DEVELOPING THE SLUM MAIN STREET:

An urban Intervention in Kisenyi, Kampala

by

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A MARKET VENDOR RESTING IN THEIR MAKE-SHIFT
VENDING STALL. KAMPALA, UGANDA

Abstract

Slums are widely perceived as hubs of hopelessness and societal decay that require removal. As architects we can affirm the place of these settlements in the urban milieu. A solution to the disrepair of the city's slums lies in a model that provides a more qualitative, habitable living and working place that can act as a framework to stimulate the existing economic activity.

Kisenyi II is one such site, bustling with economic activity and potential. It is also one of Uganda's largest informal settlements, and home to the country's largest open-air market. Its inhabitants however live in constant fear as they have been repeatedly threatened with eviction. This thesis and design proposal will be focused on designing a framework upon which quality living and ordered economic activity can thrive and in so doing reclaim the informal dwellers' right to the urban realm.

Acknowledgements

This thesis could not have been written without the help of numerous well-wishers both here in Ottawa and at home in Uganda.

To begin with I would like to thank my thesis advisor Professor Yvan Cazabon who directed my research. I met with Prof. Cazabon on a weekly basis and on each occasion he greeted me with a smile and a positive spirit that quailed any anxiety that I may have walked in with. He helped me to constantly focus my research and to develop a thesis question -- To paraphrase Professor Cazabon, the thesis is often less about finding an answer, but clearly defining the question.

I attribute any achievement that I have made to my parents Diane and Emmanuel Mugamba who have been my most constant source of support and affirmation. I thank my sister Viola, I am privileged to have her as my companion through life and my aunt Yvonne who has kept me nourished with a constant dose of vitamin love! I must also thank my friends, loving family and colleagues. I give praise to God for the opportunities and the incredible people he has placed in my life.

I am grateful to all those who committed their time and resources in the process of compiling research data, including Dr. Stephen Mukiibi, Mr. David Mugamba, Fiona Nshemerirwe and the staff of ACTogether as well as Malcolm Bigyemano. I extend my appreciation to those working on Kafumbe Mukasa each day who despite harsh circumstances manage to put on a smile and took the time out to share their thoughts with me. I greatly admire the hope and perseverance that they display.

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INTRODUCTION: THE PROBLEM

Growing up in Kampala, Uganda, the city's slums were never far from sight - a diversion off the highway in the city centre would see the tarmac road quickly degrade into a dusty, murram track and the glossy storied buildings would be replaced by shanty wattle and daub tenements. This is the home of over 60% of the city's population; a place scarce of water & sanitation services, electricity and with no garbage collection and disposal service to speak of. I have been fortunate enough to have grown up in a much better environment and through education I have acquired a skill-set. The goal of this thesis exploration is to apply this skill-set to propose some solutions to the specific societal problems afflicting the most deprived in my community.

This thesis aims to explore perhaps the most pertinent issue in urbanism today: the emergence of slums - densely populated urban areas characterized by poor-quality housing, a lack of adequate living space and public services, and accommodating large numbers of informal residents with generally insecure tenure¹. Worldwide, at least 860 million people now live in slums, and the number of slum dwellers has grow by six million each year from 2000 to 2010 (UN-Habitat 2012a). In sub-Saharan Africa, slum populations are growing at 4.5 percent per annum, a rate at which populations double every 15 years.

Slums originally came to be due to the inability of the government to provide sufficient housing to the rapidly growing urban population.

The slum and the economic activity that sustains it are inextricably tethered. Once rural migrants settle in the city, unable to afford land and build at standard rates and too poor to secure building loans, they are forced to turn to informal trade

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Marx, Benjamin, Thomas Stoker, and Tavneet Suri "The Economics of Slums in the Developing World" Journal of Economic Perspectives 27, no. 4 (November 2013) 187

FISHING SLUM IN ENTEBBE, UGANDA

FISHING SLUM IN ENTEBBE, UGANDA

for income. The city's population are divided in two categories: those who work outside of the system and those who can. The relationship of these two worlds is at the core of the slum improvement.

TWO WORLDS IN ONE

With the influx of impoverished migrants from surrounding villages into the commercial centre, the city has become a place where poverty and wealth exist side by side. Despite being situated so closely, slum-dwellers remain separated from other city inhabitants along the basis of access to infrastructure, education, space and capital. The activities and income of slum-dwellers spring from what is known as the 'informal economy'.

When Robert Neuwirth, a renown investigative reporter and author of the novel 'The Stealth of Nations: The Global Rise of the Informal Economy' set out to define the term 'informal economy' he found the most succinct definition from a local trader in Lagos who defined it as "businesses that exist solely on individual effort, with no help from the government."² For the remaining duration of his reporting in the book Neuwirth uses this definition. This definition speaks to a fundamental inequality, the poor are not equitably catered to by the government and thus must fend for themselves.

In his book "The Mystery of Capital" Fernando de Soto, a think-tank leader on the informal economy, conducted an experiment that illustrates the push-back that an individual coming from the informal economy would receive by attempting to integrate into the formal economy: he set up two sewing machine shops in a Lima shantytown. He hired two young women and put them under the supervision of someone who

MAKOKO FISHING VILLAGE. LAGOS, NIGERIA-

2. Neuwirth, Robert. *Stealth of Nations: The Global Rise of the Informal Economy*. New York: Pantheon, 2011. Print. 22

knew what steps were needed to legally set up this small business. Then, they listed and timed each and every step it took for a typical entrepreneur to get through all of the red tape and paperwork. They included time spent on buses and waiting in lines. They discovered that to legally set up this tiny business took more than 300 days working six hours a day. The cost was more than 32 times the minimum wage³.

Both de Soto and Neuwirth attest to the vitality, validity and value of the informal economy and both recognize the opportunities and facilities that members of the informal economy are deprived of but each have different takes on how to address the problem. Hernando de Soto proposes that governments simplify the workings of regulations and legal codes to make it easier for informal businesses to join the licensed, registered, incorporated world. He anticipates that businesses that become legitimized will prosper due to the credit and saving mechanisms availed to them. Neuwirth on the other hand contests that this broad, all-encompassing approach will not work for all informal businesses as the expense of formalizing may be more costly than the expenses of avoiding taxation (such as bribery).

Indeed there ought to be more equitable access to opportunity for those in the informal economy, however by focusing efforts on integrating the informal into the formal system we ought to be careful not to negate the merits of the informal system. There is a lot to be learnt from the informal system/economy. A successful integration of the informal and formal systems must feature the valuable qualities of both systems. The notion that the informal system is a completely broken one that needs to somehow be integrated into the larger established whole is flawed in that it does not acknowledge the valuable qualities of the informal system.

"PUEBLO JOVENES"
(NEWER SETTLEMENTS) OF LIMA, PERU

3. De Soto, Hernando. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic, 2000. Print 190

THE INTERWOVEN WORLDS

It might occur to the observer looking from outside at this situation that the presence of two systems of government must inevitably cause conflict; one too many bulls in the shed-- after all in the developed world one 'formal' system presides over all sectors of society. It is also fundamentally a great acquittal of juridical power on the government's side to submit control of the large-spanning slums to self-rule.

To the contrary this dual-economy setup remains prevalent without conflict in Uganda and other developing countries. Informal settlements continue to function and accumulate wealth, and the government oversees proceedings of the formal economy un-interrupted. The fairly amicable coexistence of these two systems becomes even more paradoxical when one considers that many of the nations where this dual-system exists are under somewhat autocratic rule, where juridical and economic authority remains rigorously guarded.

A reason for this is that the government needs the informal economy in order to continue functioning; the informal sector remains the foundation of Kampala's economy. It is no wonder that all new enterprises entering the country have found that they need to adapt to the informal marketing template. An example of this is 'Uchumi'- a Kenyan supermarket chain that recently expanded into Uganda as part of a company campaign to competitively position itself within the East African sub-continent.⁴

SOCIAL DISPARITY IN KAMPALA, UGANDA.
-GRANT, MIRANDA.

