town Wall Mosque might have been used primarily by women in this part of the

community offers more evidence of the increasingly complex social divisions emerging at the settlement.

Additionally, the construction of two mosques, the Necropolis and Mnara Mosques, follows a pattern found at other Swahili sites, where mosque structures serve as a form of religious beacon for visitors and passers-by (Pollard 2008; Fleisher et al. 2015). Both of these mosques were positioned to be seen from distances, set up on either a high bluff or man-made base. They both would have been accessed from the sea, and both required climbing steep staircases to enter them. These mosques seem to suggest efforts to broadcast the religiosity and piety of the town itself, and to offer unique and impressive prayer locations at first arrival in the town. Thus, the mosques of Songo Mnara were not only a part of the emerging complexity of élite and non-élite communities within the town, but also an active way to engage with visitors and non-residents from the region and beyond.

Finally, the association through time between mosques and cemeteries with ongoing commemorative practices, seen in the Central, Northeast, and Necropolis Mosques, suggests the way that religious practice at Songo Mnara was intimately connected to ancestors and ancestry. Wynne-Jones and Fleisher (2016) have argued that cemeteries and mosques at Songo Mnara served to constitute a ritual territory, “an inclusive space linked to a religious community and ancestral claims”. The growing number of graves associated with mosques offers evidence of the way religious practices were also involved with “an ongoing relationship with ancestors who were part of urban life and whose territories created particular spaces in the urban setting”.

Conclusions

In this paper we have tried to set out the connections between town and mosques – suggesting that the relationship is a complex one that needs to take into account ritual practices, emerging social complexity, gender roles, and the evolving urban landscape. Too often mosques have been seen as isolated buildings; here we believe that understanding their chronological and spatial context within the urban framework is central in not only interpreting their architecture but also in placing Islamic practice with its wider social landscape.

Bibliography

- Abungu, G.H.O. 1994. Islam on the Kenya coast: an overview of Kenyan coastal sacred sites, in D. Carmichael, J. Hubert, B. Reeves, and A. Schanche (eds.) *Sacred sites, sacred places*, pp. 152-162. London: Routledge.
- Allen, J. de V. 1974. *Lamu Town, A Guide*. Mombasa: Rodwell Press.
- Bacuez, P., 2009. *Intangible Heritage, Tourism and Raising Awareness on Kilwa Kisiwani and Songo Mnara*. Paris: UNESCO.
- Burton, R. F. 1872. *Zanzibar: City, Island and Coast*. London: Tinsley Bros (2 vols.).
- Chittick, H. N. 1963. *Annual Report of the Antiquities Division for 1961*. Dar es Salaam, Government Printer.
- Chittick, H.N. 1967. 'Discoveries in the Lamu Archipelago'. *Azania* 2: 37-67.
- Chittick, H.N. 1969. 'A new look at the *History of Pate*'. *Journal of African History* 10: 375-91.
- Chittick, H.N. 1974. *Kilwa. an Islamic trading city on the East African Coast*. Nairobi: British Institute in Eastern Africa, memoir 5 (2 volumes).
- Chittick, H.N. 1984. *Manda: Excavations at an Island Port on the Kenya Coast*. Nairobi: British Institute in Eastern Africa, memoir 9.
- Christie, A. 2013. Refining the chronology of Kua ruins: radiocarbon dates from the Mafia Archipelago. *Azania: Archaeological Research in Africa* 48(4): 521-533.
- Creswell, K.A.C. 1989. *A Short Account of Early Muslim Architecture*. (rev. edn. with J. W. Allan). Aldershot: Scholar Press.
- Dorman, M.H. 1938. 'The Kilwa civilisation and the Kilwa ruins'. *Tanganyika Notes and Records* 6:61-9.
- el-Zein, A. H. M. 1974. *The Sacred Meadows: A Structural Analysis of Religious Symbolism in an East African Town*. Chicago: Northwestern University Press.
- Fleisher, J.B. 2013. 'Performance, monumentality and the 'built exterior' on the eastern African Swahili coast'. *Azania: Archaeological Research in Africa*.
- Fleisher, J.B. 2014. 'The complexity of public space at the Swahili town of Songo Mnara, Tanzania'. *Journal of Anthropological Archaeology* 35: 1-22.
- Fleisher, J. & Wynne-Jones, S. (2012) 'Finding Meaning in ancient Swahili spatial practices'. *African Archaeological Review* 29: 171-207.
- Fleisher, J., Lane, P., La Violette, A., Horton, M., Pollard, E., Quintana Morales, E., Vernet, T., Christie, A. & Wynne-Jones, S. (2015) 'When Did the Swahili Become Maritime?' *American Anthropologist* 117(1): 100-115.

