MASTER

World heritage cities: Island of Mozambique
hotel expansion in existing typology

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Link to publication
World Heritage cities: Island of Mozambique

Hotel expansion in existing typology

Sander Damen
Foreword
I would like to thank my tutors Bernard Colenbrander, Ana Pereira Roders and Loes Veldpaus for their expertise and guidance, which helped me a lot during this last year.
Also I would like to thank the UNESCO World Heritage Centre for giving me the possibility to go to Mozambique for three months.
In Mozambique several people helped me who I also would like to thank: Ana Tarrafa, Jens Hougaard and Antoine Milliroux.

Acknowledgements
This graduation report is the completion of the master’s degree Architecture, Building and Planning of the Eindhoven University of Technology, with architecture as specialization. The final year took place in the graduation studio Cultural heritage and sustainability: World Heritage cities as a case study, tutored by Bernard Colenbrander, Ana Pereira Roders and Loes Veldpaus.
In the first part of the graduation the Island of Mozambique was studied as case study. Together with Ana Pereira Roders, assistant Ana Tarrafa and student Rob Derks and Teun Metgod research on the Island of Mozambique was performed for the UNESCO World Heritage Centre. This resulted in the book “Island of Mozambique Historic urban landscape in perspective”. Also a paper was written for the 2012 Heritage conference in Porto, being “Revealing relationship between the state of authenticity/integrity and the factors affecting Island of Mozambique”.
This report is about the second part of the graduation a design project located on the Island of Mozambique.
The Island of Mozambique is a small island of the east coast of Africa. It contains many Portuguese colonial buildings and is since 1991 inscribed on the UNESCO world heritage list. Research on the island concluded that buildings in the stone town area of the island are deteriorating fast.

As design project a hotel is chosen, which is going to expand into the neighboring building. This building is largely in ruins at the moment. In order to preserve the authenticity of the buildings the typology is put central in the design. Two typologies were analyzed: the stone town typology and the noble house typology.

After analysis of the project site three buildings with different typologies were distinguished. Instead of merging these three building into one new hotel, the three buildings stay separate entities and get different functions. This way their typologies and routings can stay intact.

The first building is the present hotel and keeps that function. Bathrooms are added to the hotel rooms which do not have them yet. Also the so called 'two grid room' of the noble house typology is reinstated.

The second building gets the function of a guesthouse, because of the small rooms. The building is in bad condition, but the structure is intact and therefore will be renovated into original state. A few modifications are added, such as a roof terrace.

The third building is almost completely in ruins. This will become the restaurant. The outer walls and roof will be renovated in original state, but the inner walls and the first floor will only partly be rebuilt. This way dark and bad ventilated spaces will be avoided. A spacious restaurant is created where old structure and new elements complement each other.

The result is a hotel complex, existing out of three entities and three different typologies.
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Island of Mozambique

The Island of Mozambique is a small island off the east coast of Africa. It was first discovered and colonized by the Arabs. In the 15th century it was discovered by the Portuguese Vasco da Gama, who was searching for a maritime route from Portugal to India. The calm bay was ideal for ships to wait for the monsoon to be in the right direction and was therefore conquered by the Portuguese. It became an important rest stop on the route between Portugal and Asia. Later also the mainland was conquered and named after the island: Mozambique. The Island of Mozambique became the capital until 1898 when Maputo became the capital. Since then the island has lost its importance as main port and national capital.

Since 1991 the Island of Mozambique is inscribed on the UNESCO World Heritage List, under criteria (iv) and (vi). Meaning the World Heritage Committee has agreed with its Outstanding Universal Value (OUV) for being:

- (iv) an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history, and
- (vi) directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

The ICOMOS Advisory Body Evaluation (ABE) report explains how these criteria are justified on the island:

- Criterion (iv) The town and fortification on the Island of Mozambique, and the smaller island of St Laurent, are an outstanding example of an architecture in which local traditions, Portuguese influences and, to a somewhat lesser extent, Indian and Arab influences are all interwoven.
- Criterion (vi) The Island of Mozambique bears important witness to the establishment and development of the Portuguese maritime routes between Western Europe and the Indian sub-continent and thence all of Asia.

The island is divided into two parts: the southern part is called “Macuti Town” and the northern part is called “Stone Town”. The Macuti town is named after the typical palm leaf (Macuti) roofs and exists of buildings mainly constructed out of bamboo. The stone town exists of mainly stone building and is the oldest part of town.

Impression of the island from the beach
Research on the island

The fieldwork on the island was focused on stone town. All the buildings of stone town, about 400 buildings, were (partly) investigated.

In advance of the fieldwork several official policy documents were analyzed. From these documents attributes were extracted, which contain the Outstanding Universal Value (OUV).

During fieldwork large quantities of data were gathered in order to find out ownership issues and other related information of the whole stone town. From this data also a database was created to support the local conservation office.

Furthermore, threats and causes mentioned in these policy documents were categorized to find out which threaten the island the most.

Terms

Attributes and OUV
The World Heritage Committee (WHC) defines OUV as the “cultural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity”. Attributes are the tangible or intangible objects which bear this OUV.