4. Kisembo, Didas. "Uganda: Understanding Uchumi Troubles." AllAfrica.com. N.p., 11 Aug. 2015. Web. 1 Mar. 2016. <<http://allafrica.com/stories/201508110721.html>>.

As recent as August 2015, the company has had to register an expansion halt because business units in Uganda have failed to bring in expected revenues. Martin Bakunda, a financial analyst and lecturer at Makerere University Business School believes the supermarket business might continue to face challenges due to an absence in demand from the target middle-upper class: "The retail market dynamic is changing. Lately, a large number of middle income earners, that would ideally flock supermarkets, now prefer much cheaper shopping points," he says.

The 'cheaper shopping points' he alludes to are local markets like Owino market found in informal settlements such as Kisenyi. It is middle income families, working citizens and campus-students who prefer to spend their weekly shopping allowance in passages of Owino rather than in the aisles of a large supermarket like Uchumi. Why is this?

Apart from the obvious reduced expense of shopping in the local open-air market I would put forth that it is also due to the fact that all groups of society would like to claim a part in the communal ritual that is integral to the experience of shopping in the open-air market: wheeling and dealing, expressively negotiating the cost of goods, interacting with neighbours and brushing paths with friends and acquaintances, all while inhaling the aroma of roasted meat and fresh cuts. I would like to think that this is an integral part of why the middle class remain loyal to open markets like Owino.

INSIDE OWINO MARKET. KAMPALA, UGANDA

NEWLY BUILT MALL IN. KAMPALA, UGANDA

The city of today is truly seen as no place for the poor man. The informal settlement is perhaps the city's last remaining vestige of communal urbanity and the slum can be seen as a conviction on the city's collective conscience. How do we choose to respond. Either we tdo away with the remaining vestige of the poor and with it lose an essential contribution to the urban milieu or we work with our fellow city dwellers on validating their rightful claim to the city.

EXPLORING JUXTAPOSITIONS

The following collages that explore the meeting of the formal mall with the open air market.

COLLAGE 01

COLLAGE 2

THE COLLECTIVE SOCIETAL CONSTRUCT

"Constant community participation and involvement are needed to shape our cities and to make them communicative"

_ Joseph Rykwert^A

Slum inhabitants rely on each other to provide the common services that the government fails to grant them. Social inter-reliance is the fundamental quality that makes the slum tick. For it is only by way of pooling resources and energies that slum dwellers, many of whom arrive in the city without a dime to their name, survive in the hyper-capitalist environment. I encountered an illustration of this travelling through the city's streets: Upon noticing the glaring open entrance to a make-shift shack in one of Kampala's roadside slums I inquired to my

.....
A. Rykwert, Joseph. The Seduction of Place: The City in the Twenty-first Century. New York: Pantheon, 2000. Print.266

chaperone, “How do slum dwellers guard their homes from intrusion when they’re absent?”. My chaperone explained to me that security is maintained by the practice of collective, reciprocal house-sitting: “Today my brother will stay at my place with my children while I’m at work, then tomorrow I will do the same for him.”

This culture of sharing, pooling and reciprocity; where the deficit of services provided by government is reconciled by the collective effort is an immeasurable asset to slum inhabitants. Any successful effort towards slum upgrading ought to take advantage of this invaluable quality. The financial sector provides an example of how to leverage this quality in efforts to empower small scale businesses in slum areas: Microfinancing has been used as a tool for the provision of financial services such as savings and credit facilities to low income clients. Starting in the 1970s, experimental programs in Bangladesh, Brazil, and a few other countries extended tiny loans to groups of poor women to invest in micro-businesses. This type of micro enterprise credit was based on solidarity group lending in which every member of a group guaranteed the repayment by all members.

SOCIAL DISPARITY IN KAMPALA, UGANDA.
-GRANT, MIRANDA.

4. Kisémbó, Didas. "Uganda: Understanding Uchumi Troubles." AllAfrica.com. N.p., 11 Aug. 2015. Web. 1 Mar. 2016. <<http://allafrica.com/stories/201508110721.html>>.

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Poverty alleviation is a key focus of the project as it is a fundamental catalyst for development in other sectors. It is also of paramount importance that slum dwellers are financially empowered in order to effectively sustain any upgrade. The various slum upgrading projects that were carried out in the 70s, 80s and 90s were considered largely successful in stimulating the production of affordable housing for low income families but could not meet the objective of cost recovery and elimination of subsidies. It was found that the key features of these projects were not replicable by the central or local government bodies in a sustainable way (UNHABITAT 2012). This indicates that slum upgrading projects are not sustainable without a base of financially stable inhabitants to maintain the improvements.

The solution to the daily strife of slum dwellers lies beyond the bounds of architecture and form. The problem is one steeped in inequality and requires socio-economic reform. Architecture can serve effectively as a tool for the implementation of solutions to these issues only when a multifold scheme is developed addressing the intrinsic deficits in the social and political structure.

This being said, the first task is to identify and prioritise the principle issues that cause the slum to be such a poor living environment. The principle issues are land ownership/rights, infrastructure provision, housing and income generation. Each of these will be elaborated upon.

LAND TENURE HISTORICALLY

Prior to the 1970s, the most common response by governments to the growth of slums throughout the developing world was either to clear them, turn the slums into urban renewal projects or to resettle slum inhabitants. These approaches however could only be implemented to a limited scale in developing countries due to the much larger slum population and meagre resources. Slum improvement strategies were initially conceived as a temporary solution to aid slum dwellers until they could be moved into public housing.

When it became evident that slums were here to stay governments opted for the cheaper approach: providing public assistance for housing construction and infrastructure provision rather than building new homes from scratch.

Today slum improvement has taken on a more holistic approach by creating conditions for tenure security and incremental

SOCIAL DISPARITY IN KAMPALA, UGANDA.
-.Oluoch, Barrack

improvement of rights to land and housing.⁶ In Kampala, Uganda the issue of land tenure has been a fundamental obstacle to slum upgrading for city planners. Historically the city was uniquely divided into two sections of governance: the colonial and the royal municipality. The colonial municipality was governed by the British-appointed government whereas the king of Buganda (Kabaka) reigned over the designated Buganda land. The Kabaka's land titling and organisation was based on feudal tenure. Those working at the Kabaka's palace atop Mengo hill would typically live at the bottom of the hill where land was doled to them by the king through a social contract. This very land holds today's largest slums including Kisenyi.

The 1995 constitution enacted the abolition of statutory leases and the Kampala city council lost its 199 year lease on land that had been previously seized. This meant that a lot of land was reverted to its customary owners- the majority of the slums are currently on "mailo"(local term meaning privately owned) land or on former public land. The 1995 constitution also stipulated that private land owners didn't have to plan for their land, an original condition of land acquisition, thereby making it harder for municipal authorities to make large-scale development plans for the slum areas.

Although the slums of Kampala are privately owned for the most part, the actual owners of the land are not the ones inhabiting it. The city's slums are predominantly lived in by tenants paying rent to land owners as well as squatters who do not paying rent at all. The majority of the city's slum dwellers live on land for which that they have no claim.

LOCAL COUNCIL OFFICIALS FOR KISENYI, INVESTED IN RESOLVING THE LAND TITLING ISSUE

THE ROYAL PALACE ATOP MNGO HILL IN KAMPALA, DURING THE 1880S
-Robert Asketill

6. Banjree 8

Because they do not have ownership of the land, squatters occupy the property at the behest of the land's registered owners (well-off business men or the government) who could repurpose/sell off the highly sought after land to the highest bidder. The success of an intervention applied to any of the city's slums is ultimately contingent upon the co-operation of its dwellers who would be much more motivated to invest their efforts into upgrading and maintaining an environment to which they have direct proprietorship. Any policy that seeks to upgrade a slum without considering for a long-term strategy by granting squatters property rights to the land they inhabit is not sustainable.

RELINQUISHING OWNERSHIP: THE UNTHINKABLE?

"This was Mahatma Gandhi's idea, moving from ownership to relationship — seeing that land does not belong to us. We belong to the land. We are not the owners of the land. We are the friends of the land, like friends of the earth. The fundamental shift is in this consciousness that land does not belong to us, we belong to the land."