- Flood, B. 2009. (2009). *Objects of Translation: Material Culture and Medieval Hindu-Muslim " Encounter*. Princeton: Princeton University Press.
- Freeman-Grenville, G. S. P. (1962a) *The East African coast. select documents from the first to the earlier nineteenth century*. Oxford: Clarendon Press.
- Freeman-Grenville, G. S. P. (1962b) *The Medieval History of the Coast of Tanganyika, with special reference to recent archaeological discoveries*. London: Oxford University Press.
- Freeman-Grenville, G. S. P. (1965) *The French at Kilwa Island*. Oxford: Clarendon Press.
- Garlake, P. 1966. *The Early Islamic Architecture of the East African Coast*. Nairobi and Oxford: British Institute in Eastern Africa, memoir 1.
- Garlake, P.S. 2002. *Early Art and Architecture of Africa*. Oxford: Oxford University Press.
- Gensheimer, T. 1997. At the Boundaries of the Dar al-Islam: Cities of the East African Coast in the Late Middle Ages. Unpublished PhD thesis, University of California, Berkeley.
- Ghaidan U. 1971. *African Heritage: The stone houses of Lamu*. Lamu: Lamu Museum.
- Ghaidan U. 1975. *Lamu; A Study of the Swahili Town*. Nairobi: East African Literature Bureau.
- Grabar, O. 2006a. The architecture of the Middle Eastern city: The case of the mosque. In *Islamic Art and Beyond. Constructing the Study of Islamic Art*. Volume III. Aldershot: Ashgate, pp. 103–120.
- Grabar, O. 2006b. Cities and citizens: The growth and culture of urban Islam. In *Islamic Art and Beyond. Constructing the Study of Islamic Art*. Volume III. Aldershot: Ashgate, pp. 155–174.
- Horton, M. (1996) *Shanga. The archaeology of a Muslim trading community on the coast of East Africa*. London: British Institute in Eastern Africa.
- Horton, M. 1994. 'Swahili architecture, space and social structure'. In M. Parker-Pearson & C. Richards (eds.) *Architecture and Order*. London: Routledge.
- Horton, M. 2004. 'Islam, Archaeology and Swahili Identity', in D. Whitcomb (ed.) *Changing Social Identity with the Spread of Islam; archaeological perspectives*. Chicago: Oriental Institute Seminar number one: 67-88.
- Horton, M. 2017a. 'East Africa and Oman c.600-1856', in al-Salimi, A. & Staples, E. (eds.). *The Ports of Oman*. Hildesheim: Georg Olms.
- Horton, M. 2017b. 'Early Islam on the East African Coast (750 -1200)', in Flood, F. & Necipoglu, G. (eds.) *A Companion to Islamic Art and Architecture*. New York: Blackwell.

- Horton, M. 2017c. 'Swahili Islam: mosques and tombs', in S. Wynne-Jones and A. LaViolette (eds.). *The Swahili World*. London: Routledge.
- Horton, Mark (forthcoming) *Zanzibar and Pemba: the archaeology of an Indian Ocean Archipelago* London: BIEA Monograph.
- Insoll, T. 2003. *The Archaeology of Islam in Sub-Saharan Africa*. Cambridge: Cambridge University Press.
- Johansen, B. 1998. *Contingency in a Sacred Law: legal and ethical norms in the Muslim fiqh*. Leiden: Brill.
- King, D. 1995. 'The orientation of medieval Islamic religious architecture and cities', *Journal for the History of Astronomy* 26 (1995): 253-274.
- Kirkman, J.S. 1958. 'Kilwa: The Cutting Behind the Defensive Wall'. *Tanganyika Notes and Records* 50: 94-101.
- Kirkman, J.S. 1964. *Men and monuments on the East African coast*. London: Lutterworth.
- Lambourn, E. 2017. Islam beyond Empires: Mosques and Islamic Landscapes in India and the Indian Ocean , in Flood, F. & Necipoglu, G. (eds.) *A Companion to Islamic Art and Architecture*. New York: Blackwell, pp. 755-776.
- LaViolette, A. and J.B. Fleisher 2009. 'The Urban History of a Rural Place: Swahili Archaeology on Pemba Island, Tanzania, 700–1500 AD'. *International Journal of African Historical Studies* 42(3): 433-455.
- Mathew, G. 1959. 'Songo Mnara'. *Tanganyika Notes and Records* 53: 155-160
- Mitchell-Hedges, F.A. (1954) *Danger is my Ally*. London: Elek books.
- Perkins, J., J. B. Fleisher, et al. (2014) 'A deposit of Kilwa-type coins from Songo Mnara, Tanzania'. *Azania: Archaeological Research in Africa* 49(1): 102-116.
- Pollard, E. (2008). 'The maritime landscape of Kilwa Kisiwani and its region, Tanzania, 11th to 15th century AD'. *Journal of Anthropological Archaeology* 27(3): 265-280.
- Pradines, S. 2009. 'L'île de Sanjé ya Kati (Kilwa, Tanzanie): un mythe Shirâzi bien réel'. *Azania* 44(1): 49-73.
- Pradines, S. 2010. *Gedi, une cite portuaire swahilie: Islam medieval en Afrique orientale*. Cairo: Institut français d'archéologie orientale du Caire.
- Pradines S. & P. Blanchard 2005. 'Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie'. *Annales Islamologiques* 39: 25-80.

