

ZANZIBAR NIGHT LIGHT

A LIGHTING MASTER PLAN
FOR UNESCO WORLD HERITAGE
ZANZIBAR STONE TOWN

Swedish University of Agricultural Sciences

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Coverpicture: Zanzibar child in a Stone Town doorway with gobo lighting of door carving. By Freija Carlstén, 2017

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ABSTRACT

ENGLISH

Where? Zanzibar is considered to be the centre of Swahili culture, found all along the east coast of Africa. The main city, Stone Town, has for over a millennium constituted an important trading port, merging east African Bantu with Arab culture, adding elements from Persia, India and Europe (NE, 2017).

Due to its outstanding universal values, Stone Town got inscribed on the UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage List in December 2000 (UNESCO, 2007). The cultural diversity of habitants was more palpable in the Zanzibar society before the revolution that happened in 1964 but the multifaceted Swahili culture is still highly visible in elements of the city's architecture.

Why? However, historical attributes are vulnerable when demands for renewal and development puts pressure on our urban environments. Valuable remnants tend to

grow dim in the disarray of private initiatives obstructing with governmental actions in the public space when regulations are missing or not obeyed (ZSTHS, 2002).

What? This thesis treats how new light can be cast on both tangible and intangible historical values. It aims to strengthening the place identity by highlighting its attributes when the sun has set, by using light design with a landscape architecture approach. The ambition is to bring out the values of the historical and sometimes neglected urban fabric for the habitants but also visitors of Stone Town to experience anew.

How? This revitalisation consists of a Lighting Strategy, suggesting an approach with concrete guidelines and lastly proposals for application for different types of spaces in Stone Town. The thesis further explores the preconditions and evaluate what influence a lighting master plan might have on the city.

SAMMANFATTNING

SVENSKA

Var? Zanzibar anses vara centrum för den swahilikultur som utmärker sig längs hela Afrikas östkust. Huvudstaden, Stone Town, har under ett årtusende utgjort en viktig handelsnod som under namnet Swahili blandar Östafrikansk bantu med arabisk kultur, blandat med element från Persien, Indien och Europa (NE, 2017).

Tack vare sina enastående universella värden blev Stone Town listad som ett världsarv av UNESCO (FN: s utbildnings-, vetenskapliga och kulturella organisation) i december år 2000 (UNESCO, 2007). Invånarnas kulturella mångfald var mer framträdande i Zanzibar före den revolution som inträffade 1964 men den mångfacetterade swahili-kulturen är fortfarande mycket synlig i stora delar av stadens arkitektur.

Varför? Historiska attribut är dock sårbara när krav på förnyelse och utveckling sätter press på våra stadsmiljöer. Värderbara kvarlevor tenderar att växa svaga i en blandning av privata initiativ som försvårar för regeringsåtgärder i

det offentliga rummet när regler saknas eller inte följs (ZSTHS, 2002).

Vad? Denna uppsats behandlar hur både materiella och immateriella historiska värden kan lyftas ånyo med ljusdesign som verktyg. Projektet syftar till att stärka platsens identitet genom att lyfta särskilda rumsligheter och element ur mörkret från en landskapsarkitekts perspektiv och med dennes metoder. Ambitionen är att lyfta fram värden för den historiska och ibland försummade urbana miljön för att både boende och besökare i Stone Town ska kunna uppleva det på nytt och känna en starkare koppling till platsen.

Hur? Denna vitalisering är uppbyggt som en ljusplan bestående av en strategi som föreslår ett tillvägagångssätt med konkreta riktlinjer och slutligen ett gestaltungs-förslag för olika typer av rumsligheter och element i Stone Town. Uppsatsen undersöker vidare förutsättningarna för genomförande och utvärderar slutligen vilken inverkan en ljusplan kan ha på staden.

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Freija Carlstén





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INTRO

This master thesis represents 30 ECTS and have been prepared during 2017 and 2018. It has been prepared in the Division of Landscape Architecture at the Department of Urban and Rural Development at the Swedish University of Agricultural Sciences in collaboration with the Department of Urban and Rural Planning in Zanzibar. It presents a Final Landscape Architectural Project, which aims to cast a new light on the possibilities and assets in UNESCO World Heritage Stone Town, Zanzibar. The vision of the project reflects a wish to learn more about lighting in our public environments and to bring more light into the landscape architect profession.



INTRO

PROLOGUE
TERMINOLOGY
ABBREVIATIONS
METHODOLOGY
PURPOSE & AIM
BENEFICIARIES
DELIMITATION
DISPOSITION

INTRO

PROLOGUE

Since the beginning of my studies, I've been appealed by the 'genius loci'. Many times I have been trying to figure out what special elements that create that 'something' in our outdoor environments. During my five years of studies I have bit by bit realized the importance of place identity and the need of letting history be the inspiration when developing public spaces. When taking the final step in becoming a landscape architect, I now want to choose what kind of urban developer I want to become and make this the starting point for my future and professional work. I want to start doing more about what is making people feel good and this thesis is the first step on that road.

Why Stone Town?

My appetite on discovering, learning from African cultures had grown after discovering the Luho culture and nature around Lake Victoria during my Bachelor's Thesis in Kenya, 2014. Having experienced both the solitude and advantages of doing my project alone in a foreign country. I asked Professor Emeritus Rolf Johansson, who earlier had helped me with contacts in Kenya, if he knew any place that would be a good site to implement a light design project. He then put me in contact with Dr Muhammad Juma, head of Department of Urban and Rural Planning (DURP) at Zanzibar. Then I did not know much about Zanzibar except for its beaches and warm climate but the more research I did, the more suitably the site seemed to fit my ambitions.

I learnt to appreciate the importance of preservation and how to conserve while developing the city scape during one year of studies in Bordeaux, France. Bordeaux is just like Stone Town listed as a UNESCO's world heritage site and have dealt with similar challenges that Stone Town is now facing. I have now gotten the chance to use my experiences from Bordeaux of how to work with city heritage in Stone Town and also to discover, explore and develop how light design can contribute to tell the forgotten stories of our environments.

Why Lighting?

I got introduced to the poetry of lighting when working with a light designer in a theatre production in 2011. After that experience I started to give notice to how light affect us, both in private and public places. I decided to learn about it myself since the landscape architecture programme does not include a lot of lighting design. In most cases it is left to a specific light designer to execute that task in a site, already designed by a landscape architect. By taking on to learn about lighting, I wanted to broaden the landscape architecture field and take a small step for the landscape architecture guild to widen its knowledge to also include lighting.



One of many inventing lighting initiatives in Stone Town.

In this thesis I explore light design as a main tool when striving to form a more pleasant environment for the habitants and visitors of Stone Town. I hope this thesis will be the

first step of bringing more light design into landscape architecture and that it can be the first step in my ambition of bringing more of light design into the landscape architecture programme.

INTRO

TERMINOLOGY

Baraza

Typical Swahili bench.

Minaret

Tower of the mosque sending out prayers throughout the day.

Glaring

What occurs when the contrast between dark and light is too big for the eye to adapt to the light (White Arkitekter, 2010).

Gobo Light

Light with a certain shape or pattern, emitted from a lighting source through a stencil.

Shehia

Administrative unit that are responsible for a certain geographical area.

Cassava

A fruit originating from Africa

Lighting Master Plan

An overarching plan for a defined area, providing strategies and guidelines for how to use artificial lighting.

Shirazi

The ethnic group inhabiting the Swahili coast and the nearby Indian Ocean islands that claim ancestry from Shiraz.

Swahili

East African culture expressed through language, architecture, cooking, music, dancing and clothing.

Spill Light

Light that falls outside of the area intended to be lit.

Zanj

Arab name for the people of East Africa; from where the name Zanzibar derives.

INTRO

ABBREVIATIONS

**STCDA**

Stone Town Conservation and Development
Authorities

ZECO

Zanzibar Electricity Corporation

UNESCO

United Nations Educational, Scientific and
Cultural Organization

ZanPlan 2105

Zanzibar Master Plan 2015

RGoZ

Revolutionary Government of Zanzibar

DoURP

Department of Urban and Rural Development

SLU

Swedish University of Agricultural Sciences

INTRO

METHODOLOGY

Research and work at the DoURP

The project is based on literature research, field registrations and analysis, design knowledge, case studies and input from consulted experts in their respective field. The process started out in Sweden in April 2017 with research through Internet and literature about the urban history and development of Zanzibar and about light design.

Research questions for the project were sent with the official request for conducting the study at the DoURP (Department of Urban and Rural Development). These questions later contributed to form a point of departure in the first meeting with the Head of Department, Dr Muhammad Muhammad Juma. We agreed on a framework that would form the basis for a Master project in Landscape architecture as well as a Lighting Master Plan for Stone Town. The department helped me with all local references I needed in terms of city maps, master plans, archive pictures and local research. My work at the department was divided into three phases with presentations for the department after each one. Local habitants, architects and representatives of organizations and governmental institutions that act in Stone Town were interviewed and later invited to the final presentation.

Case studies

Lighting programs and projects around the world were looked into to get inspiration as

well as information about how professionals have worked with light design in comparable settings. I focused my research to especially India and Arab countries since they have been of great influence in Stone Town and few projects treating light design are to be found in Africa. To get inspiration and input on how to treat historical places and street-scapes I investigated the Lighting Master Plan of the Old town of Toronto.

Registrations

Field studies and registrations of the site were conducted during five weeks in May and June 2017. The area research consisted of mapping the urban elements and spatialities of Stone town and classifying streets and roads from their usage. I documented the street-life, use and architecture through sketches, photos and by listening to stories from the locals, focusing on the historical as well as the contemporary identity of Zanzibar and Stone Town.

Analysis

Human activities together with assets of the city, such as cultural buildings or places, natural resources and vegetation were the main focus in the analysis inspired by methods introduced by Kevin Lynch (1960). The structures and the use of the city scape was examined throughout the research and combined with studies about Swahili culture and Zanzibar heritage as well as local habits.



Traditionally dressed man arranging his vegetables to sell for the day on a typical Swahili bench - Baraza.

Synthesis

After my last presentation in Stone Town, I left Zanzibar with a structure and raw material to further develop the Lighting Master Plan. Back in Sweden I continued to work by documenting my process and starting to compile my research, registrations and analysis into applicable proposals.

Presentation

In the final phase I used different means of architectural design fashions to communicate a proposal, such as diagrams and schemes, to mediate how the Lighting Master Plan would be epitomised. The presentation material is made with the main focus of being easily understood and communicated and to convey a potential future night ambience of Stone Town.

INTRO

PURPOSE & AIM

The purpose of this project is to create a lighting plan based on place identity. The Lighting Master Plan should also facilitate orientation as well as promote safety.

The project investigates how light design can be implemented at a cultural valuable site to satisfyingly meet the three factors stated above, proposing sustainable and renewable energy sources to connect it to the Zanzibar Vision 2020 by the *Revolutionary Government of Zanzibar* (RGoZ, 2000). The Lighting Master Plan will also function as a complement to the last master plan for Zanzibar, *ZanPlan 2015*, since lighting was not mentioned at all in that report.

The Lighting Master Plan will provide concrete actions for how to develop the cityscape of Stone Town, reviving the ancient stories and highlight the unique global values as stated in the UNESCO criteria. The Lighting plan is attentive to the protection of the heritage, its public spaces and its culture. No changes will be purposed in the existing architecture due to its classification as a World Heritage.

Lighting Plan, no Lamp Plan

The Lighting Master Plan should not be considered as a way to only put up lamps to ensure there is equivalent amounts of light on every street of Stone Town. The ambition for the Lighting Plan is rather to raise awareness of the significance of good public lighting, aiming

for it to be a prioritized factor in future projects of revitalization and restoration. Implementing the Lighting Master Plan should primarily be done to give people a higher experience of the place identity in the streets of Stone Town.

Why?

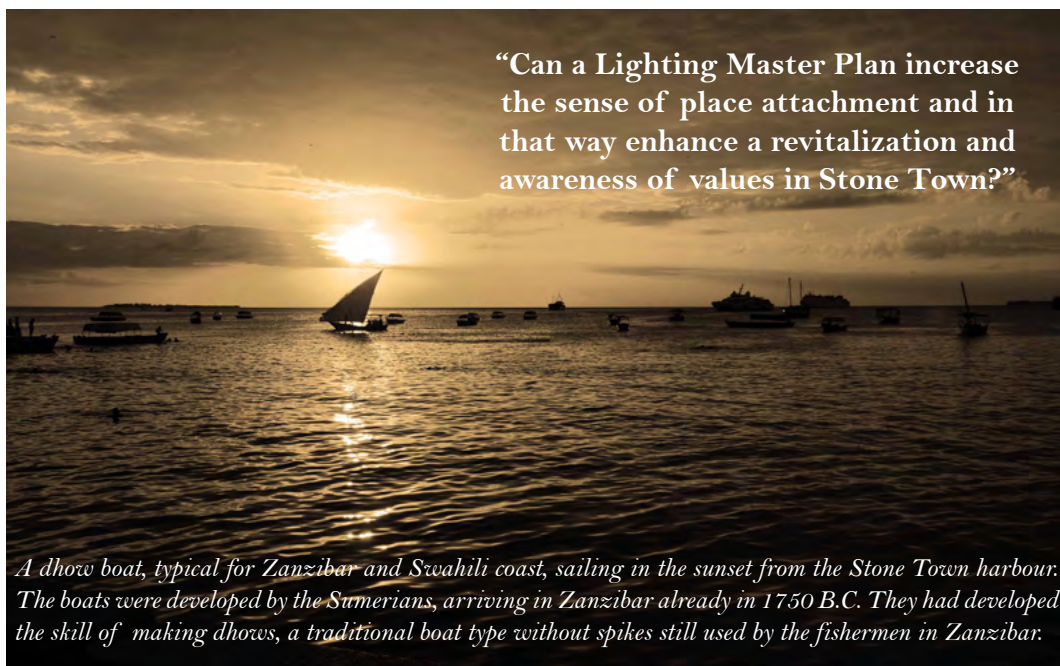
To create a Lighting Master Plan for Stone Town is a way to investigate if it is possible to:

“Increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town”

By extracting some of the globally unique values of the built landscape during the dark hours, habitants and visitors are invited to re-discover the streets of Stone Town. With an enhanced experience, the city may feel more secure and easily oriented by night, both for the people in the community as well as for visitors.

What?

The Lighting Master Plan is presented as a proposal in three parts. First a general *Strategy* describing six measures to undertake to enhance a positive revitalization and awareness of values in Stone Town. It further presents the *Guidelines*, specified for five different spatialities or elements. These guidelines are supposed to be the concrete planning tools for whomever that wants to implement a lighting project in Stone Town to enhance the identity of the



“Can a Lighting Master Plan increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town?”

A dhow boat, typical for Zanzibar and Swahili coast, sailing in the sunset from the Stone Town harbour. The boats were developed by the Sumerians, arriving in Zanzibar already in 1750 B.C. They had developed the skill of making dhows, a traditional boat type without spikes still used by the fishermen in Zanzibar.

place at night. Finally the Lighting Master Plan presents examples of how to implement the guidelines in designated places.

How?

By registering and analysing the street-scape from a landscape architectural perspective, I will be using light design to accentuate the assets, solve the identified issues and try to diminish the challenges facing Stone Town.

The Lighting Master Plan should raise awareness of the importance of lighting in Zanzibar and create a comprehensive image for those planning and designing lighting facilities in Stone Town. The Lighting Master Plan aims to achieve a safer, orientable and more aesthetically pleasing city during the dark hours.

The study further invites to a discussion of how light design and landscape architecture can work together.

INTRO

CHALLENGE

According to the Stone Town Heritage Society (2002), there are three major threats to the heritage site. Here follows a definition of the challenges facing Stone Town and how the Lighting Master plan may contribute with a solution.

1. Development Pressures

The Zanzibar economy is growing and the islands are attracting many tourists. Many people also come from the Tanzania mainland to live, which intensifies the urbanisation (ZSTHS, 2002). The increasing development is however putting pressure on the Stone Town environments. Empty spaces are results of collapsed buildings will be subject to random parking lots or private initiatives (ZSTHS, 2002). New buildings become a threat to the overall character of Stone Town, rising above the general height of the standard in the area (ZSTHS, 2002).

The STCDA (Stone Town Conservation and Development Authorities) has been criticised in a report from UNESCO (2016) for not acting enough on this matter. UNESCO is stating in their report that the STCDA “seriously fails in their mission when neglecting to conserve unique values in development projects”. Since the STCDA is a Department under the Ministry of Water, Conservation, Energy and Land (ICOMOS, 2013) this kind of repeatedly negative incidents becomes a governmental issue, affecting urban construction.

2. Environmental Pressures

The buildings of Stone Town consist mainly of traditional materials like Lime Mortar and Coral Stone (ZSTHS, 2002). The materials are environmentally more sustainable compared to for example concrete. On the other hand are

they more vulnerable to climate with the heavy rains washing away the lime mortar, which can make the building collapse if not properly maintained. Global warming is also affecting the built structure through climate change and heavier rain falls. The problem is hard to affect locally if not only by maintaining the buildings in a good shape to bear future rains (ZSTHS, 2002).

3. Lack of Awareness and Support

The STCDA has identified awareness creation as a main issue that needs to be addressed in Stone Town. The STCDA and DoURP are constantly working on creating awareness among the people in Zanzibar City and Stone Town about how valuable the built heritage is and that both people owning houses and the government need to maintain their buildings which are one of their main assets (ZSTHS, 2002).construction.

Can a Lighting Master Plan contribute?

Stone Town is a cultural heritage vulnerable from urbanization and climate. The question is however to whom the heritage may belong? Ever since the revolution in 1964, the buildings have been left without maintenance. One could argue that it because of unwise financial priorities that followed in almost every African country in the post-colonial era. Lodhi, A. et al. (1979) however argue that these priorities



The ruins of an insufficiently maintained building in Stone Town.

may have been malicious. To the Shirazi people, the Arabic and European colonial building style in Stone Town may partly symbolize a culture where Shirazis and Africans had been suffering from suppression for generations. When they finally were free from rulers that had never been chosen by themselves, maybe they did not consider the architectural heritage as their own and neither did see any point in preserving it (Lodhi, A. et al. 1979)?

I would however argue against this hypothesis after having spoken to a number of locals in Stone Town, who all emphasized how proud they are over their unique town and how they grieve that the government does not put more money into rehabilitate the buildings.

It is however a question about private and public and what the state should finance since each owner should take care of his house, no matter if it faces development pressures, environmental pressures or lack awareness and

support. But, if the government would lead by example and renovate their buildings, some private initiatives would probably follow.

A Lighting Master Plan, highlighting identity values of Stone Town, would probably cast a new light on the everyday elements that people pass everyday. It could be just such an initiative that local habitants would need to get inspired and invest in small renovation initiatives. The Lighting Master Plan could of course contribute to attract more tourists to visit Stone Town, taking back its reputation as Africa's bright city. An attraction of tourists could obviously lead to an even harder pressure on the development. But if used in the right way, the incomes that a Lighting Master Plan would bring in terms of income to the island and city, could be well governed to rehabilitate the Africa's city of light to sustain for another 1000 years.

INTRO

BENEFICIARIES

It is important that the target group of the Lighting Master Plan is well defined since the design of the light will rely on the recipient's place attachment and identity connections to Stone Town.

Target group

The target group for the Lighting Master Plan are mainly the everyday local habitants in the municipality, both people living in Stone Town as well as habitants all around the island. The target is to bring out elements of Zanzibari identity to engage the locals in their own heritage. The proposal will be created to bring the local habitants closer to their heritage, to get inspired and learn more about their city's unique global values by their experiences of the light.

DoURP

The Department of Urban and Rural Development has been pointing out particular aspects and certain areas that they requested to be accentuated in the program as well as prioritized in the application examples. I've met their demands as far as possible since they are the local planning experts. The result became a proposal, which combined their demands with places in Stone Town that I found particularly interesting to work with after conducting the registration.

Stakeholders

The majority of the interviews I accomplished are those with the stake holders. Their wishes are not so much about the design itself but more about in what place the light should be put and how to implement the plan when the design proposal is ready to be implemented.

Local habitants

Questioning the local habitants about their thoughts upon a Lighting Master Plan can be hard if the majority of them never has experienced one and they think that everything that I suggest is a good idea. Instead of a questionnaire I will instead collect their stories about places in Stone Town and use as inspiration to meet their demands and wishes in the final proposal.



*Khoja Ismaili Charitable Musafarkhana.
One of the 26 Grade 1 listed buildings in
Stone Town that hold the highest level of
conservation protection.*

INTRO

DELIMITATION

The field study for this project was limited to five weeks in Stone Town in May and June 2017. The thesis introduces the reader to challenges and prevailing circumstances concerning the urban area of Zanzibar Town. The proposal, however, only treats the area within the World Heritage Site; Stone Town.

The main focus of the project is to enhance the experience of the street-scape with light design. The delimitations extend to light armatures and product-specific light sources. Conceptual propositions will be offered but no specifications of certain armatures or installations.

I have chosen to not go into further detail about the restoration of many of the sites in Stone Town as a World Heritage Site. The local government and conservation authorities are acting upon this. I do however still hope that this proposal will urge the further needs for restoration, especially through conscious conservation in order to develop this historical site.