~ Satish Kumar^B

The extreme alternative to the current system of titling, where slum dwellers are tenants would be for full ownership of slum land to be granted to the slum dwellers. The idea of granting full property rights to slum dwellers is quite a radical one because it would compromise formal law relating to titling, as well as the personal interests of land-owners (in most cases the government owns a major portion of slum land).

SLUM DEMOLITION: THREE STUDENTS OF SIT ATOP THE REMAINS OF WHAT USED TO BE THEIR SCHOOL. ISLAMABAD, PAKISTAN-Iqbal, Myra

B. Stiles, Carrie. "Earth Pilgrim Satish Kumar at Navdanya. ~ Carrie Stiles." AHIMSA. N.p., 30 June 2013. Web. 31 Mar. 2016. <<http://ahimsa.me/>>.

An example where this measure has been proposed is in the slum of Dharavi. Located in the heart of Mumbai-India's financial capital, Dharavi is Asia's largest slum. The slum is notable for harbouring a plethora of small businesses. Despite the great productivity going on, the slum remains hampered by sub-standard housing and infrastructure. Because Dharavi is situated on prime city real-estate its inhabitants face the constant threat of urban renewal which would see this landmark community settlement transform into a forest of condos and towers.

In response to this threat, a global competition was launched by Mumbai's Urban Design Research Institute (UDRI), an independent organisation advocating for more equitable development in its home city⁸ with the goal of "generating new ideas, concepts and interventions for the integration of urban uses"⁹

The winning proposal came from a team from Mumbai and bears a unique emphasis on the core issue of property rights. Inspired by Gandhi's notion of land as a community inheritance, the team proposes that owners relinquish ownership of the slum land to its inhabitants - the people who live and work on the land day in and day out. The multi-discipline group propose that all ownership rights be granted to a Dharavi Community Land Trust. Despite bearing great promise such a proposal may be unachievable in a place like Kampala due to the complexities of land ownership.

DHARAVI SLUM. MUMBAI, INDIA.

8. Carr, Carlin. "The Best Idea to Redevelop Dharavi Slum? Scrap the Plans and Start Again." Theguardian.com. N.p., 18 Feb. 2015. Web. 30 Jan. 2016. <<http://www.theguardian.com/cities/2015/feb/18/best-ideas-redevelop-dharavi-slum-developers-india>>.

9. "Reinventing Dharavi - An International Ideas Competition." Reinventing Dharavi - An International Ideas Competition. N.p., n.d. Web. 30 Jan. 2016. <<http://www.reinventingdharavi.org/background.php>>.

Addressing the same issue, Hernando De Soto traces the path which developed countries took in order to formalise property rights for all. He takes the example of European settlers in the United States. At the time the early settlers did not have clear legislation to resolve land disputes, they had to invent their own ways of determining who owned what. Federal and state governments saw how they were regulating themselves and gradually adopted and synthesized the laws formally. He gives the example of the US 'Pre-emption' law: a legal breakthrough instated in the mid sixteen hundreds that allowed a settler to buy the land he had improved before it was offered for public sale, in some states corn rights were considered improvements.¹⁰

This example illustrates the point that the laws we take as statutes from developed countries were derived from common public consensus - by the general people: "The law that prevails today in the West did not come from dusty tomes or official government statute books. It is a living entity, born in the real world and bred by ordinary people long before it got into the hands of professional lawyers. The law had to be discovered before it could be systematized".¹¹

De Soto, having visited 30 developing countries has realised that most of their governments are directly implementing western law in their formal property systems. Despite this the majority of locals are following informal law. This inconsistency tells us that to address the issue of property rights we need to re-evaluate our law regarding property rights and adjust laws to suit the present reality in the slums.

SKETCH INTERPRETING THE MARKET-SLUM RELATION.

10. de Soto 190

11. "Hernando De Soto - Key Concepts." Thepowerofthepoor.com. Web. 20 Mar. 2016. <http://www.thepowerofthepoor.com/concepts/c8.php>

NAKIVUBO CATCHMENT PLAN INCLUDING SURROUNDING HILLS

NAKIVUBO CATCHMENT SEWERAGE/ DRAINAGE PLAN

INFRASTRUCTURAL CHALLENGES: WATER AND SEWERAGE

A significant challenge Kisenyi slum faces is the lack of clean water supply and adequate sewage disposal. The issue of sewerage takes on greater urgency in Kisenyi due to the fact that the site is located on a wetland, prone to flooding. It ultimately remains the role of the state to provide these facilities to the public.

Kampala city developed on hills linked by wide valleys of wetlands and river channels that flow into the Murchison Bay on Lake Victoria. Kisenyi II slum was built atop one of Kampala's precious wetlands. The capital is naturally blessed with numerous lush wetlands that for centuries have acted as natural filters of storm water, providing fertile soil for agriculture and a home to a diverse ecosystem. Rapid urbanization has led to the encroachment onto these natural treasures and degraded their ability to service the land. The loss of soil and vegetation coverage due to the conversion of land has clogged urban drainage channels and degraded the natural drainage system.

Apart from the lack of a comprehensive piped sewerage network, there also exist fundamental deficiencies in Kampala city's drainage system. There is inadequate wastewater treatment resulting in the discharge of contaminated water into the wetlands and Murchison Bay causing the degradation of the ecosystem. The city council has released plans for city-scale infrastructural solutions to these issues such as road re-building, accompanied with the refitting/installation of underground drainage and sewerage piped networks.

10. de Soto 190

11. "Hernando De Soto - Key Concepts." Thepowerofthepoor.com. Web. 20 Mar. 2016. <http://www.thepowerofthepoor.com/concepts/c8.php>

PUBLIC TOILET ERECTED CLOSE TO OWINO MARKET. KAMPALA, UGANDA.

price to use toilet: 4 Canadian cents

price to have a bath (men): 12 Canadian cents
price to have a bath (women): 4 Canadian cents

On the micro-scale, the architecture of the street-side vending stations is designed to complement this rebuilding by introducing enhanced on-site sanitation systems such as aerobic and biofilter units. This is not just seen as a temporary band-aid in place until the permanent large-scale infrastructural changes are made but as a complementary advent in an effort to offset pressure on the coming improved infrastructure especially as the population and demand on city infrastructure grows.

DEVELOPING A MORE EFFICIENT WATER SYSTEM

Currently the Murchison Bay is overwhelmed by run-off coming from multiple sources carried to it by rain. This includes greywater as well as industrial waste. Most of the water treatment is done by wetlands since only 10% of Kampala is served by the sewer system. This means the majority of untreated effluents are discharged into the environment and flow directly into the Nakivubo channel.

In order to reduce the pollution of the Murchison bay the different water systems need to be disconnected: Rainwater as well as grey water from the shower, lavatory, and clothes washing ought to be collected and filtered. This stored and filtered water can be reused to irrigate and nourish the landscape without consuming precious potable water. Blackwater contains pathogens that must decompose before they can be released safely into the environment. It is difficult to process black water if it contains a large quantity of excess water, or if it must be processed quickly, because of the high concentrations of organic material. However, if black water does not contain excess water, or if it receives primary treatment to de-water, then it is easily processed through composting.

EXPOSED GUTTERS FILLED WITH GARBAGE
IN KAMPALA SLUM-Eivindeh

GARBAGE LEFT IN WATER TRENCH. OWINO
MARKET. KAMPALA, UGANDA

Blackwater contains pathogens that must decompose before they can be released safely into the environment. It is difficult to process black water if it contains a large quantity of excess water, or if it must be processed quickly, because of the high concentrations of organic material. However, if black water does not contain excess water, or if it receives primary treatment to de-water, then it is easily processed through composting.

HOUSING AND INCOME GENERATION

'Housing is a verb'

John Turner(former Prime Minister of Canada)^c

Slum housing is generally poorly constructed and not durable. Most of the homes in Kisenyi are constructed with brick walls, cement flooring (mud and wattle is also a common floor material) and iron sheet roofing.¹²

The home has a particular importance in the slum because it often doubles as a place of work for slum inhabitants. Dharavi is a great example of the work-live typology in the slum context. The slum is home to an incredibly industrious population which collectively turn over \$650m annually.¹³ Building heights have gone up in the area to house the ever increasing working class population. The standard sky-scraper typology is not compatible with the way of living there because it does not provide the slum dwellers with the space that the traditional hutment typology grants them. The space outside the house serves as an extended kitchen, living room and work-space.

