

Human Settlements and Architecture of Old Buildings in Historic Stone Towns – A Case of Bagamoyo Tanzania

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Abstract: This study focused on early human settlements and architecture of old buildings in historic stone towns of the East Africa coastline which covers a stretch of three thousand kilometers. The aim was to document and provide knowledge on early human settlements to inform the present and future generations. Case study research method was selected to be the most suitable strategy for this study. The method involved intensive field surveys in Mombasa, Zanzibar and Bagamoyo stone towns. These three towns were selected because they are more abundant in information compared with other stone towns. Data collection tools included literature review, life histories, retrieval of archival records, and photographic registration. The current condition and future potentials on regeneration of the historic core and adaptive reuse of individual buildings was investigated. The research found out that the East African coastline was settled as early as the 6th century and had swahili architecture which based on local building materials - namely stones, sand, lime and mangrove poles; indigenous construction skills and local climatic conditions. The swahili architecture was later enriched by Arabs, Indians, and Persians to build residential and institutional buildings such as palaces, forts, schools and mosques. Old buildings in Bagamoyo stone town are currently neglected but holds strong ethnographical symbols on their doors in respect of social, cultural, religious meanings. These symbols acted as a unifier among diverse people's backgrounds in Bagamoyo stone town.

Keywords: Stone towns, human settlements, architecture, urban regeneration, East African Coast, Bagamoyo

1. INTRODUCTION

Towns and cities should not be left to decay but should grow for the benefit of future generations. They should not be neglected, destroyed, but be maintained, restored, adapted, and regenerated [1]. This research questions why should the architecture of old buildings in historic stone towns be explored? It is not about examining urban typologies and morphologies but studying and documenting urban regeneration of historic stone towns and adaptive reuse of old buildings from the 13th to 19th centuries to generate knowledge. The East African 15 historic stone towns (figure 1) covers a distance of three thousand kilometers stretch from Mogadishu in Somalia; through Kismayu, Lamu, Malindi, Gedi and Mombasa in Kenya; Bagamoyo, Zanzibar, Dar es Salaam, Kibiti, Mikindani and Kilwa in the United

Republic of Tanzania; down to Angoche, Sofala and Beira in Mozambique. Inhabitants of these towns were excellent in trading, but they functioned in isolation from one another as independent towns. Individual towns experienced self-rise and fall following different dynamics of trade within the stretch and beyond.

Stone towns started to emerge from the 6th century and continued to be famous to-date because of their historical buildings which include important palaces, forts, mosques, churches, harbors, schools, hospitals, residential houses, and other institutional buildings. However, most of them are not given sufficient attention in terms of restoration, rehabilitation, maintenance, or adaptive reuse. Inhabitants of these towns are mostly Africans, Arabs, and Indians collectively known as Swahili people or Waswahili [2]; [3]. Commonly these coastal historic stone towns in the East-Africa region are locally named as Swahili Stone towns. The excessive use of coral stones in old building construction has a significant influence in branding the name "stone towns." Swahili culture was developed in the process of the intermingling of the Arabs, Indians, Persians, and the indigenous African people [4].

Mombasa, Zanzibar, and Bagamoyo stone towns were surveyed to inform the research issue because of their high levels of active livelihood, town vibrancy, tourist attraction and richness of empirical information compared to other historic stone towns. Mombasa occupies 180 acres of land and has a collage of historical architecture from Arabic, Portuguese, Indian, and European culture with narrow streets of old stone buildings, mainly shops selling historical artifacts, souvenirs, and food spices. Figure 2 is a recent photograph of Sir Mbaraka Hinway Street, the oldest street in Mombasa stone town. Current residents of this street are the wealthy Indians who usually do businesses on ground floors and live on the upper floors of privately owned buildings. The North Eastern part of this stone town is occupied by Arabs and Africans. One of the iconic historical structures in Mombasa is the Fort Jesus, which was designed by the Italian Architect Giovanni Battista Cairati and was built in the 16th century.



Figure 1: East African Coast Historic Stone towns

Source: [5]



Figure 2: Sir Mbaraka Hinway Street in Mombasa - Kenya

Source: January 2020 Field Survey

Fort Jesus was constructed in the military architectural style by the order of King Philip I of Portugal to guard the old port of Mombasa. The fort's architectural form is angular originating from military rules. It is the best tourist attraction feature of Mombasa and it has been declared a UNESCO World Heritage site since 2004. It occupies 2.36 hectares along the Swahili coastal line. It has preserved the same basic shape as it was built 400 years ago. The Portuguese regarded themselves as representatives of Jesus Christ's kingdom rather than Portugal kingdom and sailed under the flag of Jesus Christ. Hence the name, fort Jesus. Figure 3 shows this fort in its current status and appearance. Fort Jesus is one of the three outstanding World Heritage forts built by the Portuguese in Africa in the 16th century. The second of these forts is in Morocco and the third is in Mozambique.



