

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

The graduation plan consists of at least the following data/segments:

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Studio	
Name / Theme	Explore Lab 21
Teachers / tutors	Michiel Smits (Research), Adrien Ravon (Design), Ype Cuperus (Building Technology)
Argumentation of choice of the studio	I chose explore lab as it allowed me to frame my own topic. A graduation project in my opinion is a very personal endeavor, which is why I chose to deal with the pressing issue of informal densification in my home town, Johannesburg.

Graduation project	
Title of the graduation project	Slumify: Qualifying Informal Densification
Goal	
Location:	Kliptown Informal Settlement, Soweto, Gauteng, South Africa

THE POSED PROBLEM,

PROBLEM BACKGROUND

The square stands vast and empty, a few people move through it, inhabiting the exaggeratedly scaled square. The space functions as a huge thoroughfare, acting as a space of transition rather than a space of destination as intended by the architect. The square is called the Walter Sisulu Square of Dedication, formerly known as the Freedom Square, and stands as an example of an architect working within conditions of poverty, awkwardly trying to reference the plight of the people but resorting to an architecture which elaborates the author more than the inhabitants.

Walter Sisulu Square of Dedication stands within the limits of Kliptown Informal Settlement. Kliptown is an area divided, historically and presently. The main boundary, the railway line, once guarded by a concrete fence now appropriated as building material in the settlement, forms a geographical suture, linking the formal and informal urban realities. On one side, the rich history of Kliptown is memorialised in the excessively large Walter Sisulu Square of Dedication, previously Freedom Square, the site famous for hosting the Congress of the People in 1955 and the signing of the famous Freedom Charter, which brought about the end of Apartheid. The Walter Sisulu Square of Dedication is described as the landmark of Kliptown, and yet in no way represents the struggle and victories that Kliptown represents.

The report on the "Johannesburg Insanitary Area Scheme" of 1903 documented insanitary areas within Johannesburg, including Brickfields, Burghersdorp, Fordsburg and Coolie Location. The inquiry was sparked by the fears of bubonic plague breaking out in the "overcrowded" and "unsanitary" settlements. The settlements were viewed as contagious lesions on the otherwise world class city. The report concluded that these places could only be dealt with by tearing the neighbourhoods down. The people were to be moved to the area next to Klipspruit River, which is now occupied by Kliptown, Nancefield, Eldorado Park and surrounds. The land was mostly occupied by unkempt farmlands, well outside the municipal borders of Johannesburg. This was the official beginning of the area to be known as Kliptown which was officially proclaimed in 1903. The camp was supposed to be temporary, but 112 years later the settlement still stands as a testament to the relevance of informal settlements to the developing city of Johannesburg.

The first site visit, in November 2016, was initiated at the Walter Sisulu Square of Dedication. My contact at Kliptown Youth Program instructed me to meet him at the Soweto Hotel, a four star hotel on the extents of the square. The initiation of the tour illustrated the problem explicitly. The fate of this rather momentous architectural error lies in its conception, rather than in its execution. It is

clear through the brief, and the winning architectural entry that neither the architect nor the local government truly understood the needs of the inhabitants of the surrounding area, resulting in a total disregard for the local heritage and a disregard for what it is that the local population wish to protect.

Supitcha Tovivich, pointed out that conventional architectural practice and education has long been limited to serving a minority of the world's elite population. Situations, whether rural or urban, which desperately require professional intervention are often neglected or forgotten due to lack of resources, empathy and understanding. Furthermore, with Kliptown as an example, we realize that the lack of education about these contexts results in interventions which display little to no sensitivity to the community and its context. Without the knowledge of how to conduct their research within a community, often regarded as dangerous, architects are likely to jump to conclusions, thereby designing "white elephant" architecture, clearly illustrated by the architecture of Walter Sisulu Square of Dedication.

Geoffrey Payne, an international housing expert, points out that, "The common claim by architects that they are the leaders of the built environment professions encourages them to see themselves as more influential in creating and managing the built environment. This in turn encourages an arrogance which, for instance, led to a senior World Bank staff member once refusing on principle to employ an architect on international development projects involving housing and local development." (Payne, 2008) The implication of this quote, is that architects lack the education, and empathy to work in local development projects.