The thesis mentions many urban spatialities and elements that could be provided with individual proposals. The time limit made me however prioritize five sites for the final proposals. These five different elements has

been agreed upon with the Department of Urban development and have been given detailed proposals in the section *Application* in the chapter *Presentation*. Humans are the main target group and even though there is research on the effects affection on animals and plants, these subjects have not been treated in this thesis.

The level of details is limited to my knowledge as a landscape architect and not as a light designer. This also allows the project to provide more of guidelines and recommendations for inspiration and further development than a fixed installation manual. The five different detailed application proposals promotes safety, orientation and place identity in Stone Town during the dark hours.

The background research focuses on how the history of Zanzibar has shaped Stone Town and the proposed design aims to highlight the traces that could be found of that history in Stone Town today.

The proposal is a Lighting Master Plan in three levels for how the urban lighting could be realized in Stone Town. The planning department and stake-holders are free to act upon the proposal in whatever way they would like.

INTRO

DISPOSITION



The thesis consists of four parts accompanied by an intro and an outro. The *Intro* treats the formalities of the thesis, presenting the limitations and ambitions of the project. The *Research* presents the facts that has been provided through literature studies. The *Registrations* treats the facts and information that has been collected and compiled during the field study. It further introduces the reader to the history that has shaped Zanzibar. The chapter *Analysis* further submits how the field registrations and research will outline the final

Presentation. The *Presentation* is subdivided into three chapters. It treats the practical aspects of light design and presents how it could be managed in Stone Town. The different chapters present a strategy, guidelines and detailed project proposals. The *Outro* discusses the after-work of the project and lastly my own reflections. It also features my expectations for the outcome of the project as well as the impact it may have on the discussion about landscape architecture and light design. Lastly it presents the resources and references as well as appendices.

RESEARCH

This master thesis represents 30 HEC and have been prepared during 2017 and 2018. It has been developed in the Division of Landscape Architecture at the Department of Urban and Rural Development at the Swedish University of Agricultural Sciences in collaboration with the Department of Urban and Rural Planning in Zanzibar. It represents my final landscape architectural project and aims to cast a new light on the possibilities and assets in Stone Town and Zanzibar. The idea to the project reflects my wish to learn more about lighting in our environments and to bring more light into landscape architecture.

RESEARCH

PLACE IDENTITY
LIGHTING
CASE STUDIES

RESEARCH

PLACE IDENTITY

The Identity of Place

Place identity is a concept commonly referred to when analysing a place within the field of landscape architecture. Motivation to analyse the identity of a place could, simply explained, be to anchor a new design with the existing elements of the place. Place identity is an idea around which much research has been made but the concept can have many different interpretations, which makes it quite abstract to work with.

Genius Loci

Within landscape architecture, place identity is often connected to the term Genius Loci (the spirit of the place). The subject is referred to by Norberg-Schulz who stresses to use each place's unique history as the source of inspiration for new buildings (NE, 2017). Norberg-Schulz summarizes the concept genius loci with the word identity in the article *About Site Quality* (Orig. *Om platskvalitet*) in the magazine *Arkitektur* (1992). In *Genius loci: Towards a phenomenology of architecture* (1980) he writes that the identity of a man-made place is determined by its **location**, its **general spatial composition** and its **distinctive architectural expression**. All places derive their identity from these factors, mainly from one of them but a strong place arises where all of the parts are considered to manifest a vital existential spirit: The genius of the site. Norberg-Schultz (1980) stresses that these three factors are to be found in all places.





This little opening in the Soko Muhogo Street is called Jaws Corner. This is where the locals, mostly men, gather and is also oddly where the tourists always come back to when trying to find their way in the winding alleys of Stone Town. The story says that the square got its name from when they once where showing the movie "Jaws" here. Others say that the name comes from all the jaws gossiping about everything between heaven and earth, all day long day.

PLACE IDENTITY

In that way, the identity or value can easily be enhanced, if the genius loci (location, spatial composition and architectural expression) is truly understood and taken into consideration when designing a place (Norberg-Schulz, 1980). Marc Treib on the other hand, professor in architecture at the University of California, Berkley, describes in *Theory in landscape architecture* how landscapes architects since the beginning of the 20th century have been trying to constantly give meaning to the design by referring to this genius loci as the existing forms in nature or the historical aspects of a place. He is instead questioning this method since he consider the genius presence in our man-made environments to be too weak, that users sometimes find it hard to understand the significance of the landscape architect (Treib, 2002). Genius Loci is however early introduced at the landscape architect program in Sweden, as a concept of how to approach and work with a site. Unfortunately, due to the many different interpretations that research proposes, the approach for how to apply the genius loci as an analysis method is rarely clarified. One can say that a proper way of using the Genius Loci for analysing purposes has not been defined and is instead highly individual from case to case.

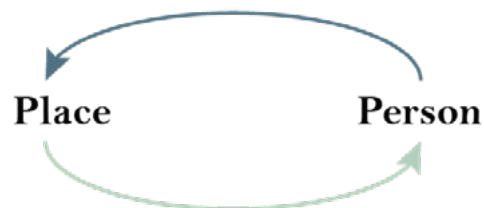
Place Identity

Even if place identity is commonly referred to within the field of architecture and planning, it is also closely connected to psychology. The concept was first mentioned by environmental and social psychologists Harold M. Proshansky, Abbe K. Fabian, and Robert Kaminoff, as a core concept within the field of environmental psychology. The three psychologists adduced that:

"Place identity is a sub-structure of a person's self-identity, and consists of knowledge and feelings developed through everyday experiences of physical spaces"

Giesecking, Mangold, Katz, Low, & Saegert, 2014

So while many theories of individual-environment relations are built upon the concept of place identity; that the identity of a place is what becomes of the identity of a person (Giesecking, Mangold, Katz, Low, & Saegert, 2014), one can also say that the places are what create our memories and provide many of the conditions for what we will learn through our lifetime.





The People's Palace (Beit al-Sahel) is one of the most well known buildings in Stone Town and has among other buildings contributed to Stone Town's place on the UNESCO World Heritage. It has throughout the times manifested the current rule in Zanzibar. It was originally erected as a home for the Sultan's family members in 1890. It has since then been used as the palace for the Sultans and was after the revolution in 1964 turned into a government seat. It is today a museum over the history of Sultans in Zanzibar and has been that since 1994.

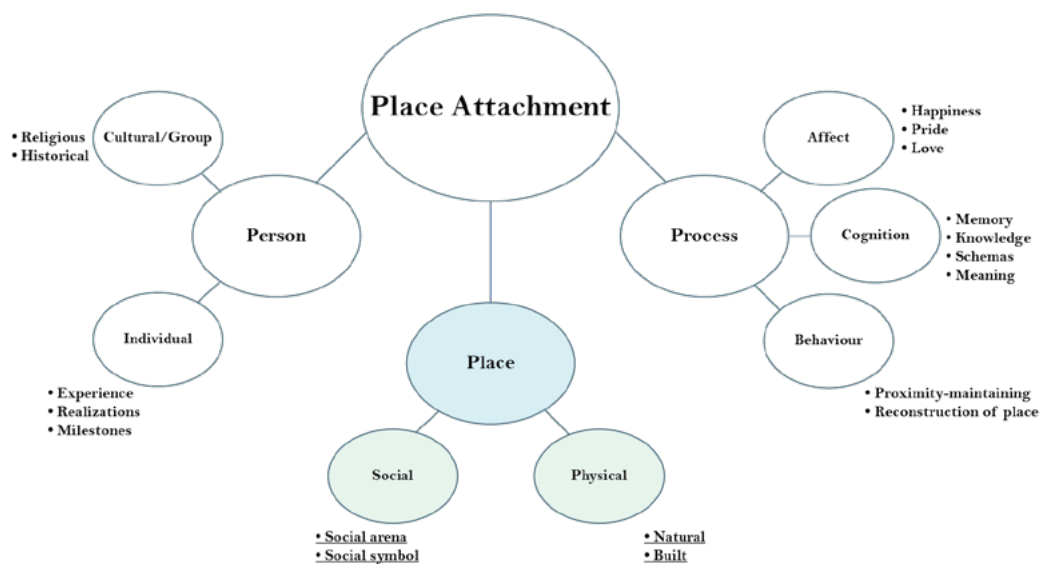
PLACE IDENTITY

Place Attachment

Altman and Low (1992) reinforces the previous mentioned theory of Place identity in their *Place Attachment*; how the connection between place and person is inter alia identity developing. Both Place Identity and Place Attachment are concepts that may interpret, why we feel in a certain way in a certain place. Laura Scannell and Robert Gifford (2010) have structured several different studies about place identity and place attachment. Their joint work resulted in a structure of the most common definitions of place attachment and place identity that they have identified in literature. From this research they have created a three-dimensional framework of how to identify place attachment that they call PPP: Person, Process, Place. This framework function as an analysis tool. It is suggested to be used for planning, to identify elements of attachment to highlight and thereby understand and create a stronger place identity that people may attach to (Scannell & Gifford, 2010). This tripartite model constitutes the basis for the analysis in the Lighting Master Plan; to identify which components of Place Identity that can be enhanced by light design. It is however not the places themselves that create the identity. It is rather the place, experienced through each person, both as an individual as well as together as a group, that creates an identity to which a person gets attached (Manzo, 2005). In this project, light design will be used as the tool to enhance that experience of place.



Jaws Corner is a place for small talks as well as for debate. The coloured flags for the CUF party are still swaying from the lanky palm tree in the middle of the square.



Scannell and Gifford's tripartite model of place attachment (Reprinted but from Journal of Environmental Psychology, 30/1, Scannell L. and Gifford R., Defining place attachment: A tripartite organizing framework, 1-10, 2010, with permission from Elsevier).

The Person dimension is connected to the individual; the person to which a place is attached or means something (Scannell & Gifford, 2010). The Process (psychological) dimension is the connection between the individual and the place. This dimension consists of the perception and personal experiences in terms of affect and behaviour manifested in the attachment between the person and the place (Scannell & Gifford, 2010). The dimension of Place consists of the objects that a person is attached to. This dimension can be manifested in several different geographic scales and divided into two levels of place attachment; *social* and *physical* (Scannell & Gifford, 2010). Many of the studies on place attachment, compiled by Scannell and Gifford (2010), focuses on how the physical aspects influence the social aspects; how people more easily tend to attach to places that facilitate a

group identity.

This conclusion embodies the the research question and the purpose with this project: “*Can a Lighting Master Plan increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town?*”

This study mainly applies the dimension of Place in the analysis, since it indicates place attachment through the characteristics in the spatial level and in the architectural elements. Places can be represented through a wide range of physical surroundings but the ultimate place attachment appears to places that individuals find substantial and meaningful (Manzo, 2005).

This conclusion also manifests in the research by Stokols, D. & Shumaker, S. A. (1981) who stresses that the perceivable, physical characteristics of a place are central to attachment since they provide the setting and possibilities to develop within.

RESEARCH

LIGHTING

What light is

Light is essential to perceive the environment and is a prerequisite for the existence of life. All humans depend on light whether having eyes to see with or not and have throughout history, been reliant on light to survive.

With incredible speed, the sight interprets the information about our surroundings given by photons (Ljuskultur, 2013). As humans, light is a crucial factor to orientate and memorize paths as well as to experience places. Light is also a safety-assuring factor. When we can see, we also feel in control. A narrow street can be perceived as lively and thrilling during daytime, but also as intimidating and unpleasant during the dark hours. No matter how secure, people may feel unsafe when lighting is either insufficient or too light and glaring. That means that good lighting can make the difference if one dares to go out at night or not. A poorly lit environment may therefore affect the equality in the urban space as well as the local profitability if some people feel to unsafe to use public space if they cannot fully perceive it (Ljuskultur, 2013).

Light Design

To work with light is just as much to work with darkness. Alike light, darkness opens up the possibilities to create ambience and to open up the space or object for different experiences (White Arkitekter, 2010). By choosing what to enlighten and what to leave in the dark, the choices are numerous of what environments we possibly can create, which demands a lot of the designer.

Design is the art of making things more appealing and useful. Hence light, or lighting design is to use light as a tool to make spaces becoming more pleasing or useful to humankind. Light design combines aesthetics, sciences and established standards with cultural and human factors, using light as the main tool (Zaki, 2013). Light design cannot however stand for itself. Light is dependent on an object in order to express itself in an artistic way. Just like light can be either artificial or natural, the enlightened object can be either an architectural mass or a part of a landscape. Just like light cannot stand for itself, neither can architecture.

Without light, the architecture space or object would be no use to human kind since we would not be able to perceive it (Ljuskultur, 2013).

“Architecture is the masterly correct and magnificent play of masses brought together in light. Our eyes are made to see forms in light and shade reveal these forms”

Le Corbusier, 1927

The difference between good and less good architecture was easy to spot in a time when the sun was the only lighting source. William Lam (1977) emphasizes light, both natural and artificial, as a form giver for architecture. Even though the possibilities became limitless, the possibility of lighting also allowed to make the environments straggly. For examples when a person putting up a lighting source in a public environment, does not consider the surroundings and how they are affected by the lighting.

History of Lighting in Zanzibar

Artificial light became of high value in Zanzibar in early developed Africa (19th century) because of its symbolic value of civilization. The people of the islands wanted to mark their advancement and introduced lights fired by oil around 1870 along the main streets of Stone Town (Khamis, 2001). Only ten years later, modern electricity was introduced in Zanzibar and the high society put them in their homes as the ultimate symbol of novelty, prosperity and cultivation. Electric lights were then installed to the entrance of many houses; both private and royal buildings.

The Bububu railway, built by the Americans in 1904, permitted for Stone Town to get electric street-lights, even long before London (Khamis, 2001). A glittering string of pearls, consisting of lighting bulbs reflecting in the ocean could thus be seen along the seafront of Stone Town already in 1906 (Khamis, 2001). A few of these first grand bulbs and massive glass domes are still possible to spot today. Even though most of them are copies of ancient models.

LIGHTING

Lighting Master Plan

Lighting Master Plans usually have the approach to create a more enjoyable environment for the city's habitants or to highlight certain valuable places or buildings. For example has Toronto and Ankara initiated Lighting Master Plans to raise awareness and values about their historical areas and buildings (Mackinnon, Hillier, Brandston, & Bray, 2011).

A successful lighting program for Zanzibar Stone Town may both stimulate the local public life and tourism as well as contributing to improve the infrastructure and orientation in the city. A recently completed restoration of the park Forodhani Garden at the seafront of Stone Town is a local example of what attraction-effect lighting can have on people and their use of public places. Improvements can still be made in this specific park, connecting the light design to the rest of the city. But it proves there is a need of raising awareness about how big role good lighting plays for the use of our environment, making people feel safer

and stimulating the use of our common public rooms. The use of sustainable lighting systems may at the same time secure the energy supply if combined with energy sources like solar panels.

The proposal initially addresses the problem that the locals seem to think that life in Stone Town was better before and that the city has lost "something" that it used to have. A lot of factors need to come into play to target this issue but better lighting to securing a higher quality of life may be one of them.

With a history heading back as far as over a millennium, a majority of the consulted habitants feel that the cultural values in Stone Town have been neglected ever since the revolution in 1964. This Lighting Plan does not propose a return to the past. History has shown that a society cannot be conservative if wanting to develop sustainably. It is therefore important to work with modern tools and methods to highlight the history. Succeeding to develop by cherishing the heritage.



Many Habitants of Stone Town seem to think that it was better “before”. It is an understandable argument when looking at the problems like this messy network of cables, which somehow symbolises the current situation in Stone Town. The Lighting Master Plan does however want people to look further and see the opportunities and possibilities. It will emphasize on the tangible and intangible assets that manifests in the architecture and spatialities of the city to promote a revitalisation and awareness of the values.

LIGHTING

Luminaires

According to the Lighting guide of Alingsås (2004) there are four types of armatures (with variation in form and function) that form the basis of public lighting. One of the most important factors in public lighting is how the fixture is distributing the light from the luminaire onto the environment, architectural features and objects (Alingsås, 2004). The distribution can be modified either by shielding the luminaire but also by reflecting it. For example can a light wall work as a reflector to light up a space instead of having a lamp in the middle of the space. These illustrations show how the luminaire will direct the effect of the light and in what spatial environment it can make the most out of (Alingsås, 2004).

Effects

The various objects of the city require different lighting effects to bring out the essential characteristics of their identity (Raine, 2001). The lighting in the spatialities also needs a variety of effects to adapt to the activities undertaken in each site. Buildings need other lighting than trees and a square or plaza requires other lighting features than a park. A wide range of lighting methods are required to bring out the identity of each element in the right way to meet the aim of this Lighting Master Plan. The achieved effects range over a broad spectrum. From techniques of gobo lighting for a glittering and playful effect to a calmer and dim up-lighting of foliage for a dramatic and massive impression of an ornamental tree. Examples of applied effects are to be found in Appendix 1.



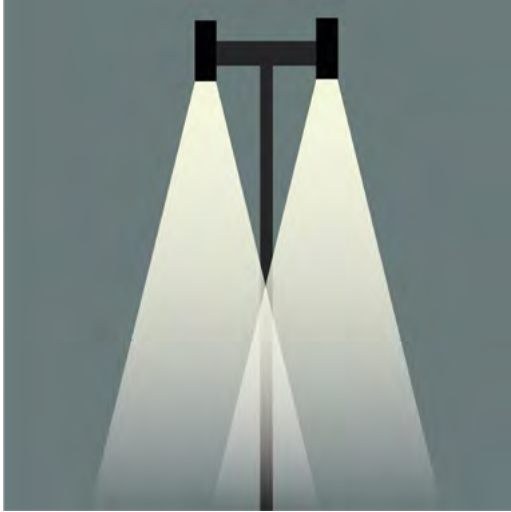
Semi-Shielding Luminaires

Semi-shielded luminaires spread light to the sides and downwards (Alingsås, 2004). This fixture is usually seen in old fashioned lamps as street lighting lanterns. There are many fixtures still to be found in Stone Town. None of them are however functioning today.



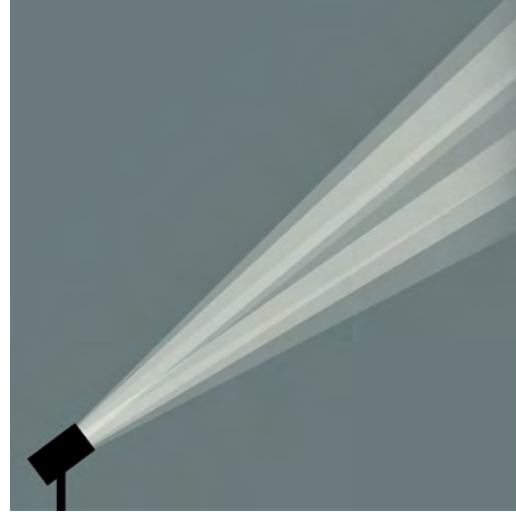
Unshielded Luminaires

Luminaires without shielding spread light in all directions. Unshielded luminaires are best used in smaller sizes or with a greater distance to the viewer to avoid glaring. They can also be softened with for example greenery, which partly covers but also reflects the foliage (Alingsås, 2004).



Fully Shielded Luminaires

Fully shielded luminaires only light in one direction (usually down or up) and can be put up in singular or plurality on either a pole or a wire. They are best complemented with other luminaires lighting up the surroundings since they are very delimited in their light distribution (Alingsås, 2004).



Spotlight Luminaires

Spotlight are used to point out a particular object or architectural attribute and the effects vary along with the light openings and diffusion angles (Alingsås, 2004). The spotlight is the luminaire with the least lighting waste. It puts the object in focus in contrast to the other luminaires, which light more in-distinctively.

RESEARCH

CASE STUDIES

Three case studies whereof two of Lighting Master Plans have been carried out to get inspiration and structural input. The Lighting Master Plans have been chosen to get a broader input from cultures and ways of working with light design around the world. Also city and monumental lighting have been consulted and have served as an informative basis for the Lighting Master Plan for Stone Town.

Atturaif, Riyadh, Saudi Arabia

The settlement of Atturaif, just outside Riyadh is based on the geographic home of the Kingdom of Saudi Arabia (Gilmore Lighting Design, 2017). It was designated as a World Heritage by UNESCO in 2010 and the conservation plans for the site as a museum and visitors centre were completed in 2014. The city is no longer inhabited so the whole area has been transformed into an outdoor museum (Gilmore Lighting Design, 2017). The best time to visit the site is in the evening since the temperature is more bearable after sunset. The Gilmore Lighting Studio has therefore made the conceptual Site Lighting Plan to be able to experience the place during the evening. The plan has served as inspiration since Atturaif, just like Stone Town, is a UNESCO heritage site as well as the urban tissue and architecture of Stone Town is partly Arabic.

Toronto Old Town

The Toronto Lighting Master Plan focuses on the urban heritage in the architecture and is a part of a Heritage Master Plan. It was developed to highlight the history of Canada and uses contemporary ideas and technology to highlight ancient architecture while still promoting daily life and commerce (Mackinnon, Hillier, Brandston, & Bray, Heritage Lighting Master Plan for Old Town Toronto, 2011). The Toronto Old Town is just like Stone Town an old city centre around which a newer city has continued to develop. This Lighting Master Plan served as inspiration for how to enhance the atmosphere of a preserved culture from an era gone by.

