

"The Lightness of the City"

by

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Abstract

Thesis Statement: “The Lightness of the City”

How will an architecture of lightness bring forth a wonder in that ambiguous paradoxical condition that is human desire, to transcend the purely rational productive model of city building?

Abstract:

Calvino sees lightness as a powerful lens through which to understand a work of art. This approach can also be applied to a city, whose inherent nature is heavy.

In the mostly unoccupied new city of Kilamba, built in Angola with Chinese money and Chinese labor, emptiness itself is a paradoxical weight. The intent of this thesis is to oppose the rational powers that shaped Kilamba with intuitive, Dionysian modes of resistance, to bring together modern and local historical conditions through a resistive third-party, to transcend the hegemonic political and technological forces that keep them separate and give them weight. Architecture is, in this mode, a poetic accident, uncovering a lightness “that defines the variety of things (in an) essential parity.” The elements of the city—oil, ivory, copper, xxxx—are summoned to dissolve the solidity of that world into “a fine dust of atoms,” allowing the city to raise itself above its weight. The city itself becomes a work of art.

Project Description:

Italo Calvino described that “lightness” was to be the first of six categories of human thought that would emerge in the twenty-first century theoretical condition. Architecture is an analogical reference to the theory of lightness that can manifest itself in the city. Lightness brings forth a wonder of things in that ambiguous condition that is human desire, which transcends our own mortality for the divine.¹ Architectural poetics are revealed as a ‘human condition’ by virtue of a wonder in tension between the self-seclusion of the earth and the ‘lightness’ of the heavens (Heidegger). The world remains open within the lightness of the city.

The human condition within the geographies of social practice are related between the three moments of the perceived, the conceived and the lived in Henri Lefebvre’s “Production of Space.” Representations of the body as bodily ‘lived’ experience are derived from accumulated scientific knowledge occurring at the intersection of culture, will lose its immediacy when treated as an abstract model. The first step is to treat lived experience as socially constructed by knowledge in becoming a productive model.

The right to the city then becomes a collective rather than an individual right to reestablish ourselves and our cities to claim some kind of “shaping power” in which “our cities are made and re-made in a fundamental and radical way.”² The architectural notion of lightness may be the conceptual vehicle by way of a radical departure from the modern urban condition.

¹ Marco Frascari, *A Light, Six-Sided, Paradoxical Fight*, *Nexus Network Journal*, vol. 4, no. 2 (Spring 2002), http://www.nexusjournal.com/Frascari_v4n2.html

² David Harvey. “*The Right to the City*.” <http://www.davidharvey.org/media/righttothecity.pdf>.

Lightness brings forth a wonder in that ambiguous paradoxical condition that is human desire that will then transcend the purely rational productive model of city building (Arendt).

Lightness is embodied in Dionysian modes of resistance to the rational power that intuitively shapes the city of Kilamba, Angola. Modern and local historical conditions are brought together by a resistive third-party that transcends the hegemonic political and technological forces that keep them separate. The poetic accident uncovers this quality of lightness “that defines the variety of things” in an “essential parity”.³ In doing so, we see the solidity of the world tends to dissolve into “a fine dust of atoms” and humanity raises itself above its own weight with a flight into a new realm.⁴ Italo Calvino sees this as a change in approach, by looking at the world from a different perspective.⁵ The city is now seen as a work of art,⁶ where something emerges out of nothing as in the original accident that created the universe.

³ Italo Calvino, *Six Memos for the Next Millenium*. (London: Penguin Books Ltd, 2002), 9.

⁴ Calvino, *Six Memos for the Next Millenium*. 8, 12, 20, 28.

⁵ *Ibid.*, 7.

⁶ Aldo Rossi, Introduction by Peter Eisenman, *The Architecture of the City*. (The MIT Press, 1982)

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Kilamba, Angola – Contextual Summary

Kilamba is a satellite town on the outskirts of Luanda that is connected by a highway often congested with traffic. The president of Angola had promised a million new homes in his 2008 election platform that envisioned the city as a self-contained housing development. His promise resulted in the construction of an ‘affordable’ housing project for a half-million Angolans 20 km south-east of the capital.

The typical resident of Kilamba is a thirty-year old, well-educated, middle class Luandan, often with a young family. Although, the complex remains largely uninhabited with only 80,000 inhabitants, sustaining a mere twenty percent occupancy.⁷ In 2012, president Jose Eduardo dos Santos introduced legislation to subsidize the cost of the new apartments resulting in an increase in demand.⁸ To this day, Kilamba remains a ‘ghost’ of its former aspirations as a modernizing agent for the new and developing Angolan economy, which is in fact one of the fastest growing on the African continent.

The construction of Kilamba represented an unprecedented opportunity for the people of Luanda as a way to find jobs and escape from their former lives in the slums. Approximately one half of Luandans live in poverty, where one third of the total population lives on subsistence agriculture.⁹ The situation was to be mended by supplying a new, clean and safe living

⁷ Chloé Buire. *"Views of suburban Luanda: banishing the ghosts from Kilamba"*. Africa Research Institute. Retrieved 26 November 2015 (2 September 2015).

⁸ Adam Sandle. *"Kilamba: New Initiatives Create Massive Demand"*. CNN iReport. Retrieved 12 April 2013. <http://ireport.cnn.com/docs/DOC-954602>

⁹ Google Public Data. Retrieved 2013-8-14.

arrangement with all the necessary infrastructure. The city covers an area of 8.8 square kilometers, providing 750 apartment blocks ranging from 5 to 13 floors, 100 commercial premises, 17 schools, 24 daycare centers, and 246 stores to drive the local economy. A clean water supply with treatment plants provides the necessary drinking water for its inhabitants, as well as power plants that alleviate recurrent power outages often experienced by local Luandans.¹⁰ The absence of a broad middle class renders the housing in Kilamba unfordable, despite political and economic aspirations, subsidizing efforts and social-housing initiatives.¹¹

Luanda is marked by extensive wealth and poverty. Certain regions contain some of the wealthiest real estate property and development in the world for foreign capital.¹² An increasing Chinese community is one source of this new wealth that is both predominant in Angola and other neighboring African countries. The Chinese government is apparently interested in African economic development through the implementation of their own planning rational. The extensive thirty-year growth and urbanization experienced in China is being applied to Africa with less coordination. Angola is also seeing a large exodus of Chinese workers to the region in a mass building effort.¹³

The massive housing and infrastructure development in Kilamba is overwhelmingly subsidized by oil and gas revenues. The industry gained predominance as Angola's primary export since the mid 1950's. The oil producer, Imobliaria Sonangol, is the public enterprise

¹⁰ Adam Sandle. "Kilamba: New Initiatives Create Massive Demand". *CNN iReport*. Retrieved 12 April 2013 <http://ireport.cnn.com/docs/DOC-954602>

¹¹ Louise Redvers. "Footage shows African 'ghost town'". *BBC News*. Retrieved 4 July 2012. (2 July 2012). <http://www.bbc.com/news/world-africa-18680217>

¹² "Worldwide Cost of Living survey 2015 - City rankings". Retrieved 2015-06-17. www.mercer.com

¹³ Quartz Africa. "Photos: African cities are starting to look eerily like Chinese ones." <http://qz.com/480625/photos-african-cities-are-starting-to-look-eerily-like-chinese-ones/>

owned by the Angolan Government in charge of marketing all the homes in Kilamba City. Sonangol develops and manages massive industrial projects, who's promotion is often used as a political tool for the government's re-election. A line of credit is granted to Angola by the Industrial and Commercial Bank of China, to supply capital to rebuild its crumbling infrastructure. The Kilamba housing is being built by workers from the Chinese state-owned CITIC Group Corporation whose aim is to "attract and utilize foreign capital, introduce advanced technologies, and adopt advanced and scientific international practice and management (1979)." The founder of CITIC was Rong Yiren, one of the richest business men in China in the 1980's and one its earliest capitalist.¹⁴ The high-tech corporation has also been given an \$8 billion investment by Itochu, a Japanese company, representing "the largest investment ever made by a Japanese general trading company, also the largest acquisition in China by a Japanese company, and the largest investment by foreigners in a Chinese state-owned enterprise."¹⁵ The project also required a third-party management group that facilitated the collusion between Angola and China. Pierre Falcone, a French-American billionaire and international business man, provides "expert financial engineering, strategic consulting and investment" for the Kilamba project via Pierson Capital Group that has locations in the United States, Mexico and China.¹⁶

A massive amount of political and economic capital is backing development projects in Angola and other African countries in the form of a rapid urbanization process, where local Angolans have relatively little say in the development of their land. It was promised in the last

¹⁴ "Citic Group Contac".

¹⁵ Atsuko Fukase. "Thaw in Japan-China Business Ties? Itochu's Citic Deal Towers Above Others". *Wall Street Journal Japan Real Time*. Retrieved 22 January 2015. (20 January 2015).

¹⁶ Derek Hammer. "Kilamba, from 0 to 200,000 inhabitants in 3 years". *Merinews*. Retrieved 12 April 2013. <http://www.merineews.com/article/kilamba-from-0-to-200000-inhabitants-in-3-years/15871400.shtml>

decade that the Angolan government would become decentralized with the distribution of power allocated to other parties. Although that was never realized under the current president, where control has been co-opted in the form of a political hegemony.¹⁷

The 2002 presidential election brought stability to Angola, with the end of a twenty-five-year civil war. In 1975, Angola gained its independence from Portugal, but an unstable economic and political landscape emerged. The country fell into a Civil War, that drove millions of Portuguese skilled laborers from the country as refugees, destroying the infrastructure. Since the establishment of the new government, the Angolan economy has become one of the fastest-growing in the world, while remaining poor.¹⁸ Extensive oil and gas resources, diamonds and rich agricultural land represents an untapped economy that is apparently being exploited by local and foreign interests. It may be that the Chinese interest in the African continent may be as much about resource extraction as rapid urbanization and massive infrastructure projects. In fact, the country's hydro-electric potential remains one of the major untapped resources afforded by Angola's extensive system of rivers and waterfalls.¹⁹

With a population of over 6 million, Luanda is Angola's chief seaport and administrative center. Kilamba represents a major reconstruction of the world's third most populous Portuguese-speaking city. Since its ports were opened to world markets in 1844, Luanda remains highly influenced by foreign capital. Before the abolishment of the country's slave trade in 1836, and continued forced labor practices, Angola has had a history of exploitation of both human and

¹⁷ Chloé Buire. "Views of suburban Luanda: banishing the ghosts from Kilamba". Africa Research Institute. Retrieved 26 November 2015. (2 September 2015). <http://www.africaresearchinstitute.org/blog/views-of-suburban-luanda-banishing-the-ghosts-from-kilamba/>

¹⁸ Birgitte Refslund Sørensen and Marc Vincent. "Caught Between Borders: Response Strategies of the Internally Displaced," 2001. Page 17.

¹⁹ Google Public Data. Retrieved 2013-8-14

natural resources for the sake of foreign and local power. The forces that created Kilamba denies its responsibility to the local population, by an artificial stabilization of an otherwise volatile situation.

Kilamba, Angola – Comparative Research Summary

President Dos Santos first proposed the city of Kilamba as a way of providing housing to alleviate overcrowding in the Angolan capital of Luanda. Kilamba's development model was based on the Economic Zone, a free trade zone created in collaboration between China and the local state. Investors were sold on a new and stable development insulated from African instability as a fast and interesting place for people to live with all the necessary infrastructure provided. Special regulations would be put in place, such as no taxes and little or no labor laws or rights. No collaboration was made with the internal and external local population in the form of market research. Rather, the Angolan government's primary intention was to attract foreign investors that are seeking minimal regulation trade policies. The Economic Zone is a very popular and successful model in China that transformed Shenzhen, initially a town of 20-30 thousand people outside of Hong Kong, into a mega-city of 15 million people over thirty years. Shenzhen is now an economic heart of the world.²⁰

Angola lacks a broad middle class with 53 percent of the population living in poverty. The absence of a clear local market strategy lead to apartment properties that were priced for the middle-class who could already afford to purchase such units and likely had housing already. For other segments of the population the lack of land registry documentation was a barrier to access

²⁰ Storefront for Art and Architecture. "*Facing East: Chinese Urbanism in Africa.*" <http://storefrontnews.org/programming/facing-east-chinese-urbanism-in-africa/>

bank credit, where there is uncertainty felt by many people about the viability of investing in Angola's untested property market. (see Appendix)

In contrast, Shenzhen's rapid growth has benefited from its proximity to Hong Kong as a source of educated professionals and migrant workers, which helped the city to develop into a major international manufacturing center. China itself was already a major player in global economics thirty-years ago, when Shenzhen was first established. Goods manufactured by local labor and exported through Shenzhen's sea ports, promoted access to international markets with a corresponding influx of expertise, manpower and foreign capital investment.²¹ Shenzhen benefits foremost by its geographical location as a city seaport located near Hong Kong, while maintaining independent regulatory, labor and trade policies that are attractive for foreign investment.

The city has developed an extensive high-tech sector,²² the largest container-manufacturing company²³ in the world and some of the largest residential real estate developers and banks in China.²⁴ Every industry located in Shenzhen fuels the integrity of this 'free zone' as a perfectly autonomous engine of economic development.

²¹ China.org.cn. "Shenzhen Continues to lead China's reform and opening-up." <http://www.china.org.cn/english/government/44680.htm>

²² Alibaba.com. "Guangdong – Shenzhen High-tech Industrial Park." <http://news.alibaba.com/article/detail/business-in-china/100102339-1-guangdong---shenzhen-high-tech-industrial.html>

²³ Sandra Tsui. "Top box firm halts output". *Lloyd's List Daily Commercial News. Informa Australia*. (11 December 2008). p. 16.

²⁴ Chinastockfacts.com. "Other receivables Rankings for Chinese Companies." http://chinastockfacts.com/data/OTH_RECEIV.php

Angola remains a minor part of the global economy even though it is currently one of the fastest growing economies on the African continent. The capital Luanda, was not in the same global position that Hong Kong was thirty years ago, as a developing player in the sphere of international trade. Although it may be a matter of time, Kilamba has yet to benefit from the vast resource and economic potential of Angola that Hong Kong had already provided for Shenzhen when it was first established. The likelihood of foreign investors purchasing new condominiums in Kilamba is highly unlikely compared to the kind of investments that were made in Shenzhen.

Kilamba, Angola – *The Cost of Unending Economic Optimism*

The election of a real-estate developer as the current US president is no accident. The world economy is in a period of high optimism characterized by an overbuilding period. Since successful real-estate and infrastructure development is directly tied to the global economy, many developers, economists and politicians apparently wish to continue this unbridled growth. Although the outcome may not be clear, the political and economic conditions of Kilamba, Angola could represent the direction in which global markets and political systems are headed.

Markets go through short and long term periods of growth and adjustment.²⁵ We have seen a relatively recent recession in the early 1990's, but it was recoverable as a minor disruption to long-term economic progress. The economic period of late capitalism that began after the second world war, is marked by an inordinate growth in capital and technological agency. Prior to the second world war, the 1930's represented an adjustment phase in the market, and proceeded a similar period of economic optimism that exists today. Over the course of eighty-years, the long-term patterns of global markets indicate that we are due for another adjustment phase.

Paul Virilio describes global markets with unbridled optimism for growth. Even in the Olympics, we now see athletes competing in a 'zero sum game' over past statistics rather than

²⁵ Ray Dalio. "*Economic Principles: How the Economic Machine Works.*" <http://www.economicprinciples.org/>

participating directly in the event itself.²⁶ He establishes the impossibility of unending development and the fallacy of its optimism. Technology is intrinsic to the development of a tautological global enclave, and it is the accident that offers a mode of resistance as the opposite side of progress.²⁷ The invention of the airplane, saw the invention of the accident, and this relationship between techno-scientific capitalism and invention is as sub-conscious to our own making as is the formative-poetic accident and systemic failure.

The language used to characterize an adjustment period, such as a depression or recession, plays an important role in how our culture perceives this phenomenon. We are constantly fed a mass hysteria by the media and other sources that a political and economic crash must always be averted by constant growth and development. Late capitalism is marked by this drive for capital growth. Despite such accumulated wealth, we have increasingly seen its concentration on the higher end of development and social class. Kilamba is a perfect example where the wealthy few have benefited from this notion of growth at the expense of the majority local population. It is key that in a market adjustment period, there is a redistribution of wealth in the form of printing money, increasing interest rates, and the taxation of the wealthy to pay down credit and increase production. The reality is that these periods, if allowed to happen, can be very inventive as it causes one to cultivate creative solutions for survival to make structural adjustments. One only needs to look at the 1920's and 30's, where there was a great market turnover, but innovations in art and science, such as the Bauhaus of Modern Architecture and the formative development of Quantum Mechanics, occurred in a period of relative uncertainty and

²⁶ Paul Virilio, *"The Original Accident."* (Polity Press, 2005), 80-81.

²⁷ Paul Virilio, *"The Original Accident."* 15.

fluctuation. Moreover, the Constructivists of Soviet Russia invented new forms of architecture as a way of reconciling a recessive political and economic condition, that went on to influence later developments in contemporary post-modern architecture.

An overbuilding period represents a concentration of wealth, and it is necessary for its redistribution in the form of market adjustments. If allowed to happen, then there ‘can’ be what is called a “soft landing”, in which markets adjust through inventive means. The alternative is that the market could continue to increase artificially, thus causing further income disparity requiring a more serious correction. The recent US presidential election indicates that there are political and economic interests that wish to maintain this kind of growth that will only end up harming those who elected Donald Trump. Experts have conceded that the presidential election has revealed the failure of institutions, rather the election has proved the reassertion of democratic capital. As a real-estate developer, the president sold the American people a myth, in the same way a magician waves his hand, he would restore their lives with the promise of a better future, much like the selling tactics in a developer’s brochure. His issues of feminism, racism and exclusionary immigration were a red-herring, only to the extent that his motives as a real-estate developer were in fact economic. The president of Angola made a similar election move, where a new life was promised in the form of Kilamba, but the potential wealth of the country has yet to be shared with the majority population. Keller Easterling characterizes that “saying one thing and doing something else” is an intrinsic tactic of politicians and developers employed for the creation of modern economic enclaves.²⁸ Although this kind of wealth disparity does not currently exist in America, if market optimism continues indefinitely, we could see the

²⁸ Keller Easterling. *Extrastatecraft: The Power of Infrastructure Space.* (Verso, 2014), 15.

same kind of Oligarchic Hegemony that currently exists in Angola occurring in America and quite possibly the rest of the world. It is no wonder that countries like China are colluding with other foreign governments such as Angola, for the purposes of economic development and resource extraction.

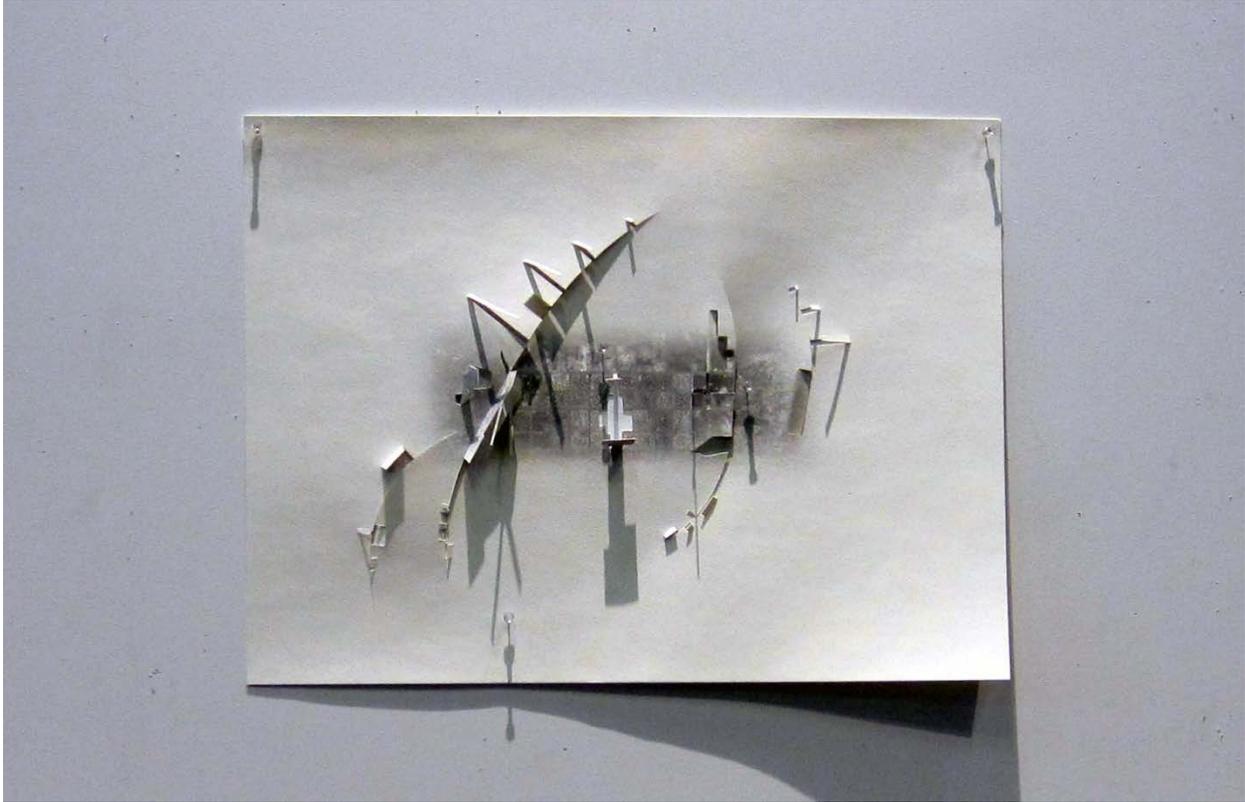
With rising world housing prices, that are directly tied to this optimism, we could see most housing simply becoming unaffordable, resulting in the kind of vacancies experienced in Kilamba, even with the persistence of slums in the region. Further, the rhetoric displayed by Canadians towards foreign buyers in the housing market is also a red-herring issue.²⁹ The central concern is our over optimism for the market, and the forced alleviation of a recession.

Climate change has become another central concern in this optimism. People who are behind the president deny that climate change exists for the purposes of their own economic ends, as it is perceived that action against climate change would negatively affect the economy. Realistically, the kinds of innovations that occur during an adjustment period may be well suited for the market, political and technological invention that is necessary to alleviate the effects of climate change. Slowing the rapid development that is happening in global markets would also curtail these processes, allowing us to reengage our commitment with the environment.

²⁹ The Globe and Mail. “*CMHC head says foreign buyers a ‘scapegoat’ for high Vancouver prices.*” <http://www.theglobeandmail.com/real-estate/vancouver/cmhc-head-says-foreign-buyers-a-scapegoat-for-high-vancouver-prices/article33110080>

Periods of growth and recession are a natural occurrence in the market, and must be allowed to manifest themselves in response to the market environment. With the placement of technological growth over adjustment, as in the Kilamba housing project, we are neglecting serious environmental considerations. Angola has had a history of exploitation as a Portuguese colony in the form of slavery, the ivory trade and now oil extraction for the construction of Kilamba, all to achieve political and economic ends. It is important to realize that a conscientious modulation of market cycles through the redistribution of wealth, among other things, will in fact bring about further invention through our essential involvement with market and environmental conditions.

Lightness embodies this notion of adjustment. The redistribution of wealth realizes a parity of things that dissolves the solidity of world market development. As the market is concealed from its long-term revelation, we rise above traditional hierarchies. In solving a problem, it is often useful to step away from its apparent opaqueness by taking a walk. Sometimes one moves forward by stepping back. When a problem seems impossible, after having a rest one can reveal a new way of looking at the world...this is lightness. As the moon rises above the world and the sun sets on the horizon, it is time for us to dream of a new reality that we have not yet considered, only then can the warm daylight reveal our future once again.



1. City – 1000 years beyond

Calvino sees lightness as a powerful lens through which to understand a work of art. This approach can also be applied to a city, whose inherent nature is “heavy”. In time, the city’s rational structure dematerializes and slowly fades into “whiteness” like a cloud that approaches a state between sky and vapor.

Typologies are grounded in elongated shadows as a poetic reflection of its “original” form.

One thousand years into the future, a hermetic structure “protects” a church, park and childcare center, with gestures of infrastructure dislocated from an

emerging ground plane. The city is now a work of art that engages the man-made artefact as an event that “gives place to spatial transformations.”³⁰

In the mostly unoccupied city of Kilamba built in Angola with Chinese money and Chinese labor, “emptiness” itself is a paradoxical “weight”. The city represents a global phenomenon extending from social-housing in north-west Toronto to the active vibrancies of Dubai and Shenzhen that orbit their double-city. Market promotions or prevailing political ideologies foreground the content of these places to effectively “disguise or distract from what the organization is actually *doing*.”³¹



2. Kilamba, Angola – Aerial View

³⁰ Aldo Rossi. Introduction by Peter Eisenman. “*The Architecture of the City*.” (The MIT Press, 1982), 87.

³¹ Keller Easterling. “*Extrastatecraft: The Power of Infrastructure Space*.” (Verso, 2014), 15.



3. Chandigarh, Le Corbusier

Modernist architects were typically guided by their own principles or guidelines as opposed to considering the various local cultural manifestations of the site. The global modern artefact was phenomenologically manifested by liberal democratic buildings as revitalization projects that seemed out of scale. Locals would then appropriate the architecture to reestablish a relationship with familiar traditions.

Le Corbusier had dreamed of constructing the ideal city based on the modern garden city. The first Prime Minister of independent India approached Le Corbusier in 1947 to construct a city where he said, “Let this be a new town, symbolic of freedom of India unfettered by the traditions of the past...an

expression of the nation's faith in the future.”³² This rational vision based its construction on the arrangement of civic buildings and abstract monuments that did not address the local traditions and history of the area.