EXTENSION OF HOUSEHOLDS CHORES INTO OPEN SPACES. DHARAVI, INDIA

RESIDENTS HAVE EASY ACCESS TO GROUND FLOOR AND OPEN SPACES IN HUTMENT. DHARAVI, INDIA

C. Cazabon, Yvan. Tamara's House: Research into a [hi]Story of African Technique. Rep. 2002. Print.
12. Dobson, Skye, Melissa Fricke, and Sarita Vengal. THIS. IS. KISENYI. Publication. Kampala: ACTogether Uganda, 2011. Print. 19

13. Carr, Carlin. "The Best Idea to Redevelop Dharavi Slum? Scrap the Plans and Start Again." The guardian.com. N.p., 18 Feb. 2015. Web. 30 Jan. 2016.

Kisenyi's economic activity

Food

- + Fresh Vegetables & fruit
- + Local dishes & snacks
- + Livestock: goat-rearing is popular, home to many butchers

Communication

- + Cell phone distribution, repair

Metal Works

- + Cell phone distribution, repair

Household Goods

- + Household Goods
Furniture: Beds, wardrobes, drawers & dressers
- + Appliances (mostly electric):
Fans, electric irons, water heaters

Artisinal Services

- + Specialized services-Jewelry making
- + candle making (caters to the many households living without connection in the area.
- + Specially crafted motorcycle seat covers

Apparel

- + Clothing is available in formal establishments, from mobile salesmen, and even along the roadside
- + Second hand clothing available from Owino market, Local tailors make original clothing, fabric available from market
- + Shoe repair and accessories available as well

PUBLIC TOILET ERECTED CLOSE TO OWINO MARKET. KAMPALA, UGANDA.

price to use toilet: 4 Canadian cents

price to have a bath (men): 12 Canadian cents

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HOUSING FUNDING AND POVERTY ALLEVIATION

Soliciting funds for slum housing projects is always a challenge. Developing states have constrained budgets which means government funding is generally unreliable. Slum development organisations have had to devise creative schemes that can attract funding from private businesses.

One such scheme is being conducted in Kisenyi today by ACTogether, an affiliate of the Slum Dwellers International (SDI), and a support organization for the National Slum Dwellers Federation of Uganda (NSDFU). The premise of this land sharing program is that a landowner in the slum volunteers their land for development. In exchange the landowner will have their land upgraded using funding from private and governmental agents. The landowner profits further from revenue earned from commercial activities attracted to the site.

The plan envisions a storied building to replace the shanty housing structures presently on the site. The building will have commercial space on its ground floor and residential units on the higher floors to house the squatters presently living on the land. Each residential unit will be designed to have a private toilet and a balcony. The commercial floor will be rented out either to multiple local businesses or to one corporation. Occupancy of local business will help finance the entire structure through the form of cross subsidies.¹⁴

The main advantage here is that squatters are provided with secure, well serviced housing and no longer bear the threat of eviction.

HOUSE EXTERIOR USED AS KITCHEN.
KISENYI, UGANDA-Google Street view

14. Mabry, Claudie. Urban Uganda City Explorations and Life Expressions. Publication. New York: New School, 2014. Print. 38

The draw-back to this plan, however, is that it could create a scenario where private businesses from outside the slum occupy the ground commercial floor and take control of the slum market. Although squatters are benefiting by gaining access to better housing and services many will be deterred by the loss of business.

This was a lesson that came out of the Namuwongo low-cost housing and slum upgrading project - an intervention to improve the living conditions in the Namuwongo slum in Kampala¹⁵. Stephen Mukiibi, the lead architect on the project lamented this in a discussion I had with him about the topic. He told a story about a man who used to make his living selling water in Namuwongo when it was a scarce commodity in the slum. After access to clean water was provided by the upgrading project the squatter moved to another slum where he could sell his product.

Unfortunately many other squatters left Namuwongo after improved housing was built; "a large proportion of the intended beneficiaries opted to sell off their plots for profit and went to live in similar slums to the one they were initially living in."¹⁶

Mukiibi stressed that poverty alleviation is a key factor in any low-income housing project. If squatters cannot afford to maintain the homes that are built for them, then they will inevitably sell them off and move elsewhere.

8. Carr, Carlin. "The Best Idea to Redevelop Dharavi Slum? Scrap the Plans and Start Again." Theguardian.com. N.p., 18 Feb. 2015. Web. 30 Jan. 2016. <<http://www.theguardian.com/cities/2015/feb/18/best-ideas-redevelop-dharavi-slum-developers-india>>.

15. Mukiibi, Dr. Stephen. "Experience in Implementing Enabling Shelter Strategy." ResearchGate. N.p., 26 June 2015. Web. 30 Oct. 2015.
Mukiibi 9

16. Mukiibi 9

An emerging housing strategy today that considers the maintenance that comes with providing a new home is 'the incremental approach'. The incremental approach offers a response to this by allowing slum dwellers to build bit-by-bit, just as much as they can afford.

UNHABITAT defines the incremental strategy as an approach that is dependent on community participation and is phased to transpire over time as opposed to the traditional top-down single-phased approach where a fully-fledged urban layout plan is implemented with minimal community participation.¹⁷

Architect Alejandro Aravena and his team ELEMENTAL exhibits the efficacy of this approach in the Quinta Monroy low-income housing project in Iquique, Chile. The project aimed at accommodating 100 families. Rather than building a large structure with small units, they built flexible half-homes that each family could expand on¹⁸. The key advantage to this approach is that the housing ceases to be an expense to the participating families and instead is an investment: A year after the housing was completed, Quinta Monroy's property values had tripled.¹⁹ Still, all the families have preferred to stay and keep on improving their homes, instead of selling them.²⁰

QUINTA MONROY- INCREMENTAL HOUSING
IN IQUIQUE, CHILE

17. Banerjee 17

18. Aravena, Alejandro. "My Architectural Philosophy? Bring the Community into the Process." Ted.com. N.p., Oct. 2014. Web. 17 Sept. 2015. <https://www.ted.com/talks/alejandro_aravena_my_architectural_philosophy_bring_the_community_into_the_process?language=en#t-329416>.

19. Nyren, Ron. "Power in Half Measures: Pritzker Prize Winner Alejandro Aravena - Urban Land Magazine." Urbanland.uli.org. N.p., 05 Feb. 2016. Web. 28 Mar. 2016. <<http://urbanland.uli.org/news/power-half-measures-pritzker-prize-chiles-alejandro-aravena/>>.

20. "Quinta Monroy." Elemental. N.p., n.d. Web. 25 Mar. 2016. <<http://www.elementalchile.cl/en/projects/quinta-monroy/>>

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19. Nyren, Ron. "Power in Half Measures: Pritzker Prize Winner Alejandro Aravena - Urban Land Magazine." Urbanland.uli.org. N.p., 05 Feb. 2016. Web. 28 Mar. 2016. <<http://urbanland.uli.org/news/power-half-measures-pritzker-prize-chiles-alejandro-aravena/>>.

20. "Quinta Monroy." Elemental. N.p., n.d. Web. 25 Mar. 2016. <<http://www.elementalchile.cl/en/projects/quinta-monroy/>>

FOCUS ON KISENYI

THE GROWTH OF KAMPALA.

The inundation of slums throughout Kampala today is largely rooted in colonial planning. The first comprehensive plan for the city was prepared by German architect Ernst May. May was hired to prepare the plan by the British colonial authorities in January 1945. He had recently re-emerged from several years away from architectural practice in pursuit of farming exploits in the then British protectorate of Kenya. Years prior, persecution of the Jewish people by Hitler's 3rd Reich led to an exodus of many prominent architects from Germany, including Ernst May, to the many European colonies around the world.