Souqs

The urban tissue of Stone Town has its origin in the Islamic culture of markets (souq or bazaar). Markets and trade has since the dawn of Islam been a part of its civilization. It was founded on pre-Islamic empires which pure existence depended on trade and agriculture. The bazaars or souqs has therefore played a central role in the development of cities throughout the Islamic world. It has often been a generator of urban tissue and definer of urban elements such as the barazas, overhanging protecting roofs or blankets and pendant lighting (Gharipour, 2012). The studies of lighting in markets has been used to revive the trade as the essence of Zanzibar culture.



REGISTRATIONS

This chapter presents the registrations of Stone Town that has been done in order to create a meaningful proposal. The registrations provides the reader with information to understand the historical circumstances and heritage that has shaped Zanzibar as well as it presents the current state of the islands. It further illustrates the current state in an, as objective as possible, narration of Stone Town in the dark.

REGISTRATIONS

PLACE
FRAMEWORK
INTERPRETATION
DIALOGUE



Zanzibar Islands

REGISTRATIONS

PLACE

Area

The archipelago of Zanzibar is located 6° south of the Equator in the Indian Ocean on the East-African coast. The islands constitute a semi-autonomous part of the United Republic of Tanzania. The name *Zanzibar* originates from the Arabic words *Zanj* for black, and *bar* for region as in *Region of the Black*, which they used for the whole Swahili coastline (Burton, 1860). When referred to properly, the name Zanzibar implies the both islands Unguja and Pemba, but often the name Zanzibar is used when only referring to Unguja, the bigger of the two sister islands. Coconut palm-trees and other vegetation is a common sight around the island which used to be covered by indigenous forest of which remains only small patches today (Encyclopædia Britannica, 2015).

Climate

The temperature is high throughout the year with a tropical monsoon climate according to the Köppen-Geiger system. The annual average temperature is 26,9 °C, oscillating between 25 °C as average coolest and 28 °C as average hottest. The annual precipitation is approximately 1 500 mm and falls mainly during the period April-May (Climate-Data.org, 2012). The monsoons and the rainfall regulate the seasons on the islands and controls many of the activities. In ancient times it controlled the trade, today the tourism. November to March is mostly hot and humid due to the northeast



monsoon. The Zanzibar summer is then followed by a heavy rain period, which lasts until June. It is followed by the cooler and dry winter associated with the southwest monsoon, ending with a short rain in November (IslandsOnly, 2013).

Daylight

The days are almost equally long the whole year around because of the closeness to the equator (Time and Date AS, 2017) which gives Zanzibar 12-13 hours of daylight every day. The sunset is a quite short process and the change between day and night is often referred to like “turning off a lamp”.



Day and Night



PLACE

Stone Town

The main city in the Zanzibar archipelago is the Zanzibar Town, which today consists of two parts. Stone Town is the historical part and UNESCO World Heritage site and Ng'ambo, east of Stone Town, is the more recently developed part. The formal urban development was mainly restricted to the peninsula of Stone Town approximately until

the 20th century. The following 60 years the development spread with informal settlements in Ng'ambo and has continued to spread ever since. Ng'ambo means "the other side" in Swahili and originates from a time when a big creek divided the two areas. The aqueous boundary was filled in 1957 and formed the basis of the today busy Creek Road.



ZANZIBAR TOWN

STONE TOWN

NG'AMBO

REGISTRATIONS

FRAMEWORK

This section presents a summary of the most outstanding events in the Zanzibar history, as well as intangible elements that are present in the everyday Zanzibar life today. The following pages will be highlighting happenings that have contributed to the structure of Stone Town. The name of the section is *Framework* since it paints the outlines of the Zanzibar identity that will form the foundation of the Lighting Master Plan. The factors presented in this section are crucial to know to be able to further correctly analyse the site and understand the potential of its values.





FRAMEWORK

The picture above shows the main routes where trading boats have been sailing over the Indian Ocean in the cycle of a year. As mentioned in the *Place-chapter*, the climate is the reason for Stone Town to even exist as a city.

Traders arrived to Zanzibar by the sailing boat dhow. The winds blowing in different directions made it possible to make a round-trip journey to the Arabian peninsula or Persia throughout one year. The North-East pointing arrow shows the June-monsoon while the South-West pointing arrow illustrates the monsoon starting from November (Byzantine Emporia, 2014).

All the goods and people that came with the monsoons to visit or live in Stone Town has affected the heritage and thus the identity of the city. All these merged influences provide the key to the design in the Lighting Master Plan. The following text summarises the Zanzibar history found in appendix 1.

History

Early times The Zanzibar history can be traced as far back as 1750 B.C. when the Sumerians sailed from the valleys of Tigris and Euphrates and reached the islands of Zanzibar (Mohammed, 2014). The communities that started to pop up around the Swahili coast came to be known as stone towns (Leech, 2017) and the stone buildings became a symbol of stability and represented a trading venue. Trading negotiations were primarily held on the baraza in front of the house or in the front rooms (Hirst K. K., 2015).

The Persians established trading routes throughout the Indian Ocean and started to settle in Zanzibar from the 11th century (Mohammed, 2014). The archipelago became the African outpost thanks to the sailing beneficial monsoon winds. The Shirazi, as many of the islanders call themselves today, is the result of the Persian influence on the regional (indigenous) Bantu people. The time period is considered being the foundation for the Swahili culture (Hirst, 2017).

Shirazi/Swahili

The Portuguese conquered Zanzibar in 1503. The downfall of the Portuguese empire started in 1622 and they lost Zanzibar in 1698 to the Omani rulers. The Portuguese manage to hold on to Zanzibar for nearly 200 years but their influence on development was limited to fruits like pineapple, cassava and maize (Cecil, 2011).

Portuguese

Arabs from the Omani empire took over the economic control over the northern part of the Swahili coast from around 1700 (Holmerg, 2017) and the capital was moved from Muscat in Oman to Stone Town in the 1830s. Plantations of clove were developed from its introduction in 1818. It came to be the base of the island's growing international trade, giving it the name Spice Islands (Royal Botanic Gardens, Kew, 2017). The dhow trade flourished during the Omani rule and the capital status attracted many Arabs to settle permanently in Stone Town. This large-scale occupancy led to the expansive development of city building that characterizes Stone Town today (Siravo, 1996).

Omani

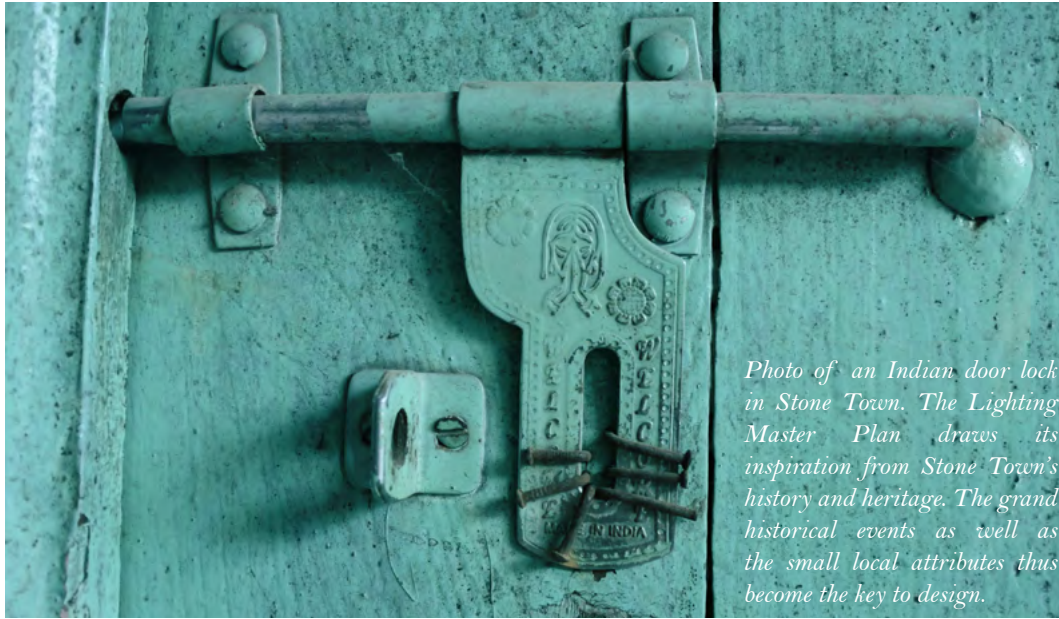


Photo of an Indian door lock in Stone Town. The Lighting Master Plan draws its inspiration from Stone Town's history and heritage. The grand historical events as well as the small local attributes thus become the key to design.

Indians in Zanzibar

Indians did not settle permanently until the 19th century (Sheriff, 2002). The Indians who did not come for trade were often skilled workers, building the houses with the massively decorated verandas of the wealthier 'Banians' (Sheriff, 1987).

Zanzibar Empire

In 1856, the sultanate of Oman was split in East Africa and Oman and the British were thoroughly involved in the process (Cecil, 2011). Under the cover of wanting to abolish slavery, Africa had been divided during the European race for land called Scramble for Africa, lasting from 1875 to 1914 (David, 2011).

British Protectorate

Zanzibar and Pemba were declared a British protectorate (not a colony) in 1890 and full independence was reached in 1963. The following year, the Afro-Shiraz majority rose and proclaimed a socialist one-party republic (Holmerg, 2017) and the Arabs who had always been favoured by the British in Zanzibar, longed to get back into highest power.

Nine Hour Revolution

A revolution was carried out in 1964, only by a few hundred men but widely supported by the ASP. 5 000–20 000 Arabs were slaughtered and many more fled, resulting in a loss of highly educated people and Zanzibari entrepreneurs (Cecil, 2011). The ASP wanted to secure their positions and therefore signed an agreement with mainland Tanganyika (Royer, 2012). This agreement resulted in the merging to form the United Republic of Tanzania in 1964 (CIA, 2017).

The new socialist politics halted investment in Tanzania and drained the economy. Stone Town's outstanding architecture suffered serious degradation due to lack of and financial support (Cecil, 2011). Luckily, Stone Town was nominated and listed as a UNESCO World Heritage in 2000, which led to improving the economy of the city (Cecil, 2011). An indicative structure plan, ZanPlan, was developed in 2015, providing an Urban Development Policy for Zanzibar Town, aiming to patch together the fragmented island with tolerance and respect for diversity, which used to be the essence of Zanzibari life.

At its peak, Stone Town was a pioneer in the terms of city development and constituted a corner stone of the Indian Ocean. The city was expressing its greatness through its architecture and in the service systems such as a railway, piped water and street-lights which they had as early as 1906, many years even before London (Khamis, 2001). After the Portuguese were driven away, it was a never-ending influx of various cultures to Stone Town during the 150 forthcoming years. The city developed into a multifaceted cosmopolitan and modern town with a broad diversity, unified in the trade while cherishing its architecture and culture (Shapira & Hellerman Planners, 2015). The tradition of openness and tolerance constructs a sound foundation for further development and imply a promising future for the city.

United Republic of Tanzania

Until tomorrow

Great Former Times

Shirazi Dynasty
1100-1503

Portuguese
Empire
1503-1698

Dhow boats

6th-8th centuries AD
Trade established with Muslim traders

8th century, Conversion
to Islam, first mosque built

9th century
Slave trade with
the Persian Gulf

11th-12th centuries, most coastal people
converted to Islam, shift in trade to the Red Sea

14th-16th centuries, shift in trade to the Indian
Ocean, culmination of coastal Swahili towns

Vasco da Gama sails
around Good Hope
Zanzibar conquered
by Portuguese

1750 B.C.

6th century

8th century

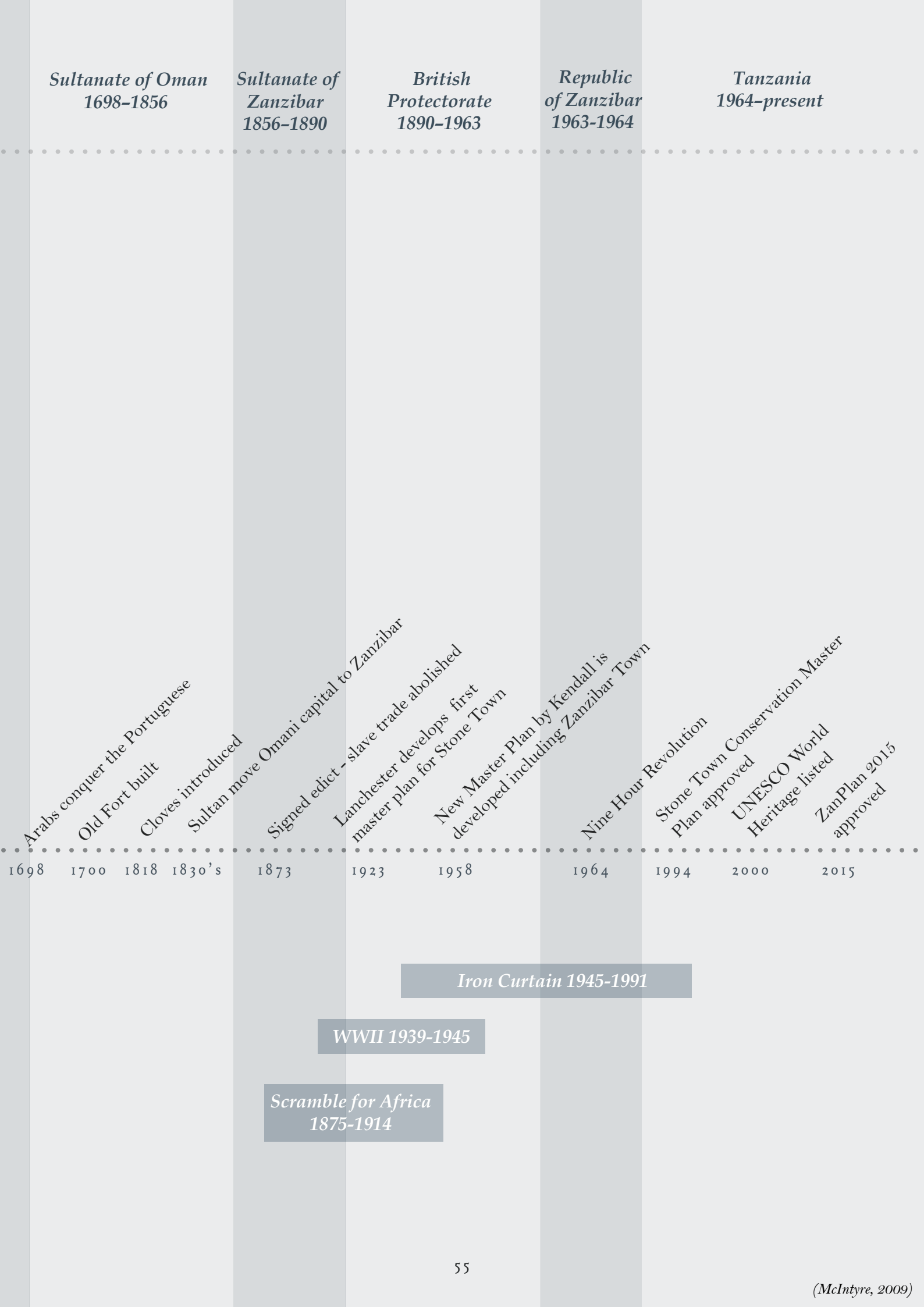
9th century

11th century

14th century

1499

1503





FRAMEWORK

Swahili Culture in Stone Town

Two major cultural traditions merge to form the Swahili civilization on the East African coast, Bantu- (south of equator in Africa) and Arabic-language cultures.

A series of harbor towns developed under influences from the interior of Africa and from the lands across the Indian Ocean. The loose confederation of small coastal city-states known as the *Zenj bar* operated in the 8th-10th centuries. The best preserved of these towns is Stone Town in Zanzibar, the name derived from the Perso-Arabic word meaning “the region of the blacks” (ICOMOS, 2000). Just like on the East African Coast, Islam is present in the everyday life in Stone Town with 52 mosques calling to prayer many times throughout the day. The majority of Zanzibaris are Muslims but due to the influence of numerous cultures there are also a few Hindu temples and Christian

churches on the tiny peninsula. The majority of the architecture is purely Arabic, developed during the Omani empire when the economy was on top. There are however strong African, Indian and British (European) elements to find in almost every street-scape. Swahili is today a cultural blend manifesting in clothing, music, architecture and cooking. People in the streets of Stone Town may probably say that it is a more of a relevant way of living rather than an ethnological study of the past. The truth is however that people are very proud of their merged and multifaceted culture (Juma, 2017) even though the buildings through which it partly manifests itself are crumbling. This pride is useful to the Lighting Master Plan and shows that there is a will to revitalize the intangible values by strengthening the tangible ones.





FRAMEWORK

Women in Zanzibar

One of the many ways of how Swahili culture can be expressed is through the kanga. It is a piece of cotton fabric, printed with colourful patterns with a border, *pindo* around the four sides and a central part, *mji* consisting of colourful patterns. Lastly and most mysterious is the inscription, *jina* of a proverb along one of the longer edges, meant to send a message to the reader (Yahya-Othman, 1997). The kanga is used for many things, carrying children, as clothing or as gifts. It is worn wherever Swahili is spoken even though the

Zanzibar kanga has a special name, *Merikani*. One outstanding function of Merikanis in communities where women have less power in the public space than men is that they provide a way of expressing themselves without uttering it in words. In that way, the *jina* of the Merikani constitutes utteranceship for those who cannot speak out in public (Yahya-Othman, 1997). It is a discreet yet effective way for a Zanzibar woman of speaking her mind about something of which she has an opinion since the addressee is never addressed directly.



The Jina (marked in pink on the woman sitting down) on the Merikani gives her a voice to speak out in public without saying a single word. Who she is speaking to though, can no one know for sure.

FRAMEWORK

UNESCO World Heritage Site

Stone Town was nominated as a UNESCO World heritage Site in 1981 and in 1999. The city qualified to join the list in 2000 on the following criteria :

Criterion (ii): The Stone Town of Zanzibar is an outstanding material manifestation of cultural fusion and harmonization.

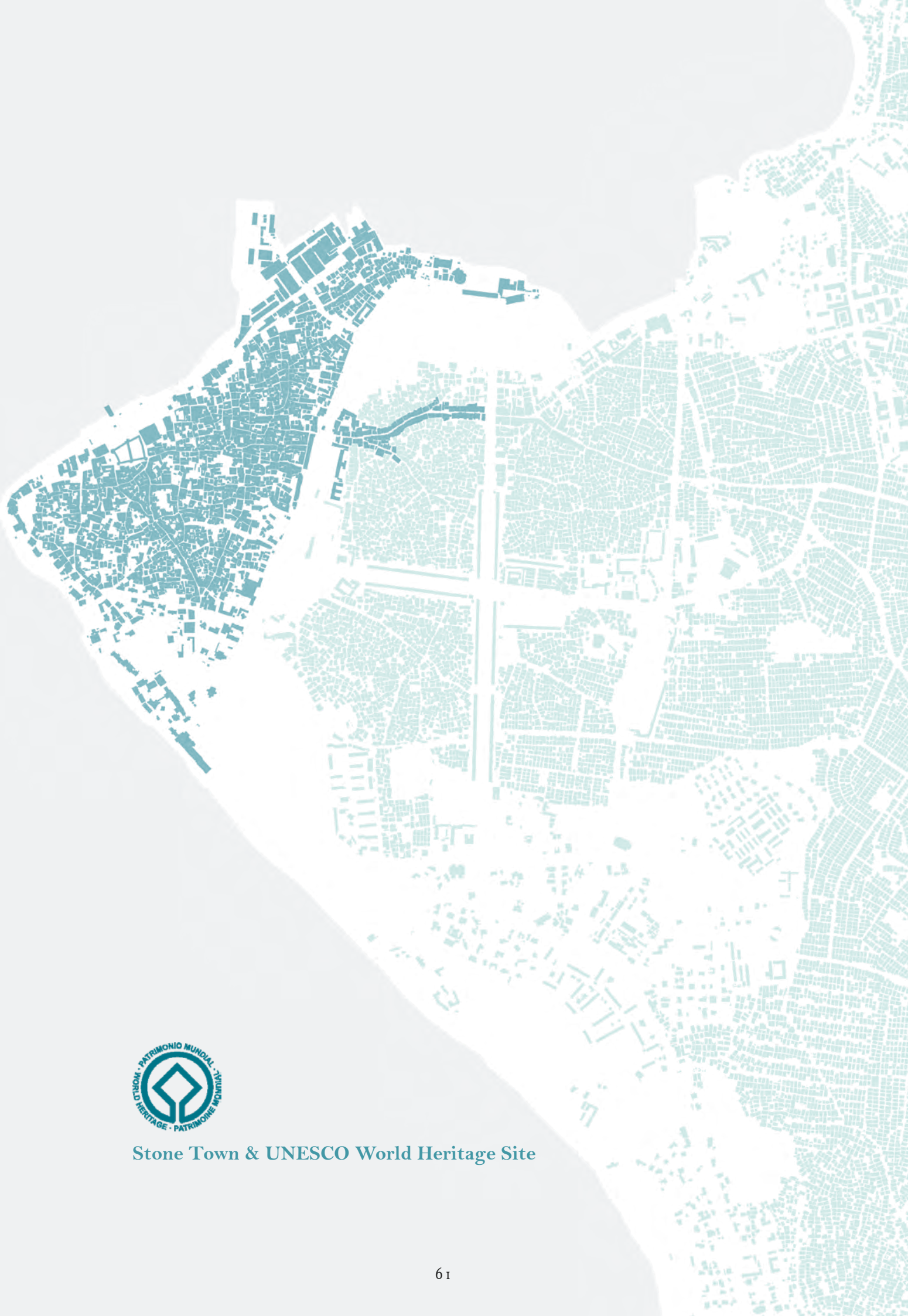
Criterion (iii): For many centuries there was intense seaborne trading activity between Asia and Africa, and this is illustrated in an exceptional manner by the architecture and urban structure of the Stone Town.