4. Brasilia, Oscar Niemeyer

Oscar Niemeyer planned Brasilia for the heartland of Brazil as a way “to build a new capital to bring progress to the interior of Brazil.”³³ By denying local conditions, it lacks the complexity of a normal city with active streets, people living above shops and offices nearby. The zoning model has produced a very clean city, but it is difficult as a pedestrian to walk amongst its massive scale. A resident describes, “All you have to do is go out of central Brasilia and you get completely normal plazas and streets with kids playing, and places open every hour

³² Chandigarh Government. “*Chandigarh: The City Beautiful.*” http://www.chandigarh.gov.in/knowchd_gen_historical.htm

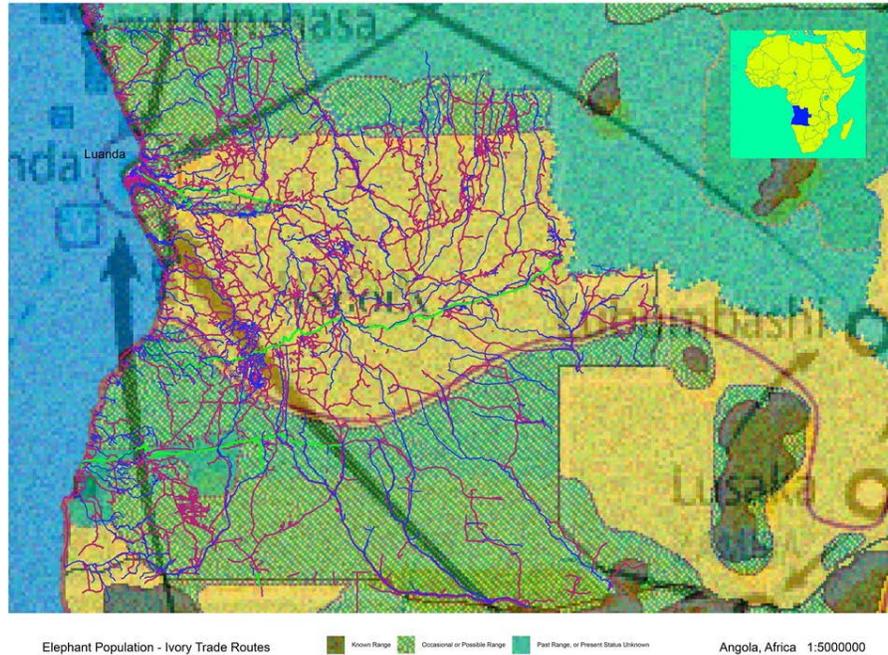
³³ Robin Banerji. “*Niemeyer's Brasilia: Does it work as a city?*” <http://www.bbc.com/news/magazine-20632277>

of the day and night, selling food and illegal alcohol and everything else.”³⁴

Brasilia is almost too successful, as it is exclusively home to the very rich, yet it lacks the cultural diversity of the spontaneous communities that have developed on its periphery.

Kilamba is modeled after this European and American modernist mindset. In a speculative inquiry that is not cast in stone, this thesis will investigate possible opportunities to engage local traditions. The people of Angola will then be given back the agency to shape their own urban environment and inhabit a place built upon local histories and expertise.

³⁴ Robin Banerji. “*Niemeyer’s Brasilia: Does it work as a city?*” <http://www.bbc.com/news/magazine-20632277>

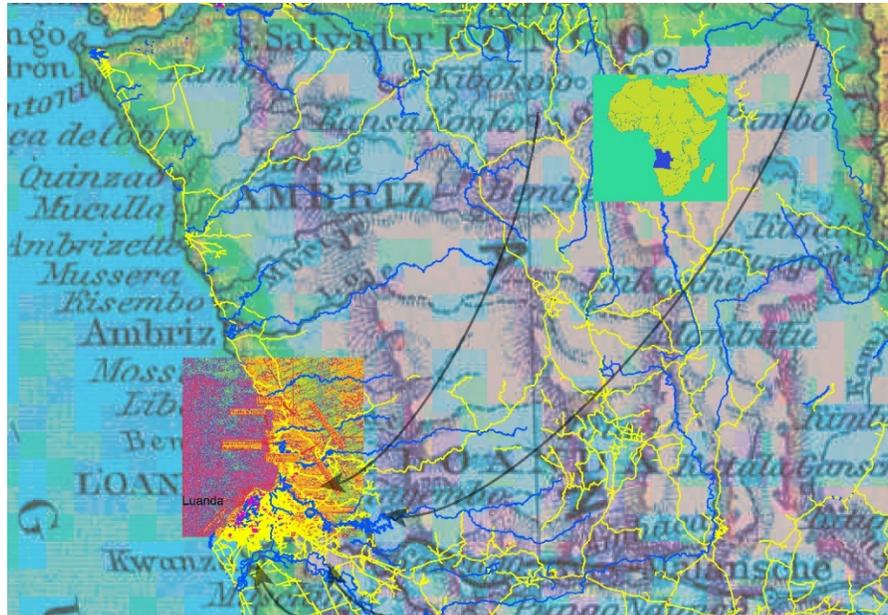


5. Angola, Africa – Elephant Populations – Ivory Trade Routes

Angola has had a long history of exploitation by European colonizers. The slave trade followed a triangular intercontinental trade route, where slaves were sent to the Americas to work in the plantations. Material produce was then shipped to Europe for manufacturing, where goods were then brought back to Africa. Luanda has been a major Portuguese shipping port since the mid nineteenth century, and today, it represents a significant trading hub for African commodities. Elephant populations are located to the north and south of Luanda, where the traditional ivory market is brought to the city along existing trade routes originating from Botswana and the Congo Basin.

Angola gained its independence from Portugal in 1975, only for an unstable economic and political landscape to emerge. A civil war erupted over the next

twenty-seven years, driving Portuguese laborers back to Europe while resulting in a crumbling infrastructure. The election of President Dos Santos in 2002 brought stability to the country, who concentrated power in the form of a centralized government.



Ivory Trade Routes - Oil Fields - Kwanza Basin

North-West Angola 1:1000000

6. North-West Angola – Ivory Trade Routes – Oil Fields

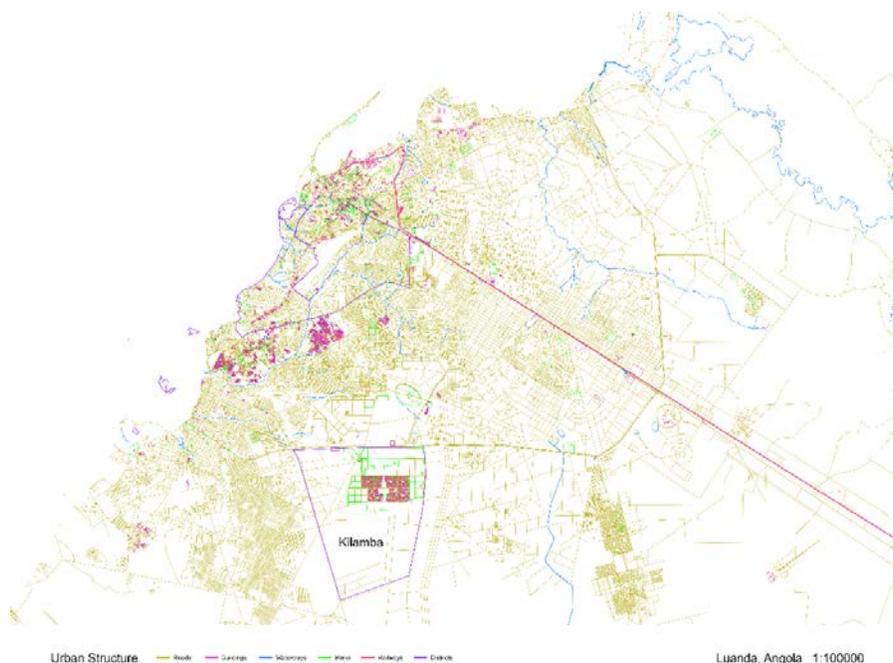
Petroleum exploits began in 1955, replacing coffee as the primary Angolan export. Since then, the country's economic growth has been driven by rising oil production controlled by Sonangol Group, a state-owned oil company that facilitates massive infrastructure projects financed by oil revenues.

Angola has abundant natural resources in forestry, diamonds, copper and a substantial hydro-electric potential afforded by its extensive river and waterfall system. The centralized political power and relatively underdeveloped economy

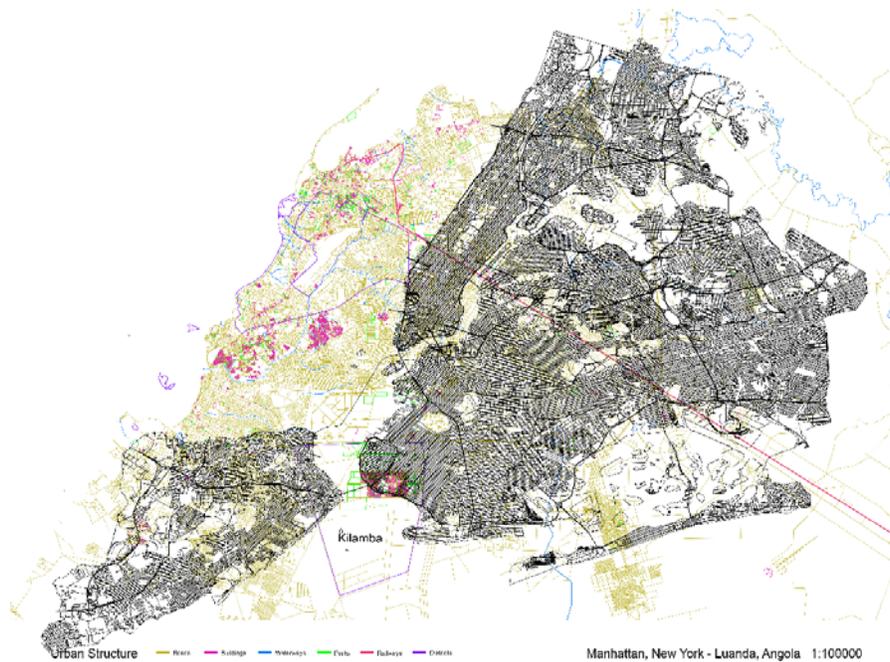
has concentrated revenues in the hands of a newly formed government that has yet to share commodity surpluses with the majority population.

Luanda is marked by extensive wealth and poverty. Some of the most expensive real-estate in the world is in the old city of lower Luanda next to the port. The upper city represents the new part, where massive new constructions such as Kilamba are located inland.

The official language is still Portuguese, as the former European colony continues to be influenced by its colonial heritage. Although, a significant Chinese community is represented in the capital in the form of foreign money and Chinese-Angolan economic investments.



7. Luanda, Angola – Urban Structure

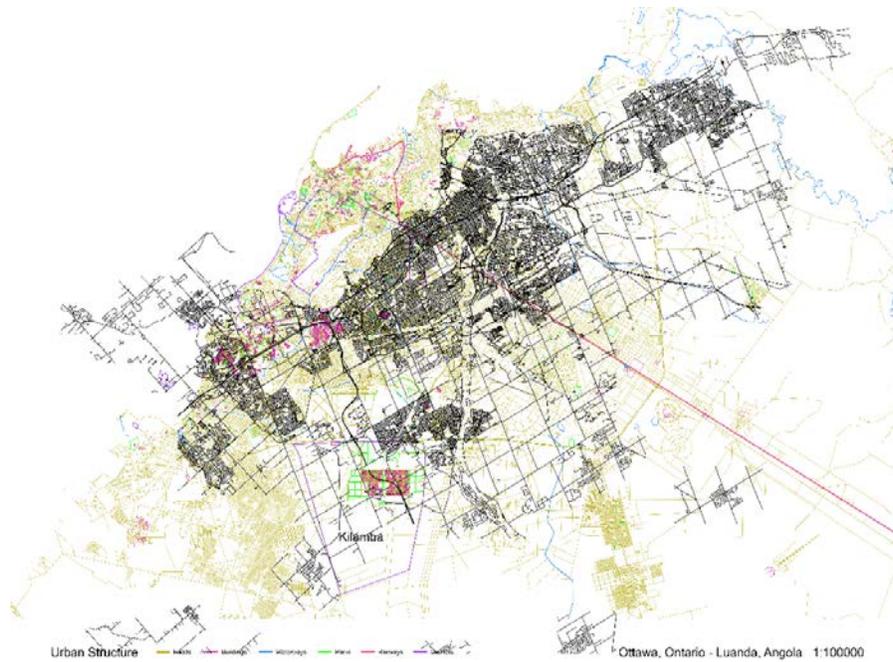


8. *Manhattan, New York – Luanda, Angola*

Fifty-three percent of Angolans live in poverty, where one-third live in the slums of Luanda, while luxury constructions are enjoyed by the wealthy minority. With a population of over 6 million, Luanda is the world's third most populous Portuguese speaking city that has a major concern: the population has multiplied and far outgrown the city's capacity.

Comparatively speaking, the greater Luanda region covers the same terrain as metropolitan New York, where the downtown area is the same size as Manhattan Island.

Luanda also covers roughly the same area as the amalgamated City of Ottawa. The relative size of their corresponding downtown regions is also similar.

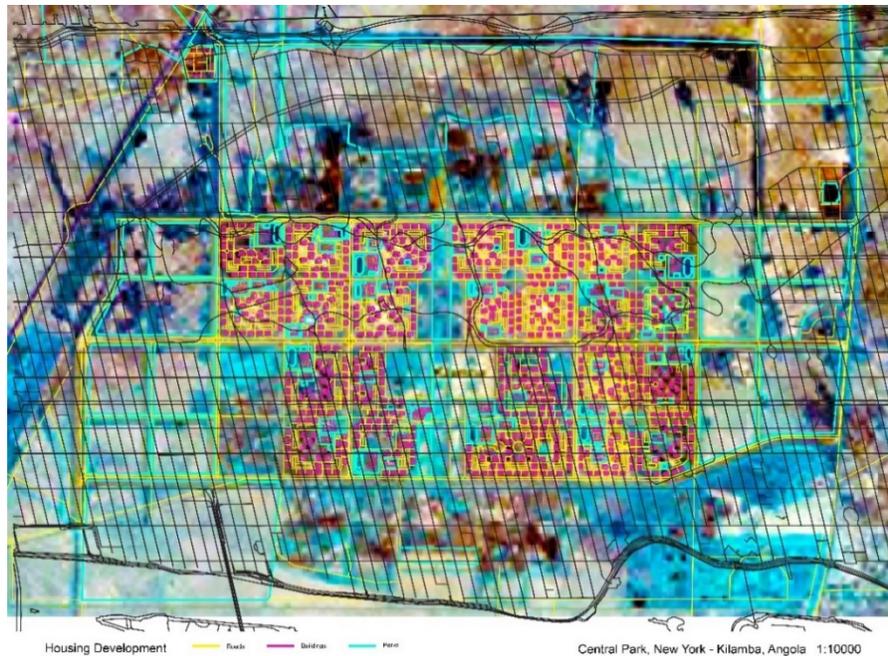


9. Ottawa, Ontario – Luanda, Angola

One can see the District of Kilamba on the outskirts of Luanda, just as if it could be a suburb of Ottawa at the same scale.



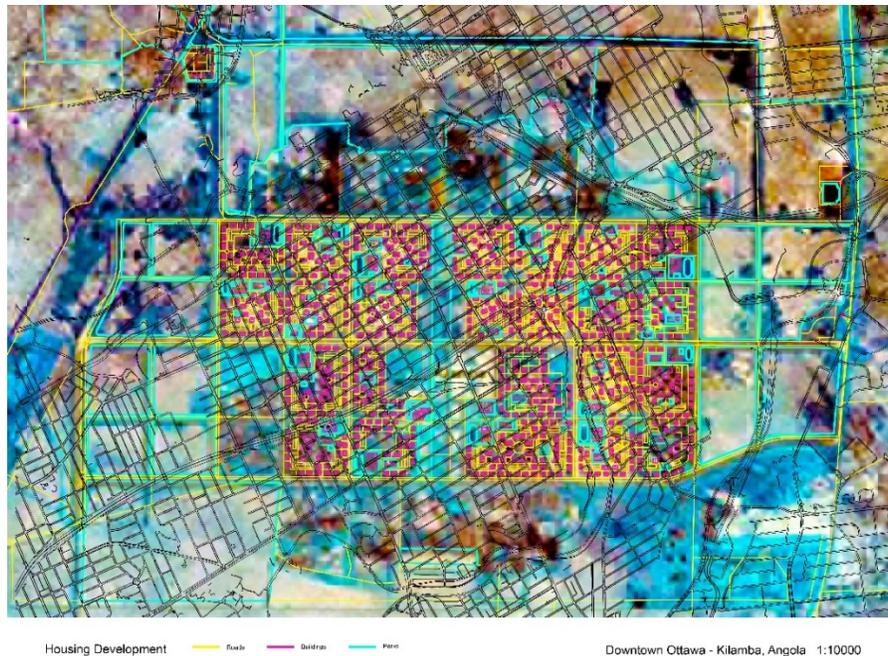
10. Housing Development – Kilamba, Angola



11. Central Park, New York – Kilamba, Angola

President Dos Santos’ 2008 election pledge proposed to build a million new homes in four years. Buildings were largely complete but still unoccupied by 2012, so the President introduced legislation to subsidize the cost of the new apartments resulting in an increase in demand. The Angolan government’s abrupt supply of large quantities of housing for sale “saturated” the market beyond local demand.

As a large housing development 20 kilometers south of Luanda, Kilamba covers an area of 8.8 square kilometers with 750 apartment blocks ranging from 5 to 13 floors, 100 commercial premises, 17 schools and 24 daycare centers along with 240 stores to drive the local economy. Kilamba occupies an area roughly twice the size of Central Park, Manhattan.

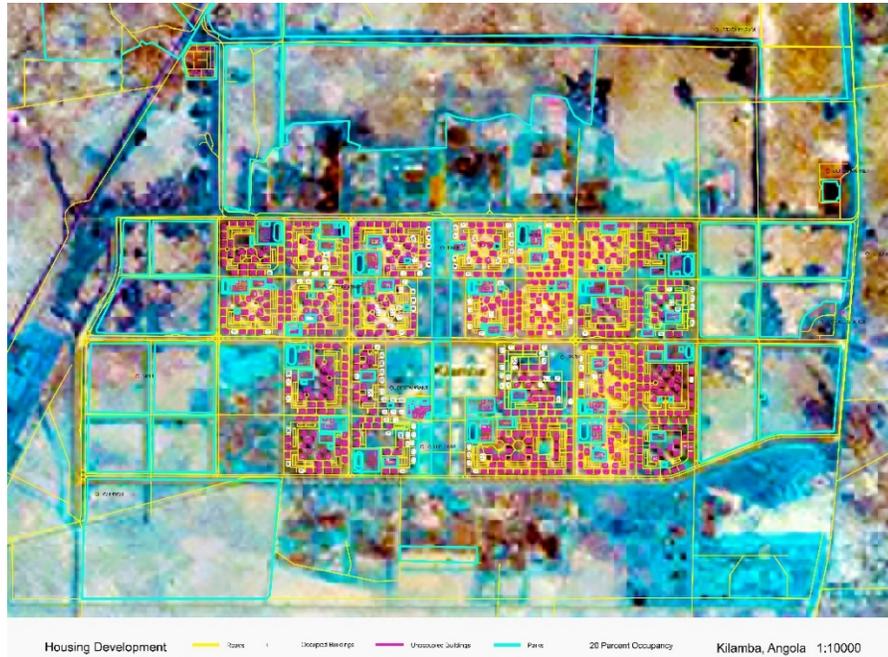


12. Downtown Ottawa – Kilamba, Angola

Kilamba is an immense area when compared to Downtown Ottawa. The city blocks are a massive 400 x 400 square meters without much differentiation between building types within a comparable area of Ottawa that would normally see a full range residential, commercial and institutional developments.

Kilamba was made possible by the collusion of four independent stakeholders. The China International Trust and Investment Corporation build the housing project based on credit provided by the Industrial and Commercial Bank of China that was backed by oil revenues acquired by the Angolan government. The project was managed by Pierson Capital Group, a third-party American consulting firm run by Pierre Falcone, a French-American billionaire. The Japanese trading company, Itochu, also invested in the Chinese state-owned CITIC

Group, which represented the largest investment of a Japanese company outside of Japan.



13. 20 Percent Occupancy – Kilamba, Angola

With the new subsidization legislation introduced by President Dos Santos to alleviate housing vacancies, approximately 20 percent occupancy was achieved in Kilamba by 2015. The majority of housing is seen to be concentrated near existing amenities, such as parks, childcare centers, restaurants, malls and churches. The central park corridor is home to most of the population.



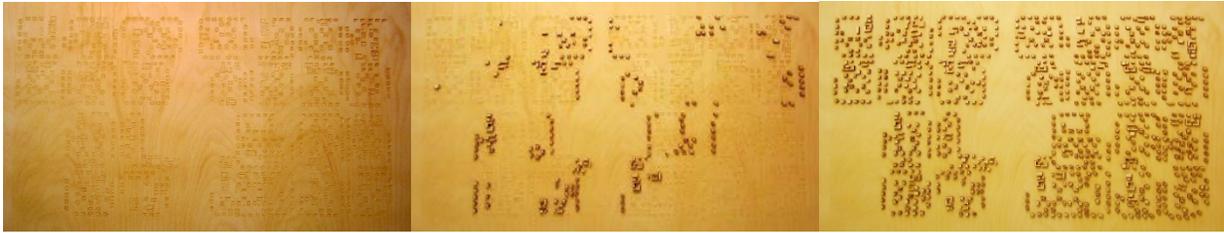
14. 100 Percent Occupancy – Kilamba, Angola

As Kilamba slowly becomes fully occupied, its paradoxical weight comes to life. “Lightness” is expressed as the transformative “whiteness” of newly inhabited spaces, where collective activity enlivens the city as its solidity dissolves over time.

The buildings fade into the pixilated ground, like weightless “bits in a flow of information traveling along circuits in the form of electronic impulses.”³⁵ Every branch of science demonstrates “that the world is supported by the most minute entities, such as the messages of DNA, the impulses of neurons, and quarks, and neutrinos wandering through space since the beginning of time...”³⁶

³⁵ Italo Calvino. *Six Memos for the Next Millenium.* (Penguin Books, 1988), 8.

³⁶ Italo Calvino. *Six Memos for the Next Millenium.* 8.



15. Stages of Occupancy – Model of Kilamba



16. Trade Route – Kilamba, Angola

Existing trade routes flow through Kilamba City like a gesture of digital particles interacting with local phenomena. The ancient founder of a Roman town would perform an initial furrow (*sculcus primigenius*) with a bronze plough to which a white ox and cow were yoked,³⁷ like a modern foundation rite grounded in the flow of commodities. The ploughing was a symbol for the unity of earth and

³⁷ Joseph Rykwert, “*The Idea of a Town: The Anthropology of Urban Form in Rome, Italy and the Ancient World.*” (Princeton Univ. Press, 1976), 44.

sky, by which the great mother earth's fertility was increased by the bronze plough. It was ritually independent of the quadripartite division, but the ancient word for city was still directly associated with ploughing.

Eighty years ago, it was speculated that the origin of the orthogonal plan in Italy, along with the Etruscan rite, was introduced to Italy in the early Bronze Age by the *Terramare* culture. The *Terramaricoli* certainly practiced some form of foundation rite, but even if they are not directly attributed to the introduction of orthogonal planning, their construction methods used a regular plan "analogous to that of modern pile-dwelling in South-East Asia."³⁸

The necropolis in Contrada Gaudo employed the first clear orthogonal plan in mainland Italy, which "can only be called "urbanistic"."³⁹ The tombs are shaped as 'a forno' composed of two or three chambers. For the Etruscans, orthogonal planning first developed in a town near the village of Marzabotta, in the province of Bologna. One main *cardo* runs north-south, and is crossed by three *decurmani* at right angles, each 15m wide. The houses were composed of a courtyard with a well sunk in the floor. The living-rooms gather around the court, while the rooms facing the street are warehouses, shops and workshops. Kilamba was established on the four urbanistic cardinal directions of *cardo* and *decurmani*. The urban

³⁸ Joseph Rykwert, "The Idea of a Town." 76.

³⁹ Ibid., 77.

structure of the Italian city therefore represents an artefact to foreshadow Kilamba's future evolution.

The Hippodamian city, after the Greek Hippodamus, was zoned according to class (warriors, farmers, artisans), and the form of land tenure, (sacred, public or private). Hippodamus was not only a planner, but also a political theorist and studied celestial phenomena, from which he employed a tripartite land tenure and zoning division that was fundamental to all Indo-European societies. His thoughts on space are not separated by the physical, political or urban, rather he saw them “integrated within the universe of the city.”⁴⁰

Originally the *mandala* meant ‘circle’ in Sanscrit: and encompassed the idea of ‘centre’ and ‘circumference’. It was a diagram of the cosmos, like the *templum* and the labyrinth, which represented a universal order. The mandala was drawn on a piece of flat ground during a ceremony when a guru introduced a disciple. A probationer's journey to the center of the *mandala* is marked by several trials until he reaches the center, which signifies the center of the world. The cosmic man is called the *pursusa*, who is manifested beyond being at the origin of existence.

In the foundation rite of a temple, this diagram is drawn on the ground ceremonially and elaborately; decorated with flowers, lights and incense. It

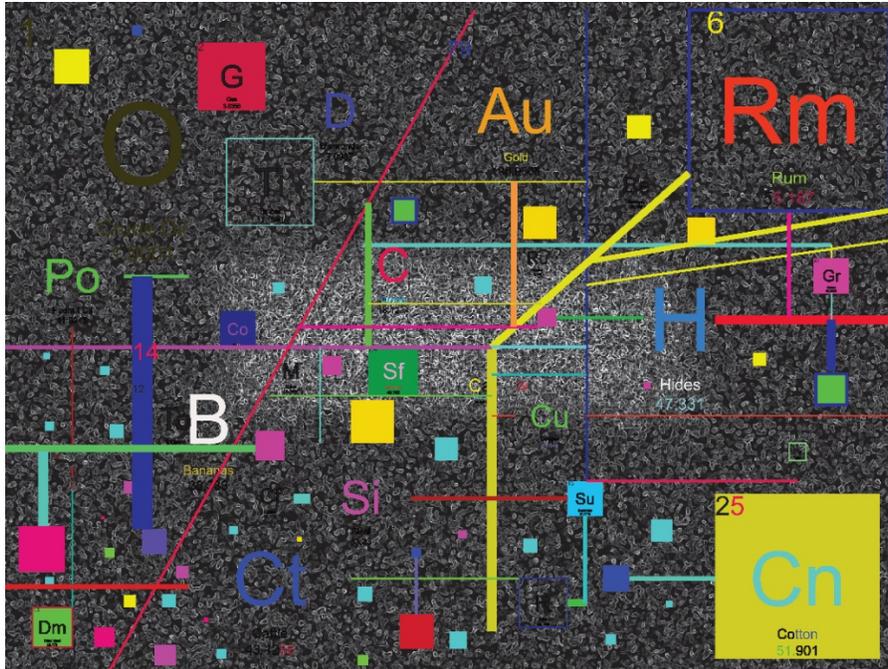
⁴⁰ Ibid., 87.

becomes a metaphor of the building plan as a prophetic program of what is going to be built on the site. The square form is a symbol of the earth, which “does not refer to the outline of the earth. It connects the four points established by the primary pairs of opposites’ – north, south east and west – sunset and sunrise, and the two ends of the world axis.”⁴¹ The earth is therefore called four-cornered, *caturbursti*, where the basic structure of Kilamba culturally reflects a contemporary manifestation of the “original” *mandala*.