May applied the strict functional zoning characteristic of Ebenezer Howard's garden plan, a popular style at the time that fit May's taste, having apprenticed under the early decentralist plan advocate Raymond Unwin. May's previous projects (from the Siedlungen housing in Frankfurt to urban master plans in the Soviet union) had focused on the dissolution of the crowded metropolitan centre into satellite cities.²¹ The plan produced for Kampala was no exception: It followed the natural formation of the city's undulating landscape by focusing residential functions on the hilltops allowing commercial activities to collect at the bottom of the hill.

MAY'S DIAGRAMMATIC PLAN OF KAMPALA.
WITH MULTIPLE CENTERS.
From May, Kampala Extension Scheme, 1947

21. Gutschow, Kai K. Modern Planning as Civilizing Agent: Ernst May's Kampala Extension Scheme. Publication. Pittsburgh: Carnegie Mellon U, 2004. Repository.cmu.edu. Jan. 2004. Web. Oct. 2015. <<http://repository.cmu.edu/cgi/viewcontent.cgi?article=1035&context=architecture>>.

According to the plan, housing was segregated by race. The up-market suburbs of Nakasero, Kololo and some parts of Naguru were created for Europeans and Indians, while the Nakawa Settlement scheme was for the itinerant African labour. In addition to this, May rationed the quality of his design based on what he perceived to be the cultural group's level of evolution/sophistication. May's modern Zeilenbau-like method of housing - a series of tall apartment blocks arranged in parallel rows and on grids - was thus reserved only for the highest levels of the colonial society, the Europeans. May defined distinct housing typologies for each of the races. The European houses were by far the largest, containing 'functionally specific room types on several levels, with elegantly curving driveways, garages and swimming pools'.²² The African houses were the smallest of all and contained only generic, undifferentiated 'rooms,' with cooking and eating facilities on the veranda. The separatism manifested in this plan persists today however it appears to be based more on the basis of socio-economic status than race.

DESIGNS ON SLOPING SITES.
from May, Kampala plan, 1947

KISENYI TODAY: A DYNAMIC ECONOMY

Kisenyi II is one of the parishes of the Kisenyi ward in Kampala's Central Division. In a city widely beset with slums (between 30-60% of the city's population live in slums)²³ Kisenyi II ranks amongst Kampala's largest informal settlements with 1,500 households, each having an average size of six inhabitants. The slum has grown quite rapidly considering it was established in 1980. Today the total population is approximately 9,000 people.

22. Gutschow 242

23. Skotte, Hans. KISENYI II & III Executive Summaries 2011. Publication. N.p.: NTNU, n.d. Ntnu.edu. Web. 25 Oct. 2015. <<https://www.ntnu.edu/documents/139680/0/UEP+ex+sum+2011-2012.pdf>>. 7

Within Kisenyi there are numerous grinding mills where people take their maize and millet grain to be ground.²⁴ The parish is bustling with economic activity and potential, it harbours a diverse variety of businesses ranging from jewelry making to cell phone distribution and repair.

Kisenyi II is also home to Owino market, Uganda's largest open-air market. Some estimates claim that as many as 500,000 vendors work in the market selling a vast array of goods. The market is alive with activity. Owino is truly a feast for the senses, flavoured by the tantalising smell of roasted meat and the visual splendour of an array of colours ranging from the rich hues of ornate fabrics to the bright Fuchsia of children's toys that are on display. Vendors canvassing the premises are not shy to tug on a visitor's arm or call-out in order to get their attention. Here one can truly appreciate the productivity in the slum area.

The two-lane Kafumbe Mukasa Road separates Owino market and Kisenyi II. It is here that the blurry line between housing settlement and open market-place is articulated. The road is accented with a series of stalls and kiosks, with distinct displays put together in order to distinguish the respective vendors and catch the attention of bypassing pedestrians. Vendors will commonly gather, grouped based on their trade along the road's trail, forming a tapestry of the slum dweller's talents.

Every so often along the street edge one encounters a point where there is a break from the continuous built form. Between the end of one building and the start of the next lies an opening.

VIEWS FROM THE BUSTLING OWINO MARKET, KAMPALA.

24. "Kampala Profiles: Kampala Central." Askyourgov. N.p., n.d. Web. 20 Dec. 2015. <<http://askyourgov.ug/request/37/response/35/attach/html/2/Kampala%20Central%20SLUM%20PROFILING.pdf.html>>.

These openings have become nodes where people gather leading to either an entrance to Owino market, to the east of the road, or a gathering place formulating out of Kisenyi II towards the west. The largest of these nodes is located near the end of the road and is generated around the local bus park. Taxi parks have always served more than just transport-related purposes; They are also business hubs in their own right. Commuting bus passengers are the main customer base for street hawkers and vendors working here. Businesses are located on the perimeter of the area, ranging from small grocery stores selling domestic products to restaurants and even a barber shop.

THE PROJECT

Kafumbe Mukasa Road is activated by the synergy of multiple social interactions that stem from the presence of commerce and trade. This gives the road strong potential to become a focal urban cultural centre. What is lacking now is an investment in infrastructure and services as well as an investment that is geared towards enhancing the pedestrian experience through a revised street plan that would both service the needs of local slum dwellers and attract business from the larger city. The vision for this site is to develop Kafumbe Mukasa Road into a cultural main street with gathering nodes along its path. The nodes shall provide a platform for local slum vendors to sell their products and grow their small businesses. Each node shall also offer community services such as rainwater reservoirs which are lacking in the nearby slum. In this way each node is viewed as a commercial hub, targeting income generation and also as a community service centre aimed at infrastructure provision.

BARBERSHOP LOCATED INSIDE TAXI PARK-SQUARE.

A GROUP GATHERED OUTSIDE THE ENTRANCE TO OWINO MARKET
-Google Street View

In addition to the street development plan the thesis proposal will include a low-income housing plan that applies the principles discussed in this paper

STREET-LED APPROACH

The design will draw from what Claudio Acioly Jr - Chief of the housing policy section at UN HABITAT terms the “street-led approach”. Acioly has had over 30 years of experience dealing with housing, slum upgrading, land policies and community-based action planning in various parts of the world. Acioly views streets as apparatus for the enhancement of slums and the transformation of the urban realm. He sees their physical utility as “mediums for mobility and accessibility— through which water and sewerage pipes, power lines, and drainage systems are laid.” Acioly also references the streets’ role as “the public domain where social, cultural and economic activities are articulated, reinforced and facilitated.”²⁵ The belief here is that enhancing the physical infrastructure available to a community as well as their socio-economic conditions results in the most effective slum improvement.

METROCABLE IN MEDELLIN, COLOMBIA.
AN EXAMPLE OF STREET-LED APPROACH
TO SLUM IMPROVEMENT.

25. Banerjee 17

SITE STUDY
+
CONCEPT DEVELOPMENT

A DAY'S VISIT TO KAFUMBE MUKASA ROAD. JANUARY 8TH 2016

Mama Fatima:
Metal works vendor

- Would appreciate an enclosure/ covered structure for protection from the elements (weather: rain, sun)
- Would not be permitted to sell her product in malls due to nature of product she sells (heavy, clunky, dirty, etc..) in addition, rent rates in malls are too high for her.
- Would appreciate a more spacious, organized selling area (demarcated selling lot for each different retailer) with ample aisle space for browsing.

Mme. Annette Nankinga
Cassava vendor

- Occupies a small space (about 2m squared) in front of multi-utility store along one of Owino's arcade buildings. She must pay rent to the owner of shop, the shop owner also benefits from the traffic she generates around the shop by attracting pedestrians from street. Between rent and cost of buying produce she is left with little profit
- she endures uncomfortable working conditions to take care of her 7 children
- Lives in wakiso and must use public transport to travel to work daily
- Annette mentioned that she would like shelter while selling her produce.

Mr. Suuna Michael
Technician/ welder: Metal works shop

- Requires more space to work in
- Solar energy is not enough to do welding.

“How can I propose changes on land that is not mine?!”