Charles Correa explained that only 10 percent of the world's population has the means to commission the type of building that an academically trained architect has learned to produce. One out of ten would think of engaging the architect in the process. The result is that only one percent of society interface with architects, as depicted by figure 1 (Serageldin, 1997).

Walter Segal lamented over the role of the architect pointing out that "There is a future for architects, but they must learn very different skills; they can no longer hide behind the same so-called architectural values. None of my self-builders is interested in the design of façades nor the skilful proportioning of solids and voids. On the other hand, a reasonably trained person can assist a layman builder who only has a very rudimentary idea of space. It is a skill that can be taught." (Hamdi 1986).

The discourse of architecture has evolved substantially since Modern times, where buildings and urban plans were seen as a tool of social development. Post-Modern ideas suppressed the social role of the architect and architectural authorship dominated social concerns resulting in a formalistic and stylistic outcome. Amongst the angst surrounding the contemporary "Starchitects", one can identify a marked return to social and environmental concerns, with organizations such as Architecture for Humanity propagating ideas about "what we build" rather than "how we build". Never-the-less architects still have little to no involvement within institutionalized slum improvement practices. Planning and development discourses have developed and advanced largely without their participation (Nickerson, 2010).

The great paradox of our time is that we live in a world of excess characterized by incredible scientific advances and technological breakthroughs, and yet many people live in tragic poverty (Tovivich, 2010). This is exemplified by the resultant lack of contact with people and their surroundings, computer screens and televisions allow one to grasp ideas about cultures and societies without having to physically interact with the people. This essentially removes the architect from the issue at hand.

The role of the architect in the 21st century is under dispute. The lack of professional involvement in crucial situations places a burden on the architectural profession as well as the architectural education system. Tovivich surmises that the architect's initial role within a community was to provide, exemplified by the top-down social housing strategies which typified the modern movement (Chatterjee, 2014). The great failures of these developments depicts the need for radical change. It is necessary to explore new values, knowledge and skills in order to sustain architecture's general relevance.

PROBLEM CLARIFICATION

Almost a quarter of the world's population lives in informal settlements, with an estimated 863 million people living in the settlements of developing countries. In Africa, approximately 61.7% of the urban population is currently residing in slums. A staggering ninety five percent of the projected population growth of humanity will occur in the urban areas of developing countries. The populations of these areas are projected to double to almost 4 billion over the next generation (Davis, 2006). It can therefore be

said that the global population is literally being shaped by the Third World (Chatterjee, 2014). Ismail Serageldin pointed out that “billions of human beings, especially in the developing, world are living in conditions beneath human decency by any definition.” (Serageldin, 1997).

It is clear that the global condition, if projections are correct, will be shaped by the urbanization patterns in the third world, where a myriad of contradictory urban phenomenon form a dynamic collage of exploitation in many senses. All large developing cities entice informality as an output of migratory patterns. Informality is a natural and necessary part of the urbanization process.

Poverty is in no way a new phenomenon. It has been the dominant social class throughout history (Amadei, 2014). Poverty is a hard phenomenon to define. The word itself is loaded with meaning and negative historical baggage. The World Bank defines poverty as the “pronounced deprivation in well-being” The United Nations expands this definition stating that poverty “means a lack of basic capacity to participate effectively in society”.

Most of the major cities were built using the poor populations. Throughout history one notices that informal settlements, or slums, attract cheap labor in order to contribute to the construction and economy of the new urban cores. The phenomenon manifests itself when the migration of people from rural places to the new urban core exceeds the possibility of the city to ensure housing and the poor peripheral areas become overcrowded. These people are poor, they often struggle to find work, and therefore are forced to live in slum environments.

Defining a slum is complex and is perhaps best defined by its major sources of deprivation. The main deprivations are the quality of housing, insufficient space, insufficient access to safe water, poor access to safe sanitation and no security of property. Informal settlements can also be defined as the invasion of public or private land with self-build shelters developed by poor groups. The areas often lack infrastructure and planning. The primary reason for the existence and continued functionality of the settlements is that they provide cheap housing and a means to earn a minimal living.