Figure 3: Fort Jesus in Mombasa

Source: January 2020 Field Survey

Zanzibar is the second surveyed historic stone town in this study. It has been a UNESCO World Heritage site since 2000. The name Zanzibar has several interpretations. Zenzj Empire and Zenjibar are Persian words for Zanzj, which means black [6]. It is the finest example of the remaining stone towns along the East African coastline representing cultural heritage of foreign trade and development of stone towns. Bantu people from the 6th century settled in Zanzibar. These people were engaged in fishing and agricultural economic activities [7]. Similar to Mombasa, the impressive architectural styles in Zanzibar are considered to originate from Arabic, Persian, Indian, European, and African backgrounds. [8] emphasize that Zanzibar's architectural richness is the result of the generosity of allowing a mixture of diverse people with different cultural backgrounds to meet and share varying experiences in food, fashion, and building techniques. The historical urban design of Zanzibar stone town is the same as other stone towns, which are based on religious and social values found in Arabic social and cultural structures. These structures subdivided semi-private open spaces and spatial organization in accordance to Islamic religion [9]. The unique feature of Zanzibar buildings is the decorated wooden balconies, balusters, and doors often with brass strips of Indian origin (figure 4), very similar to those of Mombasa. These features are mainly from Arabic and Indian origin. [7] explains that the influence of Indian building design and architecture is expressed by the type of terraced two or three-storey buildings opening directly to narrow streets, the ground floor is for commercial undertakings and family rooms are on the upper floors. Most of the buildings in stone towns were designed to have entrance lobbies at the frontage with a long stone bench mortared with lime. These lobbies were constructed along the outside walls for males to sit, rest, and socialize. Upper floors have balconies with decorative carved wooden balustrades for protection [10]. Compare and contrast figures 2 and 4.

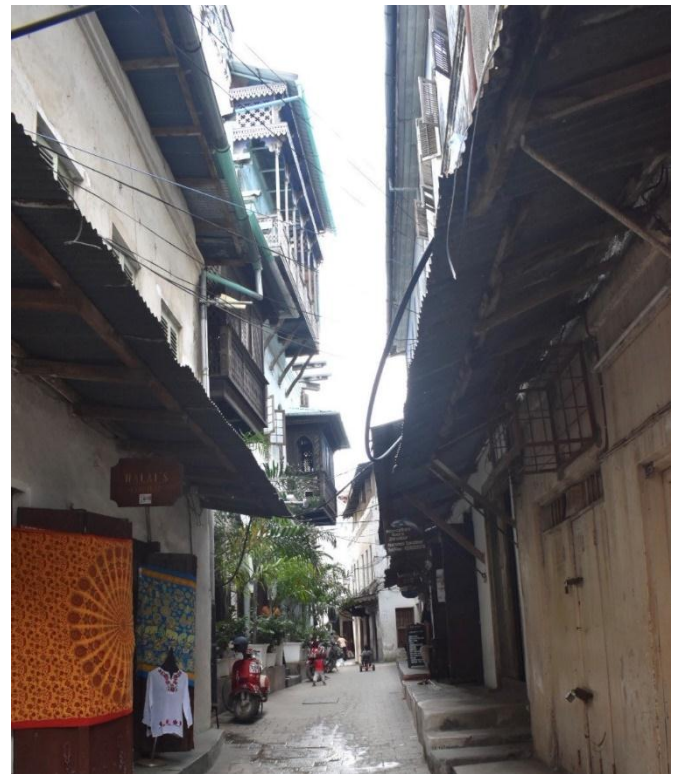


Figure 4: Hurumzi Street in Zanzibar

Source: December 2019 Field Survey

Kilwa historic stone town in Tanzania is the fourth town in this research. It has been a world heritage site since 2004. This town was not included in the survey because most of its old buildings are ruins or dilapidated. Kilwa is sufficiently documented and was referred to give further insights of historical human settlements of stone towns. [11] indicates that Kilwa human settlements started in the 8th century and were prominent in trade with the Arabian Peninsula, India, and China. If one visits Kilwa stone town today without knowing its historical past will not appreciate. However, it was the wealthiest, powerful and prosperous town along the East African coastline in the 14th and 15th centuries before the coming of Portuguese. Today, Kilwa buildings are ruined like the Colosseum, Carakala baths and Mausoleum structures in Rome – Italy but was once a splendid town with magnificent buildings. It traded heavily by selling out cowrie-shells, local cotton fabric, beads, gold, ivory, and buying beautiful fabrics and precious ceramics from India and Oman. The two important historic stone buildings of Kilwa are the Husuni Kubwa palace and the Great Mosque built in the 14th and 10th centuries, respectively. Unfortunately, this palace is completely ruined, but its floor plan (figure 5) indicate the splendor of the residence and the life-style of its habitants. Figure 6 shows part of Husuni Kubwa palace ruins to signify stone-wall construction, window sizes and patterns. [5] attempted to graphically reconstruct the form and aesthetics of this palace as it would have appear in the modern architecture era (figure 7). Kilwa's Great Mosque was the largest mosque in the South of Sahara before the 16th century. It was made of 21

spectacular domed-prayer halls which reflected the enormous power of Sultan Al-Hassan bin Sulaiman who also built the Husuni Kubwa palace.

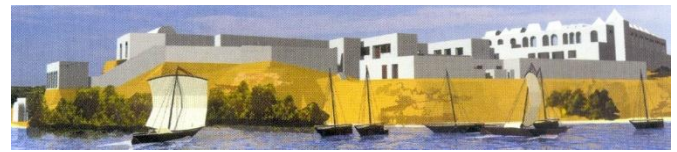


Figure 7: Graphical Reconstruction of Husuni Kubwa Palace of Kilwa

Source: [5]