“The original accident” is a modern conception of the creation of the universe. According to Aristotle, “the accident reveals the substance” and so the “invention of the ‘substance’ is equally invention of the accident.”⁴² The world is therefore an accidental creation that is intrinsically tied to invention of substance. The creation of Kilamba City is seen in this thesis as an accident revealing the first Angolan commodities connected by a topology of networks. The city as a work of art appears out of nothing as a poetic accident.

⁴¹ Joseph Rykwert, *The Idea of a Town: The Anthropology of Urban Form in Rome, Italy and the Ancient World*. (Princeton Univ. Press, 1976), 165.

⁴² Paul Virilio, “*The Original Accident*.” (Polity Press, 2005), 5.



17. *Original Accident – The Formation of Angolan Commodities*

The ostensibly flat plan extends to the space beyond the picture plane, where digital pixels representing an “atomistic concept of the universe”⁴³ appear to push-forward or pull-back depending on their color.

The elements of the city – oil, ivory, copper... are summoned to dissolve the solidity of that world into “a fine dust of atoms,”⁴⁴ allowing the city to raise itself above its weight. The city itself becomes a work of art.

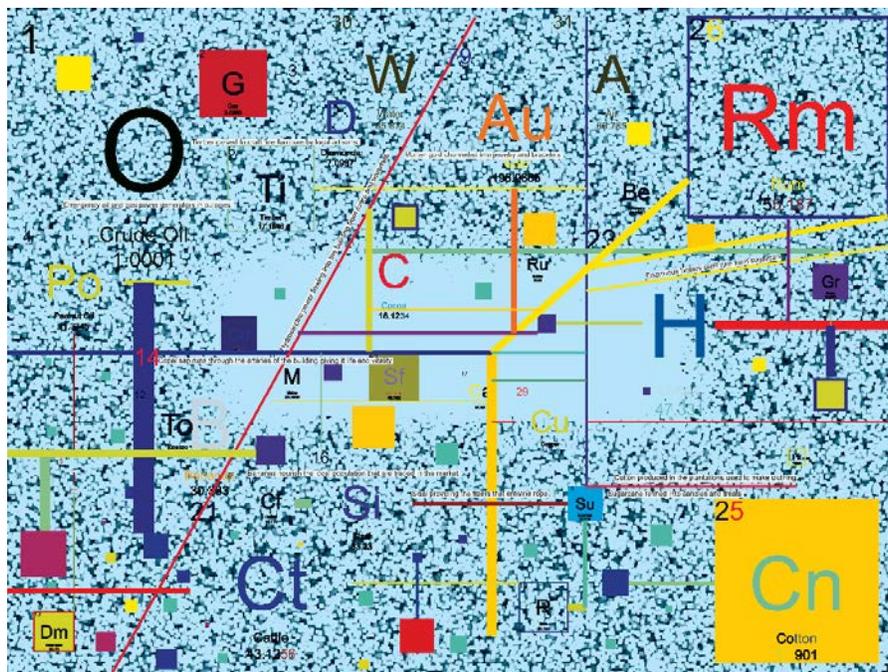
The commodities of Angola are brought into the city at a variety of scales to provide local agency. The power to shape a community organized around local expertise, traditions and techniques of craft facilitate the livelihood of Luandans

⁴³ Italo Calvino. *Six Memos for the Next Millenium.* (Penguin Books, 1988), 20.

⁴⁴ Italo Calvino. *Six Memos for the Next Millenium.* 20.

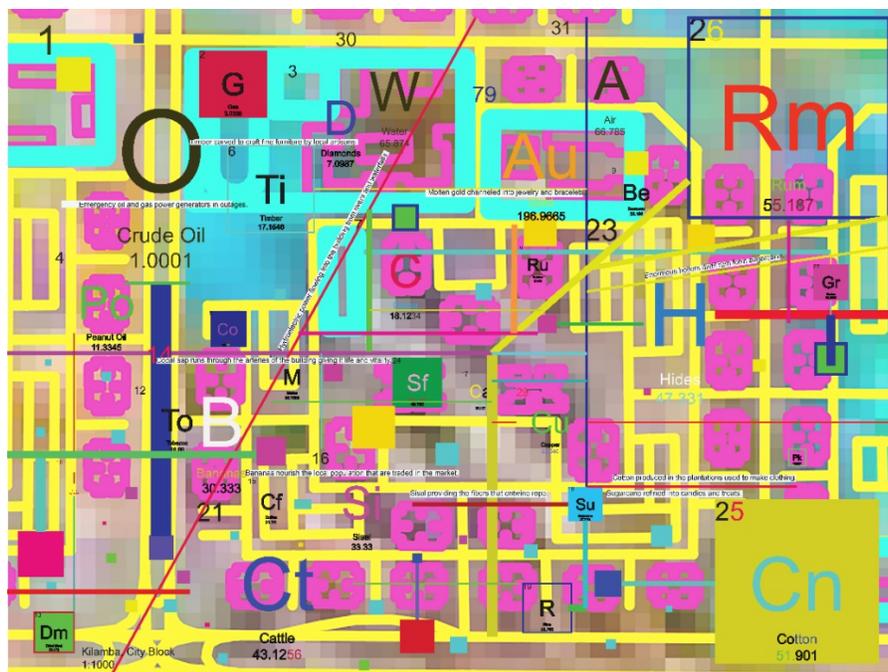
for their enduring city. Timber is carved to craft fine furniture by local artisans, while copal runs through the arteries of the building giving it life and vitality. Enormous boilers distil rum from sugar cane farms that also produce bananas nourishing the local population. Clothing is manufactured from cotton, jewelry is crafted from molten gold and diamonds, rope entwined with sisal are all sold in the market area. Hydroelectric power flows from extensive rivers and waterfalls outside the city, while being sustained by oil and gas reserves during outages.

In David Harvey’s “Right to the City”, “the construction of a broad social movement...takes back control of the city from which they have for so long been excluded...where new modes of controlling capital surpluses work through the



18. Original Accident – Building Typology

urbanization processes.”⁴⁵ The right to the city of Kilamba uncovers a collective right to reestablish our relationship with cities to claim some kind of “shaping power” in which “our cities are made and re-made in a fundamental and radical way.”⁴⁶ The architectural notion of lightness is the conceptual vehicle by way of a radical departure from the modern urban condition embodied in Kilamba, revealing the fundamental typological elements of the city. Lightness brings forth a wonder in that ambiguous paradoxical condition that is “human desire”⁴⁷ that will transcend the purely rational productive model of city building.

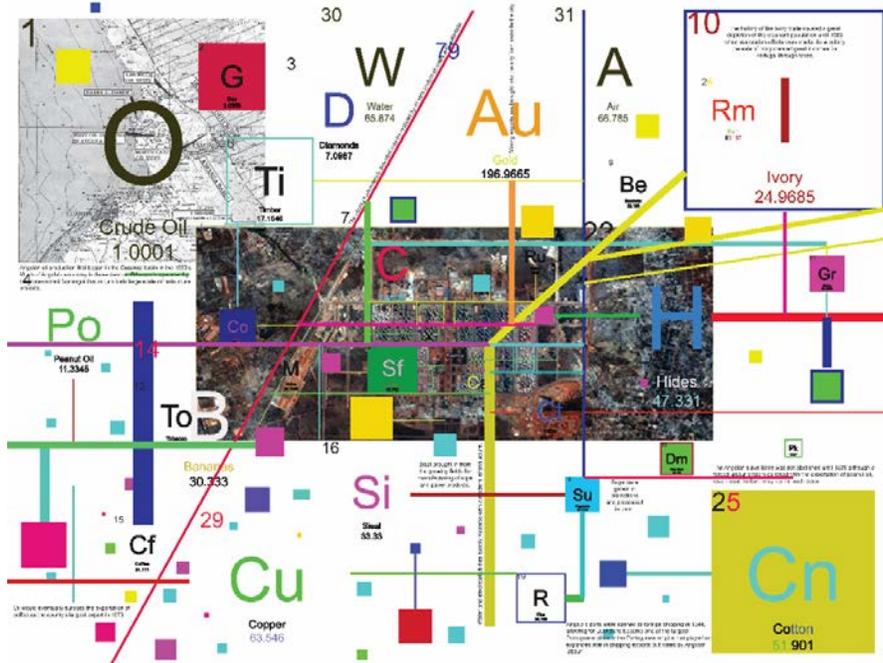


19. Original Accident – City Block

⁴⁵ David Harvey. “The Right to the City.” <http://www.davidharvey.org/media/righttothecity.pdf>.

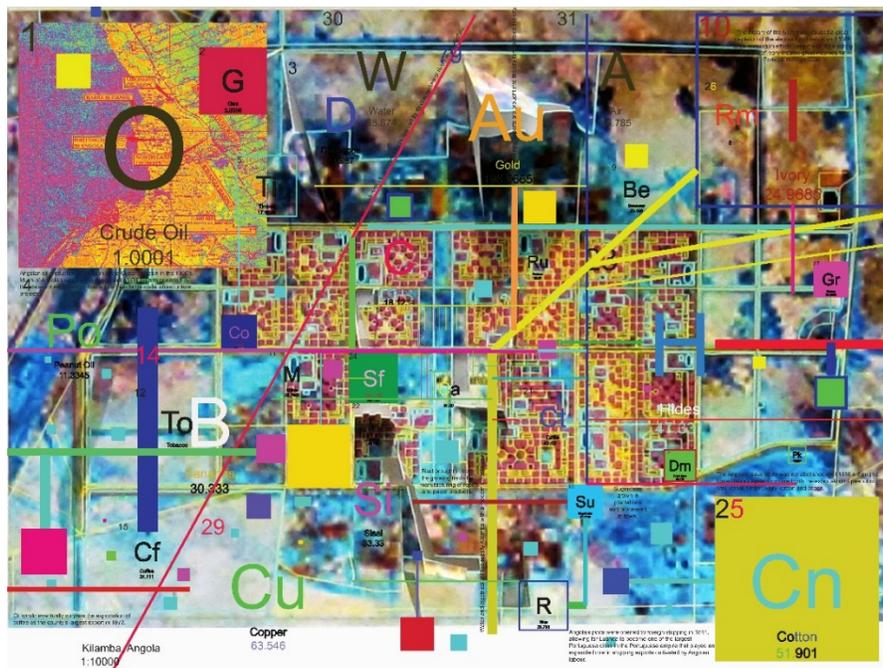
⁴⁶ David Harvey. “The Right to the City.”

⁴⁷ Hannah Arendt. “The Human Condition.” (Chicago: The University of Chicago Press, 1958).



20. Original Accident – Kilamba, Angola

The city forms an architectural artefact that encodes the unfolding economic history of Angola that will be shaped by a broad social movement.

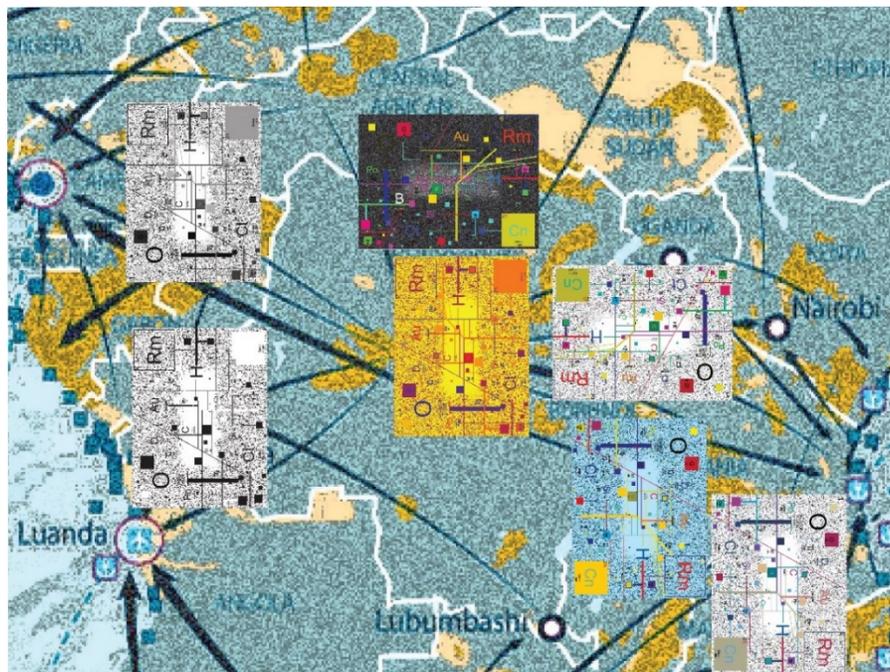


21. Original Accident – The Spatial Fold



22. Digital Mainframe – Luanda, Angola

The module can follow broad trade gestures and infrastructure networks within an interconnected digital mainframe.



23. Digital Mainframe – Trade Routes – Angola, Africa



24. *Utopic Trade – Kilamba, Angola*

The narrow and static set of values displayed by Utopian thinking disregard the development process, and whenever applied, they would inevitably lead to irrationality. Utopian writings from the classical tradition often neglect the spatial environment, while being primarily focused on social relationships. For example, Fourier’s proposal of the “phalanstery”, was based on “the manipulation of what he called the natural human passions”⁴⁸ within a utopian framework.

Alternatively, futurists were fascinated by the technical means of the physical environment rather than the social one. They proposed works of art that either did not change existing social structures, or disregarded them entirely.

⁴⁸ Kevin Lynch, *Good City Form*. 58.

Utopic structural logic expresses the intricacies of a consistently man-made world that is contained within a large-scale order. A problematic condition arises when utopian communities become “real experiments”, where they are invariably “forced to deal with their physical environments.”⁴⁹



25. *Spatial Fold – Southern Gateway*

Successful societies have been built in response to the physical environment “as a visible symbol of the community.”⁵⁰ City policy must therefore connect spatial features in a “general, explicit and rational” manner that is also “concrete and passionate.”⁵¹

⁴⁹ Ibid., 67.

⁵⁰ Ibid., 68.

⁵¹ Ibid., 70.



26. Spatial Fold – Political Center

The “spatial fold” is represented here as a series of political and economic interventions that follow the first sweeping trade gestures of the city.



27. Spatial Fold – Northern Economic Expansion



28. *Spatial Fold – Circumambulation*

A network of circular and linear pedestrian paths circumambulate or diverge from a southern city-gateway.



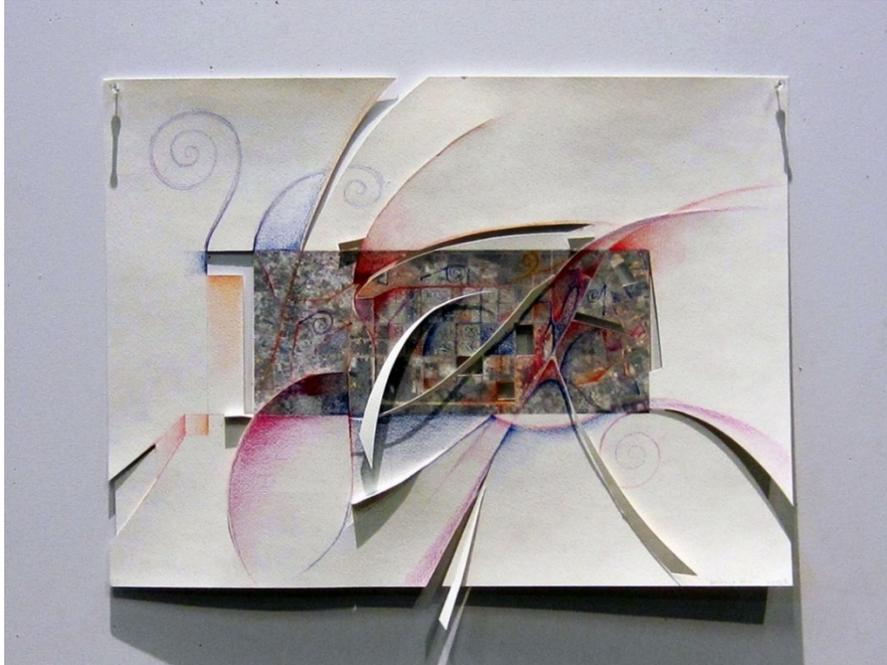
29. *Spatial Fold – Pedestrian Pathways*

Historically, entering through the ancient Roman gate was “an act of covenant with those inside the walls through which the gate leads.”⁵² The gates of the Roman towns were protected and personified by Janus that was related to the house doors in the care of Portunus. Together they were the gods of beginnings and openings called ‘universe’, where Janus was both good and bad. Passing through the gates was thus a religious act.

While today’s cities are practical objects, “the beauty of a great city is a matter of art, not of science – an intensely private affair, uncommunicable in prosaic language.”⁵³ The “practical” and “esthetic” functions of a city are interwoven as one phenomenon. The challenge of theory is to describe this even though esthetics are less discernable than more pragmatic concerns.

⁵² Joseph Rykwert, “*The Idea of a Town.*” 135.

⁵³ Kevin Lynch, “*Good City Form.*” 104.

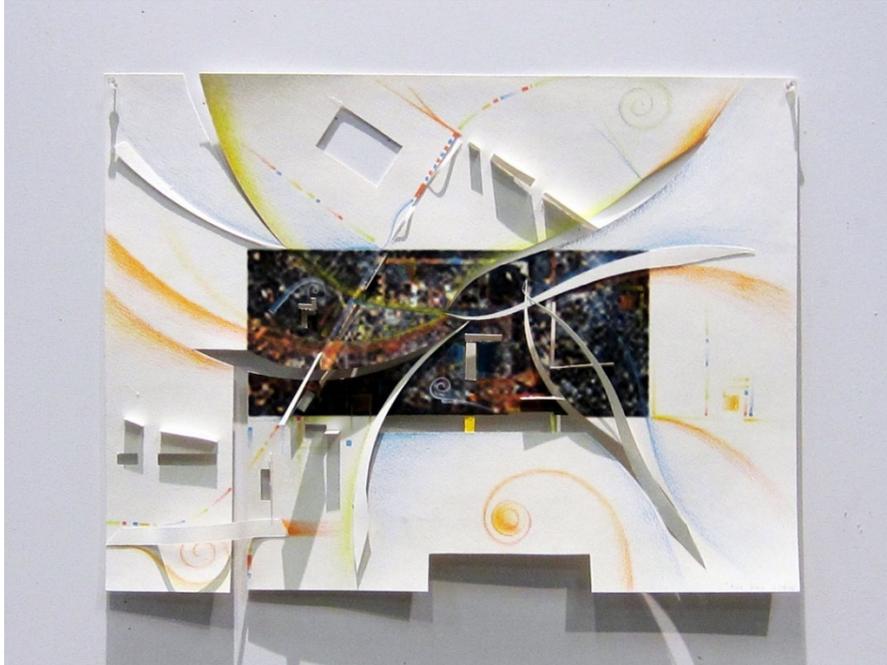


30. Relief Drawing – Sequence 1

Architecture is, in the mode of a work of art, a poetic accident uncovering a lightness “that defines the variety of things (in an) essential parity.”⁵⁴

The intent of this thesis is to oppose the rational powers that shaped Kilamba with intuitive, Dionysian modes of resistance to bring together modern and local historical conditions through a resistive third-party, to transcend the hegemonic political and technological forces that keep them separate and give them weight.

⁵⁴ Italo Calvino. “*Six Memos for the Next Millenium.*” 9.



31. Relief Drawing – Sequence 2

The poetic creation of a city has its origins in ancient cosmological models. Cosmic theory was best-developed in China and India. *Geomancy* was a Chinese pseudoscience for the recommendation of favorable sites and their improvement that “studies the local currents of “cosmic breath” as it was influenced by topography, water bodies, cardinal directions, and hidden veins in the earth.”⁵⁵ A more explicit connection between gods, men, rites, and city plans was made by Indian theorists. It took the form of a *mandala* that was an enclosure of rings divided into squares protecting the most powerful point at its center. The *mandala*’s holiness is reinforced by this enclosure, and is encircled in a clockwise movement from the outside in.

⁵⁵ Kevin Lynch, “*Good City Form.*” 74.

The *templum*, like the labyrinth was the symbolic image of the town, and was an organic constitution of the rites that were performed for its protection and regeneration.⁵⁶ The labyrinth, as an unfolding path or route, has been interpreted as the symbol of a process of transformation.⁵⁷

The word *truia* seems to be associated with a game, a dance, or a rite that become a part of ancient folklore. The maze of Daedalus was escaped by flying out as a crane would, or by Ariadne providing a clue for Theseus in the form of a red thread. Mazes appeared on thresholds, such as doors and windows, or worn by people to represent salvation and rites of initiation through “immuring” and “exclusion.”⁵⁸ The patterns that made up the maze were in fact similar in function to the maze dances.

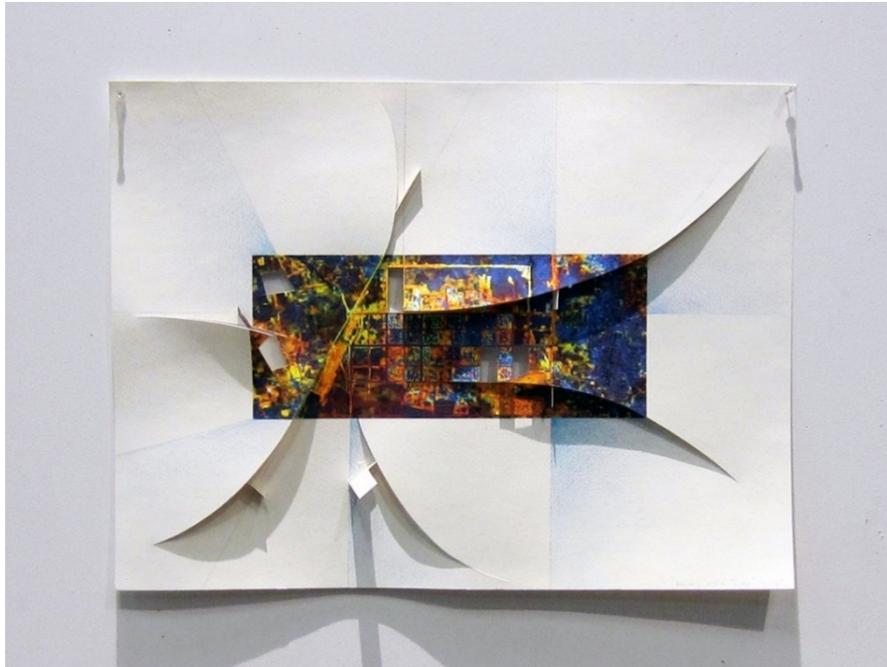
The maze and solving the monster’s riddle “often consists of a statement in which man acknowledges his real nature.” Their ancient purpose was to “arrest and confuse the intruder,” who is unable to leave until the riddle has been solved, or through tracing a path to the center of the maze.⁵⁹ The city that is founded by a labyrinth, will unfold its essence over time.

⁵⁶ Joseph Rykwert, “*The Idea of a Town*” 129.

⁵⁷ Aldo Rossi. Introduction by Peter Eisenman. “*The Architecture of the City*.” (The MIT Press, 1982), 3.

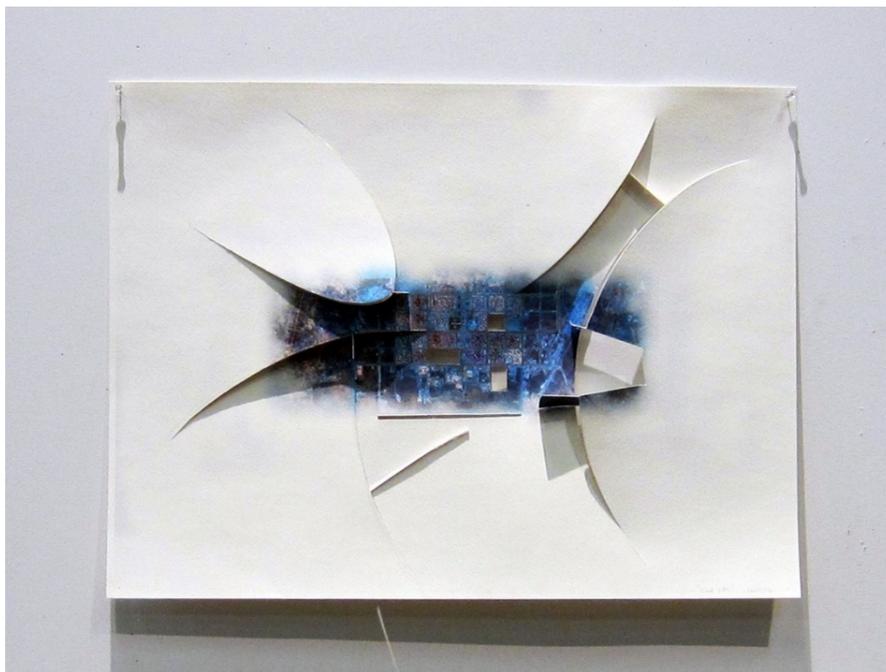
⁵⁸ Joseph Rykwert, “*The Idea of a Town*.” 151.

⁵⁹ *Ibid.*, 145.

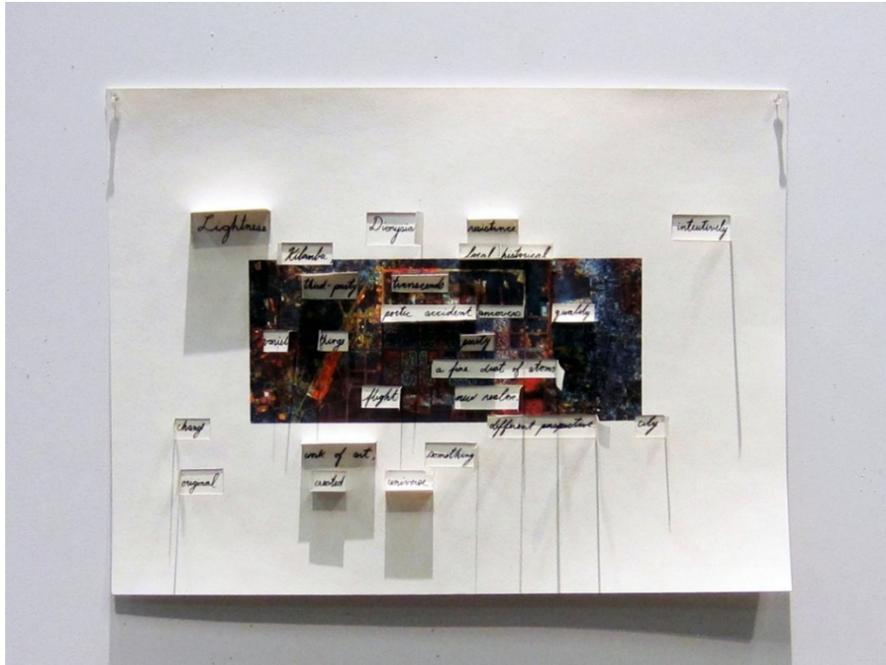


32. Relief Drawing – Sequence 3

Each “relief drawing” demonstrates a sequence of events. As the “city’s” broad history unfolds, places like Kilamba will persist as an idea.