Charles Abrams documents the extent of the worldwide urban explosion and the inadequacy of the industrializing nations to deal with the subsequent housing problems. He points out that in the early years of industrialization slum development will be an inevitable by-product (Abrams, 1964). The process of Industrialization in Johannesburg is largely linked to the discovery of Gold in the Witwatersrand, the change from an agricultural society to an Industrial society brought about the urban migration that gave rise to Kliptown, and other informal settlements.

Many contemporary viewpoints regarding informal settlements idealize them as a resource for the global future due to the dense structure of people within the urban environment. Settlements are considered as a necessary and sometimes even helpful places within the development and urbanization of a city (Baldea, 2015).

Cities Alliance (2008) found that with successful slum development three process occur simultaneously. The slum dweller becomes the citizen, the shack becomes the house and the slum becomes the suburb. A change of perception is achieved through the simple alteration of semantics highlighting the problem with preconceptions within developing environments.

Governments in these contexts have traditionally concentrated on the provision of housing as a solution to prevalent social problems. The flaw in this method of upgrade is that the individual homesteads fail to satisfy community based aspirations. A study conducted in India concluded that slum dwellers prioritize access to infrastructural services, due to the immediate enablement they receive. Slum dwellers can then strive to improve health, education and employment opportunities themselves (4).

Frederick Hertzberg’s theory of motivation explains the idea of having two different types of needs, those which avoid pain, and those which aid in psychological growth. The theory is dissected by Parikh et al in order to understand the implications of motivational theory within the setting of an informal settlement (Parikh, et al., 2012).

The factors which avoid pain are termed hygiene factors, which include considerations such as access to drinking water, sanitation, waste management, affordable energy among others. These were described as lower order aspirations. According to Hertzberg’s theory access to hygiene factors does not inspire motivation. Individuals are generally dissatisfied when they are absent, but not motivated when they are present.

The motivational factors or higher order aspirations which aid in psychological growth include considerations which bring about recognition and personal growth. These include healthcare, land tenure, ownership and education. Access to these facilities provides an enhanced sense of status within the community, thereby enabling members of the community to focus on improving rather than just surviving (Parikh, et al., 2012).

Parikh et al concluded that once lower order aspirations are achieved, serviced slums switch their aspirations to higher order aspirations. Therefore it is clear that if people don't have access to infrastructural services, they are less likely to appreciate or be motivated by an architectural intervention, even in the form of housing.

This finding implies a shift in strategy and policy for governments, developers and architects. Providing access to basic services such as energy, water, sanitation and flood management can be an important catalyst in shifting the aspirations of communities; thereby inspiring community investment in housing stock.

These findings are substantiated by an approach called "The basic needs approach", which can be described as an approach to development which attempts to provide the "opportunities for the full physical, mental, and social development of the human personality and then derives the ways of achieving this objective" (Streeter, 1981). The basic needs approach pulls the focus away from the generalised quantitative means conventionally utilised to measure development and focuses on the individual.

In order to empower a community it is important to formulate a strategy for productivity and economic inclusion for the inhabitants. Ela Bhatt describes the home within a settlement as a productive asset. This description will be expanded to assume that a building in any sense is a productive asset within a developing community.

A building provides shelter in order to work. It is a storehouse for goods and potentially a source of inputs such as water and electricity (World Bank, 1996). The implication is that resilient architecture can in a sense empower the inhabitants.

The process of construction in such environments is often slow due to the participatory nature of accepted practice. With this in mind it is necessary to consider the implications of time on the process. When considering a period of 50 years with current population growth estimates and following current urban growth trends, one can estimate that the population of Klijtown informal settlement will double resulting in an extremely dense urban environment.

The industrial revolution introduced us to the debate surrounding density. The inherent impact of industrialization and concurrent technological innovation on the housing developments within developing countries has been to the detriment of billions of people. The same processes have helped in uprooting the ancient social systems of organizations and have caused mass urban migration throughout the developing world.

In a society where concrete commodity is rare/unusual, money becomes the dominant factor. Economic growth of any form essentially frees societies from the natural pressure which required their direct struggle for survival. In the primitive economy commodity implies a surplus of survival. Having something to exchange meant having produced more than is necessary to live.