- lives far from slum as many others who work on Kafumbe Mukasa do.
**reluctant to open up-distrusting of researchers-no effective resultant change*

metal workshop

Arcade buildings

informal taxi park

Local youth
unemployed

- Idle, need work, wake up with no plan
- Represent the faction of Kafumbe Mukasa's work force that lack permanent employment- fulfilling tasks ranging from offloading produce/stock/ materials from transport vehicles to carpentry work & building market display units.
- More often or not this group comprises of the inner-city youth, who are full of energy and seeking a source of steady employment to expel it and provide a source of income.

DESIGNING FOR THE VENDOR'S DAILY NEEDS

Slum upgrading is an all-encompassing task, requiring the combined improvement of many factors. Based on research involving discussions with local vendors and other invested parties I have narrowed efforts to 3 factors, deemed to be most essential to propogating impactful slum upgrading:

	1	2	3
	Better vending structure	Service/ infrastructure centre	Housing/ commercial hybrid
Mama Fatima: Metal works vendor	Requires covered structure for protection from the elements (weather: rain, sun)	Would benefit from a constant electricity supply for lighting in the evening to enable her to work later hours, she currently uses kerosene lamps when she wants to work late.
Mr. Suuna Michael Technician/ welder: Metal works shop	Requires more space to work in	Requires a reliable electricity supply for the operation of power tools	Lives far from Kafumbe Mukasa street & would potentially benefit from a live-work housing hybrid
Mme. Annette Nankinga Cassava vendor	Requires covered structure for protection from the elements (weather: rain, sun) Requires more space to work in		Lives far from Kafumbe Mukasa street & would potentially benefit from a live-work housing hybrid
Local youth unemployed	slum upgrading efforts could employ the large group of youth in the community seeking work.	Local youth could gain skills and provide labour in infrastructure maintenance	Local youth could gain skills and provide labour in construction

Better vending structure

-more space to work in

-covered structure for
protection from the elements
(weather: rain, sun)

IMPROVING VENDING STRUCTURES

Innate sustainable qualities of the slum

In a time when governing bodies strive to re-course the path of modern cities in order to promote a more sustainable model, it can be argued that the slum is the most fertile grounds for this transformation. Kisenyi slum holds great promise for sustainable practice. A key reason for this lies in the community spirit bred by living in a condition of depravity. Slum inhabitants rely on each other to provide the common services that the government fails to grant them. A culture of sharing, pooling and reciprocity, where the deficit of services provided by government is reconciled by the collective effort is an immeasurable asset to slum inhabitants.

One of the slum's innate sustainable characteristics is its density. Kisenyi covers approximately 101.2 Ha (249.0 acres) and has an estimated population of 28,000 (UBOS, 2011) in three parishes. Sustainable solutions can more easily be implemented amidst denser populations. Here mobility is less of a constraint for any proposed strategy and services can be divided with less technical and economical investment; "Honk Kong could be a better starting point for sustainability than Los Angeles."²⁶

a Market Street Sidewalk: study drawing

Analysis of the sidewalk indicates over-congestion. The people enjoy being outside for the most part and occupy the sidewalk. This can make circulation difficult for pedestrians. The un-planned crowding deters visitors. Despite this being said, the presence of people on the street adds flavour and life to the area, making it unique - it is a quality that any plan for the area must enhance.

With such a high population density there is a high demand for space. Every day hordes of aspirants leave their villages from around the country and flock to the city in search of employment adding to the city's population. Market streets like Kafumbe Mukasa road are the prime location for city new-comers to build their small businesses. The over-crowding of the area means vendors must be economical with the available public space. The traditional 'Duka' shops (a traditional side-street shop with attached sleeping quarters in the back - a building typology introduced by Indian immigrants to East Africa in the early 1900s) are filled to the brim with produce, excess produce lines the door entrance-way outside the shop. Shop owners have also had to make use of the pavement outside their Dukas to accommodate street hawkers. For this, a unique arrangement has been struck between the two invested parties:

Those hawking goods on the pavement outside a duka must pay rent for use of the space. Many hawkers will also chose to pay for the storage of their product in the duka lock-ups at the end of a work day instead of traveling home with unsold goods: There is added incentive for the duka owners as passing pedestrians will often be drawn into their shop after having stopped to buy something from street vendors occupying the adjacent pavement outside.

²⁶Sustainability Everyday, pg 64

THE STREET SIDE METAL WORK-SHOP: AN EXHIBITION OF CRAFT AND INGENUITY

‘Kuyiya’ In local vernacular is the English equivalent of the term ‘hustle’- a colloquial term that, in very much the same manner as the term’s conception, alludes to the informal improvisation of a thing. In the context of the metal workshop this word manifests on many levels ranging from the particulars of the work .

What is unique about the metal workshop is the combination of making and selling in the same place: Here you clearly see the persistent thread of informality that characterizes the establishment. From the location itself - beset on the edge of a large informal settlement - to the price setting -- based on persuasive negotiation -- to the mode of making, customizable dimensions based on request.

Products sold at the metal shop range from ladle spoons to charcoal stoves

... and saucepans

Rain brings sales to a stand still

Metal shop viewed from the street (Google Street View)

**THE STREET SIDE METAL WORK - SHOP :
AN EXHIBITION OF CRAFT AND INGENUITY**

Stacked traditional metal charcoal stoves "SIGIRI"

A fabricator in Kisenyi, off Kafumbe Mukasa Road displays various sizes of saucepans. He says, the largest at the bottom, could go for about CAD \$513.00. Photo by Faiswal Kasirye.

IMPROVING VENDING STRUCTURES

The metal workshop truly embodies the industrious nature of Kisenyi merchants. Visiting the site has led me to appreciate the dedication and inventiveness that it takes to produce kitchenware with such limited resources.

Saucepan making process:

1. BUY the metal (aluminium is the preferred metal because it is more malleable and easier to melt in a make shift foundry)
2. MELT the aluminium in red-hot charcoal filled kiln. It takes about an hour for it to completely melt. It is then covered with another metal and then the burning begins. The metal slowly defragments, dripping down into a tin (make-shift crucible) below.
3. It's this crucible that is then lifted out (as liquid), with a long pair of pliers.
4. Some river sand is then emptied into a wooden tray and, with the use of a previously made saucepan, the sand is shaped into a mould with the desired saucepan shape.
5. The tin of liquefied metal, now extremely hot, is then poured into the tray of sand. This is then compressed and allowed to cool, and in the process, allowing molten metal to become a sauce pan.

Diagram illustrating saucepan making process

Service/
infrastructure
centre

Farida's flooding dilemma

Would appreciate an enclosure/
covered structure for protection
from the elements(weather:
rain, sun). Business is halted
whenever there is flash flooding
which has been happening
more frequently in recent years
due to climate change.

WHAT CAUSES FLOODING?

Apart from the lack of a comprehensive piped sewerage network, there are also fundamental deficiencies in Kampala city's drainage system. There is inadequate wastewater treatment resulting in the discharge of contaminated water into the wetlands and Murchison Bay causing the degradation and loss of the ecosystem. Plans exist for city-scale infrastructural solutions to these issues including road re-building, accompanied with the refitting/installation of underground drainage and sewerage piped networks.

On the micro-scale, the architecture of the street-side vending stations is designed to complement this rebuilding by introducing enhanced on-site sanitation systems such as aerobic and biofilter units which are scaled down versions of municipal sewage treatment plants. This is not just seen as a temporary band-aid in place until the permanent large-scale infrastructural changes are made but as a complementary advent in an effort to offset pressure on the coming improved infrastructure especially as the population and demand on city infrastructure grows.

1. Developing a more efficient water system

WHAT CAUSES FLOODING?

1. Insufficient coverage of the sewerage system

Majority of the water treatment is done by wetlands since

only 10% of Kampala is served by the sewer system.

This means the majority of untreated effluents are discharged into the environment and flow directly into the Nakivubo channel. While wetlands can retain nutrients from wastewater and cleanse wastewater of nutrient loads, the degradation of wetland vegetation and encroachment of wetlands by development reduces this nutrient cycling capacity

Approximately, 10% of the population of Kampala is served by the sewer system (figures vary), which covers the Central Business District and the affluent areas, while 90 % of the population, mainly the urban poor, relies on various forms of on-site sanitation (figures vary): pit latrines (55-65%), improved (VIP) pit latrines (27.5%), septic tanks (20%), public toilets (1%), and open defecation (African Development Fund, 2008; KCCA, 2012; (KCCA, 2014a).