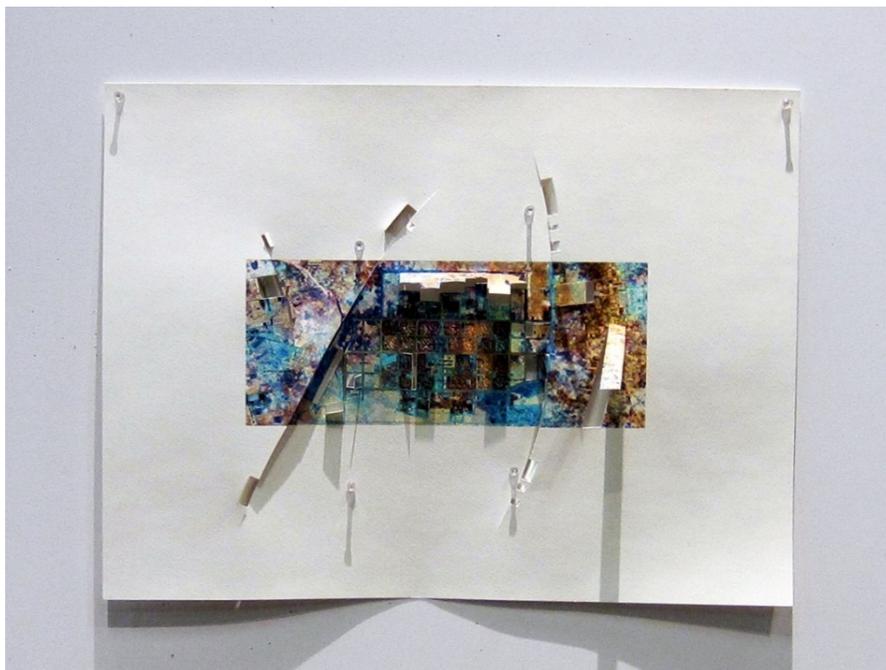


33. Relief Drawing – Sequence 4

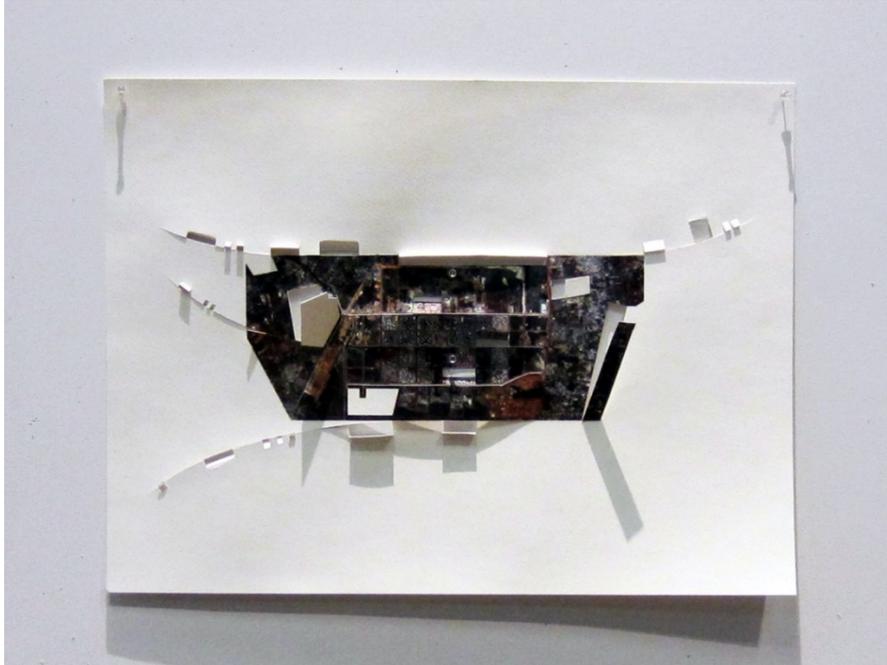


34. Relief Drawing – Narrative

The “spatial fold” uncovers a narrative structure devised by constructive accidents revealing new potentials in the city’s program.

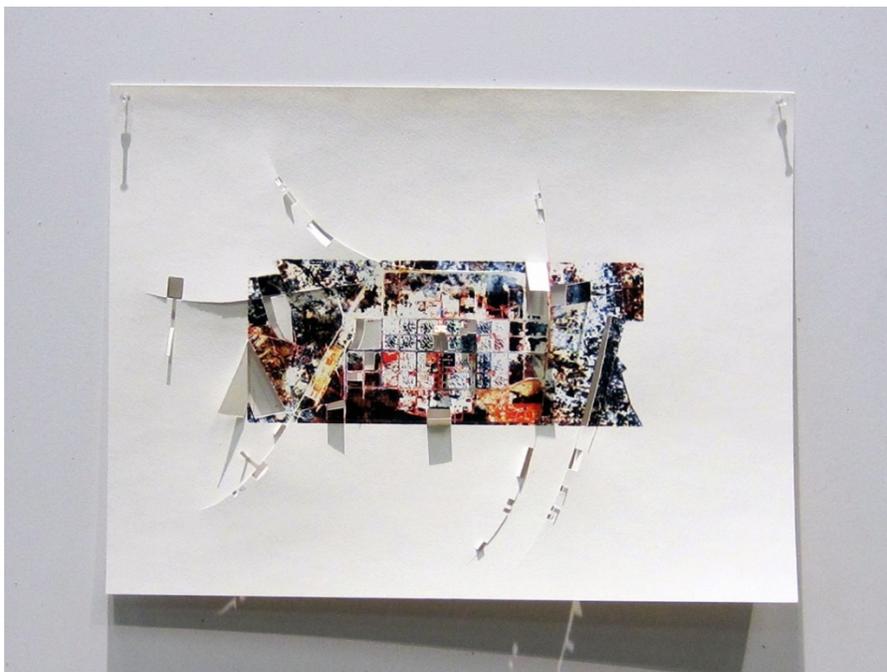


35. Relief Drawing – Sequence 6



36. *Relief Drawing – Sequence 7*

Gestures of infrastructure create new boundary conditions related to the city center accompanied by emerging features along its periphery.



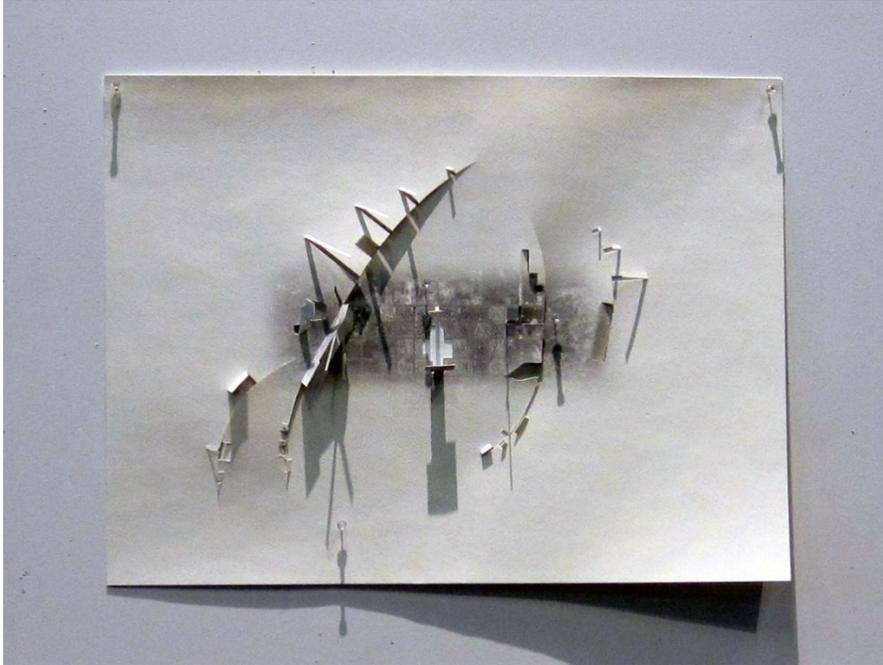
37. *Relief Drawing – Sequence 8*

In ancient Italy, the setting of a boundary stone was analogous to the rituals of the making of a *mundus*, providing a tension between the center and periphery of the town. The Terminus offering was the food of the dead (wine and beans), while the *mundus* sacrifice is one of *fruges*. The sacrifice of earth involved a tuft, where earth from the ‘neighbouring land’ that was put into the *mundus* is an act of taking possession of the neighbouring fields. The *mundus* was a “vaulted underground chamber, and as it looked like the sky, was called *mundus*, the universe.”⁶⁰

The *mundus* is female, whereas the boundary (*pomoerium*) is male, with sacrifices being made to female and male deities respectively. Each was complemented by a feature of the opposite sex. The fire set up by the *mundus* apparently had a phallic character, within which the tomb was analogous to the womb.

The entire city represents a female being encapsulated in the *mundus*. She is a divine protectress metaphysically represented in both physical defenses and ritual monuments that had a magical function that belonged in combination to a social and religious unity.

⁶⁰ Joseph Rykwert, “*The Idea of a Town*.” 124.



38. *Relief Drawing – After the Year 3000*

After centuries of struggle and renewal, a city-artefact emerges in the next millennium carrying forth ancient ritual form encapsulated in the female being. At its heart, lies a childcare center the size of a city block that defies our rational understanding of scale and materiality. At its periphery unfold intuitive gestures of infrastructure protecting the city center only to be accessed by formative gateways marked by architectural monuments along its boundary. In this new light, the idea of Kilamba dissolves, and a balance is achieved between its rational constructs with intuitive foresight and ritual history...

Case Studies



39. Arcade



40. Market



41. Underground Court

Brookfield Place represents Toronto's financial sector embodied in the plan of a gothic cathedral oriented westward along *decumanus*. As one enters from Bay Street, the processional narrative leads to a market area centrally defined by a water fountain within a courtyard of trees. Translucent floors are illuminated from below, revealing a potential to be uncovered: a significant underground court area of shops, restaurants and public seating, all given accesses by generous stairs that lead to and from the gallery.

Kilamba City can incorporate an archaded market area in its streets, allowing for the intersection of sustainable dwelling and local trade. Platforms would suspend above and inbetween places of inhabitation, carrying a variety market exchanges as an extension of their daily living.



42. Toronto City Hall Plaza

Toronto City Hall is a plaza defined by boundary ramps that lead along its perimeter to a central rotunda with curved *belvedere* towers. The *grotto* of City Hall is also the *grotto* of the City, located at the central interior of the rotunda, where city committee meetings are held just above. As one enters the compressed entrance of the rotunda, the space opens-up to the *grotto* that is surrounded by a viewing gallery.



43. Rotunda



44. Grotto of the City

The central park of Kilamba could be the location of new public buildings, organized around a city hall that would coordinate the political and economic aspirations of the local people.



45. Confederation Park



46. Ottawa City Hall



47. Ottawa Courthouse

Ottawa City Hall addresses Confederation Park with a generous order of public service offices above its entrance. An atrium “street” provides the primary organizing axis for the office spaces and conference rooms leading from the main entrance to a preserved heritage building. The Ottawa Courthouse completes the site on the western corner with a bold and authoritative presence.



48. Atrium Street – Ottawa City Hall



49. Front Elevation – Mississauga City Hall



50. Perspective – Mississauga City Hall

Mississauga City Hall, opened in 1987 as a new city civic center embodying a postmodern use of modern construction techniques that relied on traditional architectural forms. The combination of European urban civic design and rural Ontario building types, merged “local traditions and the grand symbols of western architectural history.”

Mississauga City Hall is composed of geometric shapes laid out like drawing study models: cylinder (the council chamber), rectangular prism (office building), obelisk (clock tower) and pyramid (the glass roof of the Great Hall). Jones & Kirkland continued the tradition of postmodern architects such as Michael Graves and Aldo Rossi, who “focused on the communication of architectural ideas through drawing rather than building.”⁶¹

⁶¹ Historica Canada. “Mississauga City Hall.” <http://www.thecanadianencyclopedia.ca/en/article/mississauga-city-hall/>

The Angolan People



51. Ritual Dancing



52. Traditional Home

Archeological remains show that the regions of Luanda and the Namib desert have been inhabited since prehistoric times. Hunter-gatherers were the earliest settlers of the region, who were likely the ancestors of ‘pygmy’ tribes still living in the rainforest regions.

Bantu-speaking groups brought their farming and metal-work knowledge around 500AD and pushed the ‘bushmen’ tribes into more remote regions. The Kingdom of Congo, among other kingdoms, began forming around 1100AD. Their domain stretched down to the Cuanza/Kwanza river, establishing its capital of M’banza Congo in modern-day Angola.

The Portuguese settlers of the late 15th century was challenged by the kings (called Ngola) or queens of the Ndongo. Strong links with Brazil remain to this day, as the ports of Luanda and Benguela were used for shipping slaves to the

South American Portuguese colony. After the slave trade was abolished in 1836, Luanda became an important center for shipping goods such as palm oil, ivory, cotton, coffee and cocoa.⁶²

Roman Catholicism remains the main religion for Angolans, because of Portuguese influence dating back to the late 1500's. Angolan traditional ethnic art is enjoying a resurgence in popularity owing to its rich history. The masks and statues of the eastern Chokwe people are "regarded as some of the finest wood carvings in central Africa."⁶³ Other art forms such as ceramics, basketry and textiles are also well-practiced. Portuguese-educated Angolans also began to write articles, novels and poems during the 19th century exploring Angolan history. Many traditional forms of spirited dance remain closely tied to brightly colored Angolan clothing and textile making, and are an important part of local celebration and folklore.



53. Angolan Sculpture



54. Angolan Mask

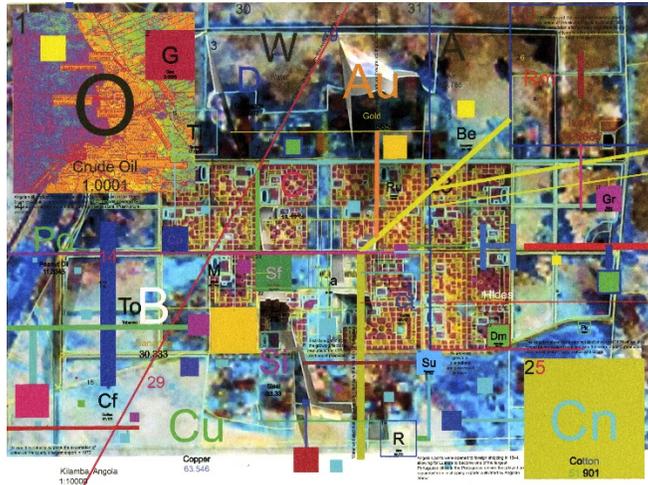


55. Angolan Clothing and Dance

⁶² Our Africa. "Angola: History and Politics." <http://www.our-africa.org/angola/history-politics>

⁶³ Our Africa. "Angola: People and Culture." <http://www.our-africa.org/angola/people-culture>

Exploration Drawing



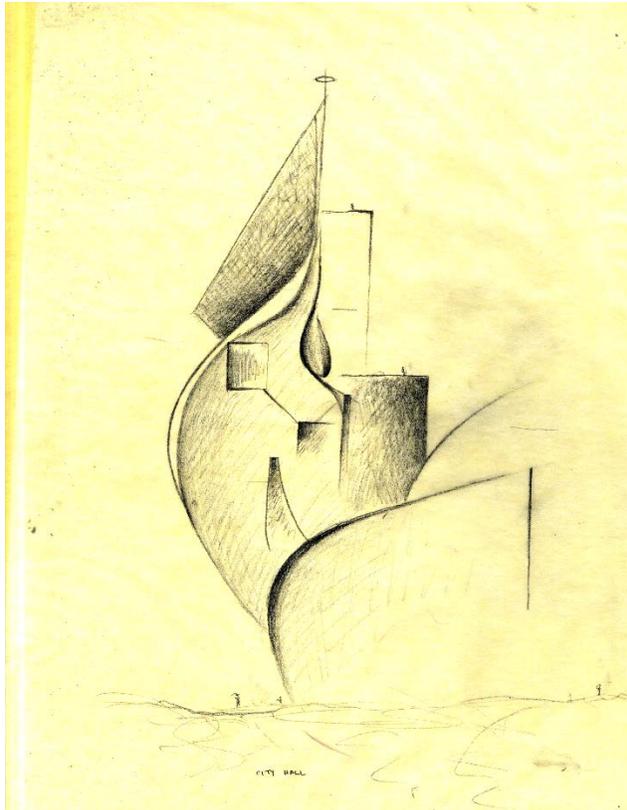
56. *Typological Drawing – Kilamba, Angola*



57. *Graphite Drawing Overlay*



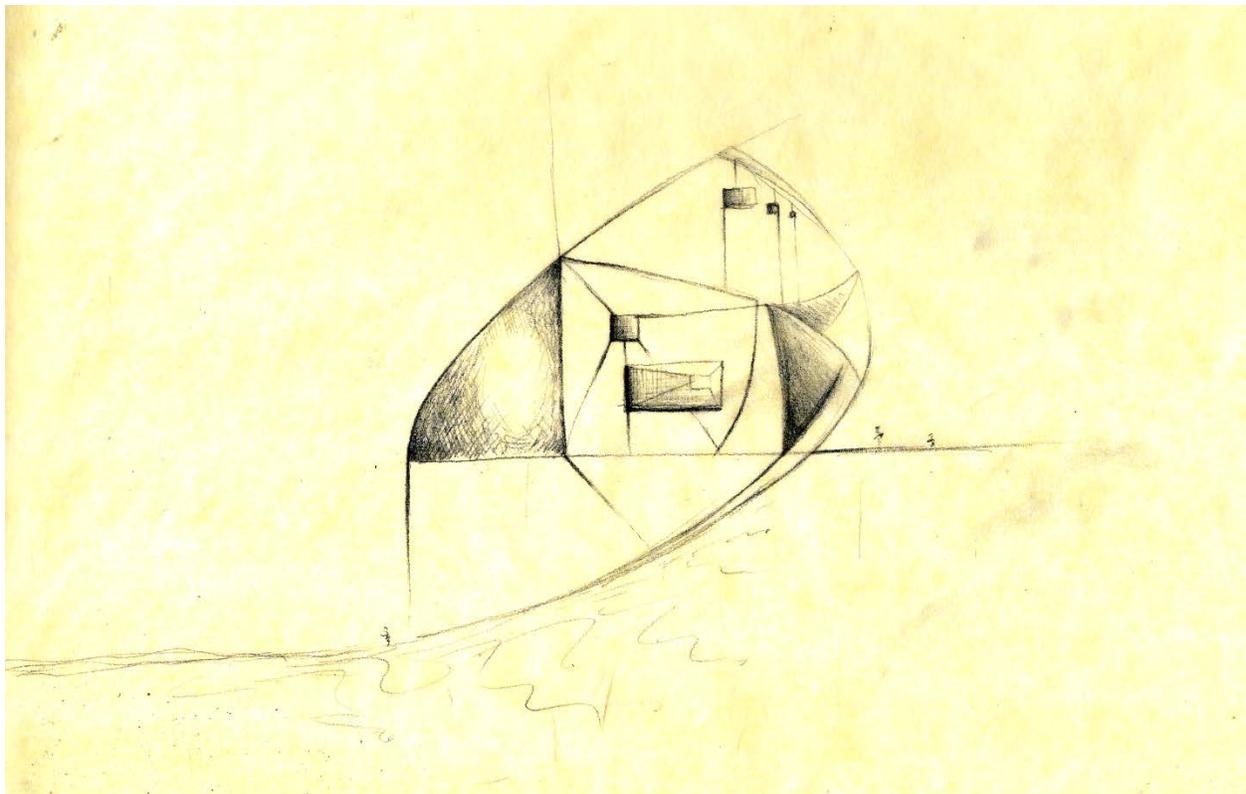
58. *Flowing Digital City*



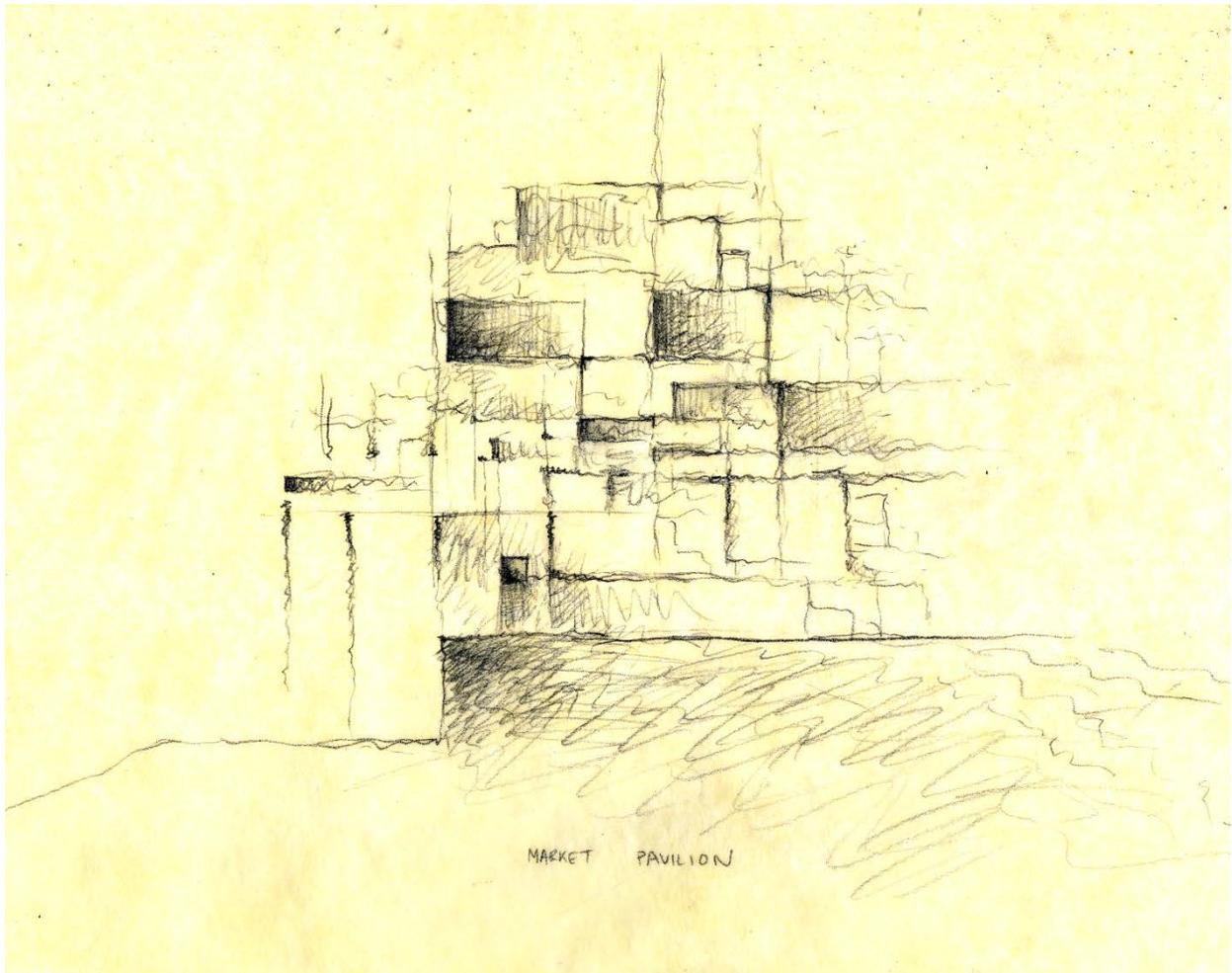
59. City Hall



60. Market Pramenade



61. Museum



62. Market Pavilion

The Synthesis of Form

The power of the “diagram” is at the core of formal synthesis. A design problem is balanced by the “good fit” of two elements: form and context. The form is the solution to the problem that is defined by the context. The surrounding context is what places demands on the form, represented by a “diagram of forces” known as the “field description”. The unitary description of the context is equivalent to the field description of the form.⁶⁴

Anthropological history can be divided into two “descriptive constructs”: the “unselfconscious” culture and the “self-conscious” culture. The unselfconscious culture is often described as primitive, folk or closed. In contrast, the modern self-conscious culture is described as anonymous, total and principled. The design process is affected by this differentiation, where the former is a highly adaptive tradition based on mnemonic methodologies. The latter is characterized by the teaching and application of “explicit general principles of function.”⁶⁵ A range of independent subsystems affords the unselfconscious design process to be very

⁶⁴ Christopher Alexander. *Notes on the Synthesis of Form.* (Cambridge: Harvard University Press, 1964), 15-21.

⁶⁵ Christopher Alexander. *Notes on the Synthesis of Form.* 36.

adaptable, whereas modern systems are less amenable to adjustment due to their highly interdependent nature.

The form-making process is therefore “the action of a series of subsystems, all interlinked, yet sufficiently free of one another to adjust independently in a feasible amount of time.”⁶⁶

The modern conditions of Kilamba represent the intersection, or more accurately the “denial” of Angolan unselfconscious culture. If the former historical period represents the traditions of the Angolan people, then the latter is the modern development process manifested in the global economic zone.

Due to the all-encompassing nature modern technology and capital, the proposed design process can be ostensibly applied by employing these principles. So how can the Angolan way of life be reestablished given this tautology? The key is in the development of abstract models that reincorporate local cultural artefacts. The diagram is essential to the manifestation of traditional patterns preserved through the lens of modern form making.

Flow lines, representing historic trade routes, rivers and water systems become pathways within the city. Angolans will be able to sell local craft and produce in modern pavilions and markets, where their traditions and advancements

⁶⁶ Ibid., 43.

are represented in museums, research centers and libraries. The notion of “lightness” embodies an elemental “flow”, where the adaptability and flexibility of a people is expressed in the city’s form. The architectural masses appear to “float” above the solidity of the world with structural integrity. The whole notion of program is in fact flexible, where architecture can change its function over time, while maintaining its basic typology.