- Prior J. 1819. *Voyage along the eastern coast of Africa, to Moçambique, Johanna, and Quiloa; to St. Helena; to Rio de Janeiro, Bahia, and Pernambuco in Brazil, in the Nisus frigate*. London: Phillips.
- Saad, E. 1979. 'Kilwa Dynastic History: a critical study'. *History in Africa* 6: 177-207.
- Sheriff. A.H.M 1992. 'Mosques, Merchants and Landowners in Zanzibar Stone Town' *Azania* 27: 1-20.
- Sutton, J.E.G. 1998. 'Kilwa: A History of the Ancient Swahili Town with a Guide to the Monuments of Kilwa Kisiwani and Adjacent Islands'. *Azania* 33: 113-169.
- Tibbetts, G. R. (1971) *Arab Navigation in the Indian Ocean before the coming of the Portuguese*. London: Royal Asiatic Society.
- Welham, K., J. Fleisher, et al. (2014) 'Geophysical Survey in Sub-Saharan Africa: magnetic and Electromagnetic Investigation of the UNESCO World Heritage Site of Songo Mnara, Tanzania.' *Archaeological Prospection* 21(4): 255-262.
- Whitehouse, D. 1980. *The Congregational Mosque and other Mosques from the Ninth to Twelfth Centuries*. London: British Institute of Persian Studies.
- Wilson, T.H. 1982. 'Spatial analysis and settlement patterns on the East African coast'. *Paideuma* 28: 201-219.
- Wright, H.T. 1993. 'Trade and Politics on the eastern littoral of Africa, AD800-1300'. In *The Archaeology of Africa: food, metals and towns*, eds. T. Shaw, P.J.J. Sinclair, B. Andah and A. Okpoko, 658-670. London: Routledge
- Wynne-Jones, S. 2013. 'The public life of the Swahili stonehouse'. *Journal of Anthropological Archaeology* 32: 759-773.
- Wynne-Jones, S. and J. B. Fleisher 2010. 'Archaeological Investigations at Songo Mnara, Tanzania, 2009' *Nyame Akuma* 73: 2-8.
- Wynne-Jones, S. and J. B. Fleisher 2011. 'Archaeological Investigations at Songo Mnara, Tanzania, 2011.' *Nyame Akuma* 76(3-8).
- Wynne-Jones, S. and J. B. Fleisher 2014. 'Swahili Urban Spaces of the Eastern African coast' in K. D. Fisher and A. Creekmore (eds.) *Making Ancient Cities: Studies of the Production of Space in Early Urban Environments*. Cambridge, Cambridge University Press: 111-144.
- Wynne-Jones, S. and J. Fleisher (2016). 'The multiple territories of Swahili urban landscapes'. *World Archaeology*: 1-14. doi.org/10.1080/00438243.2016.1179128.

Figures

Fig 1 The site of Songo Mnara and the location of its six mosques.

Fig 2 Architectural Plans of the Northeast, Small, Necropolis and Mnara Mosques (surveyed by Mark Horton, Juliette Chausson and Thomas Delany)

Fig 3 Excavated plans and sections of the Central Mosque (SM029/030)

Fig 4 Excavated plans and sections of the Town Wall Mosque (SM050)

Fig 5 Mihrabs of the Songo Mnara mosques (Northeast and Necropolis Mosques after Garlake)

Plate 1 Northeast Mosque

Plate 2 Central Mosque

Plate 3 Inset Lonquan shallow bowl

Plate 4 Town Wall mosque