Climate graph

There are two wet seasons running from April to May and October to November. The dry months are January to February and July to August. The annual rainfall mean is 1,320 mm though in many areas of the lake zone it is between 1,750 and 2,000mm.

SERVICE/ INFRASTRUCTURE

Taxi parks have always served more than just transport-related purposes. They are also business hubs in their own right and most of their clients are passengers. This taxi park has a few lock ups in which domestic products are sold. Some of these are supermarkets. And if you need a quick meal, there are restaurants as well

The main market space is a feast for the senses with unique smells, sights and sounds, a maze of vendors each with a designated space to set-up, mainly consisting of a blanket topped with an assortment of goods.

⑥ Market Street Node: study drawing

DESIGN PROJECT

DESIGN PROJECT OVERVIEW

Site plan of Kisenyi II slum with areas to be developed highlighted. Two of the areas to be developed are directly along Kafumbe Mukasa street (the taxi park and metal shop). The housing development is located within Kisenyi slum.

AFFORDABLE HOUSING

The plans below illustrate the process of determining housing positions. Intistitial spaces between homes are important social spaces, as well they are used for carrying out daily chores such as washing and cooking.

A

B

C

D

AFFORDABLE HOUSING

The design implements the incremental approach, allowing inhabitants to expand their homes with time, whenever they can afford to incur the building cost.

AFFORDABLE HOUSING

Housing site plan

AFFORDABLE HOUSING

Perspective rendering. View of housing neighbourhood from third floor terrace

AFFORDABLE HOUSING

Section perspective of housing. floor reveal allows enough ventilation for cooking to be done indoors

AFFORDABLE HOUSING

perspective rendering of housing courtyard.

WATER CATCHERS

By rearranging the sauce pan displays, a cascading framework may capture rain water. Stored rainwater can then be treated or alternatively stored and filtered. Water can be reused to irrigate and nourish the landscape without consuming precious potable water."

Conceptual sketch

Perspective rendering

Wet season
April to May and October to November.

Dry season
The dry months are January to February and July to August

Service/ infrastructure

Metal work shop

The metal shop is not only an outlet for stocked product but is also the place of making. An ad-hoc metal factory is tucked behind the street-facing display yard. The factory stands on a wooden frame and is covered by a corrugated iron sheet roof. Here metal scraps are turned into kitchenware. A lack of resources has inspired the artisans to innovate alternative equipment and make concessions with regard to the metal fabricating process: a clay kiln is used as a melting oven, river sand is used to make molds with which they cast the cookware.

Metal workshop plan

As with the other central locations on the site, the objective is to design a space that tends to the direct needs of the vendors as well as one that contributes to the overall benefit of the slum community at large; creating a more sustainable environment. Here the effort is to enable a healthy water circulation cycle. This is done by making the best use of rainwater. Water-catchers collect rainwater for later use (irrigation, washing, boiling & drinking) while rainwater over-spilling from the rain-catchers is fed into the piped sewage system.

VENDING STRUCTURE

▼ vending structure design proposal

Design development

Market site as is, layout/ order not apparently discernable

vendors form rows with displays and sales on the exterior edge and storage in between

Aisles between stalls serve for private use of vendors, visitors implicitly know not to pass through these openings.

Above is a floor plan of the vending structure with its in-between spaces for mobile vending stalls

VENDING STRUCTURE

The city of today is truly seen as no place for the poor man. The informal settlement is perhaps the city's last remaining vestige of communal urbanity and the slum can be seen as a conviction on the city's collective conscience. What we chose to do with them; either do away with the remaining vestige of the poor and with it lose an essential contribution to the urban milieu or work with our fellow city dwellers on validating their rightful claim to the city.

Exploded axonometric showing vendor's shelter

VENDING STRUCTURE

vending stalls are locked into the market structure

The market is open for trade! And stalls are in use, inhabiting the trading grounds

VENDING STRUCTURE

perspective rendering showing taxi-park-market interior.

HOW TO MAKE IT HAPPEN?

Slum improvement requires a combined effort from the government, developmental groups and the community.

Government

In the past the Ugandan government has been an unreliable partner in slum upgrading efforts. This may be partially attributed to Uganda's unorthodox democratic history. Since gaining independence in 1962 the country has never had a peaceful transition of power. Political instability has certainly played a role in impeding the slum upgrading process as so much of the government's focus has been on national security and restoring basic services and infrastructure lost during the periods of instability.

Stephen Mukiibi, the lead architect in the Uganda government's national shelter strategy of 1992-an initiative to upgrade living conditions for low income groups, cited the lack of "political will and commitment of the central government, weak institutional structure and high poverty levels" as the main factors attributing to the ultimate failure of the initiative.

After many years of national peace and economic growth - that has produced a floundering middle class - the time is ripe for the government to re-focus efforts on uplifting the poor, after all-poverty is perhaps the greatest national threat. This requires pressure from the general public, media and watch-groups.

Developmental groups & education institutions

Developmental groups have a critical role to play in the slum upgrading effort. It is through these non-governmental groups that the pooling of resources and information, enumeration and valuable strategizing can be done to develop an effective means of tackling the multi-faceted issue of slum proliferation.

Information and sensitisation is a powerful tool in slum development: It is vital for slum dwellers to have a clear understanding of what the major issues affecting their community are and the channels through which decisions affecting their settlements are made. The National Slum Dweller's Federation of Uganda (NSDFU) advocates the importance of education and sensitisation with campaigns like the 'know your city, plan your settlement' campaign geared towards informing slum dwellers about the urban realm with the goal of empowering them to be able to take an active role in the planning of their surroundings. The group works in collaboration with local and international Universities and Colleges. This is a good way of expanding the awareness of slum conditions, building a greater network of invested parties.

General public & slum community

The city is a melting pot, a place to which people travel from disparate parts of the country. There are numerous tribal groups and nationalities that engage here. The issue of slum proliferation ought to therefore be considered a shared problem with a shared solution. The general public are instrumental in applying pressure to governing bodies and legislators to amend titling laws, provide infrastructure and fund housing.

Those members of the general public who are not part of the informal economy are connected to the slum most plainly by the fact that they are customers buying goods from informal businesses. They should continue supporting these grass-roots industries in order to prevent them losing their market to the forces of capitalism and large corporations. The city's private businesses can also aid in this cause by supporting microfinance initiatives and partnering with small businesses and micro-entrepreneurs.

Last and by no means least market vendors must unite and organise themselves to form a unified front. There are examples where such organisation has resulted in community involved planning such as in the re-development of Kiseka market in Kampala.