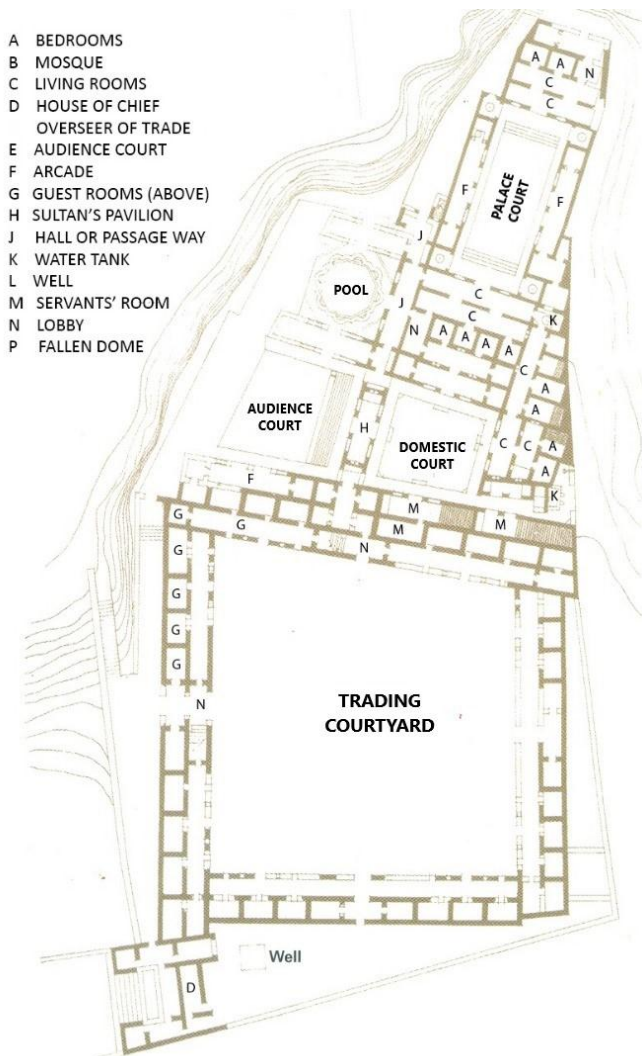


Figure 5: Floor Plan of Husuni Kubwa Palace of Kilwa

Source: [5]



Figure 6: Part of Husuni Kubwa Palace Ruins of Kilwa

Source [5]

Husuni Kubwa's magnificent palace consisted of 100 rooms. There was no other structure of its size and complexity elsewhere along the East African historic stone towns. Unfortunately, these great memorial buildings are mere ruins, probably due to age, lack of sufficient rehabilitation, and maintenance. The great mosque floor plan (figure 8) and its view (figure 9) show the greatness of this mosque [5]. These buildings were constructed with coral stones, sand and lime. Luckily, the interior section of this mosque is still standing to-date. This is one of the greatest tourist attractions in Kilwa. Sofala historic stone town in Mozambique is located south of the Swahili coastline, after Kilwa human settlements. The name Sofala was derived from the Arabic language referring to flat lowlands. The local people at Sofala settled north of Pungwe River. The first European explorer, the Portuguese, visited Sofala in the 14th century [12]. Unfortunately, Sofala stone town lost its commercial power and status to Beira stone town in the 18th century.

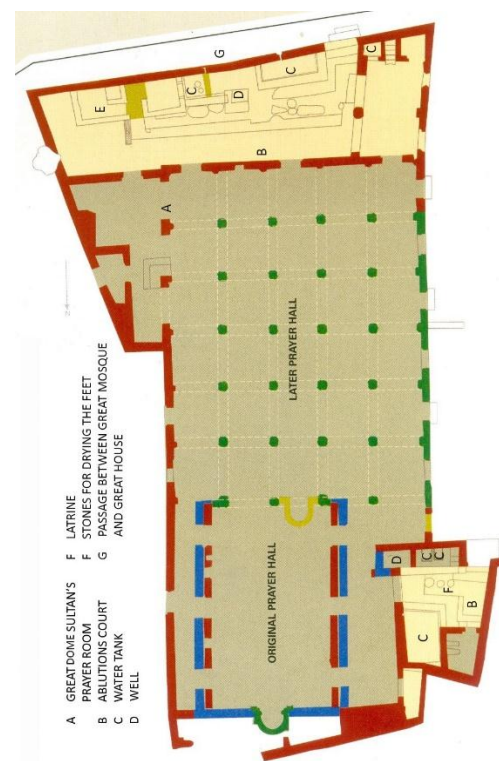


Figure 8: Floor Plan of the Great Mosque of Kilwa

Source: [5]

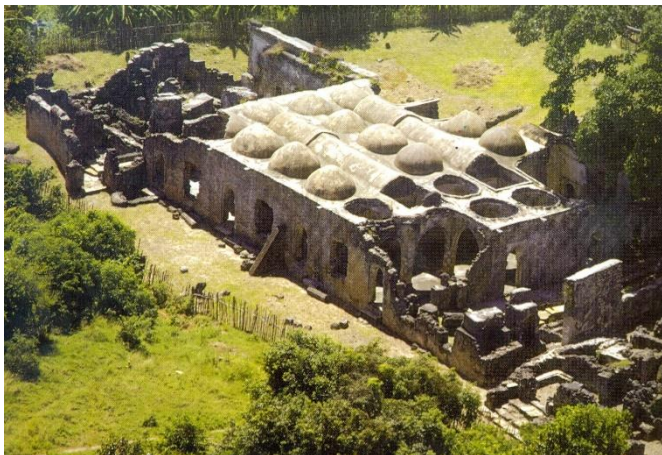


Figure 9: The View of Great Mosque of Kilwa

Source: [5]

Bagamoyo is the third surveyed stone town and a case study of this research. It is located 75 kilometers north of Dar-es-Salaam on the coast of the Indian Ocean in Tanzania. It is a small town but rich in its architecture of old buildings with a lot of heritage potentials. Bagamoyo emerged from Kaole settlements located to its southern part. Kaole was a famous and powerful trading center, administrative, and military headquarter of the Sultan of Oman in the 13th century [13]. To-date, Kaole Ruins contains the remains of two important mosques and 30 tombs. Shiraz people from Persia initially occupied Kaole. Bagamoyo historic stone town can be traced from the 17th century, as evidenced by the existence of the oldest grave of Mwanamakuka in Bagamoyo dating back to this century [14]. Bagamoyo is further detailed in the case study findings under section 4.