Criterion (vi): Zanzibar has great symbolic importance in the suppression of slavery, since it was one of the main slave-trading ports in East Africa and also the base from which its opponents, such as David Livingstone, conducted their campaign.

UNESCO (2000) finds that the broad spectra of cultures that have emerged in this unique urban environment, especially in its architecture, is the prominent reason for it to be preserved as a world heritage. While this very blend symbolises the Swahili culture at its

peak there are also certain buildings standing out from the crowd. These extraordinary buildings are ideal images documenting an architectural epoch from the main countries such as Oman, India, East Africa and Europe (British), that in one way or another have affected the Swahili culture. Zanzibar Stone Town is the only of the many former Swahili cities that still remains intact and inhabited. The other former prosperous Swahili cities of the East African coast such as Mombasa, Kilwa, Lamu and Bagamoyo have seen their old towns (stone towns) diminish in importance and population with only ruins remaining of their former glory days (UNESCO, 2000). As the only living urban environment representing this multifaceted society that previously thrived in the Indian Ocean, the Zanzibar Stone Town bears both tangible and intangible values of interaction between different groups and religions. The city is a great asset from which to learn, to preserve and to develop. Preservation of the city enables to show the possibility of different cultures learning from each other due to its status as a node for the whole African continent. Living side by side in symbiosis, with the trade as binding and unifying element.

Boats mainly used for excursion for tourists floating calmly in the Stone Town harbour awaiting better weather. Stone Town has always been dependant on the water and winds. In ancient times it controlled the trade, today the tourism.



Stone Town & UNESCO World Heritage Site

REGISTRATIONS

INTERPRETATION

Stone Town after sunset

When the sun goes down around 18-19 (6-7 pm), the city gets pitch black, and the dissimilar street lighting leaves much to be desired to experience the city to the fullest. The few light sources rather does more harm by glaring people than offering a pleasing setting. The glaring issue is intimidating for people walking around in the streets passing in and out through darkness since the eye needs up to one minute to adjust between light and darkness (Ljuskultur, 2013). This makes it difficult for pedestrians to detect irregularities in the ground and facilitates for criminals to sneak up on their victims from the shadows. It is obvious that the public space becomes more difficult to use during the dark hours because of the lack of streetlights.

Tanzania has recently ameliorated the electric line, putting down a new cable from the main land to the Zanzibar Islands. Even though there are still ruptures, the possibility of developing the public light has increased a lot thanks to this installation (Mtumwa, 2017). With sufficient lighting, bot locals and tourists will feel safer. Safety is a main prerequisite for creating good places and will serve the development of both the city and island in terms of attractiveness and tourism. Providing better lighting may not only make people feel safer but also ease the orientation in the maze

like pattern of streets in Stone Town.

While managing the conservation obligations to fulfil the UNESCO requirements, representing a bygone era, Stone Town also needs to satisfy the needs of a modern and developing society. Some efforts have been made of renewing the lighting system and some modern armatures with LED-lighting have been put up around the bigger roads on a public initiative as well as in Stone Town on private buildings. Armatures with various designs and lamps have been put up reactively as response to the need of better illumination. It gives a messy impression that does not go well with the old cityscape.

These initiatives are reactions to the government not doing its job well enough. Private initiatives are not per se a negative thing but the government should however consider these initiatives as an indication of an area in need of assistance and offer an overarching strategy for better coordination. The best thing would be to on a regular basis pro-actively identify the needs that are showing up in the community and to keep a constant dialogue with the stakeholders and citizens to satisfy these needs. Now there is a broad spectrum of private initiatives indicating that there is time for the government to deal with the public lighting.



Too strong illumination, creating great differences between dark and light.

REGISTRATIONS

DIALOGUE



The sheha is a local community leader appointed by the government. Mr Mohammed Juma Mugheiry has been the sheha for the district (shehia) Mkunazini since 1999 and thinks that the streets are busier today. He is focused on solutions and what the government can do to increase overall standards for certain groups in the public space. He see that women need better places to cook outdoors and better conditions to run smaller vending businesses in the streets. He points out how the car traffic has become worse the last 40 years and how they interfere with human in the streets without regulations. "New Mkunazini Rd is dangerous when it's pitch black and no-one can see anything. There are always cars trying to park everywhere in the public space" he says.

The series of interviews were of informal format and provided a good understanding for the current social issues and politics today in Stone Town as well as insight to events, behaviour, tales and local customs and values. The outcome was giving to get the overall picture and to understand the challenges of the project. The informal format of the interviews was however not resulting in comparable answers and did not contribute as much as hoped for which priorities to make in

the proposal. The common denominator of the answers from the interviewees revealed that they all think better lighting is a very good idea and something that is missing today in Stone Town. Some of the stories told about the Zanzibar history and happenings was used as inspiration for the design. Many of them were however told by local habitants in spontaneous conversations in the streets which makes it difficult to relate to an individual quote.



Munira Humoud, The Director of the organization Reclaim Women's Space, urges the importance of planning for women when ameliorating the public space. The decreasing safety levels in Stone Town concerns her and she thinks lighting is important for people to be able to see and look out for each other in the streets. She tells many stories of women's place in Stone Town and how it has fluctuated depending on the current rule (Hamouid, 2017).



In the interview with Mzee Khamis Juma, Head of Town Planning and Construction, ZUMC, the Urban Municipal Council, he pointed out what areas were undertaken and what areas the municipality would urge to implement lighting in. He also marked what areas people use and for what range of activities.

ANALYSIS

This chapter uses the experiences as well as facts and information which emerged in the site research and registration. The analysis further seeks to bring out common denominators that can either separate or bring together urban elements depending on their appearance in the registration. The analysis will be used to help make a final decision about which urban elements to enlighten in the Lighting Master Plan.

ANALYSIS

IDENTIFICATION
DEFINITION
OBSERVATION
PROGRAMME

ANALYSIS

IDENTIFICATION

Urban elements

The concrete aim of the Lighting Master Plan is for the intended illumination to emphasize the unique expression of each urban space or element while interacting with and bringing out the character of the urban area and local culture as a whole.

The Lighting guide of Alingsås (2004) accentuates the importance of highlighting the most essential in the expression of each site or object, and to get an overview and improve the prerequisites for easier orientation of the urban area. These areas and objects are further described, identified and referred to in a context of the Swahili and Zanzibar history in the ensuing chapter *Definition*. There are many different ways to analyse a city centre. In this Lighting Master Plan, the spatial analysis is inspired by the American architect Kevin Lynch (1960). The method is originally based on five different elements that he points out as central for orientation in an urban area; paths, nodes, areas, landmarks and borders. They are however slightly modified in this analysis for Stone Town; Space, Path, Place, Landmark

and Attribute. The reason for the modification is partly because the original elements are not totally applicable on the architecture and urban tissue of Stone Town. The purpose of the cityscape analysis of Stone Town is to bring out:

- *The most important in character and function of the place to be highlighted.*
- *Give a picture of the urban activities that are undertaken in the area.*

Here follows a definition of the five terms of spaces and architectural objects identified in the spatial analysis of Stone Town. Consideration has been taken to prevailing urban structures, the local use of spaces and range of cultural attributes. The selection is made to fit this case, with the main goal to improve the public spaces with light design. Having a landscape architectural approach to the city may define some spaces in a different way than already has been done. This is the structure for which I suggest the department to continue their work if implementing the suggested Lighting Master Plan.



1. Space is a larger continuous part of the urban area that have a common character or expression, such as a green area or a grand open square.



4. Landmark is a monumental building that is noticed because it stands out in terms of height, shape or colour standards of its surroundings. Landmarks can be used as points of guidance when orientating.



2. Path is a road, street or alley. It connects points of interests and promotes movement in two approaching directions.

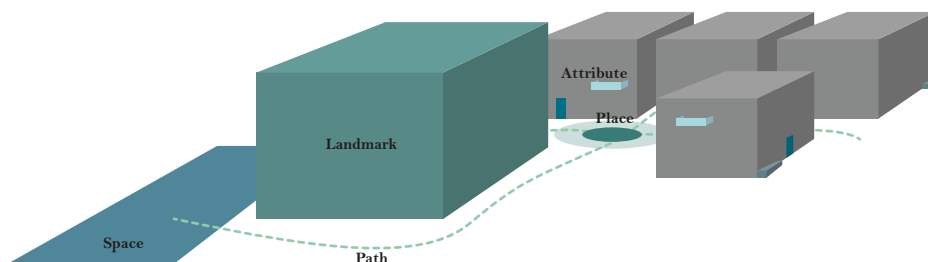


5. Attributes are architectural details that has a bearing in the local culture and repeatedly stands out because of either their use or their aesthetic expression.



3. Place is a node where different paths meet in more enclosed forms than *Space*. These places are often characterized by being meeting places. It may be, for example, smaller squares, crossings, gatherings or bus stops.

“The urban elements used in this analysis are slightly modified from Lynch’s well known method. In Stone Town they are: Space, Path, Place, Landmark and Attribute”



ANALYSIS

DEFINITION

Spatialities

1. Spaces

The common definition of the spaces is that many activities are going on at the same time, not dependent on each other and with people moving in many different directions. The spaces are open or semi-open and the entrances vary in number. The intensity is varying with the amount of destination points within and in and out of the space but the intensity is usually high and busy. The dimension of space is drawn from Paul D. Spreiregen's book *Urban Design: The Architecture of Towns and Cities* (1965). He classifies spaces as open urban areas with borders within the range of 24 - 140 m since this is the maximum distance for being able to recognize human body action and movements. Parks are also classified as spaces but with a lower pace and vegetation that both prevents from motor vehicles entering the area as well as they attract activities for more recreational purposes. The range of activities that can be performed in a *Space* vary between these two under categories. The main identity is however for their capability to hold big amounts of people at the same time that can undertake different activities without interfering with each other.

2. Paths

The urban tissue of Stone Town consist of over 300 narrow alleys, irregular in shape and directions, reflecting the Omani architecture. The small shops are crowded along the narrow alleys of Stone Town and often tend to extend outside, occupying the closest barazas. The shops make the streets come alive throughout the day and the street character highly differ regarding the shop's opening hours. Stone Town developed during a time when the main way of transportation was by foot. The motorized traffic has increased since then and has now reached an intense level of use for which the city was not constructed (Siravo, 1997). The government has taken action, trying to prohibit motorbikes on the narrow streets (Badrudin, 2017) even if the results of these actions are still to await. The bigger roads in Stone Town go around the city, along the seafront and between Ng'ambo and Stone Town. These have been dimensioned for car traffic and especially Creek Road is very busy. The horns are frequently used and bumps in the roads are a common sight.



The narrowness of the Stone Town alleys diminishes the scale, the barazas outside every home provide seating and ceilings can easily be created by hanging up textiles. The Stone Town public living room is just outside the door and is a natural part of the Swahili-culture.

DEFINITION

3. Places

Places are public meeting spots, defined by their semi-enclosed form. The specifying factors derive from Spreiregen's (1965) definition of an *Intimate Outdoor Space*, which are limited to 24 metres or less from side to side, enclosed by buildings. He affirms that this is the maximum distance at which one can recognize details of a human face. As a direct effect of their size, the places holds fewer people than a space. The activities going on are also carried out in a lower pace. The places are accessible for everyone during both day and night since they

are nodes where paths connect. People are seen selling fruits on the barazas, old men drinking coffee while discussing politics, women selling samosas from the coal fired pan, men of all ages playing brick games or girls chitchatting about people passing and tourists getting lost. These places are full of wisdom and knowledge and is where people gather to meet and interact as in a public living room. Many of the places bear unfortunately no names why an added identity by light design may stimulate to bring out a stronger character.





DEFINITION

1.1 Parks & Green Areas

Trees and green areas are limited and valuable resources in Stone Town. The biggest green areas are however found outside Stone Town, acting as buffer zones for the UNESCO World Heritage Site in order to prevent from dispersion of settlements or buildings. The official parks are usually used for recreational purposes, mostly by boys and men since they are not as restricted in their clothing to exercise as the women and girls. These parks

are also provided with some lighting, especially Forodhani Garden which is a big gathering place because of the food market that takes place every night. Some of the parks and green spaces are frequently used and crowded while some are almost deserted at night. The use of green areas depends therefore largely on the range of light, resulting in the unlit parks being limitedly used when the temperature is the most pleasant for outdoor activity.

1. Forodhani (Jamituri) Garden
2. Victoria Garden
3. Hubbard Park
4. Mnazi Mmoja Grounds
5. Vikokotoni
6. Shangani Gardens
7. Jamhuri Gardens
8. Malindi Grounds
9. Peace Memorial Park
10. Old Fort Park





6. Shangani Gardens



10. Old Fort Park



8. Malindi Grounds



9. Peace Memorial Park



1. Forodhani Garden. The trees offers shadow throughout the day and is a quite peaceful place when the sun is up. Hanging out in Forodhani garden by night is more of an experience and a treat for the eye. Freshly cooked food, lights and activities going on everywhere. The park wakes up from its daytime nap and starts to live. What if light design could activate the rest of the relatively dark city in the same way?



Photo: Wikimedia commons

DEFINITION

Edifices

4. Landmarks

The most valuable buildings in the Stone Town are given extra protection by the law through 'listing'. The Grade 1 listed buildings are marked on the map. According to Aga Khan (1994), p 1.19 THE LAW STATES: Part 1V, 32 (2)


1. No alterations or additions to the building are allowed, either inside or outside.

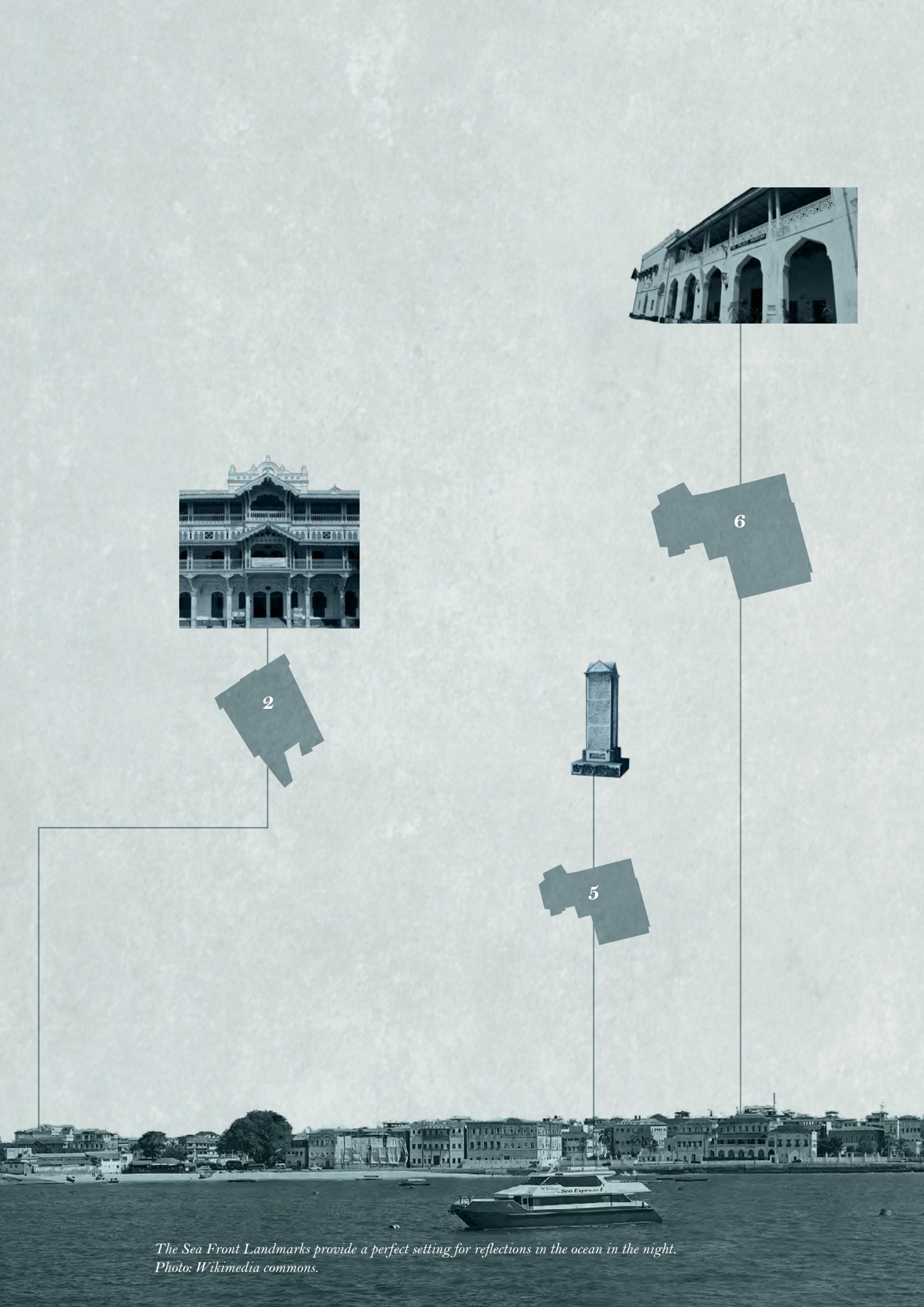
2. In very exceptional circumstances, the STCDA may allow minor changes, but any building work must preserve and/or renovate the original.

3. This means using traditional materials and techniques (See Construction Guidelines). Always follow the Good Practice Guidelines.



12. The Market

- 
1. The Malindi Mnara Mosque
 2. The Old Dispensary
 3. Kjoa Ismailil Charitable Musafarkhana
 4. The Bharmal Building
 5. Royal Tombs
 6. People's Palace
 7. Royal Baths
 8. The Hindu Temple
 9. Aga Khan Mosque
 10. Minaret of the Shia Ithnasheri Mosque
 11. Darajani Chawls (Indian Bazaar)
 12. The Market
 13. House of Wonder (Beit al-Ajaib)
 14. Old Fort
 15. Tembo House
 16. Former British Consulate
 17. Mambo Msiige
 18. Kilosa House
 19. St Joseph's Cathedral
 20. The Hamamni Persian Bath
 21. The Angelican Cathedral
 22. The Tippu Tip House
 23. The High Court Building
 24. State House
 25. Mnazi Mmoja Hospital
 26. The Peace Memorial Museum



*The Sea Front Landmarks provide a perfect setting for reflections in the ocean in the night.
Photo: Wikimedia commons.*



13

14

16

15

19



Religious buildings



The Malindi Mosque



The Hindu Temple



The Angelican Church



DEFINITION



5. Architectural Attributes

The characteristic architecture of Stone Town manifests itself through centuries of mixed cultures. 1 709 buildings were identified in Stone Town in 1985 whereof the majority were Indian shop fronts and Arab-influenced structures. The alleys are narrow and the buildings are proportionally high which provides much needed shadow for the hot days. The buildings and structures are often visibly connected to the culture of Islam through symbols or distinctive features. For example are some buildings connected with walkways, of which 13 remains in Stone Town today.

These walkways allowed for women to leave the house without entering the streets (ZSTHS, 2002) (Pitcher, 2004) since the outdoor space traditionally were for men and the home for the women (Quran, 33:33). Further inventory of Stone Town also register 43 barazas, 127 balconies/tea houses, 14 doorways and no less than 277 carved Zanzibar doors (UNESCO, 2000). The abundance of these distinctive features may get people to see them as ordinary elements in the urban structure. They are now deteriorating from year to year since they are not valued and maintained properly.



One of the 13 passages, found just behind Old Fort, which can be seen in the background. The men are walking in the street, where are the women?



The doorways marks an opening to a semi-public place. The carving of doors and doorways is a local craftsmanship that is still performed in Stone Town today.

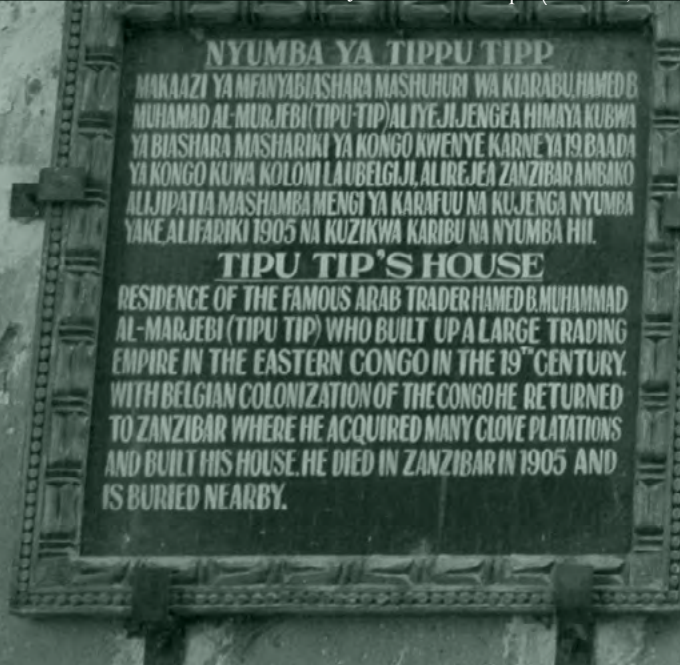


DEFINITION

5.1 Doors

The doors are beautifully carved with brass spikes on the front. They originate from India where they were meant to protect from elephants. There are obviously no elephants on Zanzibar but the brass spikes remain as vital elements to show the wealth of the family who built the house. There are usually three

types of Swahili doors, the Arabian, the Indian and the African. The eldest one is inspired by Arabian architecture and has a square form while the Indian has a rounded top. The African door is the most modest one, usually without brass spikes and with a rectangular shape (Pitcher, 2004).