Authenticity and integrity
Attributes being ‘authentic’ can be understood as the requirement to be genuine, where integrity is considered the proportion of the wholeness, completeness and intactness of the heritage and its attributes.
Attributes and values

During fieldwork in stone town data was gathered and with this data certain attributes have been analyzed. These attributes are the same building techniques, the same building materials and the same decorative principles. In the ABE they are described as "the incredible architectural unity of the island derives from the uninterrupted use of the same building techniques with the same materials and the same decorative principles". Building 9.13 is a clear example of how these attributes are manifested in stone town. It is a typical stone town building with coral lime stone walls, coloured rendering and white plinth, pilasters, opening borders and cornice. The roof however is changed from a ‘traditional flat terrace roof’ into a pitched roof with industrial processed roofing sheets. Table 1 shows the results of the research of these attributes. Especially the authentic roof types and facade renderings are not very dominant in stone town.

Table 1. Architectural elements considered to be authentic

<table>
<thead>
<tr>
<th>Element</th>
<th>percentage of the buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coral lime stone walls</td>
<td>96%</td>
</tr>
<tr>
<td>Traditional flat terrace roof</td>
<td>48%</td>
</tr>
<tr>
<td>Coloured facade, white decorations</td>
<td>48%</td>
</tr>
<tr>
<td>3D opening borders</td>
<td>68%*</td>
</tr>
<tr>
<td>Plinth, pilaster or cornice</td>
<td>89%**</td>
</tr>
</tbody>
</table>

*54% complete borders, 14% partial borders
**With an average of 1.9 decorative principle per building

1 Revealing relationships between the state of authenticity/integrity and the factors affecting Island of Mozambique
Threats

The main threats found in the documents are general degradation and new development. New development is as a threat because new buildings contain a significantly less amount of valued attributes than the original build environment.

The state of degradation is measured and compared to the condition of the buildings in the eighties, described in Ilha de Mozambique Relatório - Report 1982-85. Scores from 1 to 4 were given to the buildings, 1 being 'in ruins', 4 being 'in good condition'. Both table 2 and the general degradation maps show the serious decay over the last thirty years.

Table 2. The state of degradation of the stone town

<table>
<thead>
<tr>
<th>Building element</th>
<th>1982-85</th>
<th>2011-12</th>
<th>comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>3.87</td>
<td>3.65</td>
<td>-0.22</td>
</tr>
<tr>
<td>Wall surfaces</td>
<td>3.63</td>
<td>2.73</td>
<td>-0.90</td>
</tr>
<tr>
<td>Roofs and floors</td>
<td>3.60</td>
<td>2.71</td>
<td>-0.89</td>
</tr>
<tr>
<td>Doors and windows</td>
<td>3.83</td>
<td>3.43</td>
<td>-0.40</td>
</tr>
<tr>
<td>General</td>
<td>3.74</td>
<td>3.18</td>
<td>-0.56</td>
</tr>
</tbody>
</table>

1 Revealing relationships between the state of authenticity/integrity and the factors affecting Island of Mozambique
Methodology

As indicated the stone town is in decay. The research indicated that many buildings are not in use or are inhabited by people with very little income. These people do not have the economic capacity to maintain the building. These buildings should be used by economical stronger residents or other functions which have the capacity to maintain the buildings and to hold the general degradation of the stone town.

Tourism

Tourism is an important source of income for the island and it is increasing. A growing number of hotels and guesthouses are appearing on the island. Especially in stone town, old historic buildings are being converted into hotels. Tourism can have positive and negative impact on the island. It can ‘save’ buildings from becoming a ruin by giving them a new purpose. On the other hand tourism can be a negative development for the island. If a building is converted into a hotel or guesthouse interventions on the building will be necessary. Without a careful study of the building and respectful design the authenticity and integrity of the building can be destroyed.
Typology
For a building to be authentic, to be genuine, it needs to be what it claims to be. To understand what it claims to be the typology needs to be considered. The typology tells what kind of a building it is and it needs to be. The attributes described in the previous chapter are separate elements, parts of buildings, where typology is about the whole building. When only separate elements are preserved and not the typology, the integrity of the building is lost. In the official policy documents typology did not come forward as an attribute. However ‘building technologies’ can be interpreted as typology. How the building designed is told by the typology.

Approach
It is my opinion that tourism can help the island and the cultural heritage. By giving buildings new purposes and by generating economic development, buildings can be maintained and the general degradation can be reversed. Therefore this design project is a hotel in existing historic buildings. The main focus of the design will be how to deal with the existing typology of the build environment. First analysis will be made of general typologies in stone town and of the planning area. After understanding the typologies the design will be based upon these analyses. With this design project I hope to set an example for future tourism development and how to deal with the existing urban fabric.
As case study an existing hotel is taken. This hotel is called hotel O Escondidinho and is located in a historic building. The hotel also possesses a neighboring building which is at the moment mostly in ruins. The owners of the hotel have bought this building to be an extension to the hotel. This assignment is an opportunity to revive the ruin and to design a touristic function into existing typologies.

**Background**
The plot has a central location of the island. It is located in the middle of stone town on one of the main roads. In front of the buildings lies a small square. At the back the plot borders a garden with palm trees and the garden of the Hindu temple. The buildings are both one of the oldest and date from the 16th century. In those days the buildings lay outside of the city center and probable had palm plantations surrounding the buildings. During the centuries parts have been added to the building. The two story extension of the southern building is built in the 17th century, other annexes probably later.
Present situation
The current situation is that the left building is being used as a hotel, as it was in the eighties. The right building, numbered building 17.8, is at the moment a ruin. In the eighties it was already uninhabited and has collapsed for a big part since. Currently the kitchen of the restaurant is already placed in the ruin of building 17.8, as some storage or maintenance facilities.