2. ADAPTIVE REUSE OF HERITAGE AS A CATALYST FOR REGENERATION

Adaptive reuse, which is the transformation of an existing building for a new or continued use, has become increasingly important as a strategy to deal with the built heritage, as an alternative for mere conservation or restoration [15]. Instead of freezing the building's historic fabric, adaptive reuse allows activating its potential as a living site, serving the needs of local communities. In the last decades, heritage is recognized as a driving force for the regeneration of towns and regions, to strengthen local identity, attract tourism and hence boost local economies and enhance the public well-being and quality of life [16]; [17]. The process of adaptive reuse of heritage as a driver for regeneration is relevant in the three selected stone towns, namely Mombasa, Zanzibar and Bagamoyo. In Zanzibar Stone Town, the most significant historic buildings have been restored and reused as museums, but many palaces, former institutional buildings, and houses are more actively used and contribute to the contemporary urban life. Although many buildings have been transformed as hotels or restaurants to serve the tourist industry, others are used for shops and housing of local people. On the one hand, tourism generates incomes to

safeguard and restore the town's heritage. However, on the other hand, international tourism creates a strong pressure on the town's facilities and infrastructure. Zanzibar's stone town is hence gentrifying, and the use of heritage by the local community is under threat [18]; [19]. In Bagamoyo stone town, however, tourism is less actively developed, and many historic buildings, even the most important ones like the German boma, are currently not in use; some of which even fell into ruins such as harbors building, Liku house, and Mwambao School teachers' house. However, the potential of Bagamoyo is widely recognized in promoting the tourism industry along the East African coastline. (See among others: [20]; [21]; [22]; [23]). In the light of the future regeneration of the town, this study presents condition, characteristics and values of the heritage of Bagamoyo.

3. METHODOLOGY

Mombasa, Zanzibar, and Bagamoyo historic stone towns were surveyed to explore human settlements and the architecture of old buildings. Bagamoyo was selected to be a case study for this research because of its richness in historical and architectural information. Furthermore, Bagamoyo town has been a site for joint design studio exercises between Belgian and Tanzanian students of architecture for the past four years hence it was prudent to select Bagamoyo among others to collect more data and information to assist future joint design studio exercises. Intensive field surveys were conducted. Data collection tools included literature review, narratives, archival records, maps, internet surfing, and photographic registration. The later tool was essential to provide a current status of old buildings in Mombasa, Zanzibar and Bagamoyo. Empirical field data and information was collected from various surveys conducted in these three towns from August 2019 to January 2020 through interviews and photographic registration.

4. FINDINGS AND DISCUSSION

The current panoramic view of Bagamoyo stone town was observed to be of low rise building envelop of one, two, and seldom three storey buildings, finished with lime white wash (figure 10). Bagamoyo has a low population density with good green open spaces. Figure 11 is a typical streetscape of Bagamoyo and a perspective of India Street, which provides the sense of historical images, the extent of the livability of the town, and the occurrence of building ruins in this historic stone town. The famous double storey Arab tea house which was built in 1860 is found along this street. This house is in fairly good condition and is used by the government.



Figure 10: Panoramic View of Bagamoyo Stone Town
Source: August 2019 Field Survey

4.1 Architecture of Old Buildings in Bagamoyo

Historical architectural styles in Bagamoyo town originated from local African people's traditional ways of life. Household dwelling compounds were composed of traditional houses surrounded by green farm gardens of palm trees accessed by local paths, an aspect of Swahili architecture. This aspect was later used by foreigners in site layout as shown in figure 12. Local people used local building materials mainly stones, sand, lime and mangrove poles to construct their houses. Fundamentally, local construction technology for foundations and walls used stones, sand and lime mortar. Roofs were hipped with grasses or made flat by the use of coral stones mortared with lime on horizontally laid mangrove poles. Mangrove poles were further used to serve as columns, beams, lintels and ceilings. This architectural style has existed in East African towns before European colonization.



Figure 11: Deterioration of Old Stone Buildings along India Street in Bagamoyo
Source: August 2019 Field Survey

Local design and construction technologies were later influenced by foreign technologies with varying religious and cultural backgrounds. Arabic style from Oman was the first foreign architectural intervention which was introduced in the 17th century followed by the Indian architectural style [10]. Swahili architecture is, therefore, a hybrid of building design and technologies from Arabs, Indians and East

African people. Several colonial institutional buildings in Bagamoyo including the old fort and the German administration building (*boma*) were not built using classic architecture from Europe but Swahili architecture with flat roofs and ceilings made of mangrove poles, stones, sand and lime mortar. Ground floor plans for both residential and institutional buildings were organized around a courtyard. Room sizes were determined by the length of available mangrove poles to have stable roof structure carried by stone load-bearing walls. Figure 12 shows the location of some of the historical institutional buildings along India Street in Bagamoyo.