The trader Tippu Tip was a feared and well-known slave trader in Zanzibar. His wealth shows well on the door of his house.





Decorative wooden carvings, usually derived from Indian models, are found throughout Stone Town.





DEFINITION

5.2 Balconies

The balconies of Stone Town are closely connected to the Indian heritage. The tale says that the Omani traders brought Indians to Zanzibar to build their houses in Stone Town, since they were the ones who usually built their homes back home. Also Indian merchants came

to settle in Stone Town and eventually came to build their own houses but then in their own style. Especially the balconies are Indian attributes that enriches the street scape with fascinating elements of detailed handicraft around every other corner (Pitcher, 2004).



Many beautiful details are to be found in Stone Town. Balcony grids, has great pattern designs which can serve as inspiration for lighting design. By using already existing features, the design proposal will harmonize with the environment and tie on to the identity of the place.



DEFINITION

5.3 Barazas

The baraza is a bench fixated to the façade and plays a main role in the Swahili culture. Some people even talk about a Baraza culture. Everything can happen around the baraza. Kids are playing, people are chatting, having coffee or tea, selling fruits, cooking. As well as the baraza is a part of the public space and open for everyone, the baraza is also the public living room to which the family moves

out when it's too crowded inside the building. Or just because of the reason that it is nice to look at people passing and you're curious. Traditionally, the baraza was the place for the man in the family to receive guests or to deal with foreign traders. In that way the woman of the family would not be disturbed or risk to be seen by other men than the family in her own house.



Stairways and barazas are often combined, making the entrance of the family store or home become a place where private and public merge. The line between public and private is blurred out in the semi-private space of the baraza.

ANALYSIS

OBSERVATION

Social Analysis

Light is needed where people are. Activities may also take place where people find suitable light to carry out their activity. William M.C. Lam (1977) alleges that all cities are the built result of human activity and that a luminous environment makes it easier to attend the information needed to perform a certain activity successfully. Lam (1977) emphasizes the importance of first analysing the activities one believe will take place in the case study area, secondly list them according to their various characteristics, determine each activity's different need for visual information and lastly to assign them priorities. Lam also

highlights that there are optimal conditions under which we ideally would like to operate for each activity. Many of the areas or objects in the previous Definition do not have a pure character or function but are used for many different purposes and activities that may vary along with the prevailing circumstances. This complementing social analysis indicates the level of activity of the spatialities (Space, Path, Place) and whether it is intense or low key and what amount of people is using the space. The identified areas of activity forms the basis for the guidelines for which light to use in which place and for what purpose in the Lighting Master Plan.



High key activity node



Low key activity node



Green meeting node



High pace paths



Low pace paths

Detailed activity
observation of:

1. Space: New Mkunazini Rd
2. Path: Soko Muhogo St
3. Place: Jaws Corner
4. Landmark: Old Fort



PASSING
WATCHING
CHILLING
SELLING
RELAXING
DISCUSSING
DEVELOPPING
OPENNESS
COMMUNITY
INVESTING
DRINKING
TALKING
LOOKING
BRAGGING

3. Place: Jaws Corner

INFORMATION
VENDING
PARTYING
PASSING
EXPERIENCING
HISTORY
EXPLORING
LEARN
LISTENING

4. Landmark: Old Fort

EATING
DRINK
PRACTICING TRADE
CONNECTING
MARKET
RECIDENCE
CHATting
EXPLORING
STROLLING
VENDING
SELLING
OBSERVE
WALKING
COOKING
PASSING
BARGAINING
BIKING
SITTING
PLAYING

2. Path: Soko Muhogo St

LEARNING
LUNCHING
PRAYING
DINING
PLAYING
COMPETING
CHATting
TALKING
STROLLING
GOSSIPING
DISCUSSING
SHELTERING
TEACHING
ARRIVING
ENTERING
SPECTATING
EATING
WALKING
PARKING
OBSERVING
WAITING
WATCHING
CYCLING

1. Space: New Mkunazini Rd

Activities



Sports and Play at the Sea Front- High Key Activity Node



Trading at the market - High Key Activity Node



Fishing at the Sea Front - Low Key Activity Node



Gathering at Jaws Corner- Low Key Activity Node

ANALYSIS

PROGRAMME

The programme defines how each of the identified spatialities or edifices should be perceived with added lighting; the activities and functions of the site, from the everyday public activities to the periodic bigger events. This programme of Stone Town seeks out to define how the urban elements and spatialities are organised and to determine how to add light to the site in the best way to enhance place identity. The programme definition is a well known method in architecture and landscape architecture. This precise description is however retrieved from the architect Sophie Hamer at Portico (2017).



Spaces - Parks

Facilitate for activities such as sports, picnics or spontaneous gatherings.



Spaces - Mineralised

Place light to encourage spontaneous activities and private initiatives such as vending, cooking in street kitchens and strolling. Aim to bring back the cosmopolitan and joyful atmosphere of Stone Town in the 1800's.



Paths

Bring out the feeling of an intimate and secure place to pass through in a genuine Zanzibari slow pace. Use lighting that is shielded downwards to avoid glaring.



Landmarks

Make the grade 1 monuments and landmarks the crown jewels of the Zanzibar "urban exhibition". Make them stand out by adding facade lighting, upwards or downwards. For some even with a little colour.



Places

Turn the places into unique water-holes where the atmosphere is welcoming to everybody to sit down and have a chat with whomever.



Attributes

Make the unique attributes of Stone Town surprise the person passing by. Make them stand out all by themselves in their craftsmanship with a spotlight or add a little extra colour..





PRESENTATION

This chapter presents the Master Lighting Plan divided into three chapters. The overarching strategy explains the direction for the development of Stone Town with the help of light design. The guidelines are indicative about which concrete actions to undertake for different urban spaces or attributes. Lastly, the Application chapter suggests five conceptual project proposals, showing how the guidelines may be applied in reality. The ZanPlan 2015 as well as the Stone Town Conservation Plan has been studied and taken into consideration. This Lighting Master Plan should be seen as a complement to these documents.

PRESENTATION

STRATEGY
GUIDELINES
APPLICATION

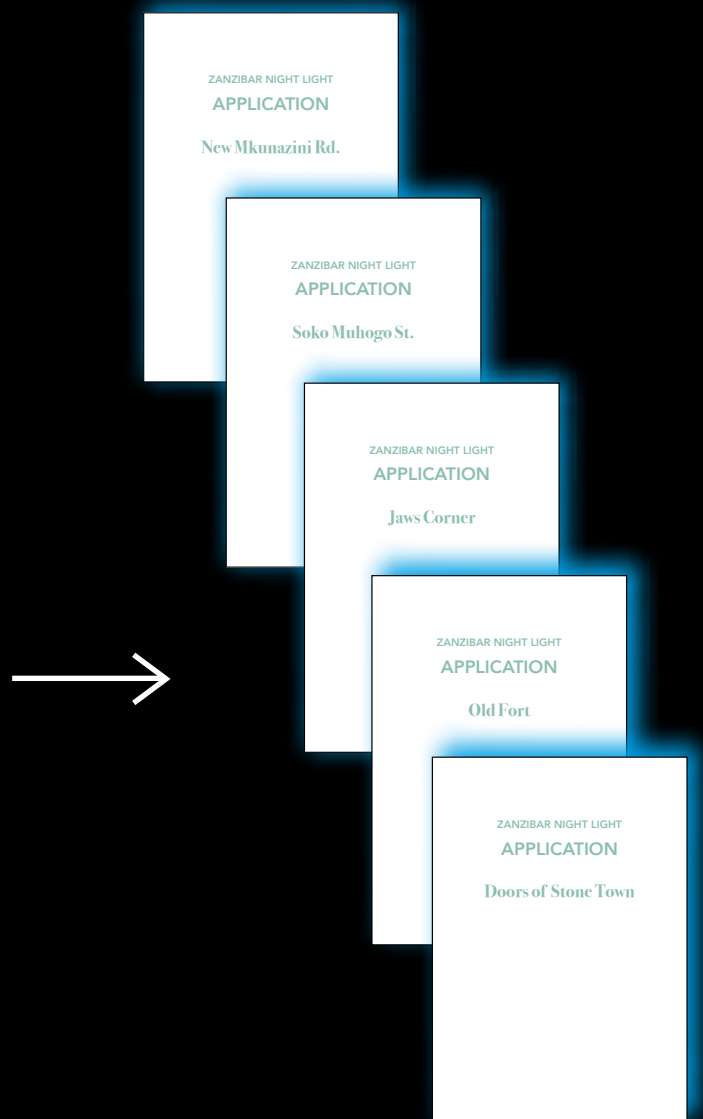


Potential illumination of House of Wonders to enhance the impression and point of orientation of the landmark

HOW TO READ THE MASTER LIGHTING PLAN
AS A TOOL FOR IMPLEMENTATION

ZANZIBAR NIGHT LIGHT
LIGHTING STRATEGY

Stone Town
Mji Mkongwe



PRESENTATION

STRATEGY

WHY?

The *Strategy* chapter of the Lighting Master Plan consists of key-positions on the importance of light and principles for lighting in Stone Town. It provides the overall approach for how to strategically think when taking the first steps of implementing the Lighting Master Plan *Zanzibar Night Light*.

The *Strategy*, based on the place attachment research explains in six strategical principles on the opposite page **why** a Lighting Master Plan would increases the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town.

Lighting in the city would affect many people and is a matter for its inhabitants and visitors as well as all the property and business owners, which form an important part of the city's character and also affect its light. Cooperation is a prerequisite for a successful implementation. *Zanzibar Night Light*, is a communicating tool aiming to facilitate such cooperation.

Introduction

Lighting has a major importance in how to create pleasant urban environments and is probably one of the most important factors to help people orient themselves as well as increasing the safety levels. City attractiveness is mainly created in the city's public space since it is available to everyone and promotes meetings between people. A sustainable city

should be energy effective and can be regulated with the choice of lighting source. Energy-efficient lighting is developing from day to day and should be used as far as possible. The technical details are not specified in this Master Lighting Plan, but they have a major impact on both operating costs and sustainability aspects.

Today

Stone Town has been shaped by different groups wanting to put their own mark on the city. Architectural expressions has taken place since the 6th century AD when the trade was established. The architectural difference between certain areas has almost been wiped out and today whole Stone Town is a melting pot of different architectural elements making this old town unique and worth preserving.

Aim

The overarching Strategy describes the objectives meant to be reached by the *Lighting Master Plan*. Lightening of Stone Town should be based on the city's diversity of architectural features and environments. Each specific location shall provide inspiration for how the lighting should be designed to increase the sense of place attachment. The lighting should also visually relate individual objects all over town, aiming to create a unified whole. That implies different solutions at different locations linking them together throughout the city.



6 Strategic Measures

To undertake to enhance a positive revitalization and awareness of values in Stone Town

1. Strengthen the place identity and thereby the place attachment

Lighting up culturally unique elements will make them stand out for visitors and locals. Putting these unique elements in a new light will strengthen them as symbols for Stone Town and Zanzibar.

2. Increase the level of Safety

Pedestrians are vulnerable and hard to spot in the dark. A nocturnal lighting setting makes the city easier to use during the dark hours. Attractive and well-distributed light public space will promote spontaneous activities and attract more people. The presence of people is in turn leading to individuals feeling safer in the streets. Feeling safe is closely connected to the ability to attach to a place. Lighting used for safety may therefore increase the attachment to a place.

3. Facilitate orientation

Well-lit connections throughout the city that makes it easier to find the way and connect bigger nodes. The surroundings are easier to read when you can see more of them which makes it easier to know where you are. The ability to memorise places is a precondition for creating an identity around that place and a facilitation of orientation would therefore promote place attachment.

4. Aim for sustainability

Providing the infrastructure with more lighting requires sustainable alternatives. LED-lights will minimize the cost of electricity for public lighting as well as it will provide more opportunities for design than traditional lighting sources. A well-governed city that promotes sustainability and a good service level is most likely easier to develop in and attach to.

5. Investigate how security levels might increase with lighter environments

The chances of stumbling or for interferences between people and vehicles decreases when the surrounding are better lit. The risk of assaults and robberies may also decrease when the perpetrator cannot hide in the dark. Being able to walk around without being afraid in your neighbourhood is a key to be proud over your city and feel more attached to it.

6. Preserve heritage to influence the future development

Enlightening typical Swahili-Coast elements strengthens the culture and consolidates its position in the community in the future. If your faith is strong, you may also be more susceptible to develop yourself and your society. Adding light design to highlight cultural elements will preserve the identity of the past while moving into the future.

PRESENTATION

STRATEGY

The areas shown in the plan are the public spaces that according to the analysis should be lifted and enhance with light design. The added lighting is based on the analysis of where people go and gather as well as elements that are considered parts of the Zanzibar heritage. It should connect areas through a web of alleys. If the locals enjoy their space, they will feel included and proud of their environment,

which will affect the atmosphere in the city. The lighting in Stone Town will be inspired of the diversity of different environments it consists of. The specific location however, always has the last saying in terms of lighting and choice of fixtures. It might therefore imply different solutions at different locations. The aim should however be for them to follow the guidelines to create a connectivity all over town.



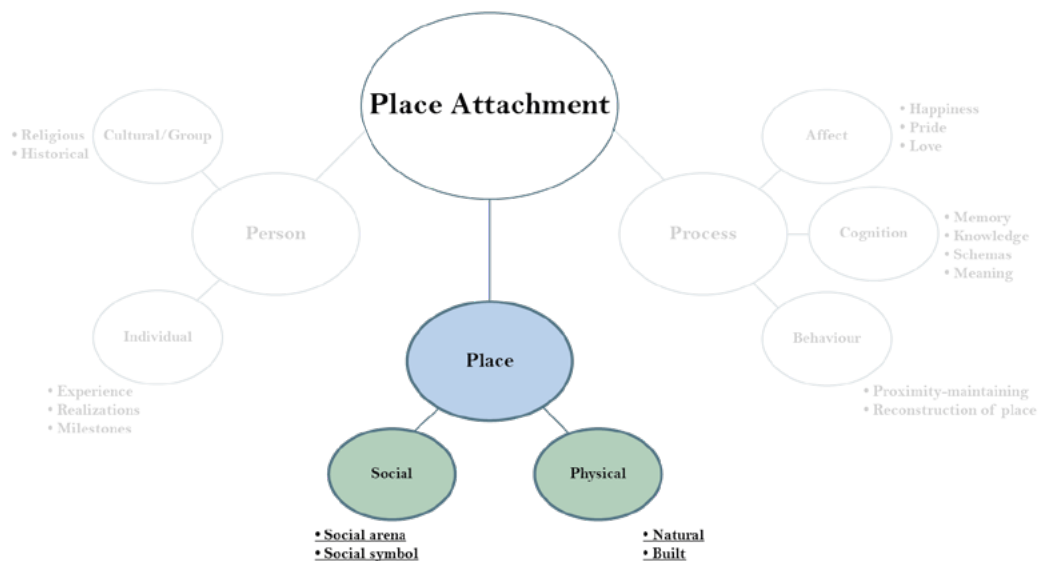
PRESENTATION

GUIDELINES

WHAT?

The Guidelines for the Lighting Master Plan are presented to give clear instructions to those implement the Lighting Master Plan in Stone Town. The *Guidelines* aim to advise **what** actions to undertake to increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town. All five urban spatialities or edifices; space, path, place, landmark and attribute, are submitted with a plan illustration and

an explanatory description. The *Guidelines* aim to illuminate the spatialities and edifices with reference to a place attachment factor corresponding to their unique expression. Each element has been given either a Social or Physical under-category of the tripartite model of *Place* and the lighting effects have been chosen and adapted to enhance these criteria to strengthen the place identity.





The quotidian presence of religion is one of Zanzibar's most intangible values. Traditionally dressed Muslims are a common sight. The stunning surroundings offers a excellent moment to watch the sunset before attending Ramadan evening prayers and then breaking the fast.

Additional lighting might change the outcome of the social/activity analysis done for the Lighting Master Plan, why a test lighting period should be conducted for every site that is planned to be lit up. A

careful analysis of the preconceptions and lighting needs of the specific site is then recommended for the possibility to adjust eventual consequences before permanent installations are applied.



GUIDELINES

Spaces Lighting

Mineralised Space

The spaces in Stone Town are used for many different activities. The lighting therefore needs to suit as many of them as possible while still maintaining unifying for the whole space. The spaces should have a good overall lighting with luminaires on poles providing an even down lighting. A space should have at least one overall common lighting factor characterizing it even though the borders may vary depending on the impression of the individual. Features of surrounding elements such as patterns or textures can therefore be used as accent lighting through pole mounted spotlights. This will create a relation to the surrounding

façades and ground. The overall ground lighting should be neutral in colour since a lot of colour may be disturbing in such a grand public space. The space usually contains other urban elements that may bear colours why these would contribute with enough colour to the space. The added accent lighting through spotlights may be provided with some colour. To avoid disharmony the surrounding facade elements however always should have priority if choosing which element to have a colour. Spaces should be enlightened so that people entering the area are visible for the people already in the square and for people to easily find the ways out.



Mineralised Spaces

- New Mkunazini Rd
- Darajani Market
- Dala-Dala Bus Station
- Sea Front
- Port

- Lighting to suit a variety of activities to encourage spontaneous initiatives
- Luminaires on poles providing an even down lighting
- One overall common lighting detail characterizing the space
- Keep the ground lighting neutral in grand spaces
- Enlightened entrances to the space for safety and orientation



GUIDELINES

Space Lighting

Green Space

The lighting in parks should be a bit more dimmed than the light in a mineralised space since parks usually are calmer and fewer people use them during the evenings. The parks should therefore be enlightened for recreation but also to enhance the impression of the vegetation. Lighting should be placed so people cannot hide in the bushes without being seen to increase the level of safety for the every day stroller. Paths should be lit with tight distance pole mounted and fully shielded down lighting. This creates a soothing atmosphere while avoiding dark

ruptures. The flow of light should be evenly distributed. There should be extra light around sitting areas like benches and gathering spots. Bigger fields of grass should preferably be enlightened with timed lighting that provides an even and clear light from luminaries on high poles. These can be turned on for a limited time by those who wants to use it whether it is for a game of football or a grand festival celebrations, for which activities these spaces usually serve.



Green Spaces

- Forodhani (Jamituri) Garden
- Victoria Garden
- Hubbard Park
- Mnazi Mmoja Grounds
- Vikokotoni
- Shangani Gardens
- Jamhuri Gardens
- Malindi Grounds
- Peace Memorial Park
- Old Fort Park (inside)

- Even light on both paved paths as well as trees and bushes
- Lighting to encourage recreational activities
- Lighting to enhance the impression of the vegetation – colours can be striking
- Extra light around seating
- Decorative lighting in the ground

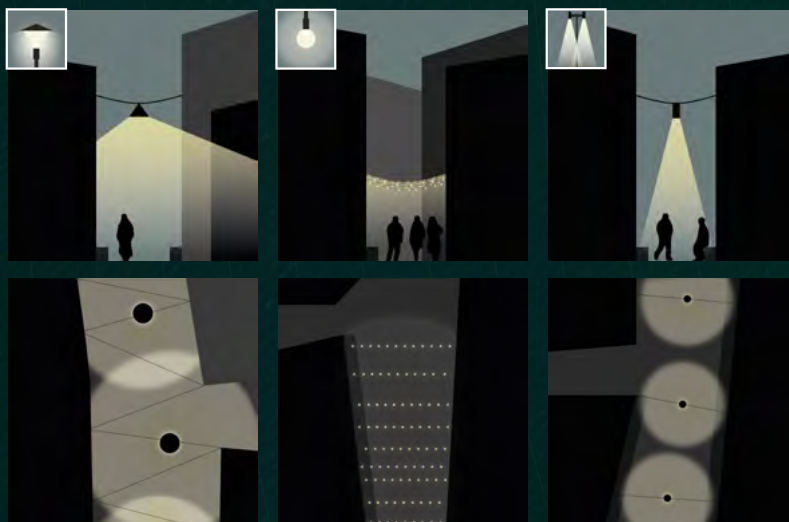


GUIDELINES

Path Lighting

It is necessary to take the ambient light of commerce into account when installing additional armatures in order to avoid over lighting. Lighting in walkways needs to be both on aesthetic assets as well as on the ground pavement to prevent accident. It's important for people to be able to see where they put their feet as well as the face of people they're meeting. The height of the lighting armature needs to be in relation with the scale of the walkway. The broader the passage, the higher up should the light come from. A good base lighting is wire-mounted luminaires that are either semi-shielded or fully shielded. The choice of luminaires depends on the width of

the street and the atmosphere desired. 3 metres or less is intimate enough for a fully shielded luminaire while a broader street might need a semi shielded lamp. The main difference that distinguishes the alleys in Stone Town is whether it is a mainly residential street or mixed use alley with shop fronts and housing on top. The prime lighting grid (shown on the plan) should focus on the shop front alleys since they are used by more people and more activities there need light. The lighting should bring back an atmosphere of a market to relate to the history of trade in Zanzibar. The lighting should therefore also be distributed on many small lighting sources as complement.