>Design project ground floor:
functions

Legend
1 Reception
2 Office
3 Toilets
4 Restaurant
5 Bar
6 Kitchen
7 Separate dining room
8 Garden
9 Swimmingpool
10 Cloak rooms
11 Hotel rooms
12 Bathroom
13 Storage
14 Shop

>Design project first floor:
functions
Hotel O Escondidinho
At the moment the hotel has ten rooms and a dormitory or a family room. As facilities it has a restaurant and a swimming pool.
A problem pointed out by the manager is that not all the hotel rooms have bathrooms. The rooms have a shower and toilet a bit further in the building. The current plan is to expand the hotel rooms into the hall way (photo 3) to make room for a bathroom. Another problem is the unclear image of the hotel. There are large hotel rooms, but also a dormitory. Two different levels of luxury are set, but with the same facilities.
Building 7.18
The condition of this building is very bad. The hotel has maintained and renovated the facade, but behind it the degradation has continued. On the roofscape (photo 3) the grid of rooms is still visible, but the walls are crumbling. Some of the roofs have been built back with not original materials. The extension is in worse condition. The storey floor and roof have collapsed. The outer walls are still standing for the most part, of the inner walls only fragments are still standing.
Stone town typology

The stone town typology is very different from the Macuti town typology. The stone town exists of closed building blocks with backyards on the inside of the building blocks. The front facades are built directly on the streets. Extensions and annexes are added in the backyard.

The buildings exist of a grid of rooms. The rooms are all mutual connected, so you can go directly to all the neighboring rooms. This way the rooms can be ventilated naturally. Most of the buildings have one storey. The walls are constructed from coral lime stone and the facade with the previous described decorative principles. The roofs are originally traditional flat terrace roofs. The roof is divided into the same grid to collect rain water, which is then lead to a cistern.
General noble house typology

The general noble house is a clear example of a stone town typology building with all the features. However, it has some specific features within which they can be distinguished from the rest. There are about a dozen of noble houses on the island which have all or almost all the features.

Noble houses are large two-story buildings with a symmetrical facade (photo 1). It has a grid of an odd number of rooms sideward and a depth of three or four rooms. The central opening is always the main entrance. Other doors in the facade are placed there to reach the shops behind them (photo 3).

Entering the main entrance, the central staircase presents itself on the right; the left hallway leads to the backyard (photo 2). The ground floor was mainly used for storage, the first floor as residence. Therefore, the first floor is higher, has more openings, and has more decorations. On the front there is one room occupying two grids, the so-called two-grid room (photo 6).

The back facade is more open than the front facade and in some of the cases, verandahs are placed facing the backyard (photo 4). Extensions and annexes are placed against one, two, or all three walls surrounding the backyard. These extensions or annexes are usually built in later time periods and that is visible by their contrasting styles (photo 5). The backyard functions as the main connection point, connecting the extensions, the back of the main building and often the first floor via a second staircase.
1: building 23.11, symmetrical facade

2: building 23.11, central staircase

3: building 26.2, shop in front facade

4: hotel O Escondidinho, verandah towards the backyard

5: hotel O Escondidinho 1982-85, different style extension

6: building 23.11, two grid room, first floor high ceiling

Noble house position of camera, >ground floor, >>first floor
Other hotels
On the island there are multiple hotels and guesthouses situated in historic buildings. Two examples are analyzed to illustrate how renovation can affect the authenticity and integrity of the original building.

The first example is Villa Sands. Originally the hotel existed out of three different buildings (see Villa Sands 1982-85 ground floor), all three with a different typology. After the renovation the typology is totally vanished: the individual buildings are not recognizable anymore. In the map of changes is visible that the main walls, which divide the buildings, are mainly demolished. Also a second floor is added, which is visible on the 2012 photo. From this perspective it is clear how the character of the most left building has changed. It was a sober warehouse and now it has the characteristics of a stone town typology house from another period of time. A second floor is added with a traditional flat terrace roof, where such warehouses all have pitched roofing sheets. Therefore besides the destruction of the authenticity of the typology, false authentic elements are added. It is questionable whether these interventions are necessary to create a hotel in those specific buildings.
Villa Sands: construction of new roof first floor

Villa Sands 1982-85

Villa Sands 2012
red is added
The second example is Jardim dos Aloe B&B. This building was during the visit to Mozambique still under construction. Although the neighboring building is included in the design, only the building on the corner is analyzed. In the schemes of 1985 the typical stone town structure is clearly visible. The house is build up by several rooms, all mutual connected. In the schemes of 2012 this structure is not that recognizable anymore. The changes show many new elements and rooms on the backside are added, making the old grid structure not recognizable anymore. The comparison of perspectives shows how windows and doors are changed. The removal of the window on the first floor affects the grid of openings. Some original details, such as the window hinge, have received attention, the typology of the building is not considered.
**Case study typology**

The hotel is a clear example of a noble house. It has almost all the features, except for the location of the main stairs. The second door opening at the facade has a shop function being a tourism office. Even though the stairs are not central, the hall way leads directly to the back, where the back facade is more open towards the backyard. The back yard functions as a central place, which lead to the extensions and annexes. These elements have different styles than the main building, showing the different time period of construction. The cistern is turned into a swimming pool, giving the back yard a central role.

On the first floor the rooms are not all mutual connected. Here the hotel rooms are placed and they are closed off because of privacy reasons. The typical noble house two-grid room is present. This room was used as dormitory, but is currently split up into two hotel rooms.