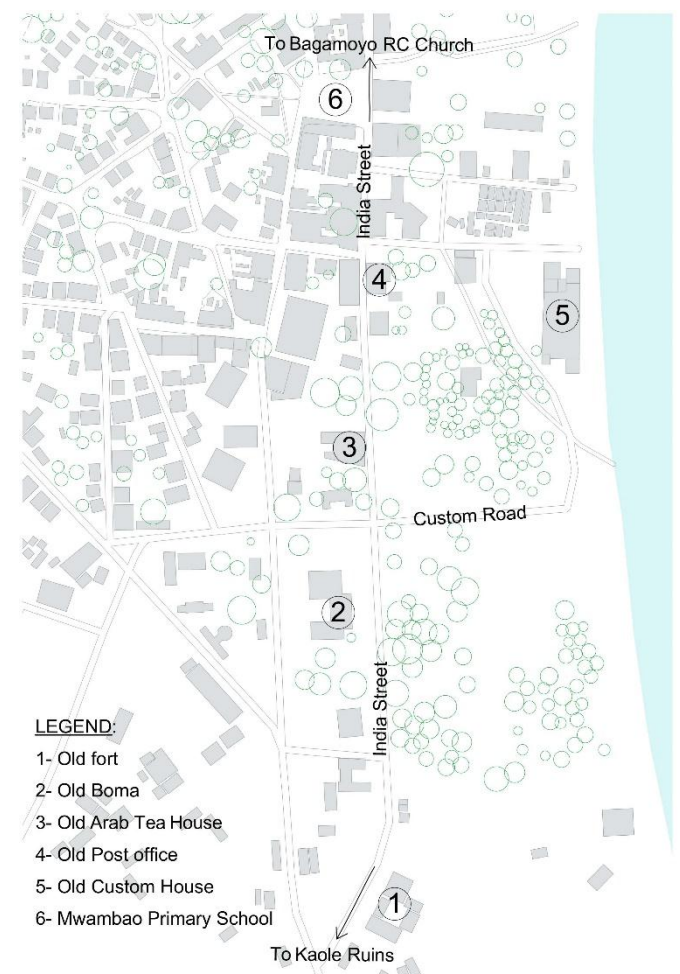


Figure 12: Location of Old Buildings in Bagamoyo
Source: August 2019 Field Survey

[24] and [25] provide a chronological list of Bagamoyo historical buildings with years of construction in brackets: Kaole building ruins and tombs (1300); old Bagamoyo fort (1860); Arab tea house (1860); Caravan Serai - Inner structure (1860); the first Roman Catholic Church (1868 – 1903); first German Boma - Liku house (1888-1891); German storehouse (1888); Caravan Serai 32 exterior rooms for businessmen (1888); the hanging structure (1889); Mwambao Primary School (1892) – the first mixed race school in Tanganyika during the German colonial era; old custom house (1895); second old German Boma (1897); and

old Sewa Haji hospital (1912).

4.2 Walking along India Street but Looking Back into History

The old Bagamoyo fort (figure 13) which is built along India Street is similar to Fort Jesus in Mombas in architectural terms. Compare and contrast figures 3 and 13. The old Bagamoyo fort and the Arab tea house were built in 1860 and they are the oldest standing historical buildings of Bagamoyo. The fort was originally owned by Abdallah Seleman Marhab. He used the fort structure as his residential house (1860 - 1870); Representative of the Sultan of Zanzibar used the building (1871 - 1880); Liwali used the building (1881 - 1884) as a merchandise market and as Arab's slave trade center. The fort was later used by the German as army barracks (1885 - 1919). However, when the British took over Tanganyika (now Tanzania mainland excluding Zanzibar) from the Germans after the First World War (WWI) it was used as a prison (1920 - 1961). After independence, it was initially used as a prison (1961 - 1974); as a police station (1975 - 1992); as a college to train artisans responsible for conservation of historical buildings (1993 -1995), and from 1996 to-date the fort is housing department of antiquities under the Ministry of Tourism and Natural Resources of Tanzania [14]; [26]; [24].



Figure 13: The View of Bagamoyo Old Fort
Source: August 2019 Field Survey

The fort's massive coral stone walls ranges from 50cm to 80cm thick. The main entrance door made from both Arab and Indian architecture has been maintained to-date as it was built 160 years ago. Room layouts face the inner courtyard (figure 14). Further observed that the suspended floors are made of reinforced mangrove poles exposed on the underside depicting a beautiful contrast of whitewashed mortar infill and black painted mangrove poles (figure 15) which is typical of Swahili architecture as documented and described by [24].

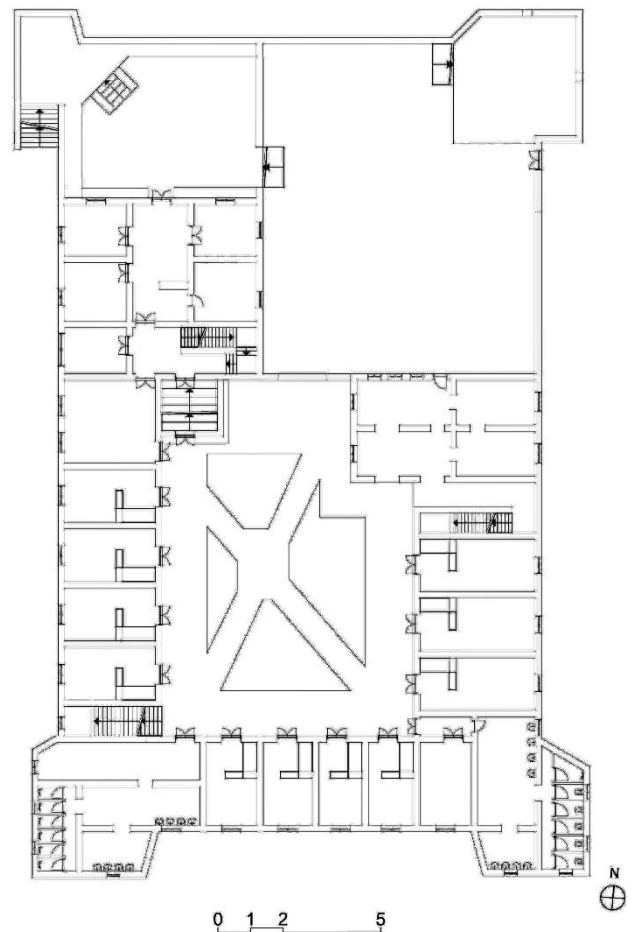


Figure 14: Ground Floor Plan of Bagamoyo Old Fort
Source: August 2019 Field Survey