Streets

- Changani St
- Cathedral St
- Baghani St
- Pigawadi St
- Mkunazini St
- Tharia St
- Changa Bazaar
- Darajani St

Roads

- Kenyatta Rd
- Kaunda Rd
- Vuga Rd
- Creek Rd
- Mizingani Rd
- Malindi Rd
- Jamatini Rd

The roads need greater amount of light than streets because of security reasons. The security level should therefore have a bigger focus since humans interfere with motor-vehicles. Pole mounted semi-shielding lighting provides an evenly spread lighting from a distance of 6-8 metres. Solar-panel luminaires are preferably used on these roads to avoid ruptures in the electrical system.

- Wire mounted semi-shielded or fully shielded luminaires depending on the width of the street as a good base lighting
- Many small lighting sources to attain an atmosphere of a market
- The lighting should be treated regarding the shop opening hours
- Sail like covers can increase the lighting through reflection



GUIDELINES


Place Lighting

The places are enlightened with lighting inspired by local culture and customs. The atmosphere should provide for activities to go from high to low key but treated like a smaller room. The places in Stone Town are not big but act more like openings in the street scape. Therefore they still contain the same activities as in the streets but can include a bigger amount of people. The barazas encompassing the place are provided with a soft down lighting for those wanting to sell something, do some handwork, play boardgames or just chat over

a cup of coffee and some dates. The centre of the place is where the colour comes in. Picking up colours from details on the buildings surrounding the places, a frame of that colour projected enhancing the shape of the place.

It is usually the men taking the place in the places since the indoors are the women's space according to Islam. The places therefore feature elements from the merikani - the cotton tissue with proverbs, to give a voice to the women that are not as represented in the public space.



- 
- An aerial photograph of a coastal town, likely in the Philippines, showing a dense urban layout with a mix of traditional and modern buildings. The town is situated along a coastline with a deep blue sea. Several glowing, circular points of light are overlaid on the image, highlighting specific locations within the town. These points are distributed across the urban fabric, from the waterfront to the inland areas. The overall tone of the image is dark and atmospheric, with the glowing points providing a focal point for the viewer.
- Accentuate the place to create a rhythm between paths and places
 - Get inspired by local customs, play with patterns and projections
 - Treat the place like a living room – think intimate
 - Get inspired by colours in the surrounding buildings to use
 - Emphasize barazas



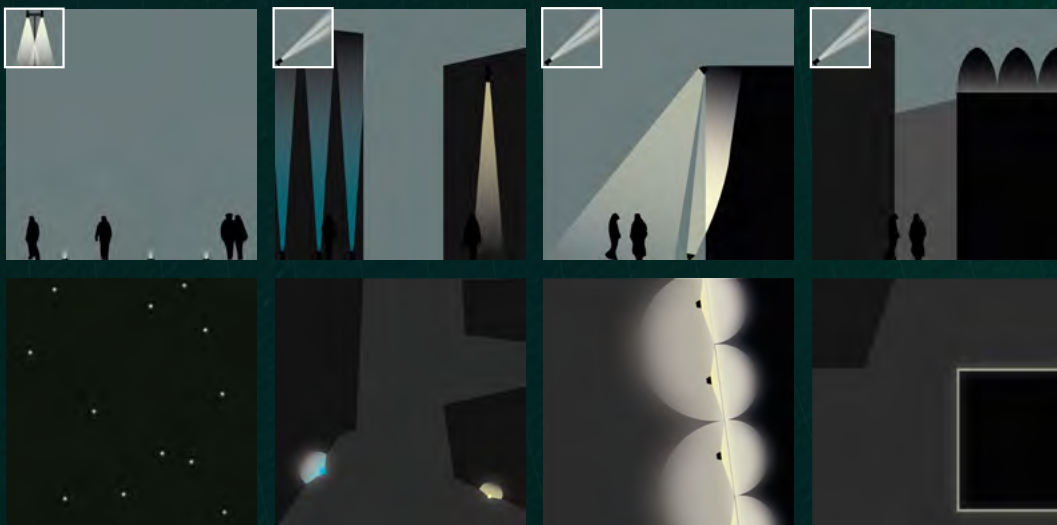
GUIDELINES

Landmarks Lighting

The 26 landmarks and monuments, listed as grade 1 in the Conservation Master Plan from 1994 should be of first priority for exterior light design. The methods should be accent lighting like façade lighting and accent lighting of culturally unique attributes. Enlightened landmarks help people orientate and endorse the identity of an urban space. By highlighting vertical objects, the surroundings become easier to read. It can also provide the urban spaces with an enjoyable atmosphere, which in turn can contribute to safer environments. Lighting of landmarks will shape the city's sky-line as well as its seafront since they will be perceived

from long distances. They will reinforce the understanding of the city's geography in the dark, which facilitates orientation. Highlighting landmarks also helps to brand the city and to strengthen its identity.

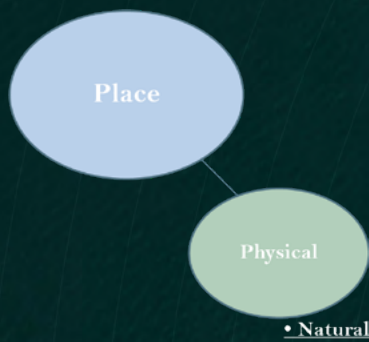
Facade lighting is to be done with great respect for the landmark's identity and appearance, and also take the surrounding environment into account. It is often better to not use too much or intense light since it might erase the sense of space in a dark surrounding. The colour and materials of the facade are also important for the amount of light needed. A lighter façade requires less lighting since its ability to reflect is greater than a dark façade.



Landmarks

- The Malindi Mnara Mosque
- The Old Dispensary
- Kijoha Ismaili Charitable Musafarkhana
- The Bharmal Building
- Royal Tombs
- People's Palace
- Royal Baths
- The Hindu Temple
- Aga Khan Mosque
- Minaret of the Shia Ithnasheri Mosque
- Darajani Chawls (Indian Bazaar)
- The Market
- House of Wonder (Beit al-Ajaib)
- Old Fort
- Tembo House
- Former British Consulate
- Mambo Msiige
- Kilosa House
- St Joseph's Cathedral
- The Hamamni Persian Bath
- The Angelican Cathedral
- The Tippu Tip House
- The High Court Building
- State House
- Mnazi Mmoja Hospital
- The Peace Memorial Museum

- Emphasize on highlight vertical objects, since it can help people to orientate around
- Use façade lighting and accent lighting of culturally unique attributes on the building
- Not too intense light since it might erase the sense of space in a dark surrounding
- Enhance the true colour and materials of the facade



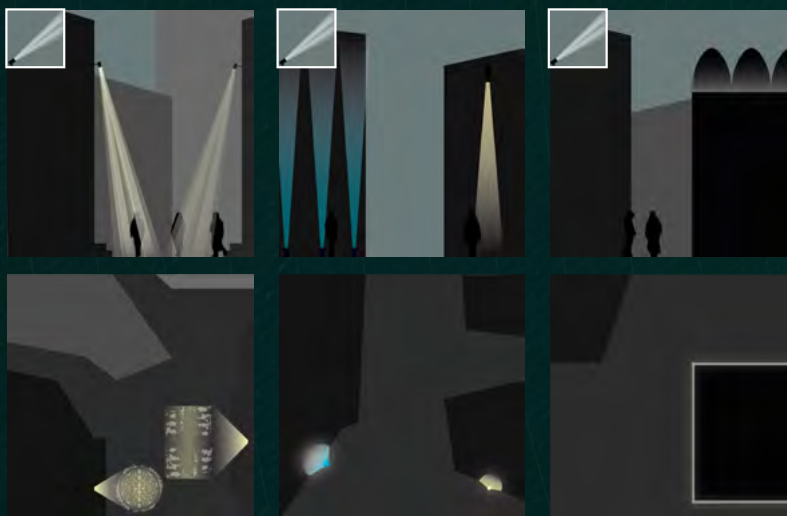
GUIDELINES

Attribute Lighting

Attributes are considered pieces of a whole. If repeatedly enlightened, people will make notice and see the attributes in a bigger context. The attributes may differ from one to another in shape, colour and condition, but the light treatment will tie them together when moving through the city, like an exhibition. The attributes do not point out a direction but they are the unique details that enhances the everyday Stone Town. When seeing them enlightened as a group, one will also start to see them individually.

A fully shielded spotlight should be used to focus lighting on the attributes without lighting

up too much of the adjacent building. Desirable would also be to replicate the ornaments and carvings of the door and project them on the ground in front of it to further accentuate the local traditions passed on for generations. Barazas are preferably lit with fully shielded down lighting, complemented with vista lighting to create the ambience of a coffee room as an intimate environment where people feel welcome to sit down and practice low key activities. Lighting could also be recessed in the barazas. This does however demand physical intervention in the concrete. This is therefore preferably done if renovating or building a new baraza.



Attributes

- Doors
- Doorways
- Balconies
- Barazas
- Passages

- Replicate or use the carved ornaments of the doors and balconies as projections
- Light up barazas with fully shielded down lighting to accentuate its form
- Complemented certain public furniture with accent lighting to emphasize the forms and create an intimate environment.



PRESENTATION

APPLICATION

HOW?

The chapter *Application* suggests practical implementation for the Lighting Master Plan *Zanzibar Night Light* and explains through design **how** a Lighting Master Plan increases the sense of place attachment and in that way enhances a revitalization and awareness of values in Stone Town. This chapter presents and describes how lighting concretely could be used for each of the five identified spatialities and edifices, based on the *strategy* and *guidelines*.

Space - New Mkunazini Rd

A great public place where the high range of activities is the main focus of lighting. Surrounding architectural elements are used to enhance the festive feeling of the popular area.

Path - Soko Muhogo

The longest street in Stone Town stretching from the North to South extent. The character resembles of a market place where added lighting would permit for greater exchange between people, easier way of displacement and private initiatives along the barazas of the streets.

Place - Jaws Corner

A meeting spot defined by its open form as a public living room that opens up in the middle of an alley. The place preserves its character of a coffee room with men talking about politics or gossiping while women are invited through the light design of the merikani that let her speak her mind in public.

Landmark - Old Fort

The oldest landmark in Stone Town and with no significant religious attachment. It has been used both as a prison and ladies club and is now hosting the yearly festival of music (Hamoud, 2017). With light design it is brought back to its previous state before it was reconstructed.

Attribute - Doors

The cultural heritage of Stone Town is put forward by enlightening its locally unique attributes in an exhibit-like way throughout the town-scape.

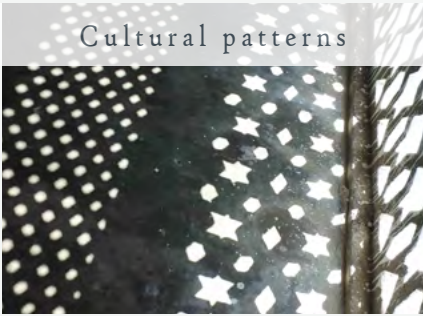
Inspiration

Motivation

Component

New Mkunazini Rd.

Cultural patterns



The multifaceted culture

The cultural mix in Zanzibar is visible in the many patterns of balcony light-screens balconies throughout Stone Town. Some with Islamic patterns and in concrete. Others in decorative wood from Indian tradition. The different patterns provide inspiration for the lighting of public spaces, just like the sun create patterns on the floor of the inside of balconies.



Soko Muhogo St.

The Dhow Sails



The Heritage of Trade

The wind in the sails is what made Zanzibar great. The heritage of trade is revived with sail-like covers in the narrow alleys. They bring back the feeling of a market, inspired by the souks as well as they offer protection from the sun. During the night they are lit up by fairy light that sparkles on and between the covers.



Jaws Corner

The Merikani



Women's Voice

The locally anchored and culturally recognized merikani is used as a design factor to give the women a voice in the public room. Applied in the smaller places where only men usually gather to talk to each other.



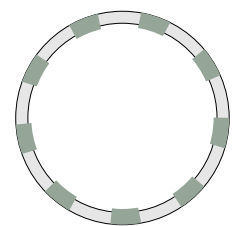
Old Fort

Footprints from the past



What Once Was

Revive the footprints of the precedent. Research for ruins and remains and use lighting to restore what once was in Stone Town.



Doors

Lights on



Local Tradition

Duplicate the pattern of the Zanzibar doors in front of each door. Let the passing people know about the symbols they express and make them visible also during the night.



APPLICATION



Old Fort
Landmark

Doors
Attributes

Jaws Corner
Place

Soko Muhogo St.
Path

Space
New Mkunazini Rd.

Component



Up-lighting to emphasize
vegetation and highlight foliage

Spotlighted patterns inspired by the
architecture surrounding the space

SPACE

New Mkunazini Road

The name Mkunazini Road implies that it would be a path but it is far more than just a space for transportation. This is where the last bigger demolition was made on the initiative of the city planner Lanchester in 1923. He planned for the New Mkunazini Rd to become the new entrance for Stone Town to reach Jaws Corner. It did however not reach the whole way due to protests from the locals, resulting in New Mkunazini Rd becoming a broad dead end, serving as more of a parking lot. The DoURP started the planning of making New

Mkunazini Rd into more of a public space on the initiative in 2017. Like most of the public spaces in Stone Town, vegetation is limited and the space is crowded. Lighting will help New Mkunazini Rd become an urban space for commerce, restaurants and a place for people to play and interact, to meet the demands of the Department. The patterns of the lighting is inspired by the more modern architecture surrounding New Mkunazini than in the rest of Stone Town. Combined with under-lighting of the few trees, like the Baobab tree.



Detailed blue accent lighting on open water reservoirs to highlight their significance for Stone Town's early development

NEW MKUNAZINI ROAD

The Multifaceted Culture







Component

Dhow sail-like weather protections to shelter from rain and sun and to reflect fairy light in the night

PATH

Soko Muhogo St.

The name Soko Muhogo Street originates from the words Souk or *Souq* in Arabic for market, and Muhogo, which means cassava in Swahili. There was formerly a cassava market by the end of Soko Muhogo Street, closest to the Old Fort in the north end of the street. The

design of the lighting of this narrow street will therefore carry on the legacy of Zanzibar as a great trading nation with Stone Town as one of the main nodes in the Indian Ocean. An even overall lighting from wired semi shielding luminaires is complemented by the spill light from the open stores.

The background of the entire page is a dark, textured aerial map of Zanzibar, showing the intricate layout of its streets and buildings. A rectangular area in the northern part of the island is highlighted with a white border, containing a diagram of lighting fixtures. Another rectangular area in the southern part of the island is also highlighted with a white border, containing text. A small inset map in the bottom right corner shows the entire island of Zanzibar with a red line indicating a specific route or area of interest.

Wire mounted semi-shielded down-lighting to
provide an evenly distributed lighting with no rupture

Unshielded Fairy Light to provide an atmosphere of a
Souq and relate to the history of trade in Zanzibar

SOKO MUHOGO STREET

The Heritage of Trade



Component



PLACE

Jaws Corner

Jaws Corner bears the design of the female garment merikani that is produced on Zanzibar. The design differ from place to place but the structure is still the same. A pattern in the middle, which is here inspired of the palm tree in Jaws Corner, a coloured border and a saying in Swahili. The saying is projected as a gobo light and could be changed regularly

to adapt to prevailing circumstances. The surrounding barazas are softly lit allowing for low key activities such as fruit vending, board game playing or just coffee drinking. The overall down lighting from the crossing streets provides sufficient lighting to complement the lighting on the place.

The surrounding barazas are furnished with fully shielded down lighting to enhance the coffee house feeling.

Gobo lighting in shapes that relate to a place, site specific ornament or detail.

The border of the merikani is applied on the place and given a colour that harmonises with the place

The existing palm tree in provided with green up lighting to enhance its colour

A text inspired by the female dressing garment merikani that provides the place with a saying

Baghani Street

Soko Muhogo Street

JAWS CORNER

Women's Voice



KUTOA MWANGA
ATU WATAPATA NJIA



Component



LANDMARK

Old Fort

The Old Fort is the oldest preserved building in Stone Town and manifests the beginning of the Omani rule on the island. The lighting is designed to emphasize the impression of the landmark as monumental and grand symbol but also to bring it back to its previous state. The facade is lit with a warm-white grazing light to intensify the perception of its texture

with shadows. The leaves from the surrounding palm trees cast shadows on the wall created by pole mounted semi-shielded ground light. A circle of aeronautical ground light is fixed in the same place as the sixth tower once stood. It was torn down when the House of Wonder was built but is now “restored” with the help of light design.



Aeronautical ground lighting to show
where the 6th tower once was situated

Grazing light on the roughly textured walls

The palm trees foliage is enlightened
with soft green up-lighting

Pole mounted flood lighting from the
road create shadows from the palm trees



OLD FORT

What once was





Component



ATTRIBUTES

Doors of Stone Town

The most famous of all the architectural attributes in Stone Town are the doors. Each carving is unique and reveal information about the household. Each door is here enlightened with a warm white accent lighting. The doors will stand out like pieces of art in a museum, an exhibition free for everyone to visit and enjoy. The carving on the door is also projected

with gobo lighting on the ground in front of the door. It shows another dimension of the door. It shows another dimension of the door when seen on the ground which may make inhabitants see them in another way and make them notice new details. The unique patterns is also preserved for the future in this way, showing the globally unique heritage of Swahili culture in Stone Town.



DOORS OF STONE TOWN

Outstanding universal value







OUTRO

This chapter summarises and reiterates the main points of the project. Lastly it evaluates the previous chapters and states the final conclusion of how a Lighting Master Plan can contribute to Stone Town's further development as a world heritage site as well as an enjoyable city to experience and live in. I will lastly reflect upon my role in this project and examine what has been done well and what could have been done better or differently. As a landscape architect, just like in every other designing profession, there is really nothing right or wrong. It is more of a question about how well the design answers to your aims.



OUTRO

DISCUSSION
CONCLUSION
REFLECTION
EPILOGUE
APPENDICES
REFERENCES

OUTRO

DISCUSSION

The purpose with this study was to create a Lighting Master Plan, which specific design seeks to answer the following research question;

“Can a Lighting Master Plan increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town?”

The proposal consists of a tangible design to improve the perception of intangible values of Stone Town. It seeks to answer the question through a *Strategy, Guidelines* and proposal of *Application*. The different phases of the project will be discussed in the following section as well as the expected result. I will lastly conclude the discussion and reflect upon the project and its possible further development.

Background

Landscape architecture projects either start with a place or a need, preferably both. In this case, the need chose the place. I wanted to look further into what light design could do to ameliorate our environments and came to choose Zanzibar and Stone Town. My need sprung from my personal opinion of landscape architects working too little with light design and what it can do to enhance the experience of our surrounding settings. In many other situations the landscape architect come to act as

a mediator between different actors in a project. My goal is therefore for landscape architects to learn the language of light and in an early stage consider light design as a main part of a project.

Methodology

When applying to join the DoURP for five weeks, my plan was to develop a form of lighting program. The framework fell into place along with my stay and was worked out together with input from stakeholders as well as with the department. The three presentations I did for the department ensured that the project followed the plan. The final presentation also involved all the stakeholders which assured the project to be well anchored with the city's interests.

Throughout the many investigations and meetings with stakeholders, NGO:s and authorities I came to realize that some sort of lighting program was already underway. It did however only consist of placing lamps in Forodhani Garden and randomly on a few places around Stone Town. The effect it generated was almost doing more harm than good, with a yellow sodium light, turning colours grey and with luminaires blinding people instead of lighting on objects to make them more attractive. What struck me was that there was little knowledge in the planning

department about how things could be done instead. The STCDA seemed to have ambitions and a vision but seemed to lack good references about how city lighting could be undertaken and come out. When consulting the last master plan for Zanzibar, ZanPlan 2015, there was no expressed need for more lighting in the streets, even if the darkness after 7 pm complicates the performance of many tasks after sunset. I soon came to comprehend the challenge in presenting the significance of a lighting program to stakeholders as well as for the community. After discussing with the Dutch/Swedish lighting designer Thijs Wiessing, I changed my project on his recommendation from a Lighting Program to a Lighting Master Plan. He pointed out the difference that a program is more technical and detailed, focusing more on what armature and lighting source to use instead of what to enlighten and what feelings it should bring to the public audience.

Simply put, it needed to be presented in a more comprehensive way and still leave room for local knowledge and organisation. I therefore started to describe the proposed lighting as a *heritage enhancing addition* to the already existing built structure as well as an *infrastructural layer* added to the urban tissue. This description, slightly reformulated to suit the receiver helped me clear my own thoughts and narrowed it down to what I really wanted to achieve with a Lighting Master plan.

Analysis

The different analysing methods are based on architectural and urban research and commonly used among landscape architects, combined with personal empirical studies of the site.