The development of the modern economy and governing systems has in some ways left a certain margin of human society behind. The poor is marginalized by a system which values economy over survival. Marginalized society struggles to break into the economy due to barriers such as tax, energy tariffs, water tariffs, land prices, labor prices and general costs of living.

The overall spectrum of community development projects within this spectrum of marginalization follows the "ready-fire-aim", whereby projects are initiated with little design, preparation and planning (Amadei, 2014). These projects are expected to be executed quickly, with minimum costs, and high quality. Many of these projects set themselves up for failure.

The Independent Evaluation Group reviewed almost 10 000 World Bank projects and reported an overall project success rate of only 57% (McKenzie, 2014). This statistic does not reflect well on the project delivery of various development agencies throughout the

world. The abominable success rate can be attributed to poor processes and frameworks, denoting a poor understanding of the context.

Typically growth has been judged by the gross national product (GNP) since World War II and has been a success in many senses, but at the same time there was an increasing dualism. Despite high rates of growth, of industrial production and economic growth, not enough employment was created for the rapidly growing urban population. The common practice of measuring deciles of income recipients in order to understand the poor is seriously flawed. Poverty has many dimensions, and trying to quantify it often hides its true cause (Streeten, 1981).

According to Hedergaard (2012), by 2030 our need for resources will alter dramatically. Overall, we will need 50 % more food, 45% more energy and 30% more water. The marginalized populations, such as slums, which lack access to these basic services are likely to be the most adversely affected and their overall quality of life will be affected in a much more tangible way than the more affluent counterparts.

The quality of density is perhaps the most significant feature of the contemporary urban built environment. Without sufficient quality density will not work. It may even become dangerous. Dense environments are positive due to their inherent sustainable use of resources and intense community links that they generate.

Qualitative site analysis, as suggested by this thesis, is a manner in which researchers are able to study things such as slums, in their natural settings, in an attempt to make sense of phenomena in terms of the meanings that people bring to them rather than the quantifiable data supplied by government. The holistic nature of the approach allows one to gain an overview of the entire context under deliberation in order to truly understand the settlement.

The majority of South African citizens are not going to be able to earn their way into owning a house anytime soon. The aim of this investigation is to find a way to increase the quality of the environment of informal settlements in order to make them livable for the foreseeable future by first understanding how to measure a settlement from a qualitative standpoint, rather than a quantitative one.

Stewart Brand stated that “On a more basic level, these places can teach us about where, for better or worse, urban life appears to be headed. Squatters are the world’s dominant builders...If you want to understand what’s going on in cities, look at squatters.”

PROBLEM STATEMENT

Based on the problem background and clarification, the following problem statement was formulated:

Contemporary ideas about slums accept them as a normal phenomenon within the growth of cities. Considering the projected population doubling by 2065 it is necessary to intervene in order to maintain autonomy whilst improving the quality of the environment in order to make it livable.

The key to positive urban densification is delivering and maintaining a positive quality of environment. Contemporary methodologies regarding slum upgrade emphasize quantifiable aspects, such as GDP, when analysing the context. The architect or practitioner is bombarded with worrying statistics and numbers which clearly illuminate the scope of the problem but fail to understand the intricacies of the specificity of the site.

The architect acting on quantitative data alone often reacts with inappropriate interventions such as the Walter Sisulu Square of Dedication. More emphasis needs to be placed on qualifying informal settlements, in order to clarify and really understand the objectives of upgrade initiatives.

RESEARCH QUESTION

The thesis as a whole is composed of one main research question and several sub questions.

1. How does one qualify a slum?

What is the definition of the word “slum”?

What is “quality of life” and how can it be measured?

What is development and how has it evolved?

Which frameworks are relevant and how do they relate to quality indexes?

Which tools are useful in the process of qualification and how are they utilized?

APPENDIX - Explain density, autonomy and time as central concepts.

DELIMITATIONS

Whilst the process of research for this thesis is based within the context of Kliptown Informal Settlement, and is backed up by widely accepted theory, the findings are applicable in multiple contexts.

This thesis focuses explicitly on spatial and community based issues, and not psychological or health indicators as the author does not have relevant expertise.