Figure 15: Mangrove poles to Support Upper Floors and Ceiling Below of the Bagamoyo Fort
Source: August 2019 Field Survey

[14] contend that Germany was declared a protectorate of East Africa in 1885 and established the colony of German East Africa (now mainland Tanzania, Rwanda, and Burundi countries) in 1891 and made Bagamoyo the capital of the country. The old double-storey German *boma* building (figure 16) was built by the Germans in 1897 along India street for both residential and central administration functions. The building was designed and built in accordance

with Swahili architecture. To date, all rooms are accessible (figure 17), especially after the recent renovations executed by the Tanzanian government in 2015. It is believed that there is an old iron treasured *safe* still locked at the ground floor which was left by the Germans. This study is urging that German government in consultation with Tanzanian government to convene in Bagamoyo and open the *safe* to take out whatever treasured materials that may still be in the *safe* for the interest of both Germans and Tanzanians. Noted that this building was later used for few years by the British after they took over German colonies in 1919 before they shifted the capital to Dar es Salaam.



Figure 16: The View of the German Old *Boma* in Bagamoyo
Source: August 2019 Field Survey

Dar es Salaam, the *East Africa's haven of peace* started as a fishing settlement village known as Mzizima as early as the 8th century [27]. [28] indicate that Dar es Salaam was found by Sultan Majid in 1862 and remained a small port until the German East Africa Company established its headquarters there in 1887. [27] describes human settlement timeline of Dar es Salaam as follows: Mzizima early settlements (early 8th century – 1862); Zanzibari Sultan's haven of peace (1863 - 1887); German settlement (1887 – 1916); British settlement (1916 – 1961) and post-independence settlements (1961 – to date).

Dar es Salaam is the starting point of the central railway line to Kigoma (a town and lake port in northwestern Tanzania). The Germans started to construct the railway line in 1907. Dar es Salaam served as the capital of German East Africa from 1891 to 1916. Buildings in Dar es Salaam urban fabric often reflect the city's colonial past and display a vibrant mix of architectural styles, incorporating Swahili, British, German, and Asian architectural identities. Post-World War II (WWII) modernization brought contemporary architecture of high-rise glass façade skyscrapers such as that of the Tanzania Port Authority's 32 storey tower (the tallest) and many others of similar heights. [29] and [30] argues that modern architecture is an international architectural style appearing in different cities of the world without consideration of local architectural identities posing a potential security risk. The architecture of buildings in historic stone towns is rational with a maximum of three storeys designed and constructed based on local materials,

technology, climate and cultural considerations. [31] discussed the end of architectural modernism by showing that traditions and local skills in building construction cannot be neglected or under-estimated.

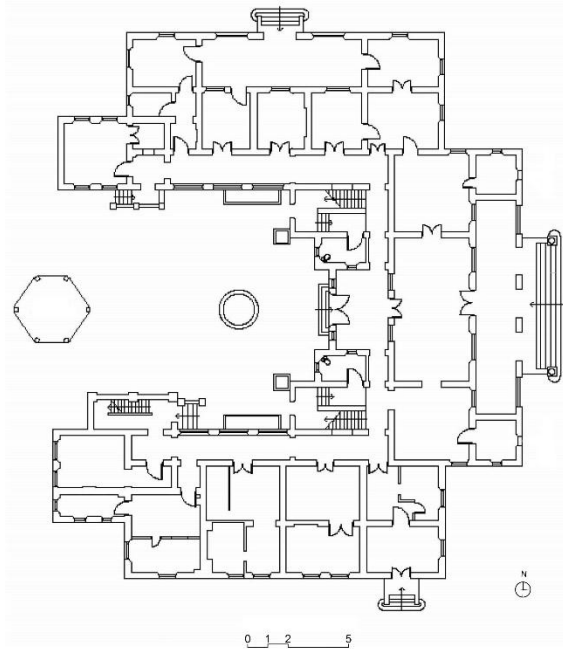


Figure 17: Ground floor plan of the German *Boma* in Bagamoyo
Source: August 2019 Field Survey

The British constructed their statehouse in Dar es Salaam in 1922 on the ruins of a German building, which was destroyed during WWI. The British palace building was on a larger scale than the original German building layout plan [32]. Dar es Salaam double-storey state house building (figure 18) which was designed by the English architect John Sinclair is standing on 33 acres of land with a spectacular beautiful view towards the Indian Ocean on the East. Its architecture comes from African and Arabian styles, with vast ornamental entrance lobbies with covered corridors, very similar to that of the Bagamoyo *boma*. Sometimes this palace is called the *White House* because of its white colored walls. Its floor finishes are terrazzo. In 1961, Tanganyika got its independence from the British and continued to use this building as its statehouse up to 2019 when the capital was further shifted to Dodoma, the geographical regional center of Tanzania.