An increasing Chinese influence also recalls ancient traditions brought back to Africa. Over millennia, nomadic people crossed vast continents out of Africa to the north and east. Now there is a return from the far east, where people settle and continue to work in the surrounding capital of Luanda. The ancient Chinese dragon is represented by this flowing parkland, where rational programmatic cores are protected by flying and undulating exteriors. Thus, new traditions are constantly formulated and reformulate within an increasingly adaptive framework.

Kilamba, Angola – Civil Works Project

Intermediate Design Phase

Angola, Africa is home to Kilamba, a city on the outskirts of the capital Luanda, whose very nature defies conventional notions of urban planning: or as it may be, the very embodiment of Western development practices that have been imposed on the African continent. Subsidized by Angolan oil and built with Chinese labor, Kilamba reflects a so far unsuccessful attempt of global powers employing local commodity surpluses to attract foreign capital.

The economic zone, or gated community, is currently at twenty-percent occupancy in this massive condominium development whose center remains both physically and ontologically empty. The majority of Angolan people live in poverty in the slums of Luanda, even while the new city largely remains unoccupied and financially out of reach due to the lack of a broad middle class. The distribution of wealth is largely at the higher end of social class, with political elites promising a better standard of living for the Angolan people in the form of Kilamba, despite the current wealth disparity in the country.

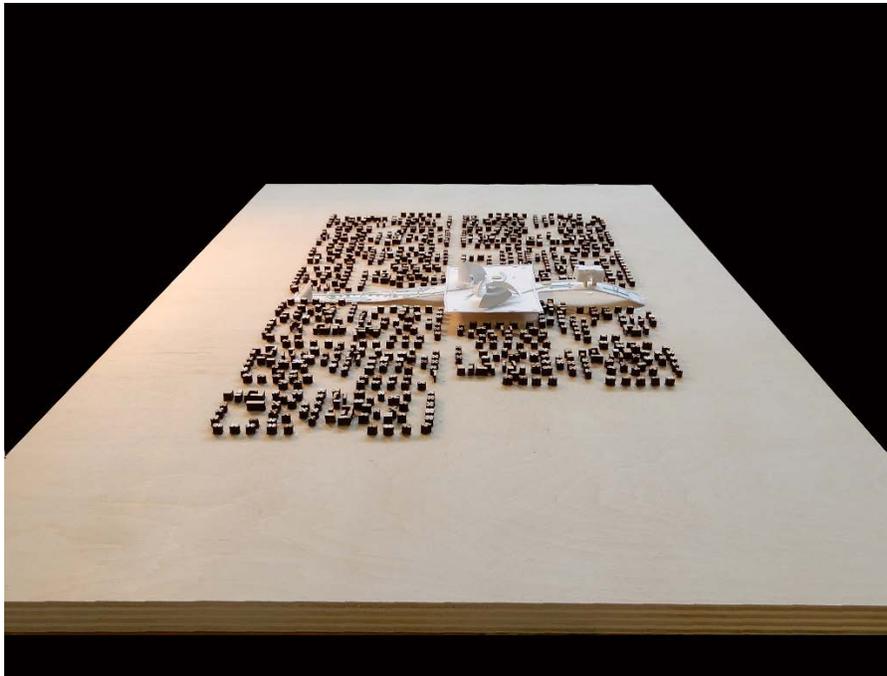
David Harvey describes a similar modern urban condition in which commodity surpluses have yet to be shared with the majority of urban dwellers, who have been excluded for the benefit of social elites. He proposes a broad social

movement, in which surpluses are redistributed to the masses to achieve a power to shape their cities once again: a city that currently denies its own “place of existence” for the sake of capital circulation. Harvey underlines the intrinsic nature of power, capital and collective political discourse to achieve all forms revolutionary urbanism.

The proposed civil works project, at the heart of Kilamba City, assumes the broad shaping power of local Luandans within a revolutionary context, where commodities once shared with only a few are redistributed in new forms of power and capital. Once the political and economic potential is opened, a parity is achieved by the various stakeholders that can support future “systemic” development in the city as a place for everyone, that is, of all social class.

The central park corridor is elevated from its northern entryway that welcomes its people with an outdoor theatre that progresses to a library at its southern limit. The broad middle portion is home to a market and city hall, exchanging in political and economic dialogue. The city hall is a place where broad social movements can manifest themselves in “class discourse” for the purposes of shaping the new city in which they live, while ensuring an inclusionary politics. The library, at the city’s “head”, locates an archival knowledge base for the purposes of advancing research, while also being accessible to all citizens at all levels interest and intentionality. The theatre at the “foot”, is a place for celebration

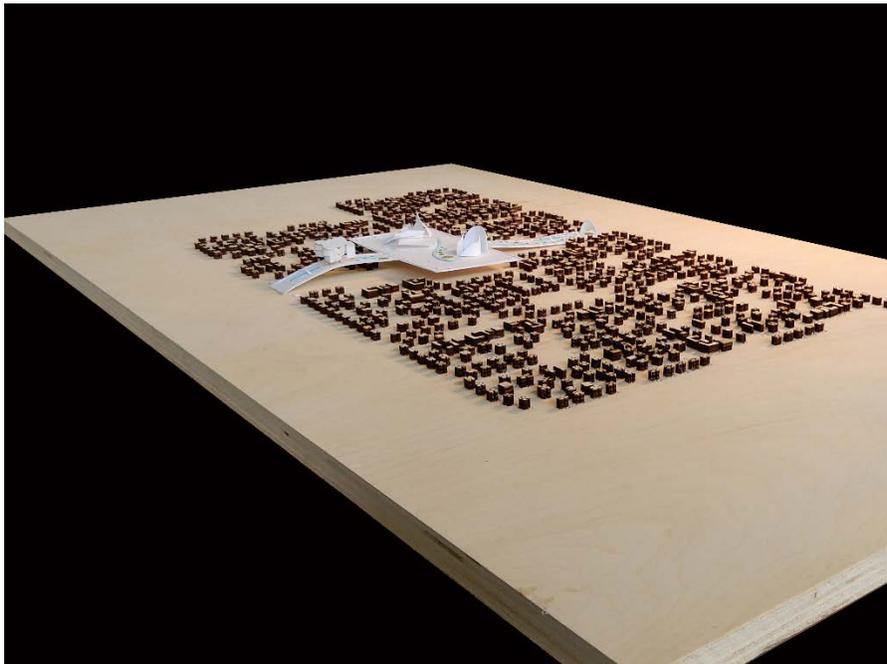
and dance, reflecting the intersections of Angolan ritual and folklore, with the emerging stories of the modern world. The city core “elevates” everyday occurrences by allowing its citizens to “flow” under and over the land, in free exchanges amongst the rivers and parklands reflected in the vast natural terrain of Angola.