RESEARCH GOAL

The conclusion of the research will take the form of a set of guidelines which can aid in the digestion of the intricacies of a specific site in relation to certain predetermined parameters. The guidelines set out in the framework are produced as products of the theoretical research process. The research looks into the various existing frameworks and tools in order to formulate a better understanding of a feasible course of action in order to enact community appraisal. The framework should inform the improvement of the spatial and environmental quality of Kliptown Informal Settlement.

Community appraisal is a methodology which defines what the community baseline is in terms of assets, resources, skills, knowledge, structures, strengths, finances and policy in order to ascertain the scope of development and capacity building which is possible within the settlement. The guidelines provided as a conclusion to the theoretical research utilise this concept in order to enable the appraisal of spatial quality within the settlement.

If one can understand the baseline quality of a settlement one may be able to strategise development in a manner that enhances the resultant spatial quality of the settlement. The guidelines will inform the active qualification of Kliptown Informal Settlement in Soweto, Johannesburg.

The intention of the research is to undertake a measured means of slum qualification in order to gain a holistic overview of the context under study through prolonged contact with the field in an open ended manner. Due to the lack of standardized measures the researcher becomes the “measurement device”.

The context studied in this thesis is Kliptown Informal Settlement in Soweto, Johannesburg. The guidelines will aid in highlighting the pertinent problems within the community by presenting a methodological approach along with key deliverables which aid in the formulation of a well-considered and feasible course of action.

The intention is to produce a thesis which deals with global problems surrounding marginalization, in a context specific manner, in order to formulate a methodology of interaction in these environments.

The scalability of the research must allow for the future implementation of the guidelines in many situations within South Africa, and the world.

DESIGN GOAL

The research advocated a qualitative appraisal methodology when dealing with slum upgrade projects. Whilst the research phase was concluded with a set of guidelines to inform the process of intervention, the true measure of the success of the research will be the success of a feasible design solution.

The intention of the research was to find a means to qualify a slum, meaning that the research and design is intrinsically linked. Figure 1 depicts the workflow projection for the project. The research results in a set of guidelines explaining means of intervening in a site. The guidelines are then utilised to qualify Kliptown Informal Settlement as a means of site analysis.

The application of the guidelines in Kliptown informs the design process, forming the baseline off which to design and make decisions. The tools allow one to gain perspective on systems, spaces and materials within the site, in order to formulate a means of intervention.

It is important to reconfigure the way of thinking about urban slums. Instead of being considered a major urban problem in third world countries, one needs to realise their essential role in the continual functioning and growth of the nation's economy.

Slums provide a means of living which allow rural populations to transition into urban life- providing cheap labour. The problem rests in the fact that slums should only act as transition spaces- meaning that the poor quality of life experienced by slum dwellers should essentially be temporal. The slum, and the surrounding context needs to provide opportunities for the slum dweller to progress and earn a better life.

The project is located in Kliptown Informal Settlement, a slum in South Africa. In South Africa, the government provides each eligible slum dweller with a number, which entitles them to an RDP house, provided by the government. There are many problems with this scheme. One is that the shack that this person left behind is inhabited by a new family thus perpetuating the cycle.

To break the cycle one needs to realise and augment the importance of informal living in third world society, but how does this relate to an architectural project?

The proposal is born from the necessity to improve the quality of life of the inhabitants, by upgrading the quality of the housing. People without training do not necessarily know what they want, or how to achieve their desires. This provides a gap for the architect to intervene.

The proposal is for a facility which produces building materials and solidifies and secures the railway station node by activating manageable and meaningful public space.

The intention is to fill the "employment" gap in the society by designing a people based means of construction, which instils skills in a socio-technical manner in order to provide slum dwellers with the opportunity to progress and earn a better life.

SITE PROPOSAL

The challenge facing architects has undergone massive change in recent years. Today architects have the opportunity to address new challenges such as climate mitigation and social development. It is clear that buildings alone can no longer frame the experience we have. Space must be designed to facilitate better quality of life, space which is cleaner, healthier, socially supportive, economically viable and environmentally sustainable (Wratten, 1995). The design process itself becomes a form of artificial evolution.