Figure 18: Tanzania's State House in Dar es Salaam
Source: [33]

4.3 The Ethnography of Doors in Bagamoyo

The primary function of the door in a building is to connect or disconnect the interior from exterior spaces. Apart from providing aesthetics, doors facilities security to inhabitants of buildings and allows light and ventilation to interior spaces. Doors are barriers to human beings and animals to penetrate a building structure. Traditional doors in Swahili stone towns are more than door as they provide ethnographic symbols, religious identities, and cultural meanings to inhabitants. These doors are intelligently curved to express cultural values making them the most ornamental element of old buildings in Bagamoyo. The wealth of inhabitants was determined by the degree of ornamentation of the doors and hugeness of its hinges. The heavier the door, the more massive the hinges, denoting house owner's affluence [34]. Doors in Bagamoyo historic stones buildings are important artifacts with ancient tradition initially from Shiraz origin brought by Sultan Bargash [35]; [34]. Three main doors are available in Bagamoyo historic stone town, namely Arabian, Indian and Mixed Arabian-Indian doors. In total, nine symbols bearing different meanings are found in these doors.

4.3.1 Arabian Doors

Six symbols are found on Arabian doors (figure 19), including *dates*, *fish*, *roots of the date tree*, *lotus flower*, *frank-scents*, and the *sun*. [36] explains that the *fish* symbolizes fertility and the creation of humankind. The fish symbol which appears at the bottom part of the door is a prayer to increase fertility and security to the inhabitants of a particular building. The second symbol on Arabian doors is the *roots of date trees* to enable the tree to bear fruits even during the dry seasons in countries full of deserts or semi-deserts. These roots are a symbolic prayer for good fortune,

wealth, and security even in difficult times of life. The *lotus flower* at the top rail and the *sun* at the middle rail are powerful symbols of the Arabian door revealing the act of talking with the Almighty God in asking for blessings, forgiveness, and protection of the inhabitants. The *dates* are essential calendar information strategically placed on the top of the middle rail, and *frank-scents* on the style denotes religious symbols in asking God's blessings to house users. Examples of this is the door is found in the old Arab Tea House in Bagamoyo.

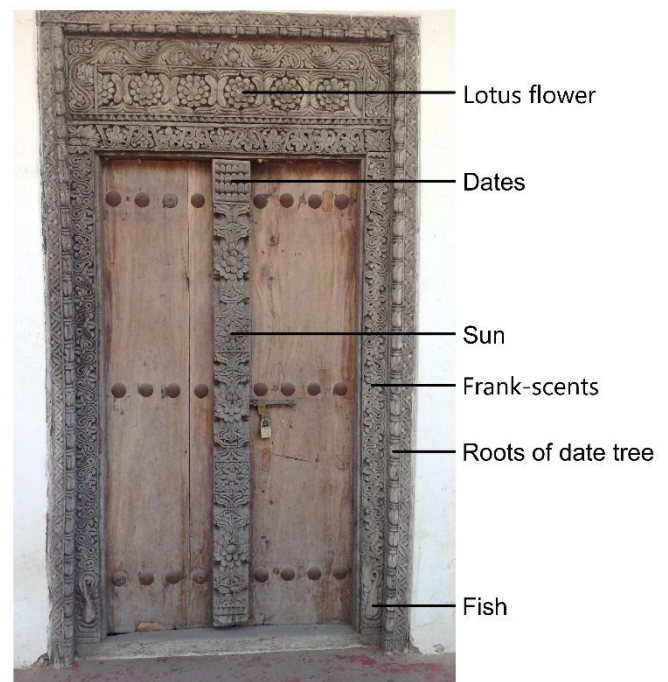


Figure 19: Arabian Door in Bagamoyo
Source: August 2019 Field Survey

4.3.2 Indian Doors

Five ethnographic symbols on Indian doors (figure 20) include *prayer's space*, *lotus flowers*, *palm leaves*, *pineapples*, and *roots of date trees*. There is an ornamental symbolic prayer space at the top rail, which also serves to write the name of the house owner. The palm leaves on the style denote wealth that the Indians accumulated from coconut plantation at Swahili coast for many centuries. The pineapple on the bottom part of the style is an ornamental expression element to signify the glory of God and his power to the world and nature. The location and meanings of the lotus flower and roots of date trees are the same as described for the Arabian door. An example of this type of doors is found in the old fort in Bagamoyo.