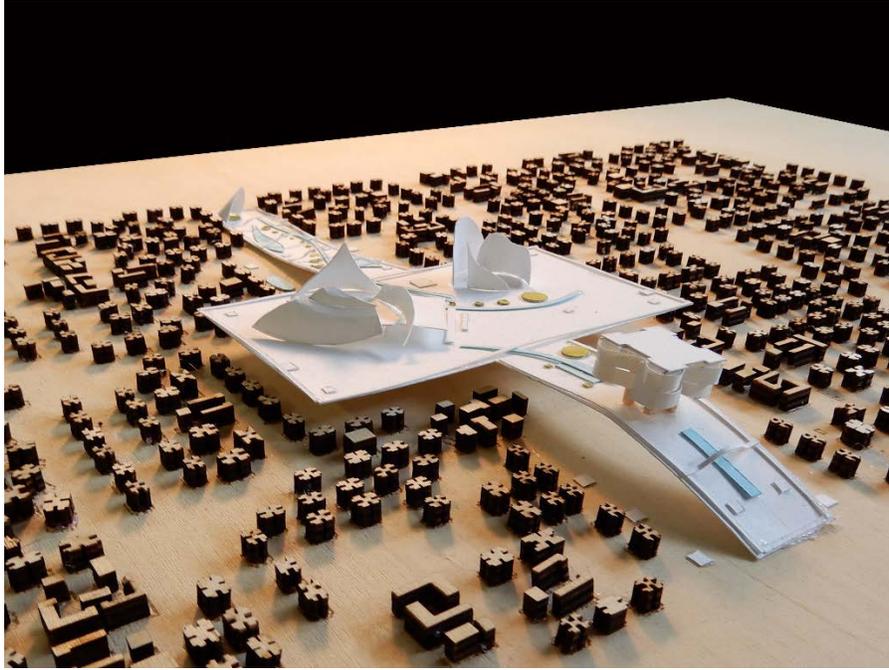
63. Site Model – East Perspective



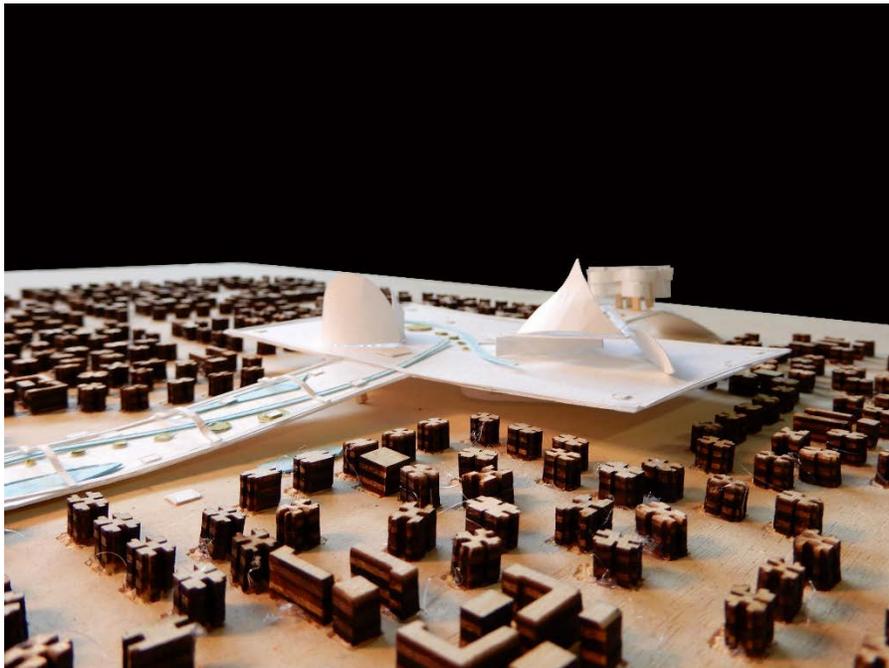
64. Site Model – Arial Plan



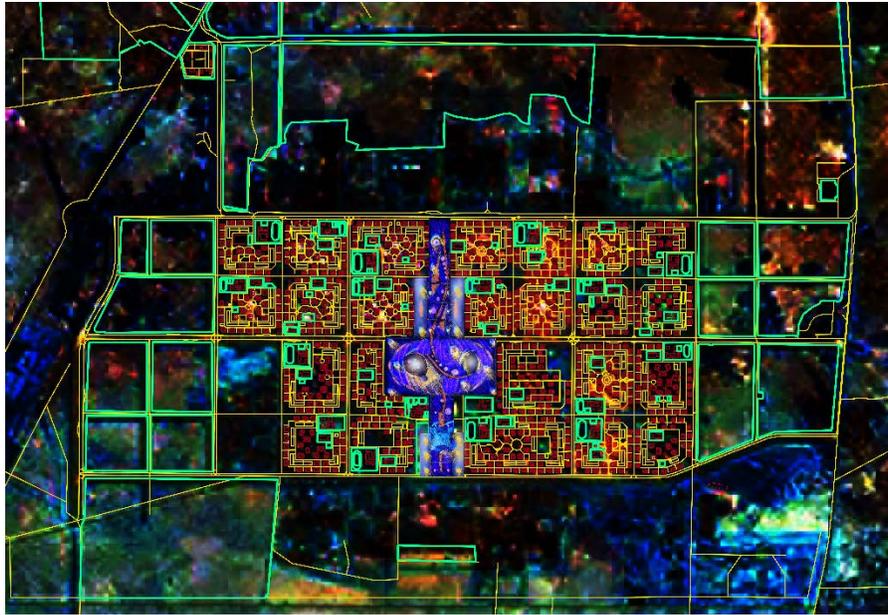
65. Site Model – Oblique Perspective



66. Site Model – Central Platform



67. Site Model – Elevated Plane

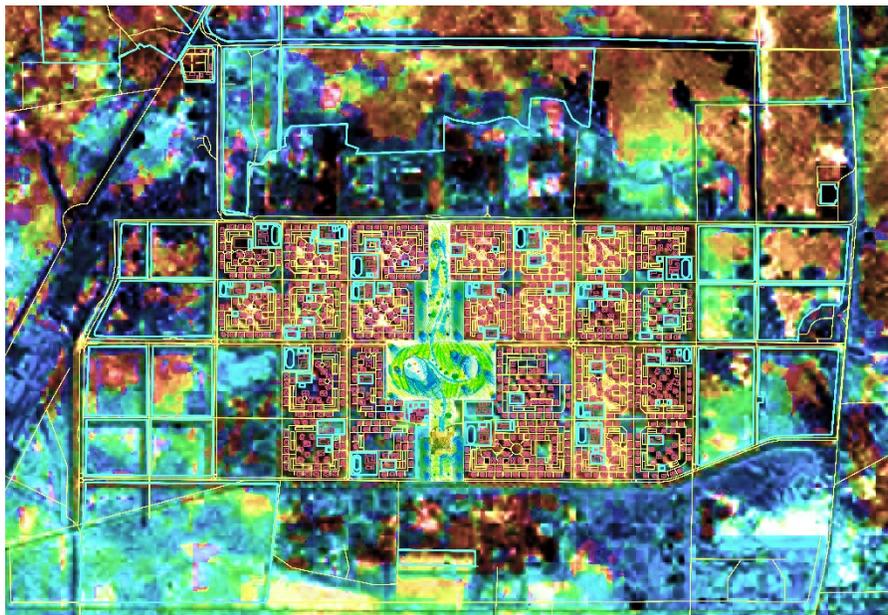


City Development

Blocks Buildings Parks

Kilamba, Angola 1:5000

68. Site Plan – Celestial Emergence – Illuminated at Night

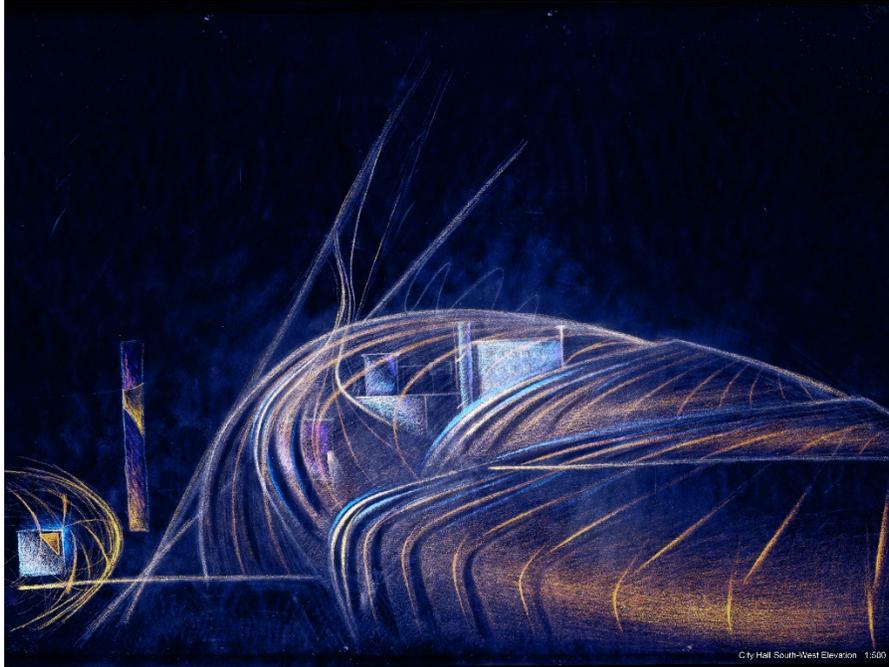


City Development

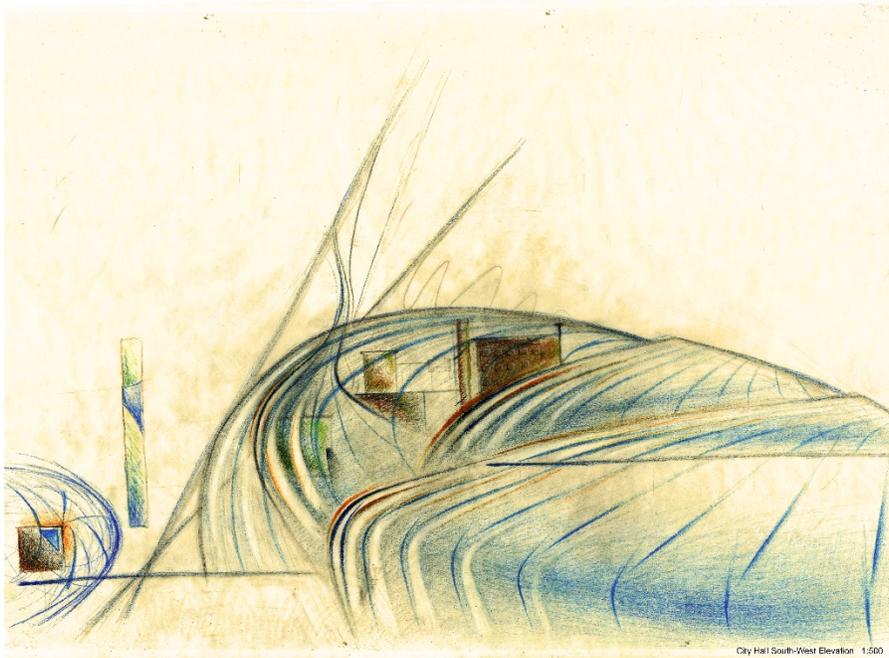
Blocks Buildings Parks

Kilamba, Angola 1:5000

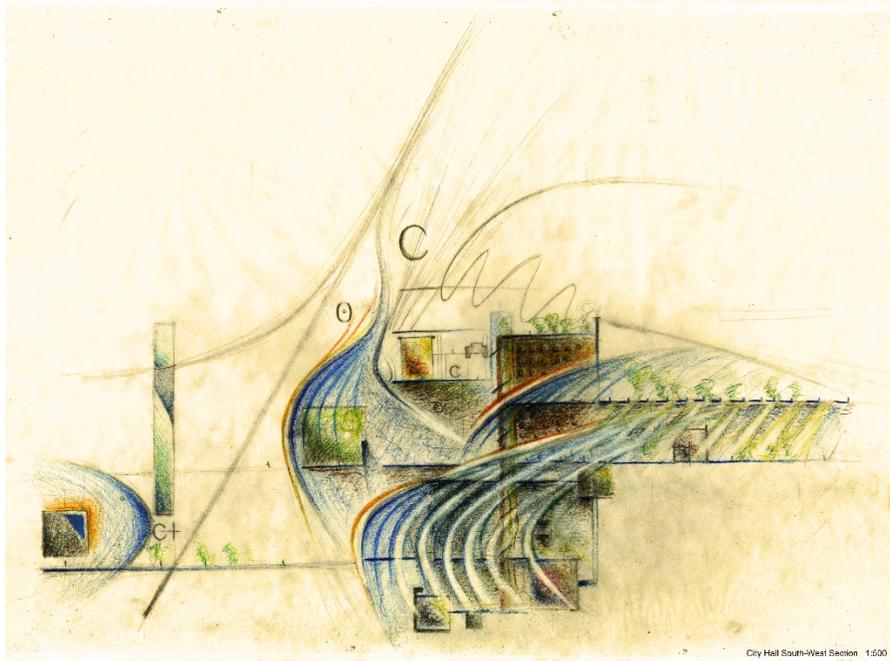
69. Site Plan – Daytime Illumination



70. City Hall – South West Elevation – Quantum Energy Field

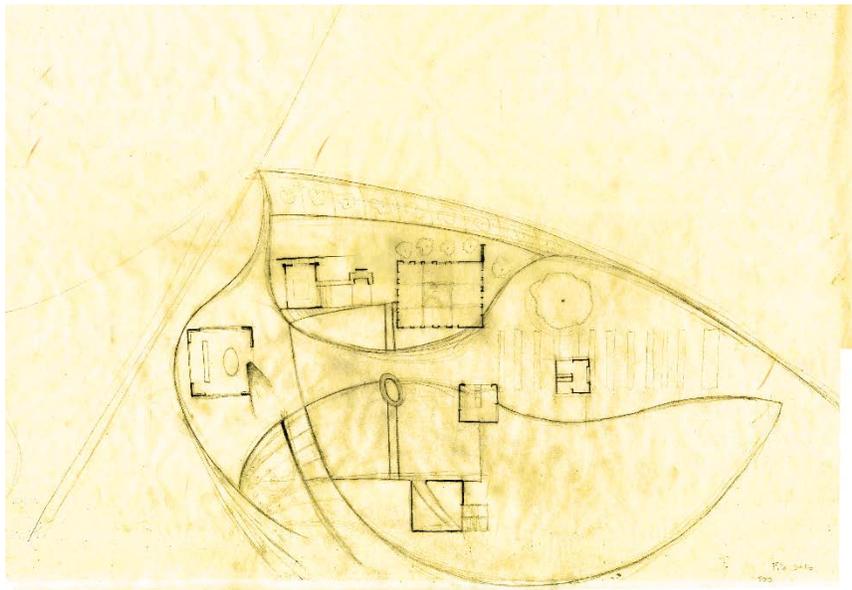


71. City Hall – South West Elevation



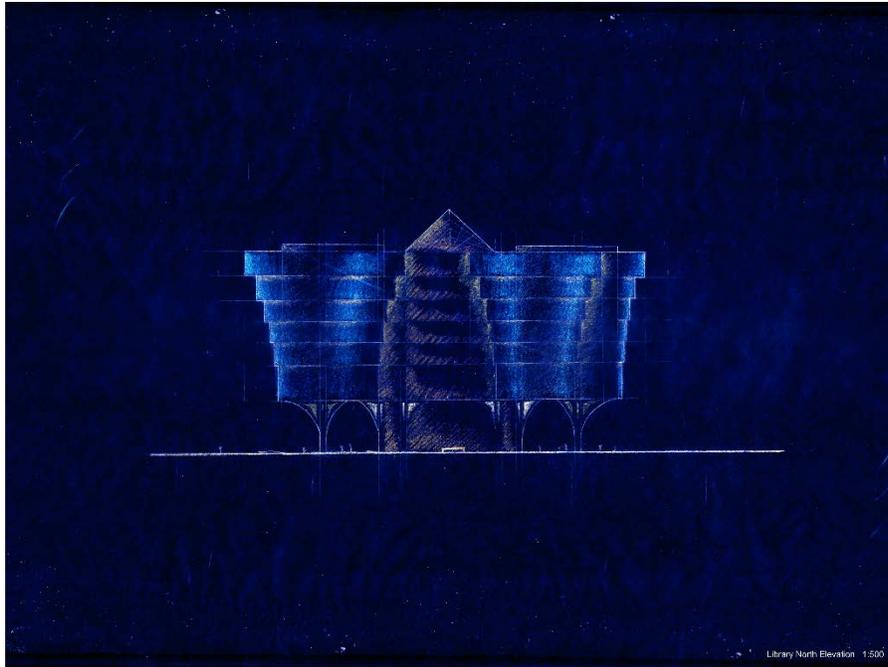
City Hall South-West Section 1:500

72. City Hall – South West Section

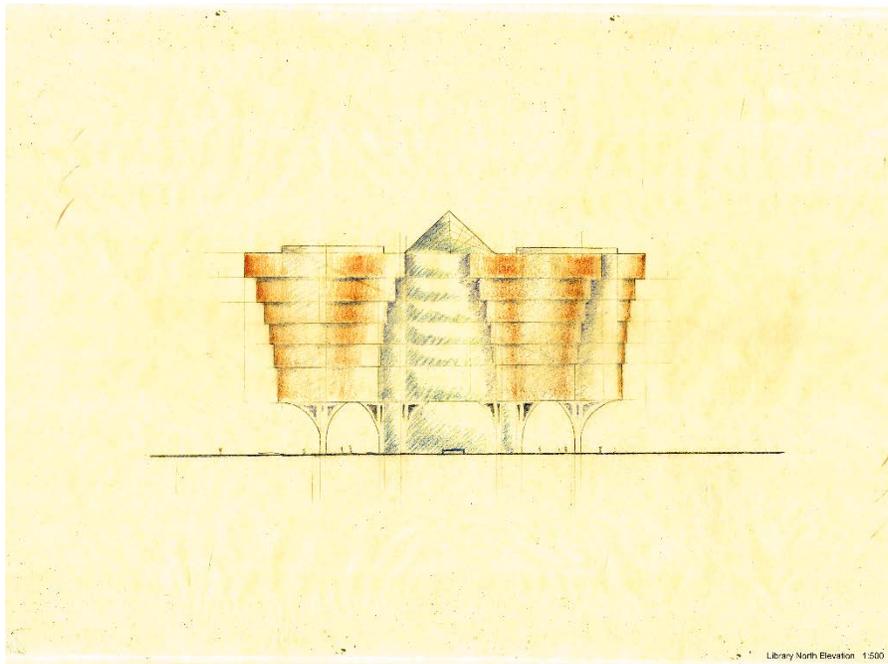


City Hall Plan 1:500

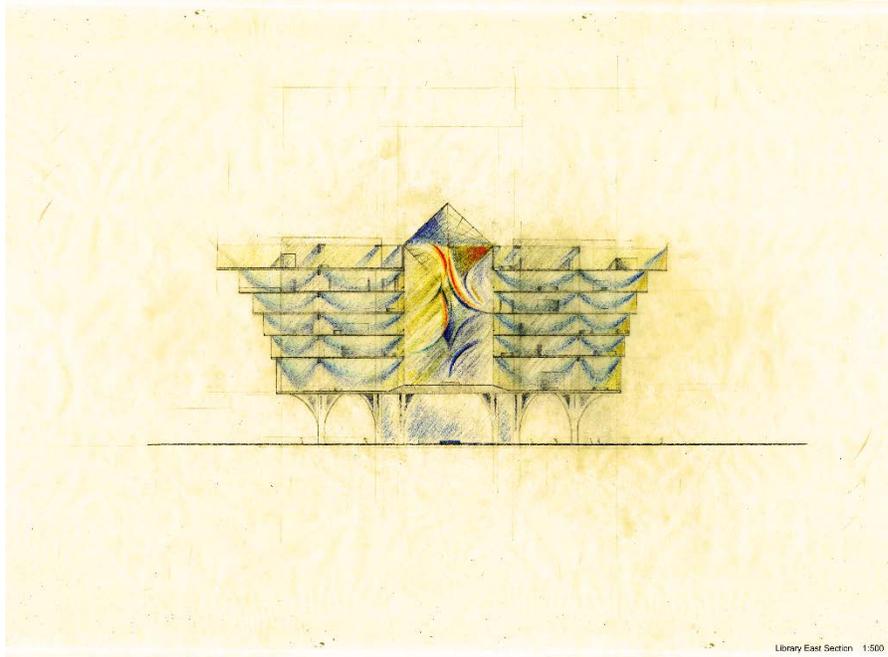
73. City Hall - Plan



74. Library – North Elevation – Illuminated by Night

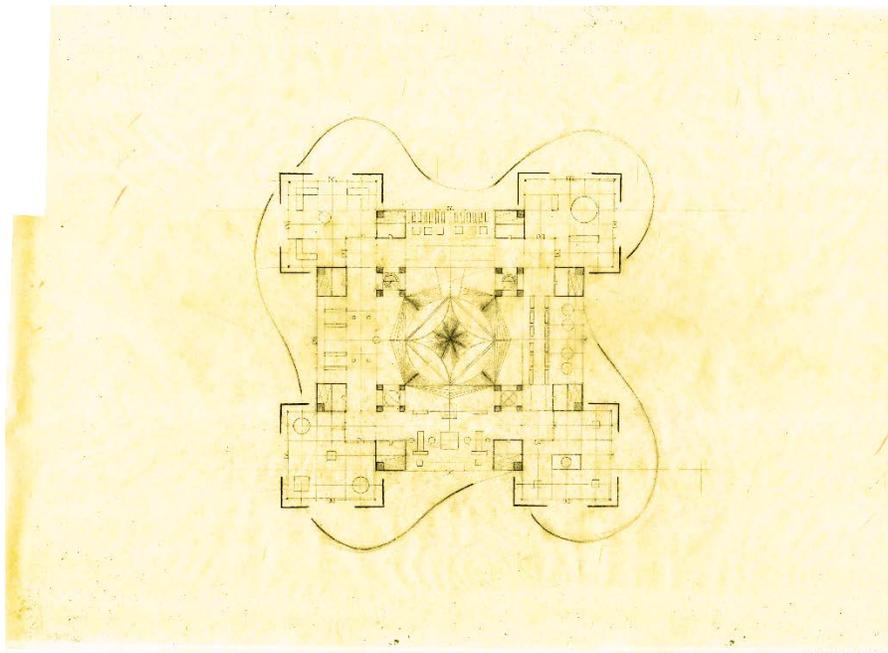


75. Library – North Elevation



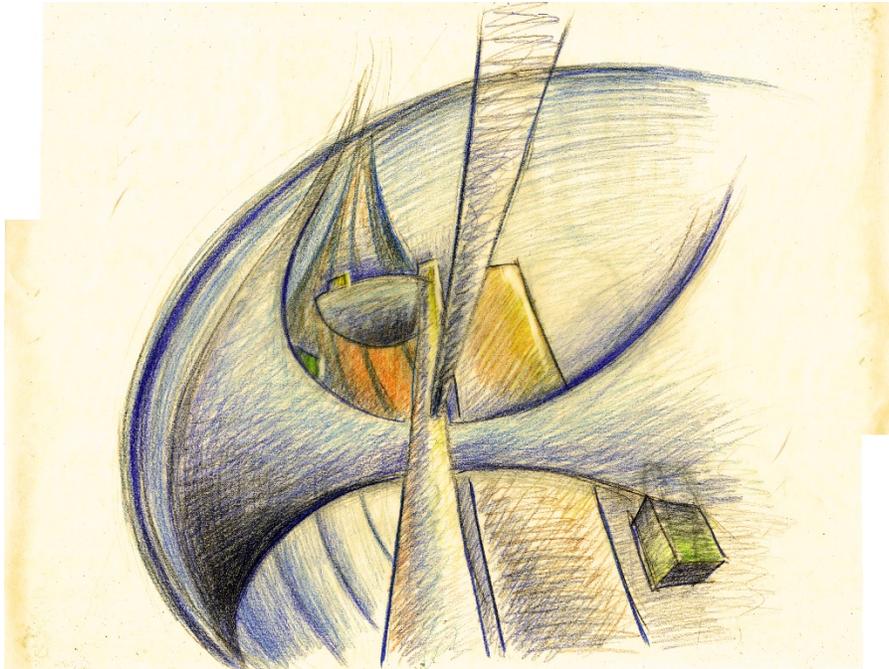
Library East Section 1:500

76. Library – East Section

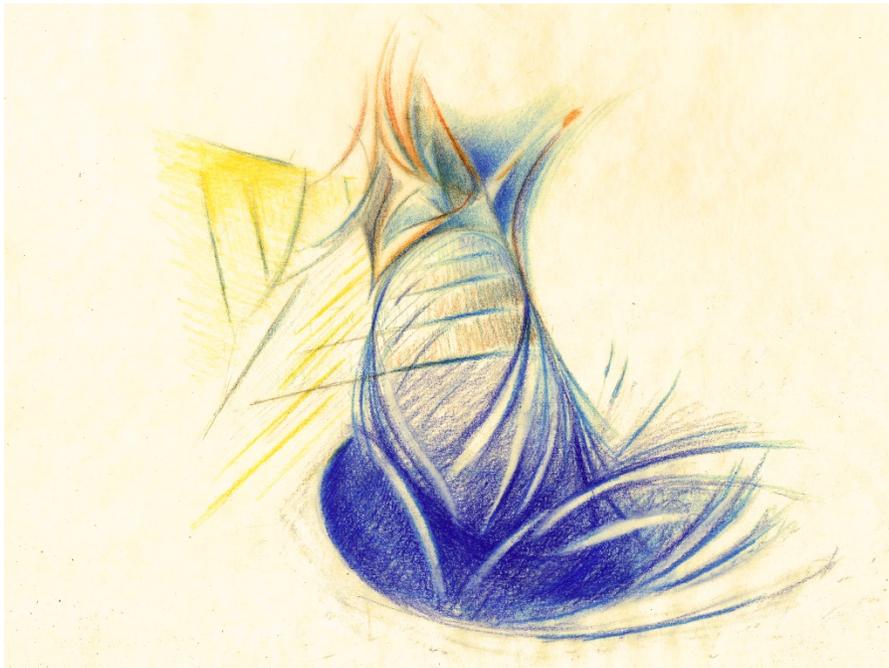


Library Plan 1:500

77. Library - Plan

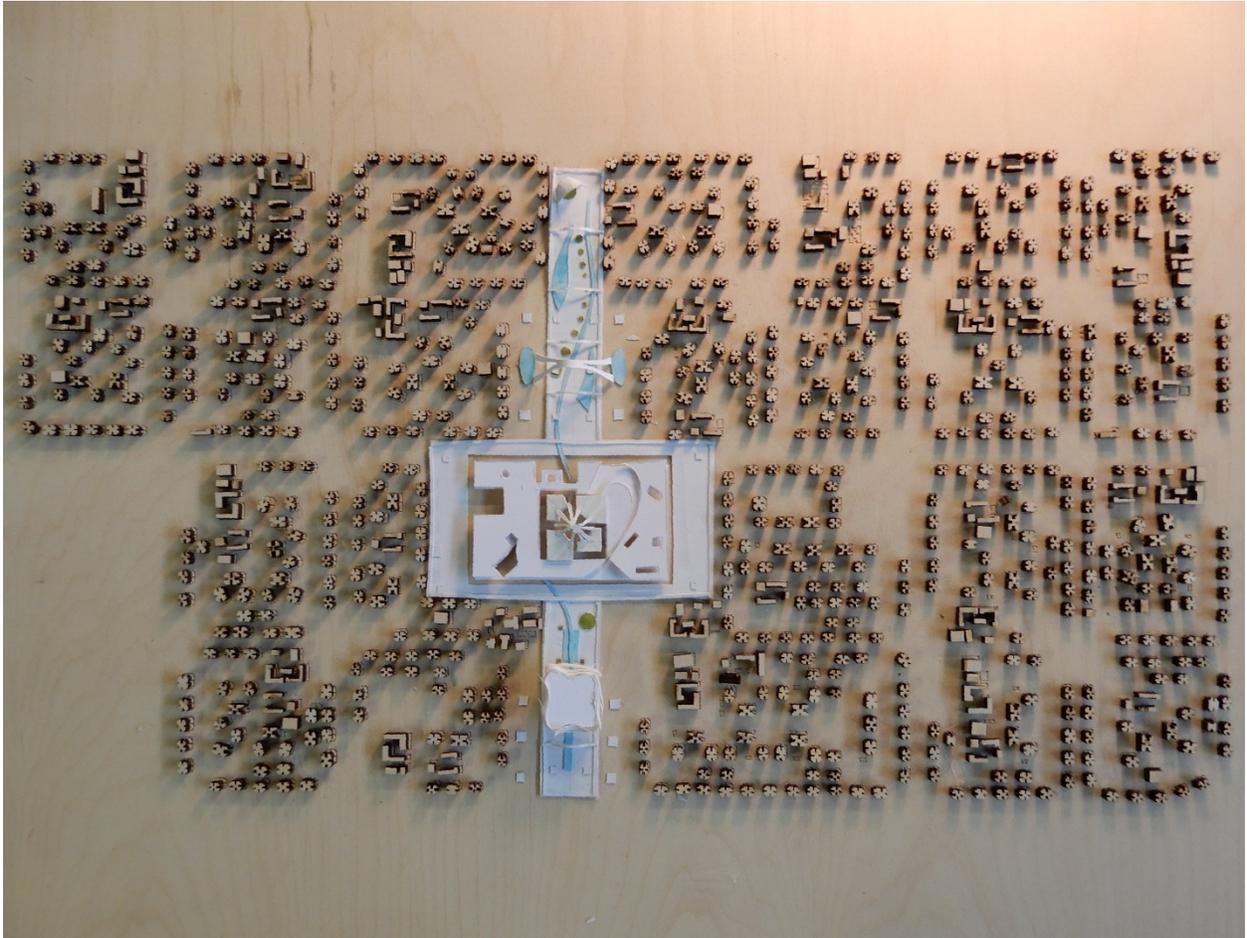


78. City Hall - Interior



79. Library – Interior Atrium

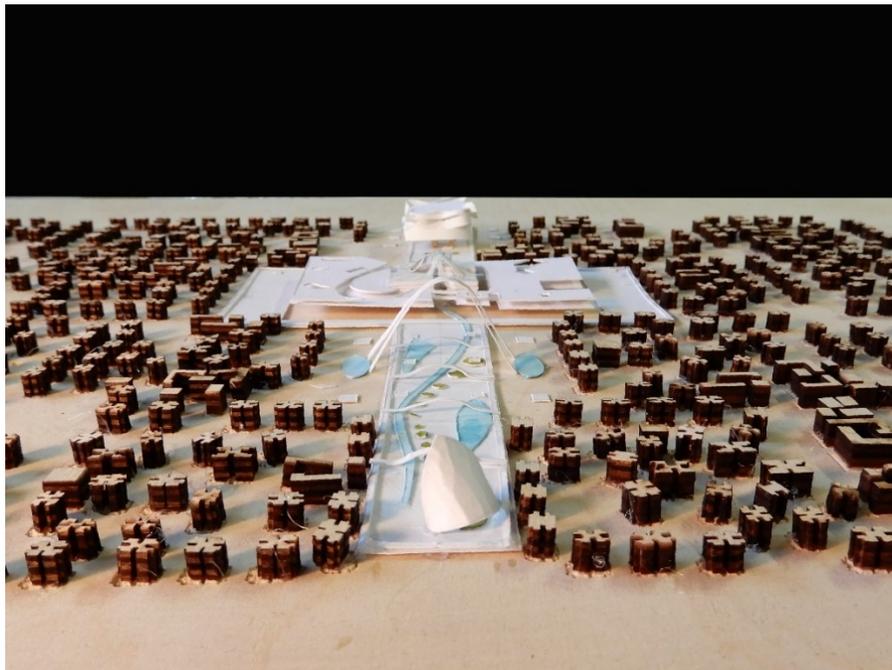
Final Design Phase



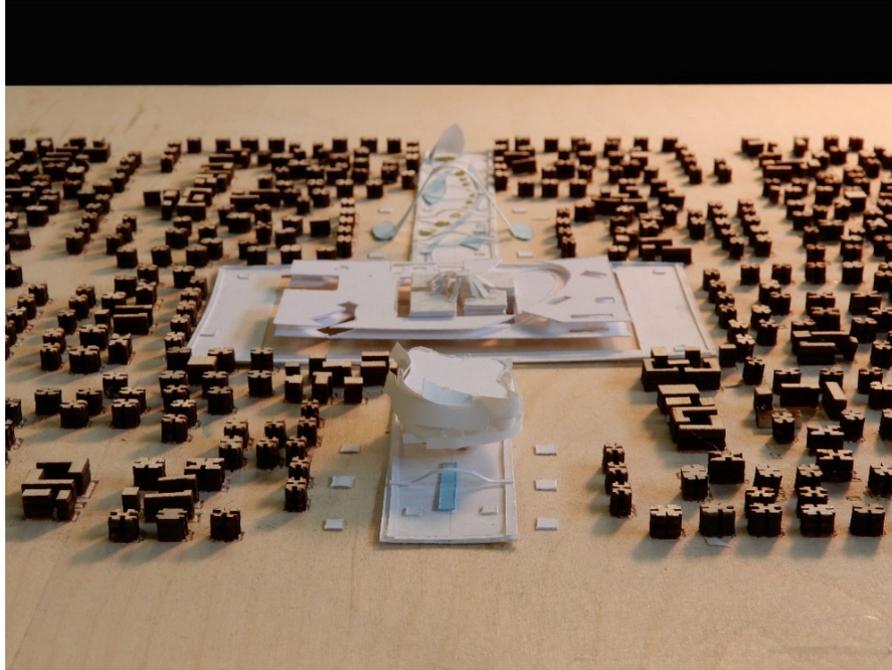