This form of design finds relevance in informal settlements throughout the world. These low income settlements are typified by poor living conditions. It is estimated that there are over 200 000 slums on Earth, highlighting the importance and subsequent viability of such a project. Davis (2006) pointed out that a staggering 95% of the projected population growth will occur in the urban areas of developing countries. In Africa, approximately 61.7% of the urban population reside in informal settlements.

The African continent is rich in diversity; many cultures, many ethnicities and subsequently many different forms of urbanization and slum development. According to the UN, Sub-Saharan Africa has the highest percentage of people existing within situations of poverty (UNDP, 1990).

Land has been and still is a complex issue in South Africa. Use of land, and ownership have always played a large role in shaping the social, political and economic agenda within the country (NDoH, 1994). Kliptown is regarded as one of the oldest urban settlements within Johannesburg, a city within the province of Gauteng. The settlement was established in 1903 to house various racial groupings. The settlements was developed on two farms, namely Klipspruit and Klipriviersoog, where people had settled, or been forcibly resettled from areas such as Newtown (Himlin, et al., n.d.).

The greater Kliptown area forms part of Soweto, and is located between Pimville and Dlamini on the north, Eldorado Park on the South, and Klipspruit River on the west.

The settlement is described as a backyard town where tin shacks litter the backyards of the formal brick housing. Rows of chemical, portable toilets stand outside in the streets and the gravel roads run with streams of filthy water.

The population of the settlement is estimated at 38 000 - 45 000. The unemployment rate is between 60%- 70%, resulting in an estimated 3415 households out of 8977 shacks with no annual income (Himlin, et al., n.d.).

The broader area does not have access to health and education facilities, meaning they should travel lengthy distances to reach basic necessities.

The informal communities within Kliptown have access to communal taps, which are sometimes as far as 200m away from their homesteads. For sanitation 3276 households utilize the bucket system, a further 1437 households use communal mobile chemical toilets and 219 households have no toilets at all. As for electricity, the greater majority of the informal settlers utilize candles or paraffin for light (Himlin, et al., n.d.).

Kliptown has active community participation networks. These independent community forums form institutions where residents can channel their pressing concerns and needs, and contribute ideas. Three such forums are the Community Policing Forum, the Community Development Forum and the South African National Civic Organization (Himlin, et al., n.d.).

PROCESS

METHOD DESCRIPTION

Through the use of cross sectional research design the author seeks to triangulate the outcome through mixing various research methods in order to reach an objective outcome (Groat & Wang, 2002). The process will be described as conceptualization. To conceptualize, as explained by Ipsita Chatterjee, is the act of digestion, observing, reading, interviewing, understanding and recording the reality in which one is immersed (Chatterjee, 2014). The result is a synthesized version of the scattered perceptions, allowing people to easily understand an unfamiliar urban condition, or means of working. Conceptualization is therefore an entirely “democratic” act, allowing one to be empathetic towards other people’s realities without alienation of the protagonists.

The inductive approach rests on premises put forth by qualitative research methodologies. The research is therefore multi-method in focus, with a naturalistic approach to its subject matter. The approach taken is that of grounded theory. The researcher therefore does not begin with a preconceived theory in mind, but with an area of interest; allowing the theory to emerge from the data (Groat & Wang, 2002). The tactics undertaken are descriptive (noting patterns and themes), analytical and explanatory.

The research process includes three distinct phases. The first phase is that of theoretical familiarisation. In order to conduct thorough research it is important to familiarize oneself with the theoretical construct that supports the goal. Nabeel Hamdi suggests that those who design tools and guidelines must work with the basic principles widely proposed in contemporary literature. Frameworks need to be grounded on sound theory (Hamdi, 1986).

The first step of phase one was conducted through the use of a broad scale literature review, making sense of various issues. The definition of a slum formed the starting point of the investigation. The etymological and operational definition of a slum introduced the topic, and introduced the first means to categorically define and understand a slum. This investigation led to the realisation that there is a distinct lack of qualifiable factors involved in the definition of a slum.

The next step was analysing and understanding the various quality of life indexes, by categorizing them into relevant headings. In order to understand the quality of life aspects and expand on them further key global development strategies were considered as a means of understanding the global development scene, and filling in gaps from the first step.