The methods of classifying spatialities according to the elements of Kevin Lynch (1960) is a method that have been used in lighting programs and master plans that I have been consulting during my research. It has been a good analysis method to use in earlier projects but did not totally fit the needs of the project aim; *Can a Lighting Master Plan increase the sense of place attachment and in that way enhance a revitalization and awareness of values in Stone Town?*

I therefore adjusted the urban elements of the analysis to focus more on what objects and spatialities that would be enhancing the values related to place identity found in Stone Town.

For the empirical study of activities I had only my own observations and interviews to base this analysis on. The problem with basing my research on the present situation is that the activities are only going on where the light is today. These activities are therefore restricted to places that might not be suitable for the activity, but is happening there in the night only because there are nowhere else to perform them. In the analysis I therefore took in some daytime observations too, to identify places where people might would have wanted to be if it would have been light there.



Dialogues

As mentioned in the *Challenges* section, a Lighting Master Plan could contribute to attract more tourists. It is a fine line between planning for what the tourists *think* is the local culture, and for what it really is. As mentioned in the *Beneficiaries* section, I first asked my questions about where people thought it should be light. Of course I got different answers from every person according to where they lived or what they thought was important. But when I started asking them about *what* they considered important for Stone Town to be Stone Town, I got the true and honest answers that I needed to proceed with the Lighting Master Plan.

Proposal

My project has been received with admiration when I have explained the possibilities of light design for stakeholders and local habitants. The history of the site makes me however sometimes question my right as a westerner landscape architect attempting to cast light on and bring out the heritage of a place that I have neither grown up in, neither experienced before. I do however believe in exchanging experiences and proficiencies. I therefore think that as long as I am being humble in my approach, do my research thoroughly and offer a proposal that can be easily evaluated and adjusted if not perfectly suiting, it will not affect the community in a negative way.

Living in a country with so much darkness

as Sweden I think we have developed methods of lighting that very well could be used or redesigned to work in an equatorial setting. The challenge is to put the lighting in the right context, adjusted to the Swahili culture and Islamic religion that is a part of the everyday life.

The proposal would most likely have been different if implemented by a Zanzibar or Swahili planner or architect, who had known the habits of the local habitants by heart. The background of the designer highly affects the outcome of a project; in that way it can be limiting to work with a site you have known for such little time. On the other hand, a fresh look and approach to the site can make the design stand out from anything else that a local designer never would have reflected upon. Working with an area close to you can sometimes seem easy but the result can be lacking in innovation since the broader the knowledge is, the more restricted is the final outcome.

The proposal had to balance between the local knowledge and the broader perspective. Having used the local heritage and place identity as a design factor, I believe and hope that the local values can be revitalized through this proposal even for those experiencing the area every day. So now I leave it for the every day Stone Town habitant to evaluate it further.

OUTRO

CONCLUSION

Place identity and place attachments are fuzzy concept that still can have a huge impact on the daily life of people. How well you as a citizen connects to a place is key to an including society. Long time has not passed since the multifaceted culture that today is a natural part of the Zanzibar identity, instead was dividing and the urban infrastructure was planned to separate people. Designing for all should therefore be prioritised when planning for people of many different customs and cultures.

Planning and designing for diversity could help societies develop. The Lighting Master Plan *Zanzibar Night Light* shows an example of how heritage can be interpreted and expressed as place identity through light design.

Lighting is an interesting and flexible designing tool since it does not leave any permanent footprints and also only appears during the dark hours. It is also a very selective utensil since it can be used to show very limited parts of reality.

The proposal *Zanzibar Night Light* only scratches the surface of a history that goes so much deeper. It would have been interesting to let the local people themselves express their view on place identity in a further developed project. This could preferably be done through

a more extensive citizen dialogue or workshop in a project with a bigger time frame.

Zanzibar is an island with endless potential and inspiration in terms of heritage and history that I absolutely believe that this kind of lighting project would be implementable. The fact that Stone Town was the first African city to have electric lighting is also a good argument for implementing this kind of project in this site in the near future.

The knowledge about using place identity in design and architecture is well-known among planners but the method is also very subjective. It is therefore necessary to thoroughly anchor such a proposal with the habitants designated to experience it. The historical facts also need be blended with awareness about the current use and needs to be a useful proposal.

Place identity should not be used for its own sake but instead to create awareness, strengthen societies and to educate. There is no reason to preserve if not to develop. So by telling and remember ourselves and each other about both our shared as well as different history, we can learn and move into the future with more knowledge and better preconditions for awareness about our common values.

OUTRO

REFLECTION

Project

By choosing Zanzibar, I hoped to discover a new culture and new settings and I was amazed by how much history this little island could carry when I arrived. I happened to time my stay with Ramadan and got to visit a calmer and more silence Stone Town than usually. It was incredible to meet with such a strong culture where religion is present in the daily life. I think this was the hardest part to work with in the project since I come from a country where religion is more of a passive activity.

In Zanzibar, religion is the glue holding the society together but not only. The commerce and trade is still strong and is also a part of the daily experience even if on a less global scale than before. Throughout my discussions with locals, I got the impression that the habitants really are longing for change but still are proud of their heritage. At the same time the restrictions of what and how to build in Stone Town are frustrating for the one that might not have the resources to do it according to the law. The lighting design might not be appreciated by the local habitant. Maybe in the beginning but after a while the objects enlightened might become invisible to the every day dweller again. I do however think that the lighting definitely will facilitate life in a practical way that will generate both values and income in the long run.

Personal

This project increased my curiosity in light design but even more in the theories about place identity and place attachment. To carry out a master project in landscape architecture about light design was a challenge but I found it stimulating to explore a domain I probably never would have worked with otherwise. Thanks to this project, I am now keen to lobby for more collaborations between landscape architecture and lighting, in both educational and professional terms.



Lighting xample of the orphanage house car tunnel and example of door application.



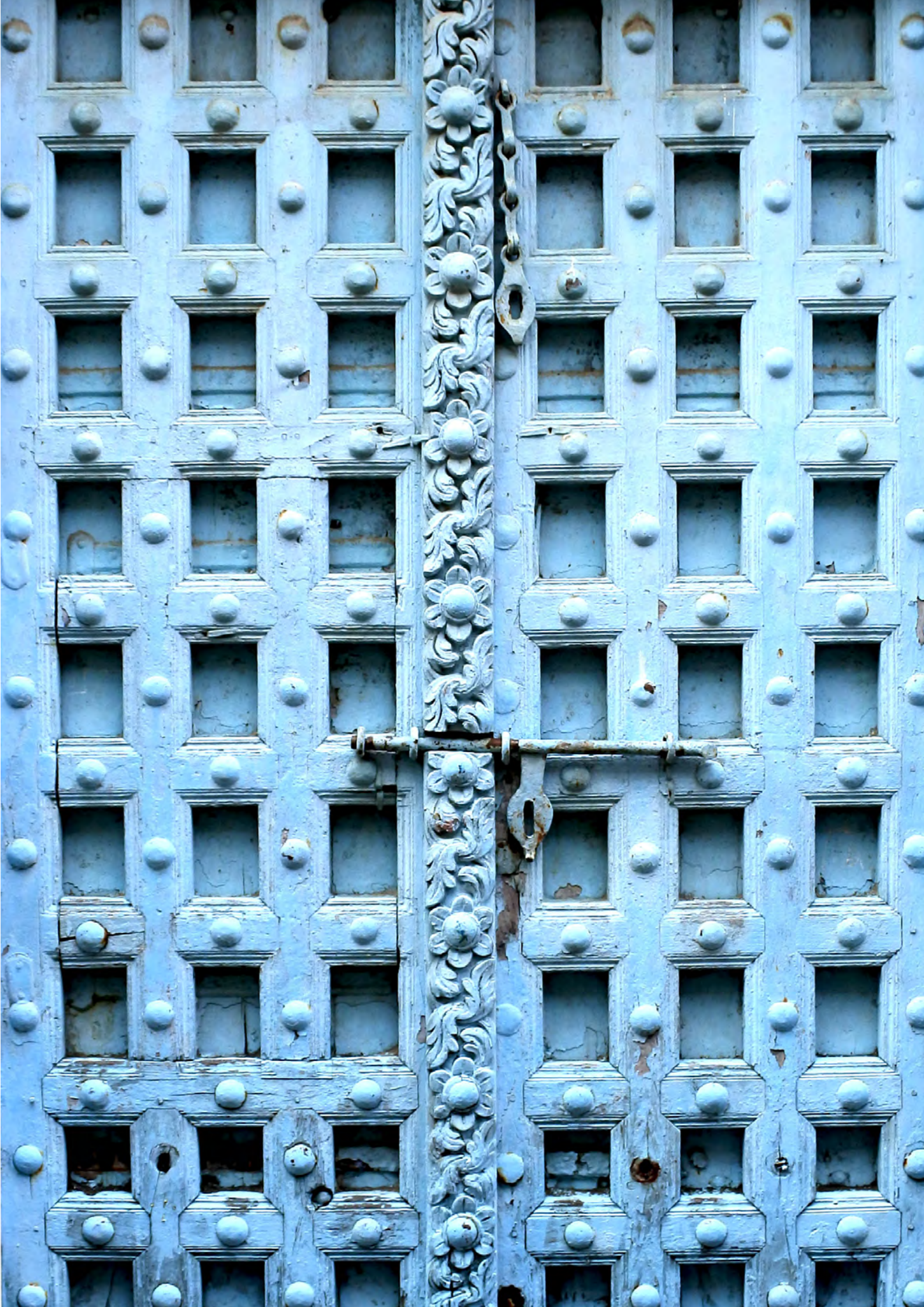
OUTRO

EPILOGUE

By doing this project I got the chance to challenge myself as a person as well as a landscape architect. I also got the opportunity to investigate a new domain in landscape architecture that has an incredible ability to grow along with the development of solar and battery power as well as the technology of lighting. Landscape architects need to better answer to the demands of better ability to use and enjoy the public spaces not only during the day-light hours, but also during the night. We

therefore need to educate ourselves and make lighting a tool of communicating our designs in a correct way also throughout darkness.

I am grateful for the new contacts I have made in Zanzibar. I have achieved knowledge and new perspectives that I will always bear with me in future projects, especially the stories about Zanzibar life told by people in interviews or in the street. I leave my work for the people of Zanzibar to implement and further develop and hope that I can take part in that process.



OUTRO

APPENDICES





OUTRO

APPENDIX A - LIGHTING

Lighting effects

Ljuskultur (2013) points out the following visual basic principles to consider how the light is perceived in a space in the guide *Light & Room* (originally: Ljus & Rum). These visual conditions can be manipulated in different ways to control how they interact with the physical conditions. The art of light design is however to create a well considered balance of the following parameters:

- Luminous intensity
- Spatial distribution
- Shadows
- Glaring
- Reflexes
- Illumination colour
- Surface colour of illuminated object

Here follows a description of the different lighting effects applied in the Lighting Master Plan of Stone Town, *Zanzibar Night Light*. The illustrated examples are put in a context of what it would look like and be used for in Stone Town, taking into consideration to balance the parameters mentioned in the previous section.

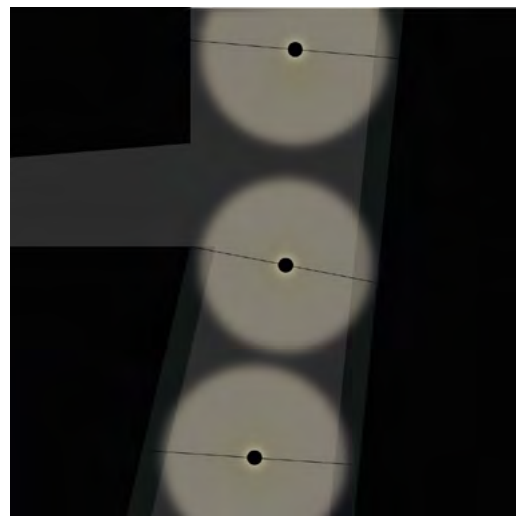
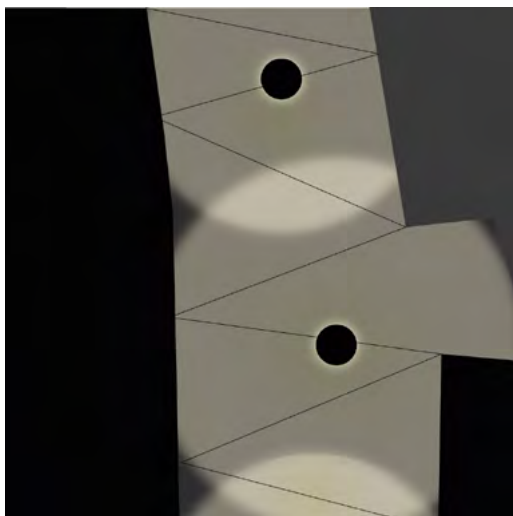
Semi-Shielded Down Lighting

Lighting in a downward direction. This method is used when lighting a large space or object from above. The power of the lighting source should be lower than up lighting due to the reflection on the ground and its direction towards the eye (Raine, 2001).



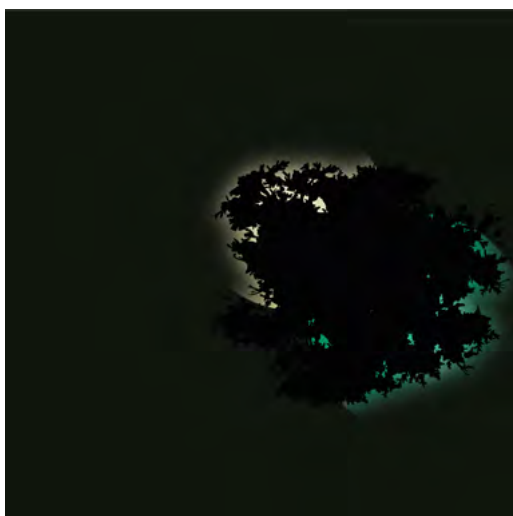
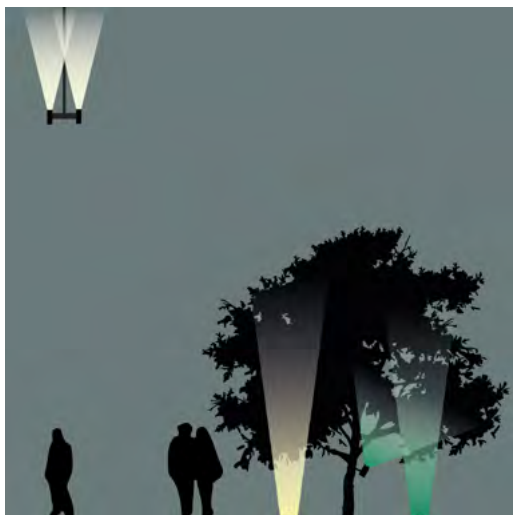
Wired Fully Shielded Down Lighting

The down lighting luminaires also needs to be semi- or fully shielded to avoid glaring. It also focuses the light on the ground which avoids spill light. It provides a distinct pool of light for an intimate ambiance but then needs to be placed closer to each other to avoid ruptures.



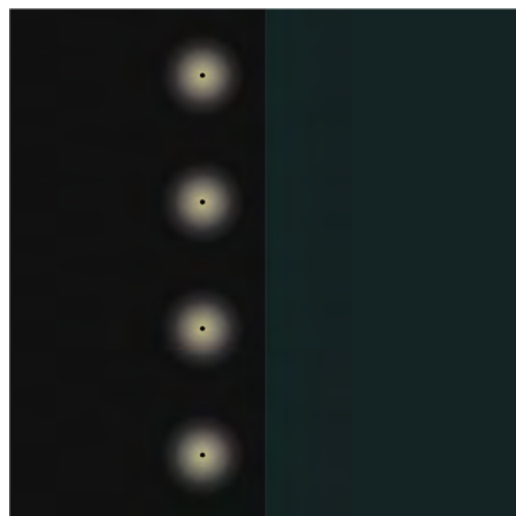
Up-lighting

Illuminating from below reverses the daylight effect. It is important that the luminaire is shielded so that the lighting source does not distract the viewer. Lighting from below is good when you want to accentuate an object such as a tree, a statue or a facade (Raine, 2001).



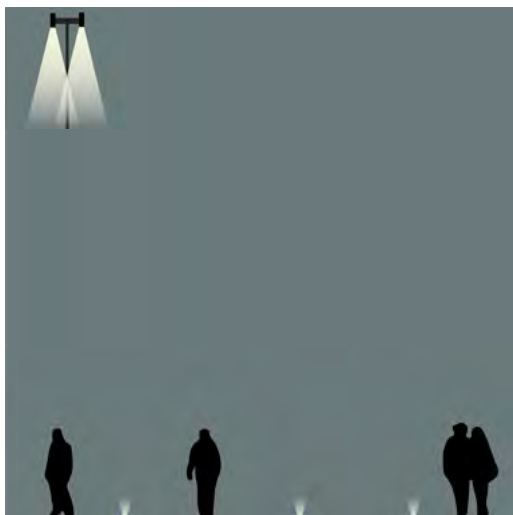
Spread Lighting (Bollard lighting)

Spread lighting provides a non glare pool of light from a fixture below eye-level. Bollards can be used in public spaces to create points of orientation to help people find their way in an open space where no wall mounted solutions are possible (Raine, 2001).



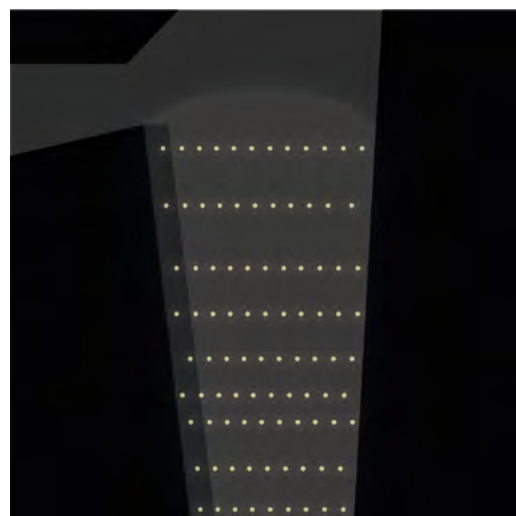
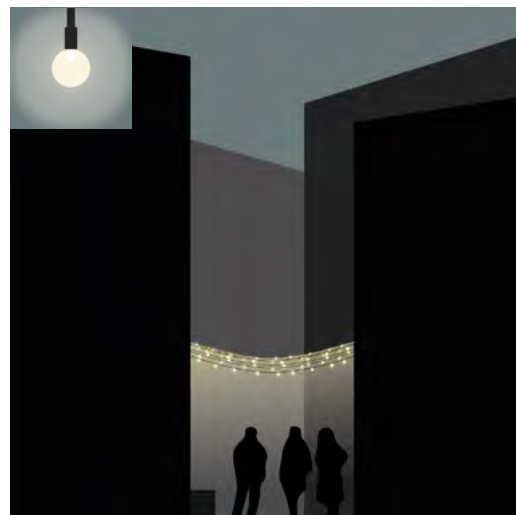
Aeronautical ground light

The lighting from aeronautical ground light substitutes more of a lighting for its own purpose than to enlighten something else. It can be placed in a line or patten. For example to imitate a sky of stars in the ground when seen from above.



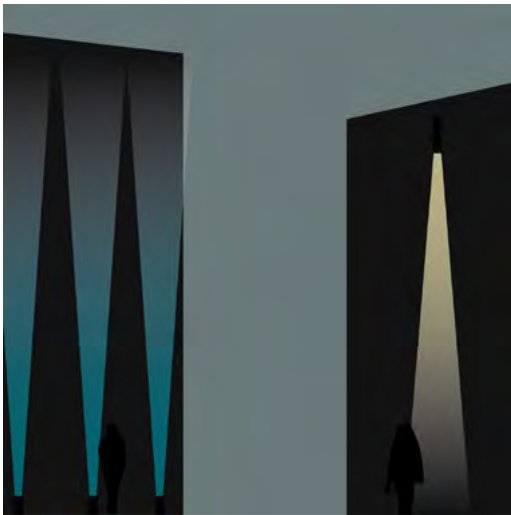
Fairy Light

Fairy Light consists of small but a large amount of Unshielded luminaires on a wire. They vary in design and character but provides more of an atmosphere than actual lighting for orientation. They should therefore be combined with complementing lighting.



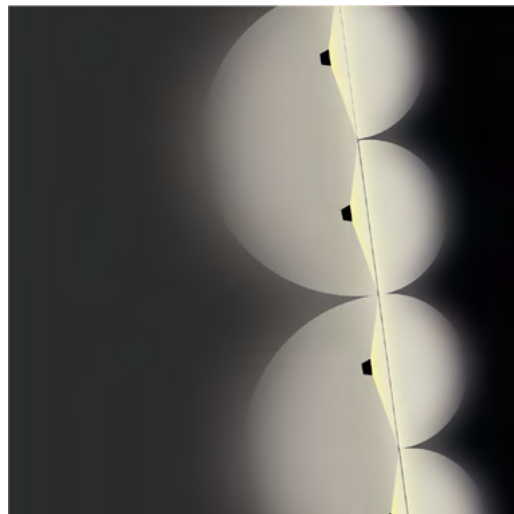
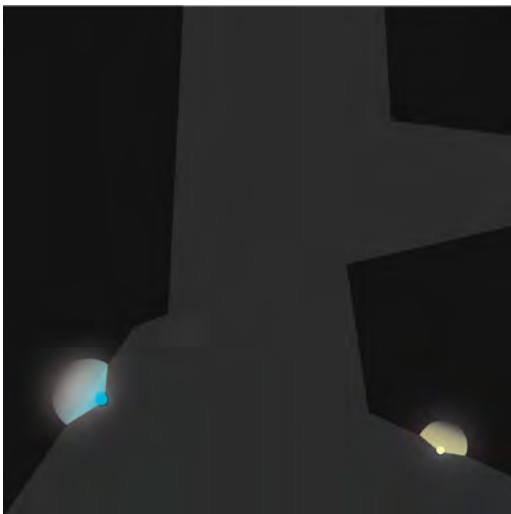
Grazing

When the light grazes the surface of a building it creates sharp shadows that emphasize the texture of it. The lighting source is placed at an acute angle near the surface and will give the object a dramatic effect (Raine, 2001).