The other building is a stone town typology building. The building facing the street has symmetry of rooms comparable with the noble house, only turned around 45°. The entrance is a veranda, not located on the street but hidden behind a gate. This kind of entrance is more common on the island. Further it has small rooms, mutual connected. The left part of the facade has two doors instead of windows. The rooms behind it lead to the extension, not directly to the rest of the building. The routing in this part is in contrast with the other part of the building.

The unusual feature of the building is the extension. The extension is bigger than the initial building itself. It has two stories and is more decorated. The extension has become the main building, which is very unusual on the island. It is accessible through the left part of the initial building. The shape of the building is complete different from the noble house, but is has some characteristics of the noble house. The ground floor is dark and has few openings, suitable for storage. The first floor is high, light and has wall decorations, suitable for living space. The largest room can be interpreted as a two-grid room. Because of its size it is clearly the most important room of the building. The right part facing the backyard is more open and facing the backyard, as the back facade of a noble house does. This part is smaller and gives access to the larger spaces left. Three arches give clear access towards the backyard and the annexes.
Typology
The analysis of the plot shows how the plot exists of three buildings with three different typologies. By merging these three buildings into one hotel, the risk exists of destroying the independent typologies and routings as is happened with Villa Sands. Therefore the three buildings will be treated as independent entities, keeping the typologies intact. This way the hotel is not expanding in the other buildings, but entities are added.

Program
Each building gets a function based on the typology and the state of degradation of the building.

Hotel O Escondidinho
At the moment this building has all the functions. Because of the dominant facade (two stories, pilasters, symmetry) the central entrance and all the central functions stay intact. The noble house typology fits this function. The more expensive hotel rooms will be placed here because of the grid of large rooms.

Building 17.8
The cheaper hotel rooms are placed here. This building has a grid of small rooms. Even though the building is in bad condition and roofs are collapsed, this grid is still intact. The right part has a separate entrance, in this part a guesthouse with shared facilities is placed. It can operate separate from the hotel. The left part leads to a shop (19) and to the extension (21).

Building 17.8 extension
This building a grid of large rooms and is oriented on a backyard. Because of the collapsed floors and inner walls an open and well ventilated space is created. The restaurant is placed here, with a separate entrance from the street. On the first floor some extra hotel rooms are created. These can be reached from the hotel backyard.
The result is a hotel and two separate entities, which can operate independent. The hotel now can offer two different standards: The more luxurious with large room and all the facilities and a cheaper standard with shared rooms and shared facilities. The restaurant is now separated from the hotel. External guests do not have to enter the hotel, where as hotel guests can reach the hotel directly from the hotel.

Between the three buildings a patio (21) is created. The roof is already collapsed, but is not built back. This way three different entities are being highlighted and it benefits the ventilation.
Changes: hotel

The hotel fits the noble house typology well. The central backyard here is the swimming pool area. The restaurant is replaced with a foyer with bar. On the ground floor one wall is removed, reconnecting that room with the other rooms, restoring and increasing the stone town typology of mutual connected rooms. Most changes are related to the hotel rooms and their bathrooms. Rooms cannot all be mutual connected because of privacy reasons, but the grid structure of rooms can stay intact. The bathrooms are placed in the room (photo 3) instead of cutting off a part of the room for bathroom. These boxes do not use the whole height of the room and are built out of wood to contrast with the walls. This way the space of the room as a whole can be experienced.

The two-grid room was separated into two rooms. One room is too big for a plain hotel room. The solution is a division into two rooms with bathrooms in the middle. However, two pivot doors over the whole height of the room can be opened, creating a two-room suite and reviving the two-grid room.

Because the hotel rooms are closed off for privacy reasons, the natural ventilation does not work well. By placing a skylight the hallway (2) can be ventilated via the roof. Ventilation grids are placed above the hotel rooms supporting ventilation from the hotel room to the skylight. The other reason of placing the skylight is to lighten the hallway, transforming it from a dark hallway into a pleasant space.

Changes hotel cross section
Scale 1/200
red is added
yellow is removed
3: two grid room as two-room suite

<<1: dark hall way present situation
<2: design hall way with skylight

Position of the camera: >ground floor, >>first floor
Changes: guesthouse

Most of the changes are walls renovated and roofs placed back in original state. As with the hotel toilets and bathrooms are placed in the rooms at the street. The other two rooms are shared rooms or dormitories. The room with the small window has become the shared bathroom.

Because the backyard is in use by the restaurant, the guesthouse hardly has outside space. Therefore a roof terrace is placed on the roof. It is placed on the street side, not bordering the restaurant and the hotel rooms in the hotel.

The stairs are placed in the middle grid, making the roof terrace part of the building. As with the hotel this benefits the ventilation of the rooms. Where the stairs in stone town usually are made out of stone, these are made of wood. This way more light can come in and the wood contrasts with the renovated stone elements. This is a new added element and that is how is should look like. Authentic renovated elements and new elements are contrasting.
Changes guesthouse ground floor
Scale 1/200
red is added
yellow is removed

Changes guesthouse first floor
Scale 1/200
red is added
yellow is removed
1: Stairs to the roof terrace

Position of the camera: >ground floor, >>first floor
**Changes: Restaurant**

In the present situation this building is largely in ruins. If the old structure would be completely renovated as it once was, the ground floor would become an unpleasant room. Because it was designed as storage space and lies against a dead wall it has very little light and hardly any ventilation. Hardly any functions beside storage could be placed here. That is why only the outer walls are being renovated. The inner walls stay in the present situation, as a reminder this was once a ruin. By replacing the roof these walls are protected from the elements.