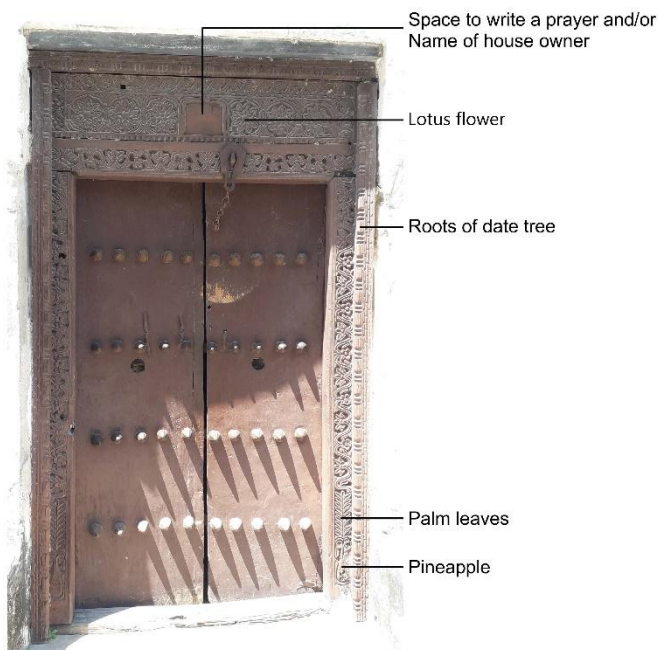


Figure 20: Indian Door in Bagamoyo
Source: August 2019 Field Survey

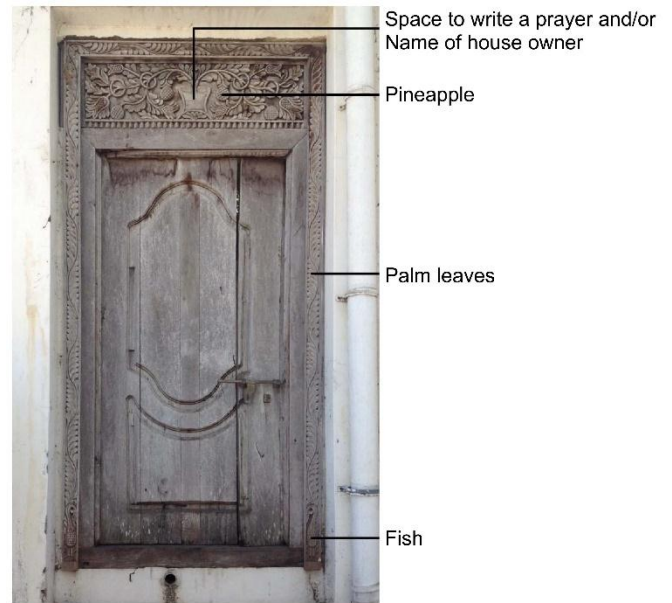


Figure 21: Mixed Arabian-Indian Door in Bagamoyo
Source: August 2019 Field Survey

4.3.3 Mixed Arab-Indian Doors

Ethnographers may interpret curved historical doors in Bagamoyo as a meeting point of various ethnicities and cultures from different countries of the world, mainly Arabs, Persians, Indians and Africans. This interpretation comes from the fact that the two famous doors, the Arabian and Indian eventually produced doors bearing some of their ethnographic symbols and expressions onto one door (figure 21). Hence a meeting point of people’s culture. It manifests African-Arabian-Indian cosmological networks on various social trade and religion issues. For example, this type of doors are found in the old Arab tea house and the dilapidated first German *boma* known as Liku House with the Arabian *fish* and Indian *ornamental prayer’s space, pineapple, palm leaves*. Location and meanings are as described on subsections 4.3.1 and 4.3.2. The field survey observed that these three types of doors are commonly referred to as *Zanzibar doors* in the contemporary East African human settlements along the coast. Table 1 shows different symbols on these three doors types. Today *Zanzibar doors* are increasingly becoming touristic artifacts and are exported to many parts of the world for wealthy people’s main entrance doors. Moreover, [37] highlights the importance of these doors in conjunction with heritage-making and branding historic stone town’s architecture.

Table 1: Composition of Different Symbols on Doors

Symbol	Arabian Door	Indian Door	Mixed Arab - Indian Door
Space to write a prayer and/or Name of house owner		√	√
Lotus flower	√	√	
Dates	√		
Sun	√		
Frank-scents	√		
Roots of date tree	√	√	
Palm leaves		√	√
Pineapple		√	√
Fish	√		√

Legend: √ = existence of a symbol on a door

Source: Authors’ Construction

5. CONCLUSION

This study reflected and documented early human settlements and the architecture of old buildings in historic stone towns along the East-African coastline. Currently, this coastline is famously known as Swahili coast. Human settlements were traced back from the 6th century including those of Africans, Arabs, Indians, Persians, and Europeans - namely Portuguese, German, and British who settled in the East African region. The research discovered knowledge that the present generation should in terms of architecture from old buildings to inform future generations and the built environment.

Design principles of Swahili architecture included: use of local building materials mainly stones, sand, lime, and

mangrove poles; application of local skills such as the use of mangrove poles in place of conventional beams, reinforcement steel bars and concrete lintels; and spatial layouts which allows gardening and fresh air movement inside the building. Single bank roomed buildings were preferred with door and window openings facing the courtyards. The name stone towns came out from the excessive use of stones for walling and floor slabs of upper floors. Streetscape studied in Mombasa, Bagamoyo and Zanzibar revealed similarities, including narrowness of streets; the number of building storeys from one to three on maximum; ground floors used for commercial purposes; upper floors in case of multi-storeyed buildings with decorated wooden balconies for family living. Entrance lobbies or barazas on the ground floors with long stone benches for the males to sit and socialize. Swahili architecture was used not only for residential but also institutional buildings such as forts, palaces, administration buildings (*bomas*), mosques, churches, schools, hospitals, and harbors to mention a few.

There are ethnographic symbols used on doors in respect of social, cultural, religious meanings which acted as a unification of people from different domiciles and backgrounds. Arabic, Indian and mixed Arabic and Indian doors are found in all historic stone towns along this coastline. Today these doors are collectively branded as *Zanzibar doors*. Advisably, cities and towns should be planned in accordance to local cultural identities and climatic conditions of the particular place and should not be left to decay. This paper invites architects, urban planners, sociologists, social workers, anthropologists, archaeologists, and policymakers to re-think how historic stone towns along the East-African coast can be regenerated for adaptive reuse. The survey of the historical values and traditional features that characterize Bagamoyo may be a starting point for future planning and architectural interventions in the towns and cities. Deliberate national efforts must be in place to maintain, rehabilitate, restore, document, and reuse existing historic stone towns and buildings for the benefit of future generations.

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