80. Site Plan – Aerial View



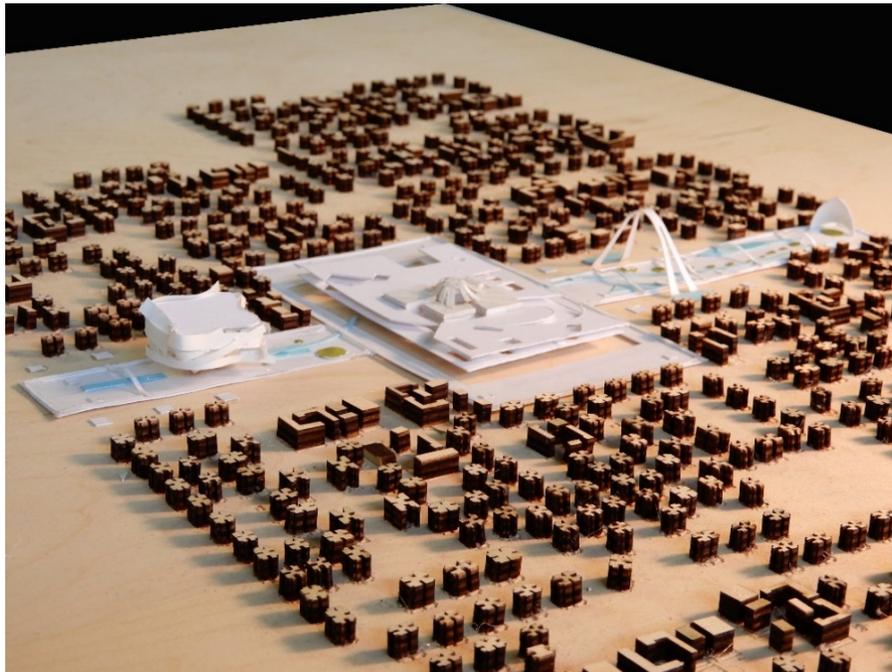
81. South Perspective



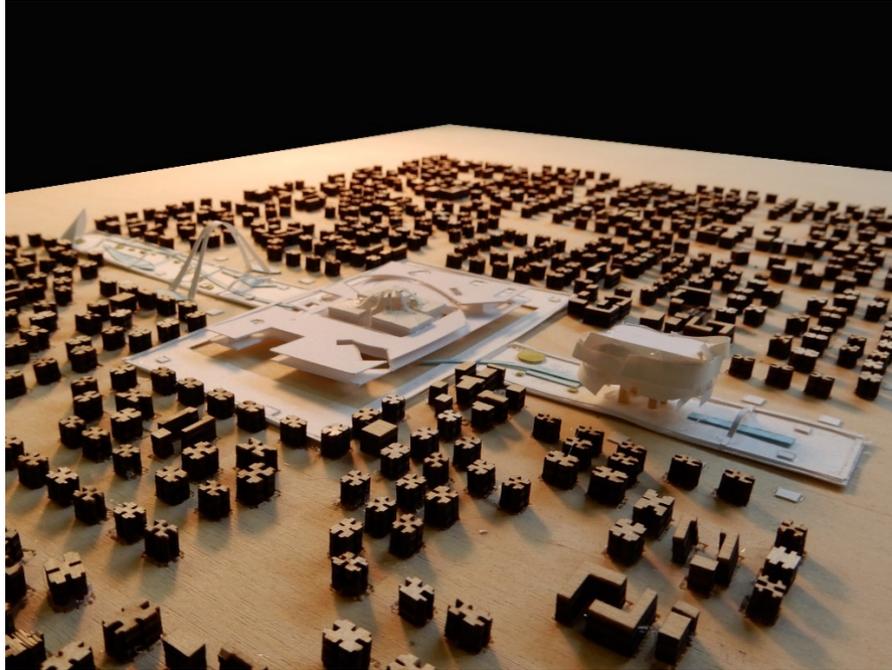
82. South Perspective - Detail



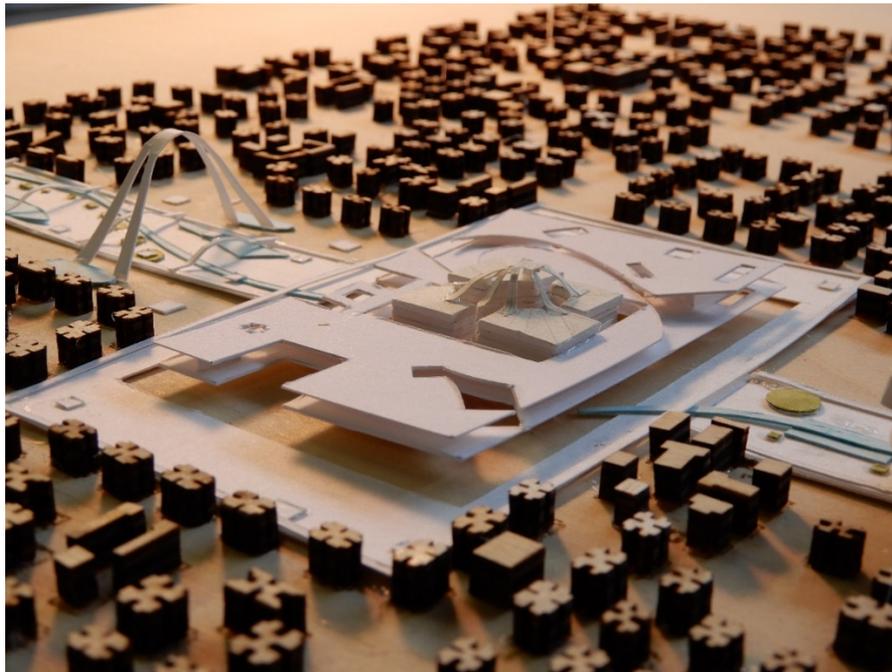
83. North Perspective



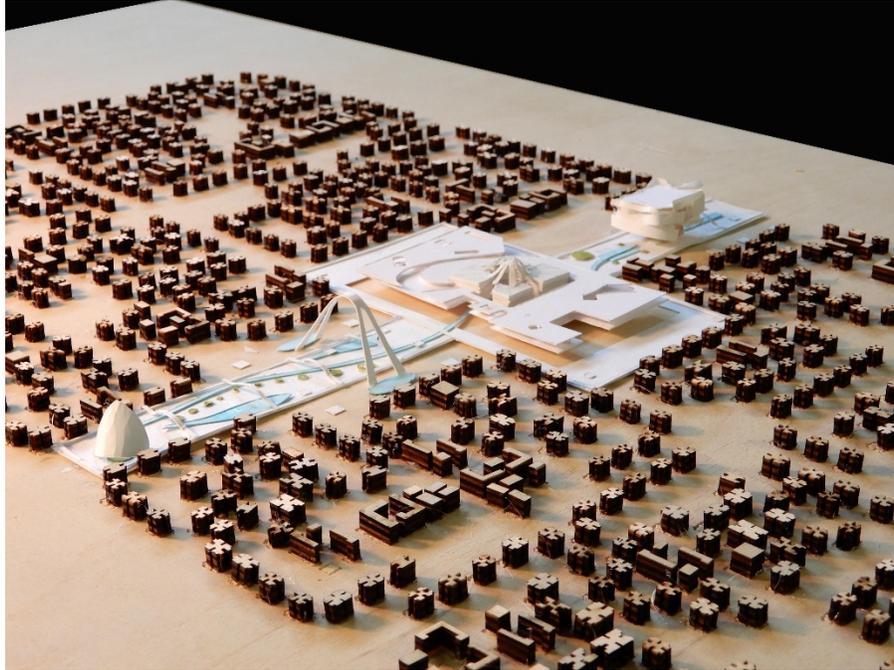
84. South West Perspective



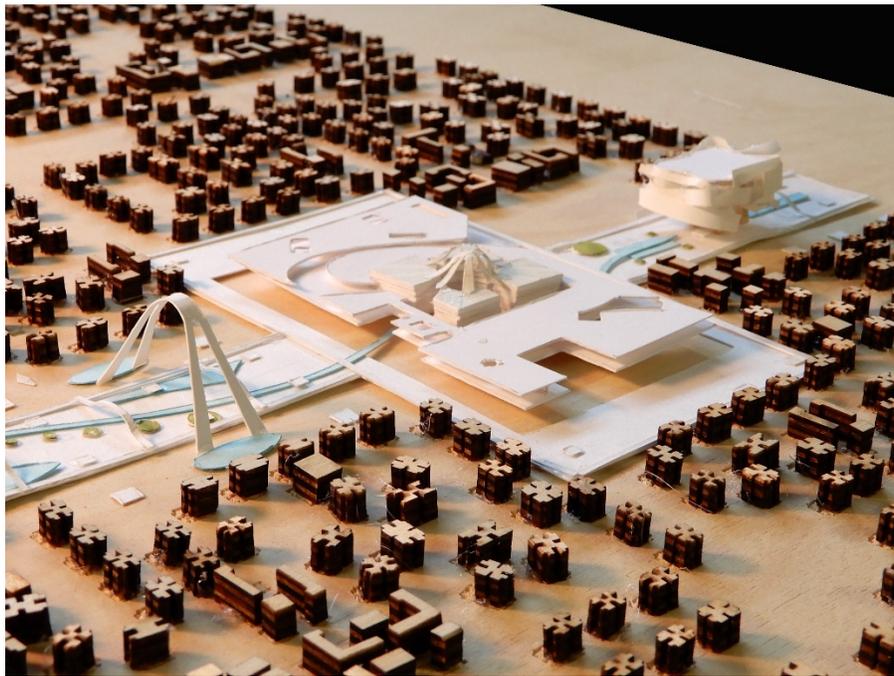
85. North East Perspective



86. North East Perspective - Detail



87. South East Perspective



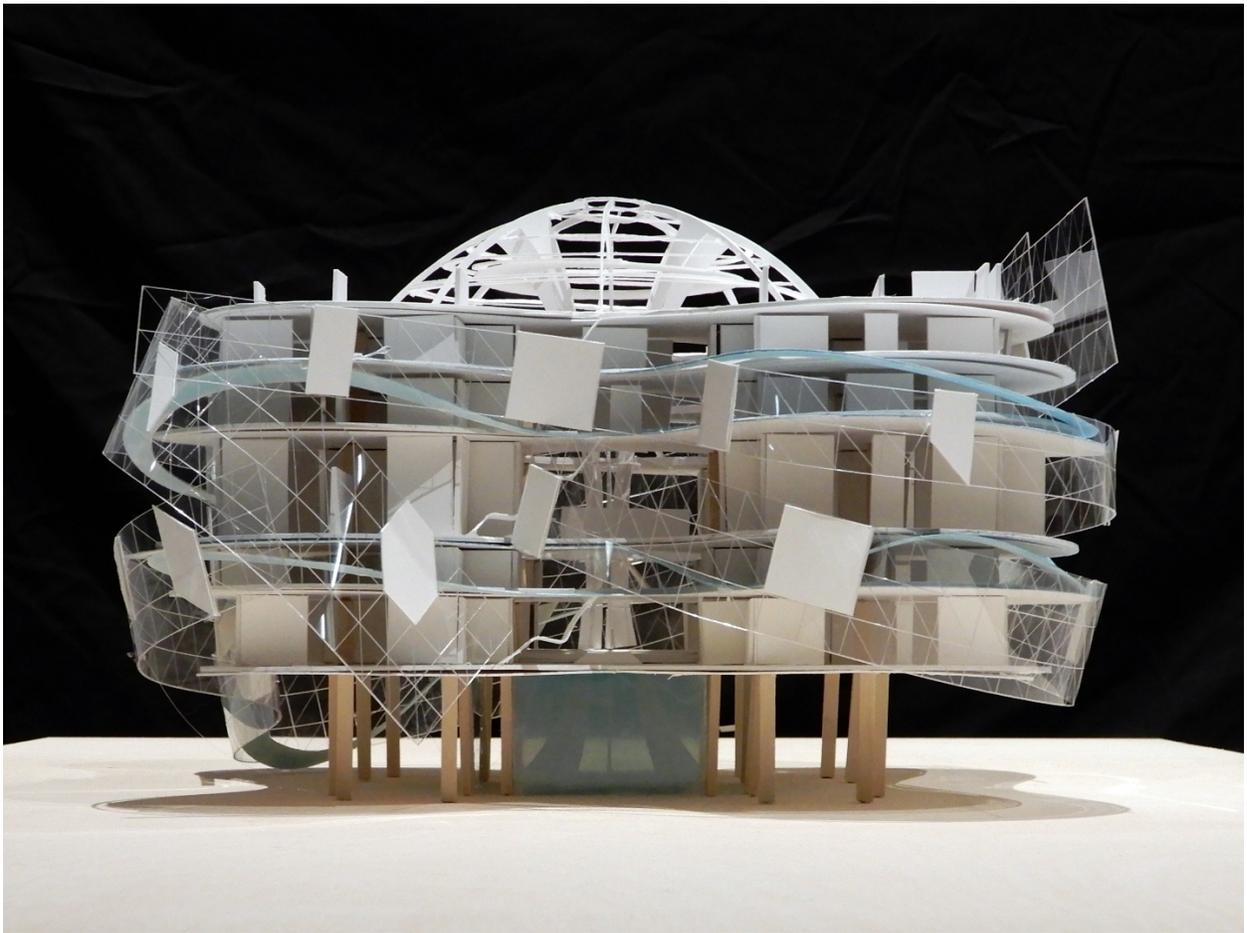
88. South East Perspective - Detail



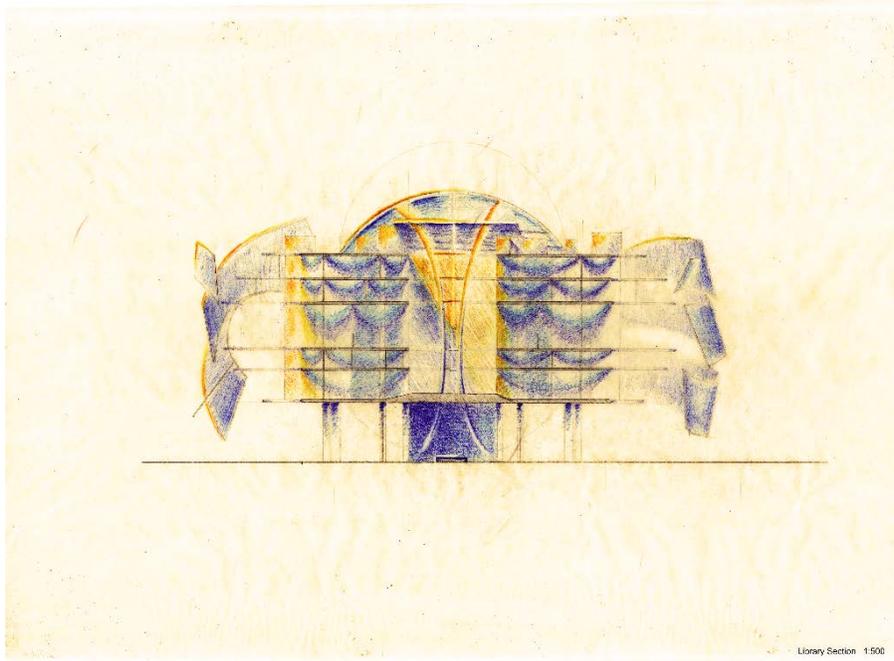
89. Site Plan – Celestial Emergence



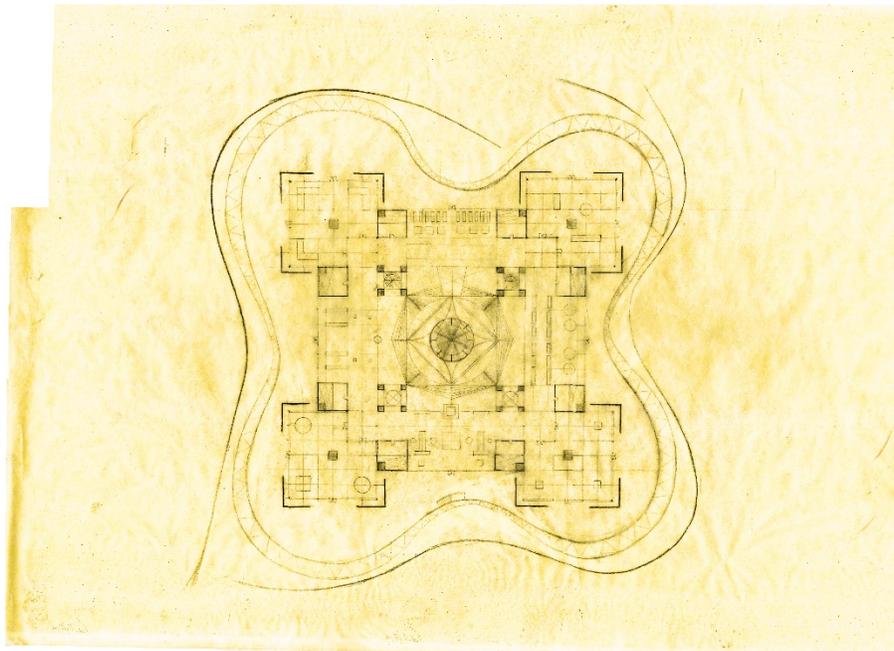
90. Site Plan – Daytime Nebulae



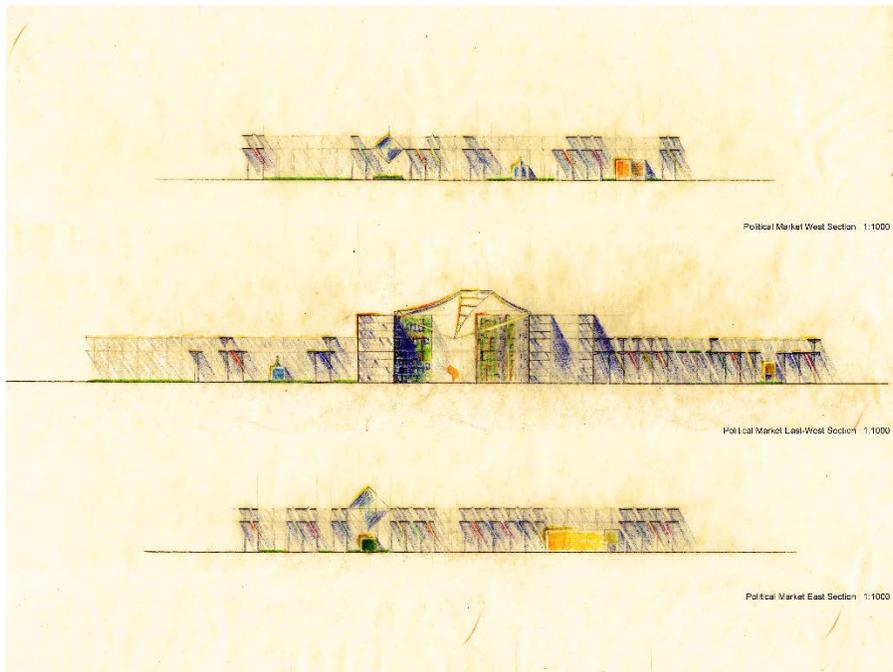
91. Library – North Elevation



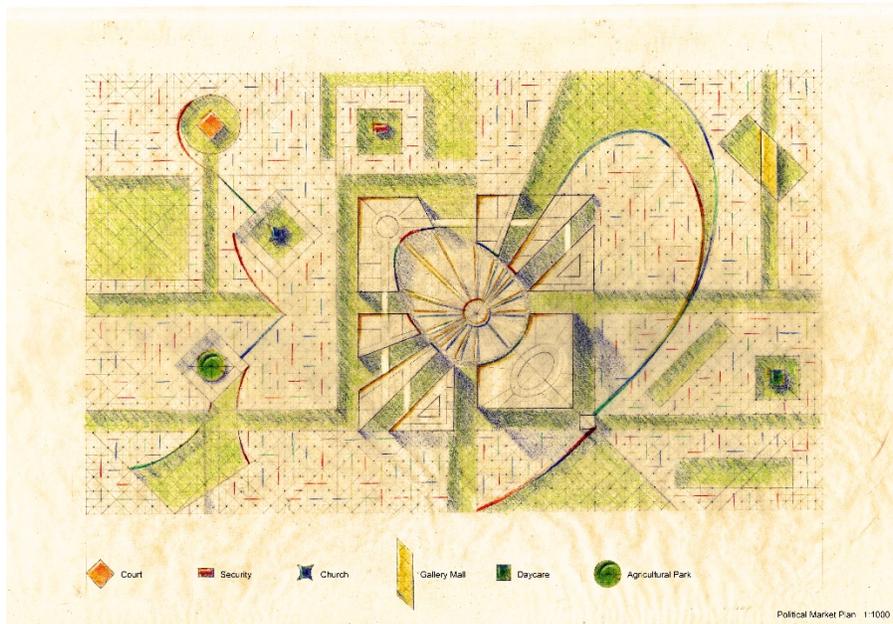
92. Library – East Section



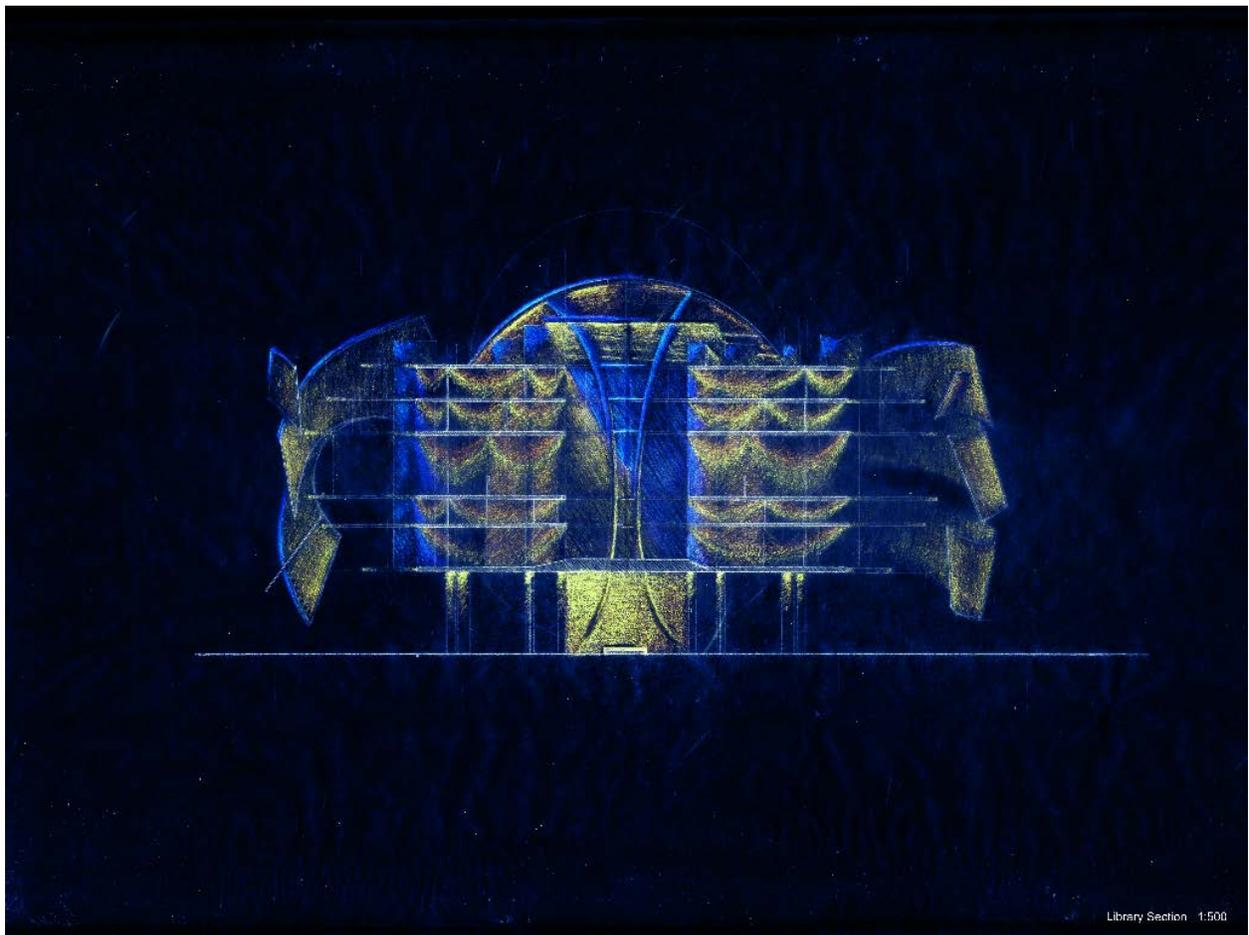
93. Library - Plan



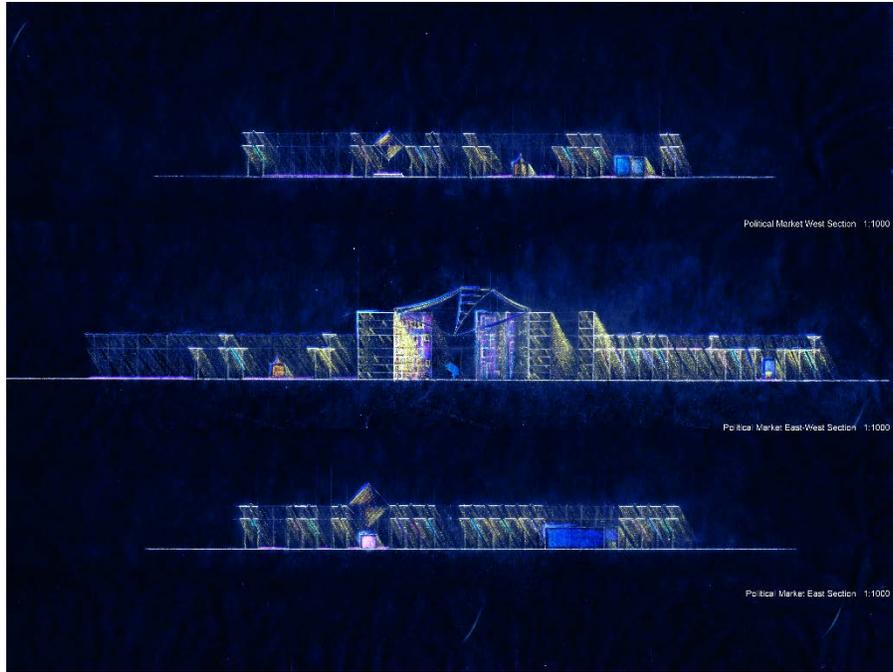
94. Political Market – Sections



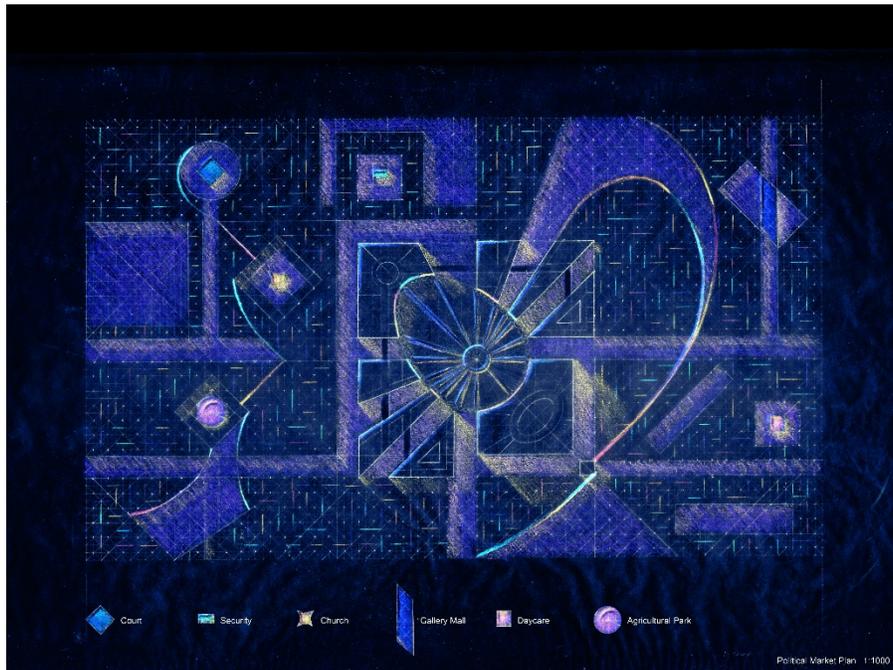
95. Political Market - Plan



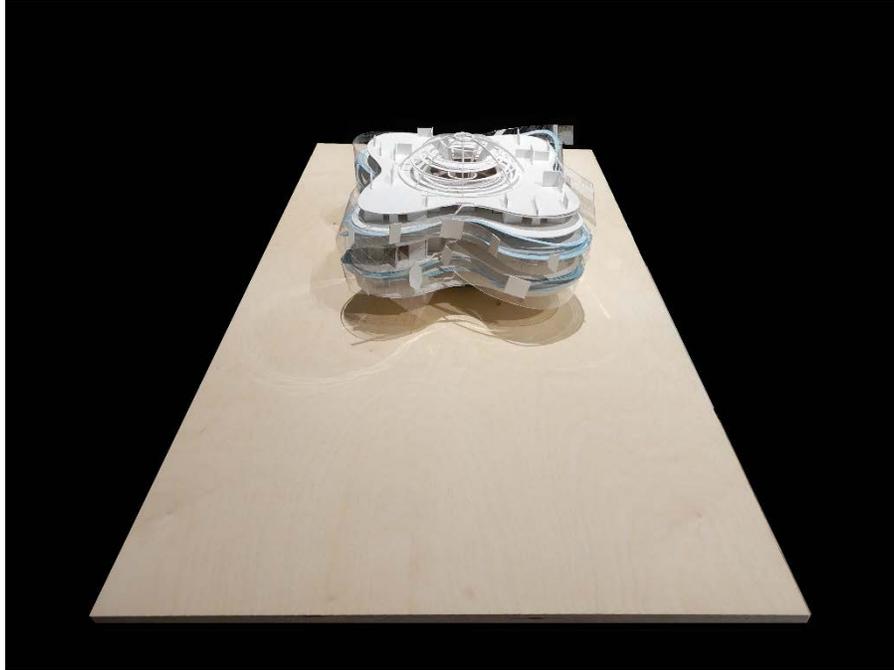
96. Library – East Section – Night Glow



97. Political Market – Sections – Night Glow



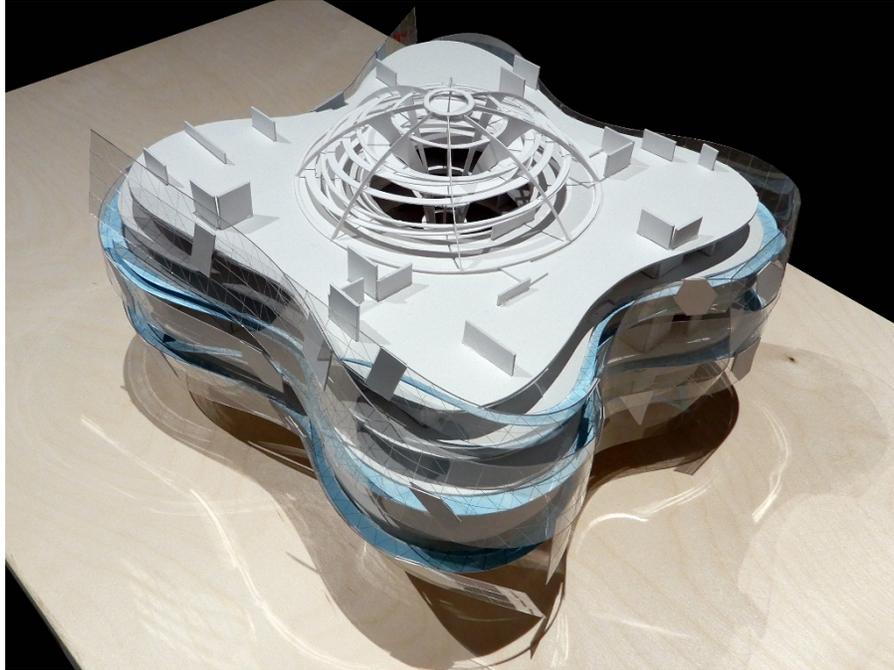
98. Political Market – Plan – Night Glow



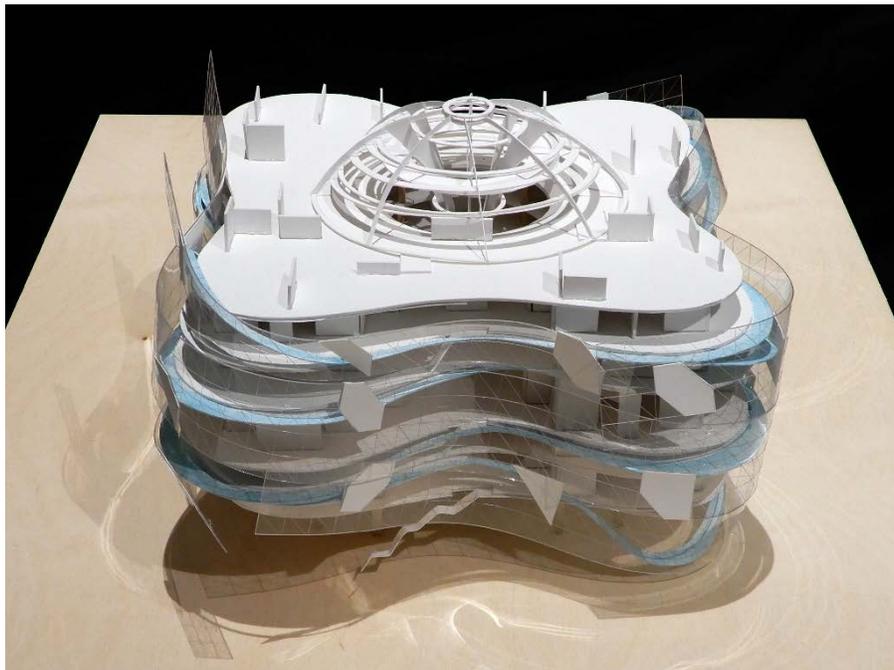
99. Library – South Perspective



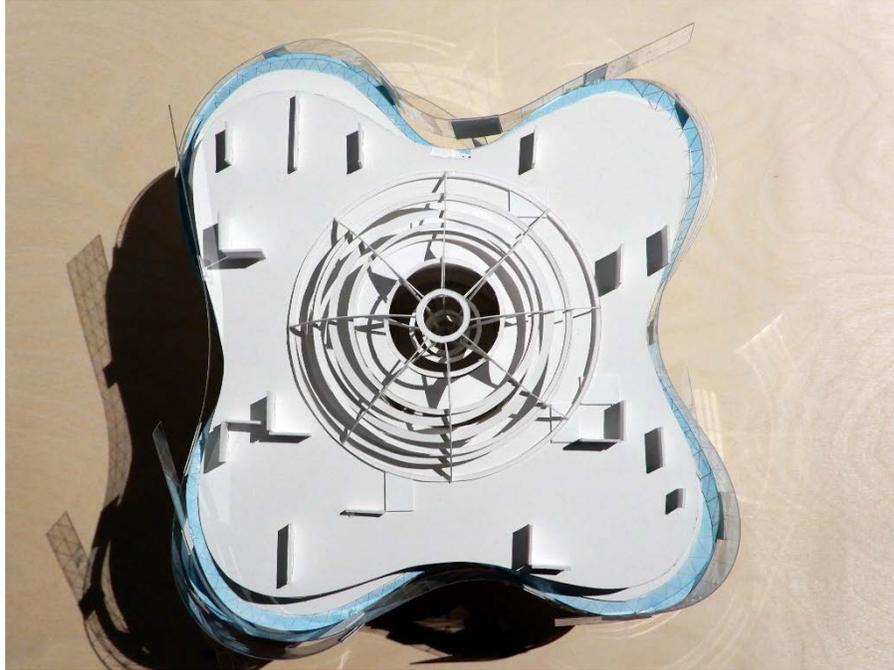
100. Library – North West Perspective



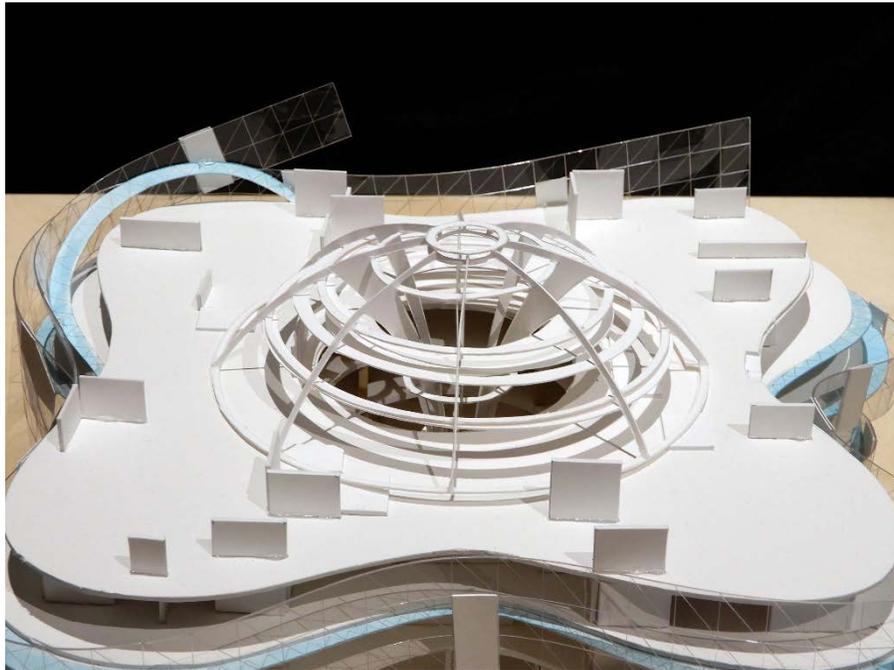
101. Library – Oblique Overhead Perspective



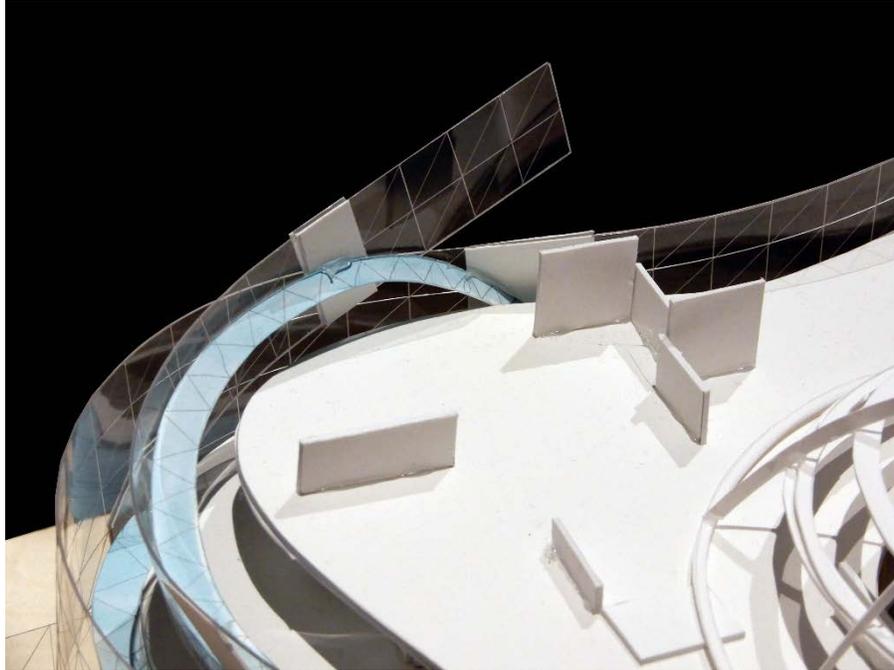
102. Library – North Overhead Perspective