The middle wall once running over the whole length is replaced by a concrete construction (see cross section). This more open construction continues the original grid and bears the beams of the floor and roof, but allows the spaces to be well ventilated.

The only element deleted is the staircase. This way a spacious entrance is created (3). The routing to the restaurant part on the first floor is replaced. However the right part of the building functions as main routing.

The kitchen is placed in front of the building. This way the kitchen connects the bar in the restaurant as the bar in the foyer of the hotel.

The restaurant has three dining areas: one in the back (2), one on the first floor (4) and one in the backyard (5). This allows flexibility to use one of the areas for an exhibition or other purposes.

On the first floor three hotel rooms are created. These are not connected with the restaurant, but with the backyard of the hotel.

The concrete construction is visible in these rooms (6), letting the original grid run through the rooms. It divides the bed area from the bathroom and the rest of the hotel room.

Because of the present condition of this building more liberties in designing are taken then in the other buildings. Still the typology is continued. Old and new elements are integrated with each other, resulting in a spacious restaurant.

*Changes restaurant cross section*

*Scale 1/200*

*red is added*

*yellow is removed*
3: Entrance of the restaurant

<<1: present situation
<<2: restaurant from the back

Position of the camera: >ground floor, >>first floor
4: restaurant area on the first floor

Position of the camera: >ground floor, >>first floor
5: terrace created in the backyard
6: hotel room

Position of the camera: >ground floor, >>first floor
Understanding and respecting typology is the concept of this design. My first intention was to design one coherent building. After understanding the different typologies I have understood this would be forcing a program onto these buildings and with that damaging the typologies and therefore the authenticity of the buildings. By seeing and treating the project as three different entities the typologies can be preserved or even enhanced, resulting in a better project.

At the hotel few interventions were needed. The function stays the same, only a few problems were solved. The typology is even enhanced by restoring the two-grid room as a flexible two-room suite. The present condition of the guesthouse is bad, but the structure is intact and the function of guesthouse fits the building well. Therefore the building is to be renovated into almost complete original state. With the stairs and the roof terrace new elements are introduced which follow up the typology. The most inventions took place in the restaurant. The building is largely in ruins, which gives more possibilities. The concrete structure is an example of how the old structure can be continued and at the same time introducing new possibilities and spaces. Old and new elements flow into each other.

The result is a realistic design for this project. The hotel expands from ten hotel rooms and one dormitory to 23 hotel rooms (of which four rooms can be turned into two two-room suites) and two dormitories. A larger restaurant is placed with three dining areas which also can be used for other purposes. Also a foyer is introduced.

For other renovations in stone town this can be an example how to deal with existing typologies of historic buildings, not only for hotels but also for other functions. All the buildings in stone town are different cases and require other approaches. This example shows three approaches, dependent on the condition of the building and the typology.

Restaurant area on the first floor: continuing the collapsed wall with a more open concrete structure fusing the area with the rest of the restaurant.


Damen, S.G, Derks, R. & Metgod, T.L.M. 2012. *Revealing relationships between the state of authenticity/integrity and the factors affecting Island of Mozambique*
INTRODUCTION

This paper presents part of the results achieved in a research taking the World Heritage property Island of Mozambique as case study. The case study not only aims to assist local authorities on monitoring and managing their property in relation to urban development, it also provides output from the local level on a larger research program short-titled “Outstanding Universal Value, World Heritage cities and Sustainability” led by the Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France. This is an innovative, collaborative and comparative research program that aims to make a significant contribution to both research and practice in World Heritage management and sustainable development (Pereira Roders & van Oers, 2010). This particular case study research was conducted in collaboration with the local authorities, including the Conservation Office (GACIM) and the University Lúrio, in Nampula, funded by the Flemish Funds-In-Trust, Belgium.

Background

The Island of Mozambique is a small island just offshore the mainland of Mozambique. It is divided in two urban areas of distinct morphology (see Figure 1): “Stone Town” in the northern part and “Macuti Town” in the southern part of the island. A by-law determined that a line would be drawn over the middle of the island, peripheral to the hospital: “In 1866 it was decreed that huts could only be built outside the line which bounded the Arrabalde. (…) The line ran from the fish market to Bairro alto de Marangona, and forms the present distinction between the Macuti town and the stone built town” (Aarhus, 1985). Curiously, these urban areas gained their name from their regulatory materials: “Stone Town” and “Macuti Town”. Both materials are to be found in both urban areas, only not in a balanced proportion. “Stone Town” is characteristic for the use of coral lime stone, flat terrace roofs, the same decorative principles and the closed block structure. Instead, “Macuti Town” is characteristic for the use of bamboo constructed walls, Macuti pitched roofs and the huts standing independent from each other.
Being listed as World Heritage means that a property is considered to be of “Outstanding Universal Value” (OUV). Then, its cultural and/or natural significance is “so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity” (UNESCO, 2008). Island of Mozambique (Mozambique) is inscribed on the UNESCO World Heritage List since 1991, under criteria (iv) and (vi). Meaning the World Heritage Committee has agreed with its OUV for being:

(iv) an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history, and
(vi) directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

By 1991, the official decision texts that underpin nominations did not always include a justification of significance, currently known as the Statement of Outstanding Universal Value. Though, ICOMOS Advisory Body Evaluation (ABE) report does index by criteria the justifications for its inscription on the World Heritage List (1991). Accordingly:

“Criterion (iv) The town and fortification on the Island of Mozambique, and the smaller island of St. Laurent, are an outstanding example of an architecture in which local traditions, Portuguese influences and, to a somewhat lesser extent, Indian and Arab influences are all interwoven.
Criteron (vi) The Island of Mozambique bears important witness to the establishment and development of the Portuguese maritime routes between Western Europe and the Indian subcontinent and thence all of Asia.”