Flood Light

Flood Lighting is the ultimate area lighting since it imitates the daylight effect and enlightens a lot of objects in the same time. It however needs careful installation with an angle of 60° from vertical to avoid glaring and instead be able to enjoy its security aspects (Raine, 2001).

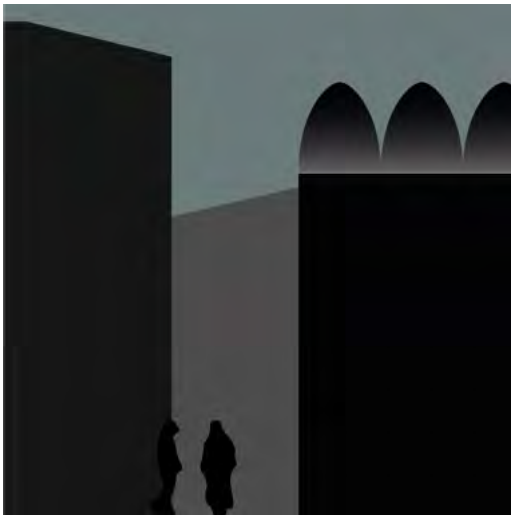


Accent Lighting

Accent lighting can be used to highlight a particular object so it stands out from its surrounding. Different techniques can be used, but it should emphasize the object with an intense stream of light (Raine, 2001).

Gobo Lighting

Gobo lighting can be used to create playful effects on the ground as a complement to Down Lighting or Flood Lighting.





APPENDIX B - FRAMEWORK

History

Early times

The Zanzibar history can be traced as far back as 1750 B.C. when the Sumerians, who sailed from the valleys of Tigris and Euphrates reached the islands of Zanzibar. They had developed the skill of making dhows, a traditional boat type still in use by the fishermen of Zanzibar today (Mohammed, 2014). It is believed that the Assyrians arrived around the same time as the Sumerians but were driven out by people from the Persians Gulf the year of 606 B.C. (Mohammed, 2014). People from South Arabia also arrived early in Zanzibar. Due to war in their homelands and because of the trade they touched the Zanzibar shores in 684 A.D. (Mohammed, 2014). The urban development in Zanzibar began around the 11th century, proved by archaeologists who have found remains of a Swahili port city with underneath the buildings in Stone Town (Leech, 2017). The communities that started to pop up around the Swahili coast came to be known as stone towns. Stone building construction had started off all around the Swahili coast around the 12th century, at first most stone mosques and tombs but later houses and other buildings made of the local coral and lime stone. Living in a stone house symbolized stability and represented a trading venue. Negotiations were held in the front rooms of the stone houses, which also offered a staying place for traveling international merchandisers (Hirst K. K., 2015).

Shirazi/Swahili

The Persians established trading routes to Babylon, India and China and started to settle in Zanzibar from the 11th century (Mohammed, 2014). The archipelago became the African outpost thanks to the sailing beneficial monsoon winds. The Shirazi, as many of the islanders call themselves today, is the result of the Persian influence on the regional (indigenous) Bantu people. The name refers to the Persian area of Shiraz (now Iran) and the time period bares the name the Shirazi-era, referring to the time when the international trading flourished in the eastern Indian Ocean (Holmerg, 2017). Opinions have differed whether the Shirazi people (Swahili traders) were of Persian ancestry or not. However, new research proves that Swahili culture is fully African, and that the Persian aspects and heritage of Shirazi, usually were claimed by people to gain social benefits. The Persian influence should therefore be seen as a result of the trading connections rather than a heritage through birth. It is however still considered being the foundation for the Swahili culture, arising in the 6th to 8th century (Hirst, 2017). Croucher (2015) describes that the difference between Shirazi and Swahili is a self-definition by choice rather than it is inherited. The Shirazis were usually traders or came from a trading family, belonging to the higher class in society. While the ones defining themselves as Swahilis were the ones who had been taken to Zanzibar as slaves from the mainland, having



learnt the language, practised Islamic religion and dressed according to the traditions. Even today, the majority of the Zanzibaris are calling themselves Shirazis (Encyclopædia Britannica, 2015).

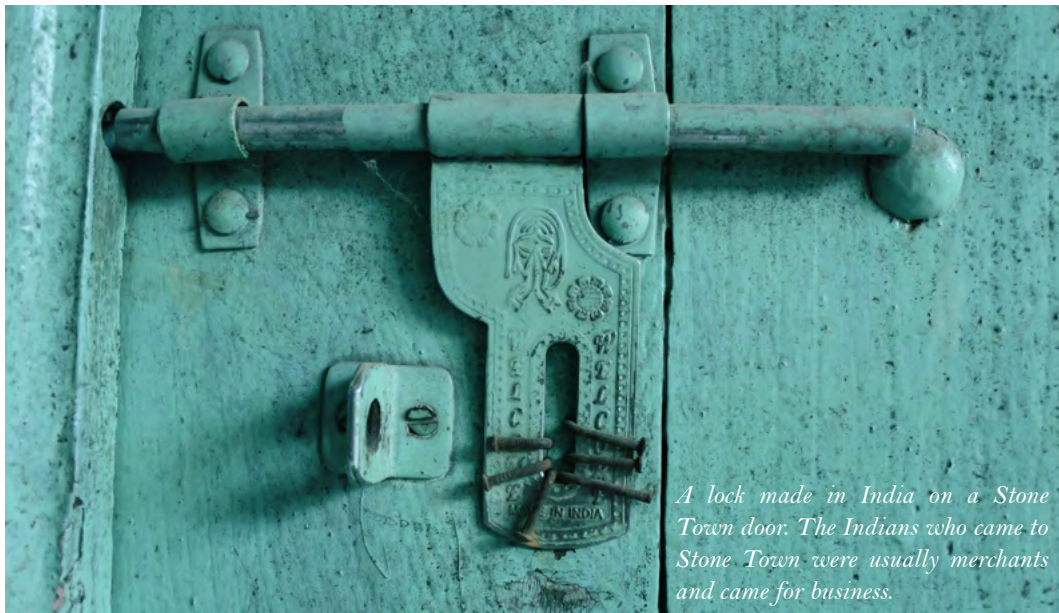
Portuguese

As the first European empire, the Portuguese conquered Zanzibar in 1503 when aiming to expand their commercial empire in the region. The downfall of the Portuguese empire started in 1622 when they lost the kingdom of Ormuz in the Persian Gulf (Mohammed, 2014). They continued to suffer losses in the eastern Indian Ocean and finally lost Zanzibar in 1698 when Omani rulers sent soldiers to put an end to their presence on the East African Coast. The Portuguese managed to hold on to Zanzibar for nearly 200 years but their influence on development was limited to fruits like pineapple, cassava and maize (Cecil, 2011).

Omani

Under the leadership of the Omani trading empire, Arabs took the economic control over the northern part of the coast and from around 1700 throughout whole Zanzibar (Holmerg, 2017). It was around this year the Old Fort was built in Stone Town. The fort is the oldest building in Stone Town and was constructed on the site of a Portuguese church from the 17th century, mainly to repel eventual returning Portuguese (Zanzibar.cc, 2009). The Omans

continued to develop the East African trading ports and favoured Arabs as the elite of society. In the 1830s, the energetic sultan Seyyid Said (ruled 1806-56), moved his capital from Muscat in Oman to Stone Town (Holmerg, 2017). He started to develop plantations of clove that had been introduced from Mauritius to the Islands in 1818. The aromatic clove came to be the base of the island's growing international trade, making Zanzibar the world's largest producer for over 100 years, giving it the name Spice Islands (Royal Botanic Gardens, Kew, 2017). Ivory, cloves and slaves, working in the Zanzibar plantations or sent to Iran and the Arabian peninsula were the three pillars on which the Omani empire and Zanzibar economy rested, especially in favour for the Arabic elite in Zanzibar (Limbert, 2010). Although slaves had been one of the main trading goods since the dawn of the Swahili trading network, Zanzibar experienced a powerful influx of slavery during the 19th century, above all to manage the expanding spice plantations (Harrison, 2006). The dhow trade flourished during the Omani rule and the capital status attracted many Arabs to settle permanently in Stone Town. This large-scale occupancy led to the expansive development of city building that characterizes Stone Town today. In the years of 1830, almost 5000 of the 17000 Stone Town habitants were Arabs (Siravo, 1996).



A lock made in India on a Stone Town door. The Indians who came to Stone Town were usually merchants and came for business.

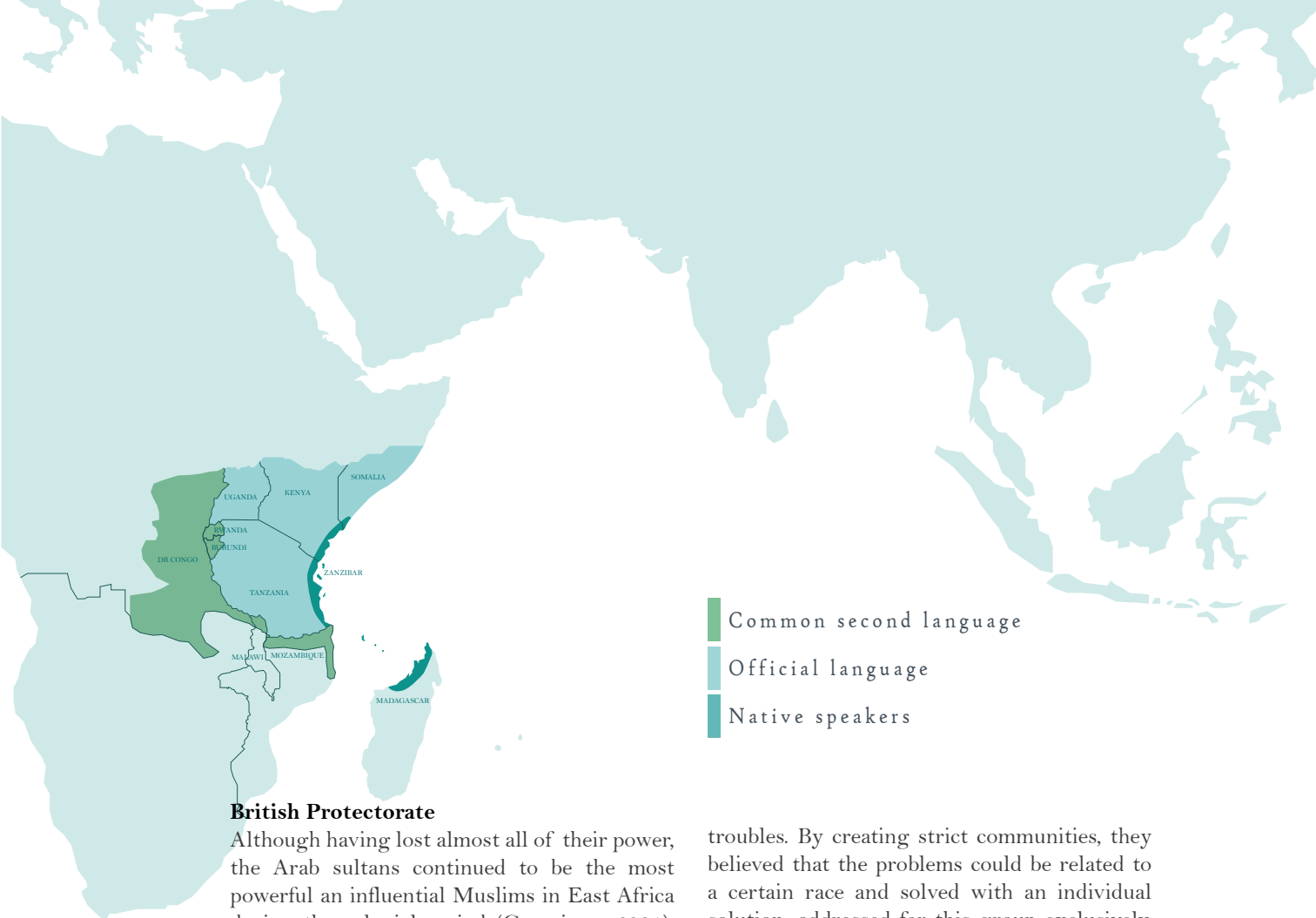
Indians in Zanzibar

The earliest recording of Indian presence can be traced back to the 16th century. The Indians did however not settle permanently until the 19th century and even then the population in Zanzibar was small (Sheriff, 2002). The Indians were usually merchants and came for business, encouraged by the Sultan Seyyid Said who saw potentials in increasing the trade. The Indians who did not come for trade were often simple, yet skilled workers, building the houses with the massively decorated verandas of the wealthier 'Banians'. The Indians did rarely marry Africans because of cast rules. They did however integrate with the Shirazis in Zanzibar as they grew in numbers from 214 in 1819 to 3000 in 1870 (Sheriff, 1987).

Zanzibar Empire

The sultanate of Oman was split between the two sons of Sultan Said after his death in 1856; East Africa and Oman. This partition in which the British were thoroughly involved, was the beginning of a new era in the Zanzibar history when the island in 1860 was declared independent from Oman (Cecil, 2011). The new sultan Majid bin Said gained a close relation to the British and American and European consulates were opened on Zanzibar. The rule of Majid bin Said was however short and he was succeeded by his brother Bargash in 1870 (Gascoigne, 2001). The British Vicar Consul, later Consul Sir John Kirk (1832-1922) was the

Sultan's adviser 1863-87, aiming most of all to fight slave trade (Holmerg, 2017). Christian missionaries and other white colonists like David Livingstone had actively fought the slavery until his death in 1873 (Harrison, 2006). Kirk, who had witnessed the brutality of the Arab slave traders in the interior of Africa managed to achieve an agreement of abolishment later the same year. He encouraged Barghash to find replacing economic incomes to the slave trade and advised the Sultan to invest in the trade of ivory and rubber. Thanks to his adviser Kirk, the Sultan earned a fortune of the affairs by the 1880s (Gascoigne, 2001). Under the cover of wanting to abolish slavery, Africa had been divided during the European race for land called *Scrambled for Africa*, which lasted from 1875 to 1914. The event commenced seriously after 13 European countries had signed the Berlin Act of 1885. Europe's great powers, especially Great Britain and Germany found particular interest in East Africa to keep their trade routes to East Asia and India (David, 2011). After a threat from Germany, the British convinced the Sultan of Zanzibar to sign a treaty to avoid an attack from the Germans. After this event the border between Tanzania and Kenya was drawn and split between the two colonial powers. Zanzibar and Pemba were declared a British protectorate (not a colony) in 1890, leaving the Sultan still as an official ruler over Zanzibar but with no influence of the Swahili coast-line (Eliot, 1905).



British Protectorate

Although having lost almost all of their power, the Arab sultans continued to be the most powerful and influential Muslims in East Africa during the colonial period (Gascoigne, 2001). The build-up of Stone Town had pressed its current limits by the end of the 19th century and the development continued on The Other Side (of the creek), in Swahili called Ng'ambo (Shapira & Hellerman Planners, 2015). After the Portuguese were driven away, it was a never-ending influx of various cultures to Stone Town during the 150 forthcoming years. The city had developed into a multifaceted cosmopolitan and modern town with a broad diversity, unified in the trade while cherishing its architecture and culture (Shapira & Hellerman Planners, 2015). The British however, while still wanting to develop their protectorate, believed in the idea of diverting people after race and class, themselves belonging to the highest of course. Expressed in the new city plan, drafted by Lanchester in 1923, Stone Town was divided into resident areas, strictly linked to race and culture (Bissell, 2011). This way of thinking was rather a fantasy than a reality-based vision since Lanchester (1923) himself wrote that almost any of the houses in Zanzibar were built by Europeans, leaving them with no choice other than house in already established Arab neighbourhoods. Bissell (2011) implies that rearranging the habitants in the town were the Britisher's way of dealing with area related

troubles. By creating strict communities, they believed that the problems could be related to a certain race and solved with an individual solution, addressed for this group exclusively. The British wanted to create a clean and neat city through Lanchester's plan. Organizing the city after nationality was only the ideation featured by many different physical approaches. Stone Town had already been a pioneer in the terms of city development during the Oman Empire. There were oil street-lights as early as 1870 and the development continued during the protectorate years when Stone Town was equipped with electric street-light as early as 1906, many years even before London (Khamis, 2001). The British also reformed the city's service, installing proper sewage systems and initializing a garbage disposal programme, eliminating the smell that so many visitors had come to associate with Stone Town (Pettersson, 2002). Having reached a population of 58 000 habitants, the British launched the Kendall & Mill city plan in 1958. The plan included development of new roads and areas to which people were encourage to move to reduce the density in Stone Town and Ng'ambo (Shapira & Hellerman Planners, 2015). After WWII, it became clear to the British that they would have to give up most of their colonies and initiated a de-colonization program to form new governments consisting of locally chosen representatives for the new states. The Arabs



Zanzibar; a study in tropical town planning. Lancaster, 1923. Stone Town is divided according to race and the water filled creek is clearly visible.

who had always been favoured by the British in Zanzibar, longed to get back into highest power in Zanzibar after receiving their independence while most Shirazis (native Swahilis) were eager to enjoy the same privileges that had been retained by the Arabs during the protectorate era (Petterson, 2002). Usually the Shirazis looked down on the mainland Africans but the two people came together to form the ASP, to oppose the Arab-dominated ZNP. The ASP won in the second election since the first had been too be repeated due violence. Having received a majority of the votes with 54%, the ASP still only got 13 of the 31 seats in government. Under the façade of a paradise island, the British had turned the multifaceted and culturally diverse society of Zanzibar into a fragmented cast-like system where hatred grew between the groups (Petterson, 2002). The decolonization of Zanzibar had begun already in 1960 even though full independence was not reached until 1963.

The Nine Hour Revolution

The revolution in 1964, was only carried out by a few hundred men but came to be widely supported by the ASP. The revolutionary leader, John Okello, was born in Uganda but had worked in the sister island Pemba for a few years (Petterson, 2002). His political socialist and communist ideas, sprung from the ongoing Cold War combined with his despise for the colonial and Arab powers, made him orchestrate the revolution when the Arab-dominated ZNP had taken more place in the new government than they had gotten votes for (Petterson, 2002). 5 000-20 000 Arabs were slaughtered during the revolution and many more fled the island, resulting in a loss of highly educated people and Zanzibar entrepreneurs (Cecil, 2011). The ASP leaders were taken by surprise by the revolutionary actions but welcomed the event (Royer, 2012). In the wake of the revolution, the ASP formed a one party government and nationalized the country, taking the right to confiscate any private immovable property and turning abandoned



Arab houses into buildings for governmental purposes (Encyclopædia Britannica, 2015). The ASP wanted to secure their positions and therefore signed an agreement with mainland Tanganyika to secure political allies in a case of uprising from the opposition in exile (Royer, 2012). This agreement resulted in the merging to form the United Republic of Tanzania in 1964 (CIA, 2017).

United Republic of Tanzania

At its peak, Stone Town was a true corner stone of the Indian Ocean, expressing its greatness through its architecture, in the service systems as railway, street-light and piped water. The new socialist politics however, halted investment in Tanganyika as well as in Zanzibar and drained the economy in the long term while Zanzibar's outstanding architecture suffered serious degradation due to lack of and financial support from the government (Cecil, 2011). The newly elected president Karume wanted to create a fortune for the Zanzibar's poor majority with the help of spicy herbal exports (Holmerg, 2017). He took help from East Germany and China to reach the Government's primary goal to improve the living standard and to provide housing for all (Shapira & Hellerman Planners, 2015). The Germans drew the GDR plan in 1969, consisting of long and tall apartment

blocks in East German style in Ng'ambo. The Chinese were later consulted in 1982, providing the city with what is known as the Chinese Master Plan. This plan forms the basis on which today's (2017) planning of Zanzibar Town is founded (Shapira & Hellerman Planners, 2015). After years of degrading economy, the dictatorial Karume was shot in 1972. His successor Aboud Jumbe conducted some liberalization of the state and Zanzibar's reorientation towards capitalism began in the early 1990s following the world wide orientation away from communism and the government's socialistic mismanagements that had wounded the economy for too long (Cecil, 2011). The STCDA (Stone Town Conservation and Development Authorities) was founded in 1985 as a stated goal in the Chinese Plan, to prevent the ancient city centre Stone Town from crumbling under the absence of maintenance. Stone Town was later nominated and listed as a UNESCO World Heritage in 2000, which led to further improving the economy (Cecil, 2011). An indicative structure plan, ZanPlan, was developed by Shapira & Hellerman Planners in 2015, providing an Urban Development Policy for Zanzibar Town, aiming to patch together the fragmented island with tolerance and respect for diversity, which used to be the essence of Zanzibar life.

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