WORKS CITED

- Marx, Benjamin, Thomas Stoker, and Tavneet Suri. "The Economics of Slums in the Developing World." *Journal of Economic Perspectives* 27, no. 4 (November 2013): 187–210.
- Neuwirth, Robert. *Stealth of Nations: The Global Rise of the Informal Economy*. New York: Pantheon, 2011. Print.
- De Soto, Hernando. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic, 2000. Print.
- Kisembo, Didas. "Uganda: Understanding Uchumi Troubles." *AllAfrica.com*. N.p., 11 Aug. 2015. Web. 1 Mar. 2016. <<http://allafrica.com/stories/201508110721.html>>.
- Nakato Mwajuma. *Microfinance services and the growth of small and medium enterprises: a case study of katwe small scale industries development association (kassida) in kampala central division kampala district*. Diss. Makerere U, 2012. Kampala: Makerere U, 2012. Print.
- Ree Banerjee, Banash, Claudio Acioly, Axumite Gebre-Egziabher, Joan Clos, and Katja Dietrich. *Streets as Tools for Urban Transformation in Slums: A Street-Led Approach to Citywide Slum Upgrading*. Publication. Nairobi: UNON, 2012. Print.
- Carr, Carlin. "The Best Idea to Redevelop Dharavi Slum? Scrap the Plans and Start Again." *Theguardian.com*. N.p., 18 Feb. 2015. Web. 30 Jan. 2016.
- <<http://www.theguardian.com/cities/2015/feb/18/best-ideas-redevelop-dharavi-slum-developers-india>>.
- "Reinventing Dharavi - An International Ideas Competition." *Reinventing Dharavi - An International Ideas Competition*. N.p., n.d. Web. 30 Jan. 2016. <<http://www.reinventingdharavi.org/background.php>>.
- "Hernando De Soto - Key Concepts." *Thepowerofthepoor.com*. N.p., n.d. Web. 20 Mar. 2016. <http://www.thepowerofthepoor.com/concepts/c8.php>
- Dobson, Skye, Melissa Fricke, and Sarita Vengal. *THIS. IS. KISENYI*. Publication. Kampala: ACTogether Uganda, 2011. Print.
- Mabry, Claudie. *Urban Uganda City Explorations and Life Expressions*. Publication. New York: New School, 2014. Print.
- Mukiibi, Dr. Stephen. "Experience in Implementing Enabling Shelter Strategy." *ResearchGate*. N.p., 26 June 2015. Web. 30 Oct. 2015. <https://www.researchgate.net/publication/279183034_Experience_in_implementing_enabling_shelter_strategy>.
-
- Aravena, Alejandro. "My Architectural Philosophy? Bring the Community into the Process." *Ted.com*. N.p., Oct. 2014. Web. 17 Sept. 2015. <https://www.ted.com/talks/alejandro_aravena_my_architectural_philosophy_bring_the_community_into_the_process?language=en#t-329416>.
- Nyren, Ron. "Power in Half Measures: Pritzker Prize Winner Alejandro Aravena - Urban Land Magazine." *Urbanland.uli.org*. N.p., 05 Feb. 2016. Web. 28 Mar. 2016. <<http://urbanland.uli.org/news/power-half-measures-pritzker-prize-chiles-alejandro-aravena/>>.

- "Quinta Monroy." Elemental. N.p., n.d. Web. 25 Mar. 2016.
<<http://www.elementalchile.cl/en/projects/quinta-monroy/>>
- Gutschow, Kai K. Modern Planning as Civilizing Agent: Ernst May's Kampala Extension Scheme. Publication. Pittsburgh: Carnegie Mellon U, 2004. Repository.cmu.edu. Jan. 2004. Web. Oct. 2015. <<http://repository.cmu.edu/cgi/viewcontent.cgi?article=1035&context=architecture>>.
- Skotte, Hans. KISENYI II & III Executive Summaries 2011. Publication. N.p.: NTNU, n.d. Ntnu.edu. Web. 25 Oct. 2015. <<https://www.ntnu.edu/documents/139680/0/UEP+ex+sum+2011-2012.pdf>>.
- "Kampala Profiles: Kampala Central." Askyourgov. N.p., n.d. Web. 20 Dec. 2015.
<<http://askyourgov.ug/request/37/response/35/attach/html/2/Kampala%20Central%20SLUM%20PROFILING.pdf.html>>.
- Rykwert, Joseph. The Seduction of Place: The City in the Twenty-first Century. New York: Pantheon, 2000. Print.
- Manzini, Ezio, and François Jégou. Sustainable Everyday: Scenarios of Urban Life. Milano: Ambiente, 2003. Print.
- Cazabon, Yvan. Tamara's House: Research into a [hi]Story of African Technique. Rep. 2002. Print.
- Boano, Camillo, William Hunter, and Caroline Newton. "Contested Urbanism in Dharavi. Writings and Projects for the Resilient City." Contested Urbanism in Dharavi. Writings and Projects for the Resilient City. Bartlett, n.d. Web. 01 Mar. 2016.
<<http://www.bartlett.ucl.ac.uk/dpu/publications/dpu-book-17>>.

IMAGES, PICTURES, MAPS AND PLANS REFERENCES

3. "pueblo juvenes" (newer settlements) of Lima. Digital image. *Mamacarts.com*. N.p., 13 Feb. 2013. Web. 31 Mar. 2016. <<http://www.mamacarts.com/market-research-in-lima-part-1/>>.
4. Makoko: Lagos, Nigeria's Floating Slum. Digital image. *Lostininternet.com*. N.p., 9 May 2014. Web. 31 Mar. 2016. <<http://lostininternet.com/makoko-nigerias-floating-slum/>>.
5. Grant, Miranda. Social disparity in Kampala, Uganda. Digital image. *Mirandasgrant.com*. N.p., n.d. Web. 20 Sept. 2015. <<http://www.mirandasgrant.com/home/stories/photography/>>.
9. Asketill, Robert. The Kabaka's palace during the 1880s when Kabaka Mwanga was overthrown. Digital image. *Thelondoneveningpost.com*. N.p., 2 Apr. 2012. Web. 31 Mar. 2016.
<<http://www.thelondoneveningpost.com/features/history-of-uganda-part-62-the-overthrow-of-kabaka-mwanga/>>.
12. Dharavi slum. Mumbai, India. Digital image. *Masteremergencyarchitecture.com*. N.p., n.d. Web. <<http://masteremergencyarchitecture.com/category/field-trips/india-field-trip-2016/>>.
13. Oluoch, Barrack. Photos of evictions in Kibera(2012). Digital image. *Nairobismiths.wordpress.com*. N.p., 1 Feb. 2012. Web. 31 Mar. 2016. <<https://nairobismiths.wordpress.com/2012/02/01/forced-eviction-in-the-name-of-development/>>.
14. Iqbal, Myra. Three students of Pehli Kiran (Islamabad) sit atop the remains of what used to be their school. Digital image. *Tribune.com*. N.p., 15 Apr. 2014. Web. 31 Mar. 2016.
<<http://tribune.com.pk/story/695621/slum-demolition-charity-school-among-structures-torn-down/>>.

15. Eivindeh. Walking by the Gutters. Digital image. Slumreporter.org. N.p., 1 May 2015. Web. 31 Mar. 2016. <<http://www.slumreporter.org/author/eivindeh/>>.
16. House exterior used as kitchen. Digital image. Google.ca. N.p., n.d. Web. 1 Mar. 2016. <<https://www.google.ca/maps/place/Kisenyi,+Kampala,+Uganda/@0.3093606,32.5713404,18z/data=!4m2!3m1!1s0x177dbc857c804c5d:0xdacc04d99426d470>>.
17. Boano, Camillo, William Hunter, and Caroline Newton. "Contested Urbanism in Dharavi. Writings and Projects for the Resilient City." Contested Urbanism in Dharavi. Writings and Projects for the Resilient City. Bartlett, n.d. Web. 01 Mar. 2016. <<http://www.bartlett.ucl.ac.uk/dpu/publications/dpu-book-17>>. Pg42
18. Incremental Houses Complex. Digital image. Www.elementalchile.cl. N.p., n.d. Web. 11 Mar. 2016. <<http://www.elementalchile.cl/en/projects/quinta-monroy/>>.
19. Gutschow, Kai K. Modern Planning as Civilizing Agent: Ernst May's Kampala Extension Scheme. Publication. Pittsburgh: Carnegie Mellon U, 2004. Repository.cmu.edu. Jan. 2004. Web. Oct. 2015. <<http://repository.cmu.edu/cgi/viewcontent.cgi?article=1035&context=architecture>>.
20. Kasirye, Faiswal. Aerial view of Kisenyi one of the biggest slums in Kampala City. Digital image. Mobile.monitor.co.ug. N.p., 10 Nov. 2014. Web. 1 Apr. 2016. <<http://mobile.monitor.co.ug/News/KCCA-to-ban-mizigo-from-city/-/2466686/2516976/-/format/xhtml/-/lrf28gz/-/index.html>>.
21. Echwalu, Edward. Aerial view of Kisenyi slum. Digital image. [Http://barakadidi.tumblr.com/](http://barakadidi.tumblr.com/). N.p., n.d. Web. 1 Apr. 2016. <<http://barakadidi.tumblr.com/post/118787208299/everydayafrica-an-aerial-view-of-kisenyi-slum>>.