Problem field

Just as any other historic urban landscape (UNESCO, 2011), Island of Mozambique has evolved ever since its nomination. Though, just as any other UNESCO World Heritage property, either when caused by natural or human influence, this evolution should be kept under control. This is done by the World Heritage Committee, but more regularly, by the national and local stakeholders; in order to prevent that such evolution would cause irreversible damage to the attributes conveying its outstanding universal value as. After all, “the permanent protection of this heritage is of the highest importance to the international community as a whole” (UNESCO, 2008). Such protection efforts however, are often perceived as an obstruction of the (socio-economic) development of urban settlements, and at the same time development pressures and management deficits are commonly found factors affecting cultural heritage (ICOMOS, 2005; Pereira Roders, 2010).

The reporting trend, former threat intensity coefficient (Patry, 2005), denounces that the frequency in which the World Heritage Committee has deliberated during the sessions about the Island of Mozambique have been declining till 2005. From 2005 until 2010 however, it grew steadily, with a, not yet significant, decline in 2011 (See Figure 2). Those deliberations addressed threats such as natural disasters e.g. cyclone Nadia (1994), general degradation and lack of/or insufficient infrastructure e.g. lack of sewage and water systems, particularly in “Macuti Town”. An example would be the 2009 deliberation on the fact that “the Island of Mozambique continues to be threatened by serious degradation of its historical monuments and urban structure and is in danger of losing part of its authenticity” (UNESCO, 2009).

Not only these threats, but also the causes affecting the island, are discussed by the World Heritage Committee. Along the years, these causes related to the development of the Island of Mozambique, are varied. Follows a categorical list of the causes found referenced in relation to the Island of Mozambique (Turner et al, 2011):

Lack of/or insufficient regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.); Lack of corrective measures and their timely implementation; Insufficient implementation or enforcement of regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.); Insufficient coordination of stakeholders or integration of respective initiatives; Lack of/or insufficient human, financial and technical resources, and insufficient understanding of heritage's value and conditions of integrity.

All these causes have affected, and do affect the World Heritage Property. The goal is to solve these causes and create a situation in which the Island can develop sustainably. In order to achieve this sustainable development, change is needed in relation to executive and regulative processes on the island.

Aims

The research aims to contribute to the monitoring and decision making processes related to urban development on Island of Mozambique. The main goal was to research the ownership issues on the island and their expected impact on the OUV, as requested by the local stakeholders. Priority was given to “Stone Town”, as this urban area was the most affected by the changes on the governance strategies concerning property rights. Therefore fieldwork was taken only in the “Stone Town” area of the island. The paper presents part of the results achieved with this research.
The main research question was: “What is the relation between the state of authenticity and integrity and the factors affecting the property?” This paper will explain the methods used to evidence the relations between the state of authenticity and integrity and the factors affecting the property, and illustrate them by elaborating on a smaller selection of attributes and factors. As such, the main research question was divided into two sub questions: “What is the state of authenticity/integrity of the property?” and “What are the factors affecting the property?” Authenticity is defined as “the degree to which information sources about this value may be understood as credible or truthful” (UNESCO, 2008). Instead integrity “is a measure of the wholeness and intactness of the natural and cultural heritage and its attributes” (UNESCO, 2008).

In order to accomplish the research goal, the list of attributes identified conveying the OUV of the Island of Mozambique and their main values was identified; together with the threats/causes affecting the island. Following, the paper will present the results on locating and assessing the state of authenticity/integrity of three attributes considered to contribute to “the incredible architectural unity of the island” will be related to some of the factors found affecting the island. The attributes are respectively, “the same building techniques”, “the same materials” and “the same decorative principles” caselessly used over the last centuries. The paper will further elaborate on the threats “general degradation” and “new development” as well as on the cause “lack of or insufficient regulatory framework”. As the fieldwork took place exclusively on “Stone Town”, further research is needed to present overall conclusions on the entire island. Though, as they are distinct urban areas, this sub-division is not expected to compromise the results, nor the reliability of the results.

2 METHODOLOGY

This research had two clear stages: the desk research and fieldwork. For the desk research, content analysis methods were used to identify the attributes, values, threats and causes affecting the property. Particular to the attributes and values, a coding method was used to classify all identified attributes according to eight categories of cultural values. The eight categories are respectively technical, economic, political, historic, aesthetic, scientific, age and ecological values (Pereira Roders, 2007; Tarrafa Silva & Pereira Roders, 2012). The documents used as data source were all official documents resulting from the nomination and protection process such as the ABE (ICOMOS, 1991), the Nomination file (Mozambique, 1991), the decision texts (UNESCO, 1991-2011) and the Periodic report (Macamo, 2000). When classified, this list of attributes and corresponding values provided an overview of the reasons why Island of Mozambique was listed as World Heritage. In order to classify the threats and causes, they were sorted into respectively twenty four and nineteen categories (Turner et al., 2011). The categories presented were considered to be the most important threats or causes, ranked by their level of references in the documents.