The following step was to understand contemporary frameworks and tools in order to formulate an understanding surrounding participatory qualification practices. The frameworks and tools considered were chosen due to their alignment with qualitative research norms, ensuring that they do not start with a preconceived outcome but rather a course of action, or area of interest. The frameworks were broken down into key themes and consolidated with the parameters from previous analyses in order to inform which tools need to be inspected.

The outcome of the theoretical phase of research is a list of parameters necessary to conduct a conclusive qualitative analysis of a site, with corresponding tools which may be useful in the execution of the information gathering.

The second phase is context specific site investigation utilizing contemporary participatory research tools extracted from the theoretical research. The literature research informs various methods such as transect walks, informal surveys, model building amongst others in order to formulate an inventory of tools for onsite community appraisal. The necessity of this site visit is bi-fold; the tools suggested by the literature study must be tested and investigated in order to ascertain a large amount of site specific data, whilst resulting in a clear understanding of the practicalities of utilizing the various tools in practice.

The third phase was the development of the guidelines. This phase entailed detailed investigation and on-site experimentation. Tools and methodologies needed to be quantified in practice, in order to test their effectiveness in local conditions, and then iterated in order to improve the effectiveness of the tools (Hamdi, 1986). This phase linked research and on-site participation in order to formulate tools and ways of working which are proven to be successful through on-site work.

The output of the research process is a set of guidelines, designed in an easy-to-understand manner, in order to facilitate the education of architects, students or other professionals with little to no experience when working in an informal settlement or slum. The guidelines include tips from the literature study as well as advice and examples from working on-site in Kliptown Informal settlement.

The research consisted of two on-site investigations. One conducted in November 2015, and one in March 2016. The first site investigation is conducted in order to make sense of various tools and parameters extrapolated from the variety of indexes, definitions, frameworks and tools studied in the first phase, as well as to familiarize myself with the site in order to inform design decisions.

The research method is both global and specific. The global part of the research relates to the design of the guidelines, and the extrapolation of global parameters within the research process. In conjunction with the global parameters, local indicators have been researched in order to inform the design process. The second site visit was undertaken in order to test design ideas on site with the community whilst at the same time testing the implementation of the suggested guidelines.

In order to get a clear and accurate reading of the site, the on-site work was conducted through a cross-section of age groups and community organizations. The on-site work was conducted in liaison with Kliptown Youth Program. The collaboration with the well-esteemed youth organisation on-site ensured that the information gathered is accurate.

Literature and general practical preference

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REFLECTION

RELEVANCE

In a society where concrete commodity is rare/unusual, money becomes the dominant factor. Economic growth of any form essentially frees societies from the natural pressure which required their direct struggle for survival. In the primitive economy, commodity implies a surplus of survival, having something to exchange meant having produced more than is necessary to live.

The development of the modern economy, and governing systems has in some ways left a certain margin of human society behind. The poor is marginalized by a system which values economy over survival. Marginalized society struggles to break into the economy, due to barriers such as tax, energy tariffs, water tariffs, land prices, labor prices and general costs of living.

The thesis finds relevance within the architectural discourse surrounding the role of the architect in the 21st century. The intention is to produce a thesis which deals with global problems surrounding marginalization, in a context specific manner, in order to formulate a methodology of interaction in these environments.

When one deals with a problem as big as the global housing shortage, and resultant proliferation of slum environments, one is morally obliged to produce work which can essentially help and potentially solve the problem.

This thesis deals with a manner of appraisal, which may help avoid costly mistakes and white elephants, such as the Walter Sisulu Square of Dedication (figure 14), within slum development, but in no way solves the problem of slums as a whole.

One needs to realise that one thesis may not be able to save the world, but may be able to enact change that affects a small percentage of the population. The importance of limitation in research is incredibly crucial. It is more valuable to solve a small problem comprehensively, than to solve a large problem badly.

This thesis forms a small start to a lifetime of work, dealing with informality in a responsible and sensitive manner. Due to time limitation, many aspects were not comprehensively analysed, leaving space for an abundance of future work on the subject.

The scalability of the research allows for the future implementation of the outcome in many situations.

TIME PLANNING