The fieldwork on the Island of Mozambique, more specifically in “Stone Town”, was somewhat conditioned by the availability of data from previous surveys, as one of the main goals was to determine the evolution of this urban area. This comparative analysis over time required comparable data from earlier stages. For this reason, the “Island of Mozambique Report 1982-1985” (Aarhus, 1985), generally known as the “Blue Book”, was used as main reference to this research, together with its methods and tools.

For the comparative analysis three sets of data were collected. First, photographs were taken of all buildings in “Stone Town”. One set of photographs was made to enable a categorization into themes such as main facade, roofs, doors, windows, decorative elements, etc. A second set was taken following the same perspectives as those taken in the eighties. The purpose was to compare the buildings condition in 1985 and 2011. Condition was classified in four categories: 1-in ruins, 2-poor, 3-deteriorating and 4-good condition (Aga Khan Trust for Culture, 2008). The condition rates from 1985 were converted into this classification.

Table 1 shows all the attributes found in the Advisory Body Evaluation (ABE) concerning the whole island, the values conveyed in these attributes, and the architectural elements related to the attributes. These last, were not all found referenced in the ABE, but on the “Blue Book” (Aarhus 1985), a publication which sustained its nomination to the World Heritage List, and confirmed in the Island during the fieldwork.

### Table 1. Attributes of the Island of Mozambique conveying its OUV

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Values</th>
<th>Architectural Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal port</td>
<td>x, x</td>
<td>Harbour, warehouses, hospital</td>
</tr>
<tr>
<td>St. Gabriel</td>
<td>x</td>
<td>St. Gabriel</td>
</tr>
<tr>
<td>National capital</td>
<td>x</td>
<td>Slave houses, 18th century development</td>
</tr>
<tr>
<td>Unequal development</td>
<td>x</td>
<td>Different urban structures</td>
</tr>
<tr>
<td>Same building technique</td>
<td>x</td>
<td>Roof type, plan type, opening type</td>
</tr>
<tr>
<td>Same materials</td>
<td>x</td>
<td>Roof material, wall material</td>
</tr>
<tr>
<td>Same decorative principles</td>
<td>x</td>
<td>Cornices, pilasters, borders, colours</td>
</tr>
<tr>
<td>St. Sebastian</td>
<td>x</td>
<td>St. Sebastian</td>
</tr>
<tr>
<td>Defensive buildings</td>
<td>x</td>
<td>Fortifications</td>
</tr>
<tr>
<td>Numerous religious</td>
<td>x</td>
<td>Churches, mosques, Hindu temple</td>
</tr>
<tr>
<td>The architecture of the town on the Island of Mozambique</td>
<td>x, x</td>
<td>Portuguese, Arab, Indian and local features</td>
</tr>
<tr>
<td>The architecture of the fortifications on the Island of Mozambique</td>
<td>x, x</td>
<td>Portuguese, Arab, Indian and local features</td>
</tr>
<tr>
<td>The architecture of the smaller island of St. Laurent</td>
<td>x</td>
<td>Portuguese, Arab, Indian and local features</td>
</tr>
<tr>
<td>Island of Mozambique</td>
<td>x, x</td>
<td>Portuguese vs. Indian Ocean Culture</td>
</tr>
</tbody>
</table>

This paper will further elaborate on the attributes contributing to “the incredible architectural unity of the island” which according to the ABE derived “from the uninterrupted use of the same building techniques with the same materials and the same decorative principles” (ICOMOS, 1991).
MOS 1991). These attributes were chosen due to several reasons. First, they are measurable, thus making it possible to elaborate on them quantitatively as well as qualitatively. Second, the area of “Stone Town” has its own architectural unity, a unity with those attributes, making it possible to research these attributes completely. Third, these attributes are categorized as “aesthetic”, which, from the analysis of the ABE (see Figure 3), turned out to be the most important values most frequently referenced about the Island. Lastly, there is information available from the current situation (2011-2012) the impact of the varied ownership entities on protection of cultural significance conveyed in their buildings could be determined.

For the consistent use of the same decorative principles on only the facades facing streets have been taken in consideration. Three kinds of the same decorative principles are analyzed. The first is colour scheme. The facades and the opening borders are often coloured in different colours, creating different colour schemes. There are four kinds of colour scheme distinguished: coloured facade with white opening borders (51%), white facade with coloured opening borders (9%), white facade with white opening borders (38%) and coloured facade with coloured opening borders (2%).

The second decorative principle is the opening border. The kind of opening border most present in “Stone Town” is a border with relief in relation to the facade and surrounds the whole opening. About 54% of the buildings have this ‘full 3D opening border’ around the majority of its openings; 14% have partial 3D borders, 1% has 2D borders and 31% have no borders around the majority of its openings.

For the last decorative principle three kinds of principles are taken together: the pilaster, the cornice and the facade border (in most cases only a plinth). About 89% of the buildings have one or more of these principles on their facade(s); the other 11% have none. Of those buildings which have these decorative principles, 20% have one kind, 37% have two kind and 32% have all three kinds of principles on their facade(s). This is an average of 1.9 decoration principle (pilaster, cornice or facade border) per building in “Stone Town”.

Table 2 illustrates that in “Stone Town” 96% of the buildings have traditional limestone walls, but the traditional flat terrace roof only exists on 52% of the buildings and 89% of the buildings are still decorated according to at least one of the main traditional decoration principles (table 2).

The factors affecting the “Stone Town”

Not only attributes are mentioned in the official documents. These attributes and their correspondent values are threatened. The main threats, filtered from the UNESCO documents are new development, general degradation, natural disasters and some unidentified threats. The first two threats are the only ones which possibly have an apparent reason related to various issues or causes. According to the analyzed documents “the lack of or insufficient regulatory framework” is the most important cause for the threats prevailing on the island.

The local Conservation Office (GACIM) is since 2006 responsible to control these tendencies to rebuild buildings different then they originally were or from what allowed according to the laws and legislations. As GACIM lacks the manpower and capabilities to monitor, these tendencies are not being reversed and will probably continue on affecting the architectural unity of “Stone Town”.

The factors which were found directly affecting the architectural unity are mainly “new development” and “general degradation”. New development normally does not comply with the traditional building methods, materials and decorative principles as defined in the section “results”. New development occurs in the type of additions, interior changes, layout changes and complete new buildings.

The OUV of the island mainly emerges in the built environment of “Stone Town”. These tangible objects are subject to deterioration. The comparing results from 1982-1985 to 2011-2012
have proven the increase of deterioration. In thirty years the general condition score of 3.74 dropped to 3.17 (table 3). About 41% of the buildings in “Stone Town” are generally in good condition and 56% are in ruins. The other buildings have structural problems: 17% of the buildings are in poor condition and 3% are in ruins. Speculation already stated that the general condition was getting worse, but now figures exist to prove it. Hopefully, local and national authorities get alarmed by these numbers and will take action.

<table>
<thead>
<tr>
<th>Building element</th>
<th>1982-85</th>
<th>2011-12</th>
<th>comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>3.87</td>
<td>3.65</td>
<td>-0.22</td>
</tr>
<tr>
<td>Wall surfaces</td>
<td>3.63</td>
<td>2.73</td>
<td>-0.90</td>
</tr>
<tr>
<td>Roofs and floors</td>
<td>3.60</td>
<td>2.71</td>
<td>-0.89</td>
</tr>
<tr>
<td>Doors and windows</td>
<td>3.83</td>
<td>3.43</td>
<td>-0.40</td>
</tr>
<tr>
<td>General</td>
<td>3.74</td>
<td>3.18</td>
<td>-0.56</td>
</tr>
</tbody>
</table>

Even though GACIM has only been operational for six years, no efforts have been found to create and keep a monitoring routine, as well as, to regulate and control new development. Even though new development is not considered as a major threat at the moment, it will probably become in the near future. It is generally assumed that tourism is increasing and prices are rising. Though, there are many buildings being reconstructed without technical advice. Over the years, GACIM has written several advisory documents, of which afterwards no monitoring was possible due to the lack of resources, including technical capacity.

4 DISCUSSION AND CONCLUSION

To recapitulate, the consistent use of the same building techniques, the same building materials and the same decorative principles contribute to the outstanding universal value of the Island of Mozambique. These intangible attributes are still to be found in the built environment of “Stone Town”. This consistency in architecture over the years has resulted in a homogeneous streetscape. Elements such as traditional flat terrace roofs, limestone walls and facade decorations are key attributes of its homogeneity. The gathered data evidences a trend in which integrity is declining.

It must be said that the ABE only refers to the use of the same building techniques, materials and decorative principles, but not discriminates in detail their nature. The reference to such identification was found on the “Blue Book”, but without percentages or locations. No other references were found discriminating the different materials or techniques have been dominant in earlier time periods. Even though the pitched iron sheet roof for example has been introduced in the 19th century, the flat roof is considered as the authentic one. Still, all elements in table 2 are dominant. However, because the ABE only talks about the same use and not about which ones, the OUV increases if the mentioned elements in table 2 also increase, apart from their proven authenticity.

These consistent uses of building techniques and decoration principle all solely emerge in the built environment. That is why these attributes are subject to both new development and general degradation. While new development replaces the building traditions, general degradation affects its condition. These two threats persist due to a lack of regulatory framework. GACIM lack of technical capacity has resulted into a lack of monitoring, lack of maintenance and a lack of impact assessments when development projects are being proposed. Such passivity is contributing for the destructive development in the one hand and for the lack of maintenance (with ruin as consequence) in the other hand. This is now proved by numbers, which hopefully can result into some actions towards the raise of GACIM technical capacities, supported by both local and national authorities.

Threats and causes, such as “general degradation”, “lack of regulatory framework” and “new development” had never been proved to be directly affecting the OUV of the island. By means of this research, evidence now exists for the direct relation between these threats and the decrease of OUV. The same use of materials and same use of building techniques resulted in a certain typology for the floor plans of the island. This yet needs to be defined and further elaborated in what way this typology is the result of this consistent use of same materials and same building techniques. Future research could aim to define the current state of integrity of this traditional floor plan and the importance of this aspect.

Since this research focused on “Stone Town”, so “Maciuti Town” remains unexamined. As the whole island is inscribed on UNESCO’s World Heritage List, future research should continue this research in order to reveal and locate the OUV of “Maciuti Town”, as well as, how the OUV is being affected.

To conclude, this research has given a clear overview of the current state of integrity of part of the attributes conveying the OUV of Island of Mozambique, as well as, to what extent these attributes are being affected. Clearer planning policies, a raise of GACIM technical capacity and halt of new developments with negative impact on its cultural significance could be the way forward to, the least, halt the destruction of its cultural significance which has proven to be progressively growing in Island of Mozambique.

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