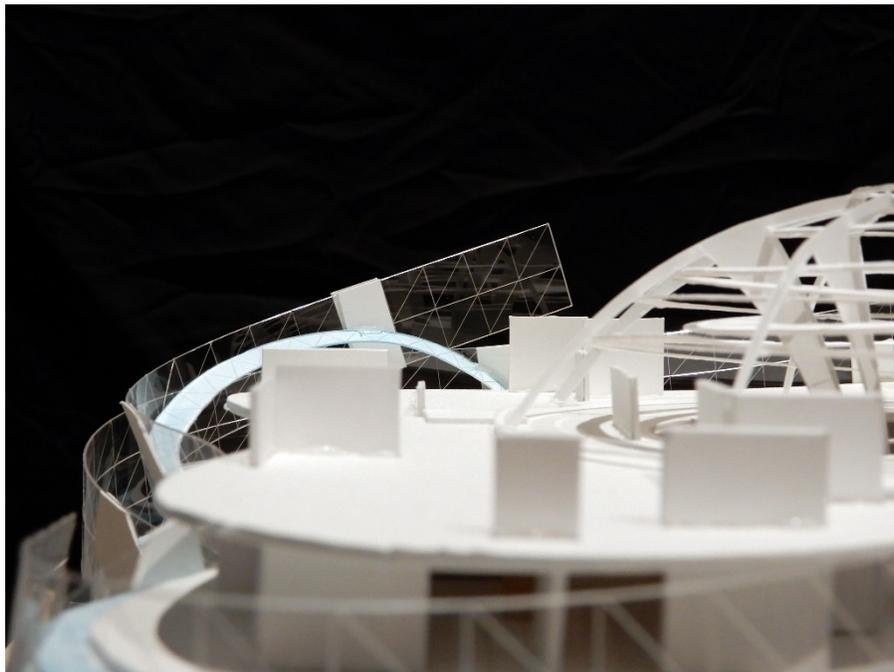
103. Library – Plan Perspective



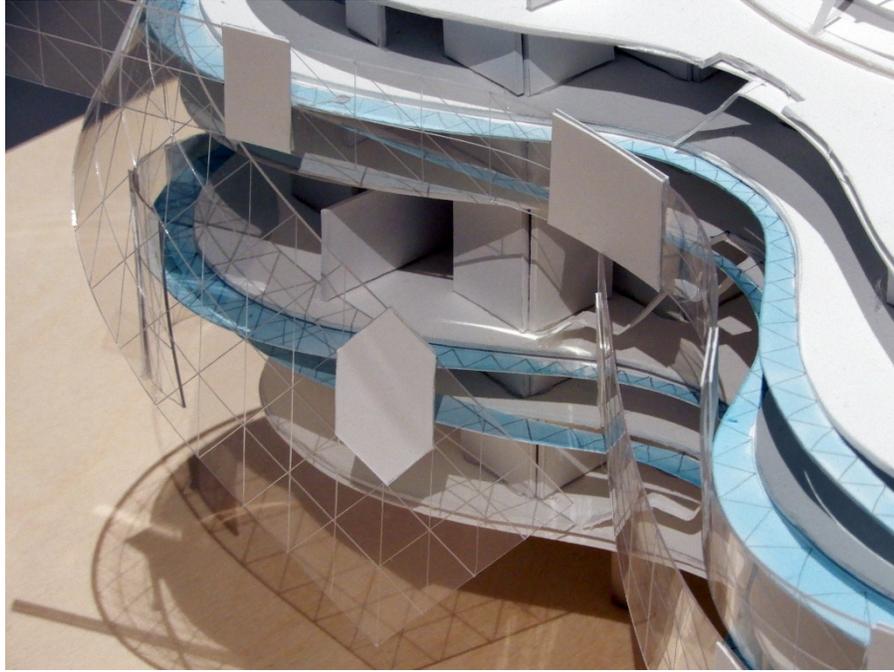
104. Library – Cupola Detail



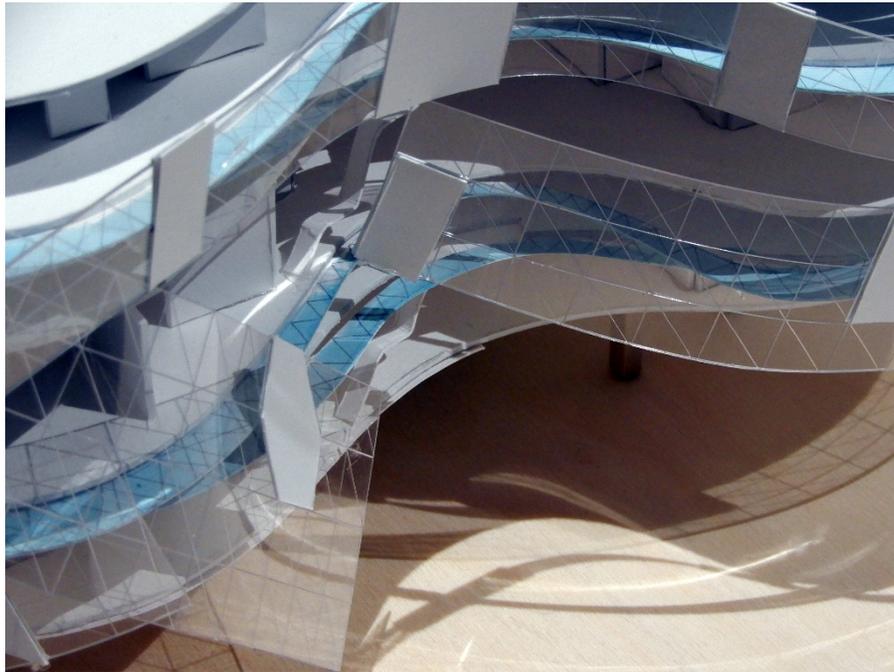
105. Library – Roof Detail 1



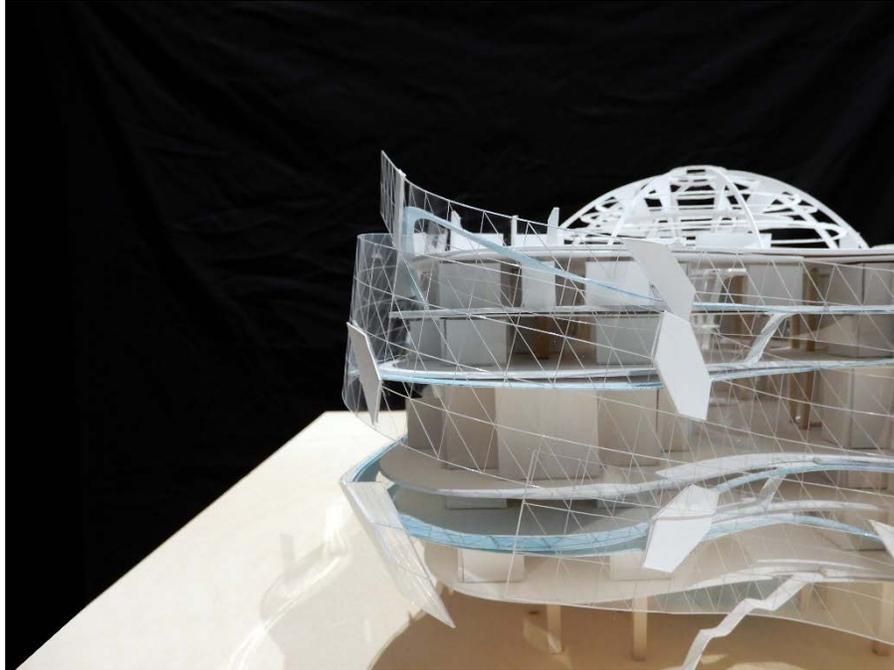
106. Library – Roof Detail 2



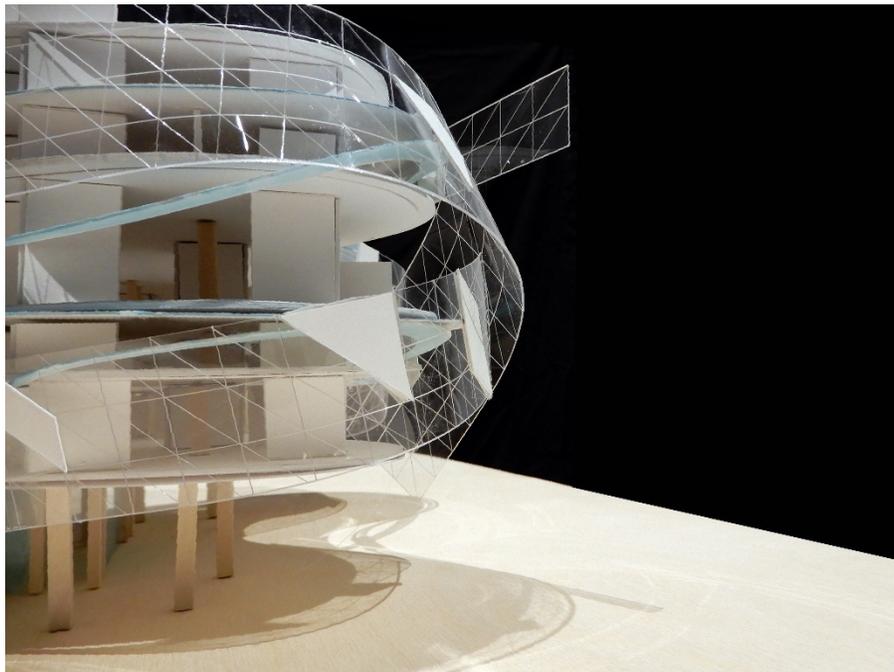
107. Library – Façade Detail 1



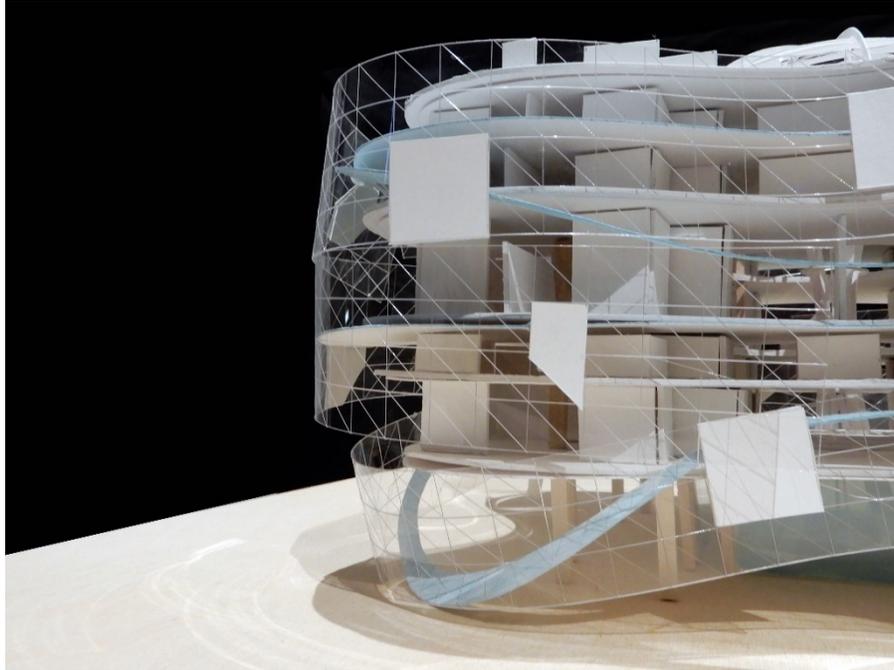
108. Library – Façade Detail 2



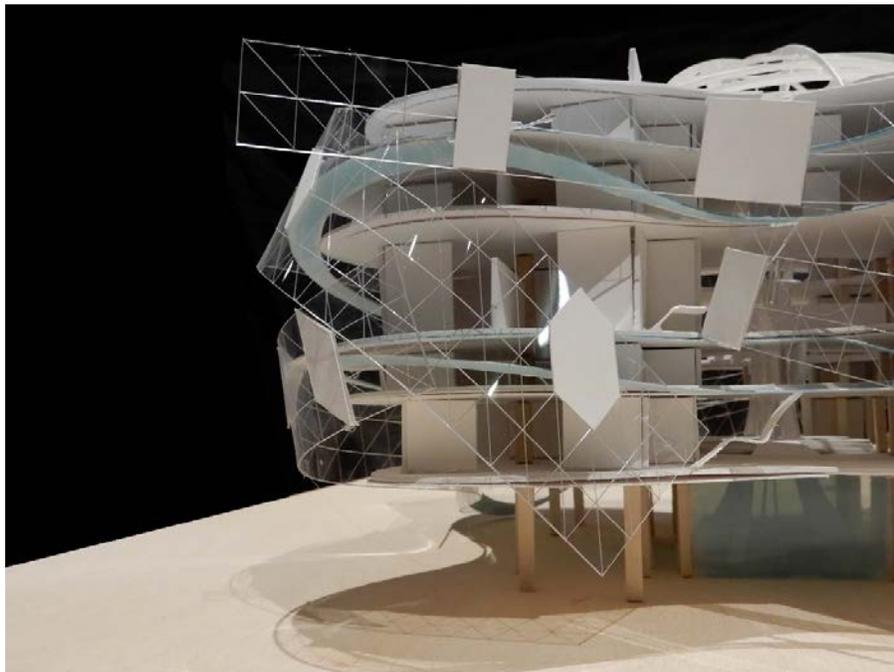
109. Library – Corner Façade 1



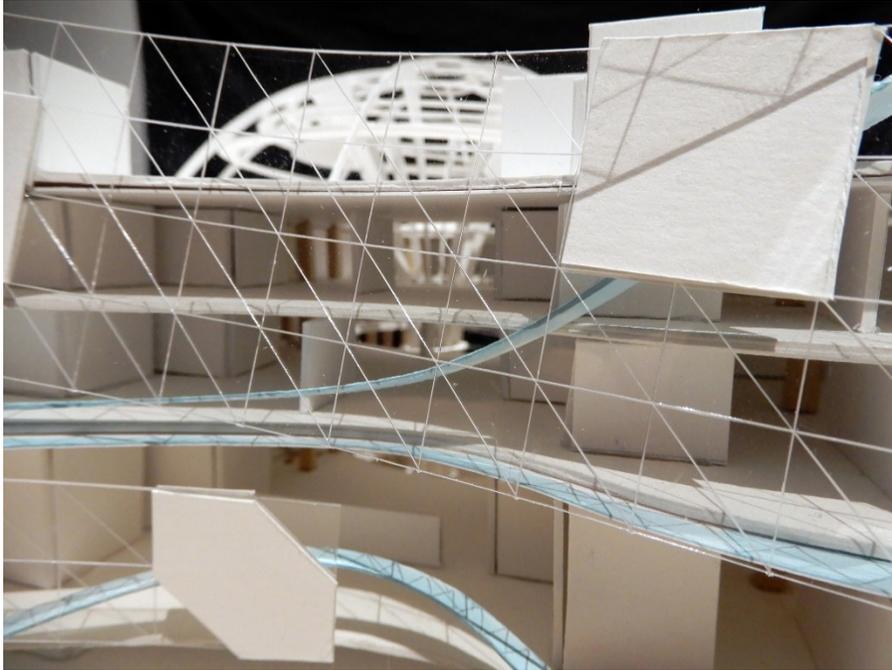
110. Library – Corner Façade 2



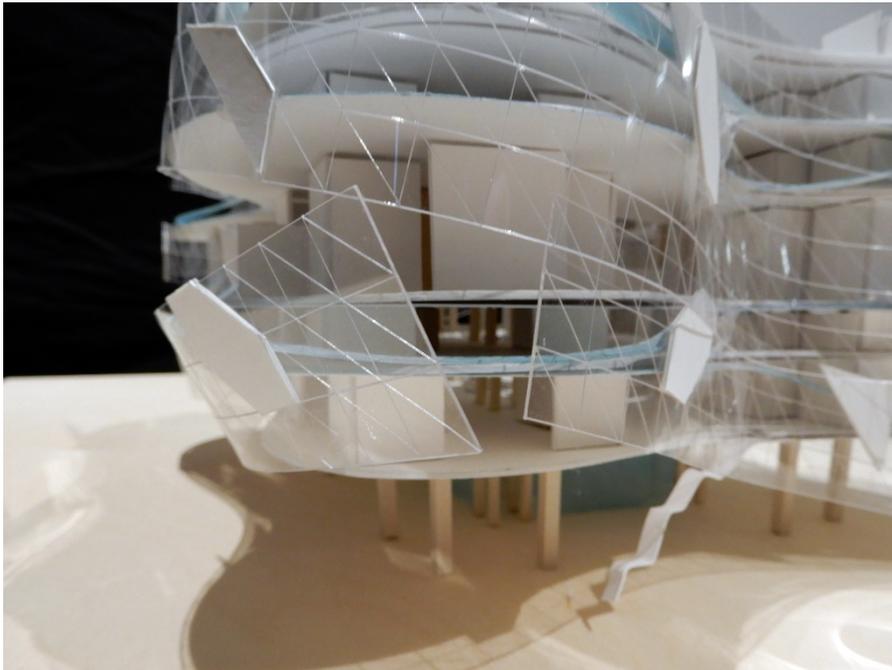
111. Library – Corner Façade 3



112. Library – Corner Façade 4



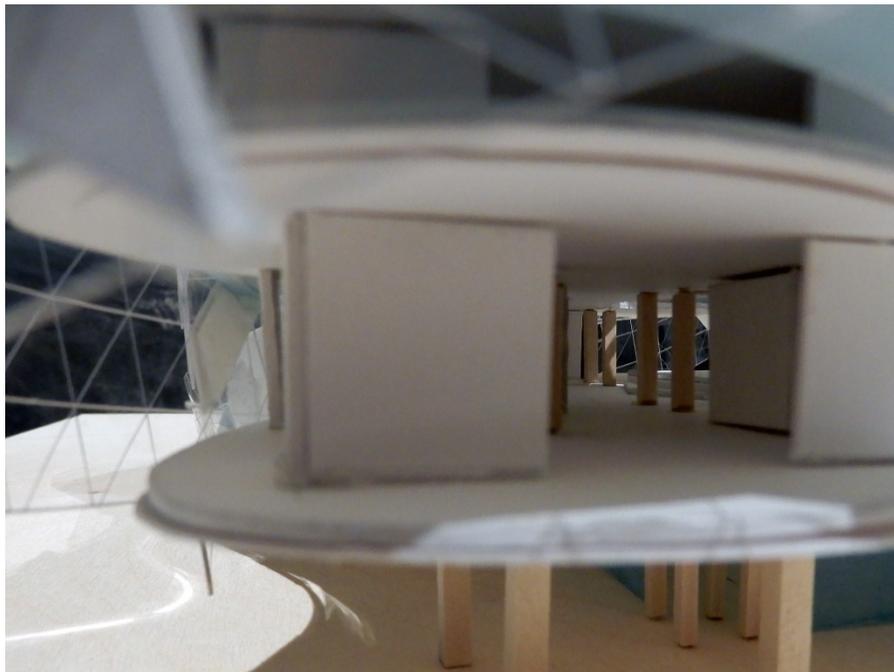
113. Library – Façade Detail 3



114. Library – Façade Detail 4



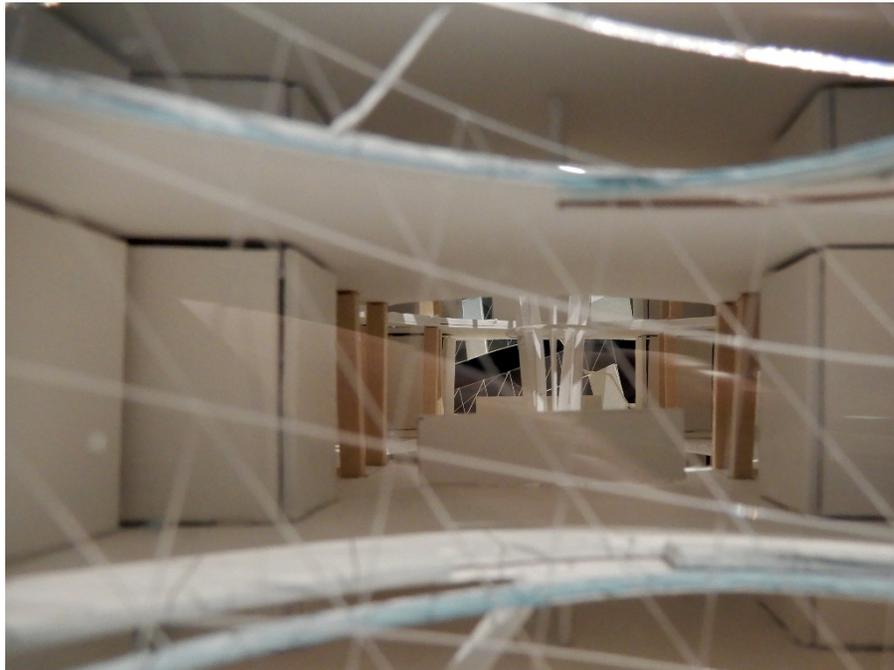
115. Library – Interior 1



116. Library – Interior 2



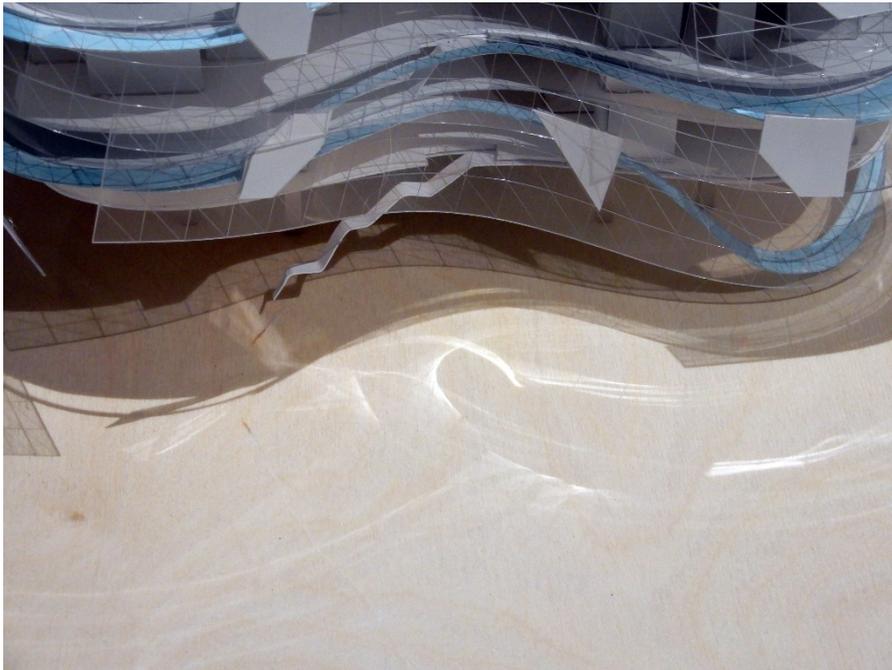
117. Library – Interior 3



118. Library – Interior 4



119. Library – Interior 5



120. Library – Light Reflection 1



121. Library – Light Reflection 2

“Elephant and Frog”

“I often tell of Mr. Elephant and Mr. Frog, who were courting at one house.

One day Mr. Frog spake to the sweetheart of Mr. Elephant, saying: “Mr. Elephant (is) my horse.” Mr. Elephant, when he came at night, then the girls tell him, saying: “thou art the horse of Mr. Frog!”

Mr. Elephant then goes to Mr. Frog’s, saying: “Didst thou tell my sweetheart that I am thy horse?” Mr. Frog says, saying: “No; I did not say so.” They go together to find the sweetheart of Mr. Elephant.

On the way, Mr. Frog told Mr. Elephant, saying: “Grandfather, I have not strength to walk. Let me get up on thy back!” Mr. Elephant said: “Get up, my grandson.” Mr. Frog then goes up.

When a while passed, he told Mr. Elephant: “Grandfather, I am going to fall. Let me seek small cords to bind thee in mouth.” Mr. Elephant consents. Mr. Frog then does what he asked.

When passed a little while, he told again Mr. Elephant, saying: “Let me seek a green twig to fan the mosquitoes off thee.” Mr. Elephant says: “Go.” He then fetches the twig.

They, when they were about to arrive, the girls saw them, and they went to meet them with shouting, saying: “Thou, Mr. Elephant, art the horse indeed of Mr. Frog!””⁶⁷



122. Outdoor Theatre – Angolan Folklore – “Elephant and Frog”

⁶⁷ Heli Chatelain. ed. *Folk-Tales of Angola.* (London: Houghton, Mifflin and Company, 1894), 203.

Conclusion

Lightness: Lightness is, from its outset, an abstract construct meant to transcend the rational modern condition. The core presentation of this work elevates and preserves traditional cultures through this abstract lens. Modern forces and local conditions are brought into parity as a focused exploration of the contemporary human condition and its future development.

Digital Flow: The flow of commodities, like a modern city foundation rite, grounds the evolution of Kilamba from its very inception. Local Angolan traditions are reflected in the ephemeral quality of the digital particle, as it dances and sings throughout space amongst its manifold pixilated tapestries, unfolding from the cosmological ground plan necessitating the emergence of a radically dynamic city. Theatre and dance lead to core market and political exchanges in dialogue within a digital mainframe. A library is wrapped with undulating surfaces streamed with elementary particles that vary in geometric configuration, concluding in an elevated dance of digitally archived platforms.

Continuity of Time: The city evolves from modern and historical creation myths that extends well beyond normative time-scales. Its essence revolves around the continuity of all things, meaning that we are all connected to the very origins of the world and the formation of its first elements. Each of its component forms are interconnected with the rest of the city, its people and its diverse histories that are manifested in a contemporary setting drawn from a cosmic diagram.

The design process plays with varying histories and time, where after centuries of persistence we see a radically subjective city-artefact emerging sometime in the next millennium, only to be brought back closer to the present through a series of exploratory design phases. Initial speculative sketches precede quantum field energies and glowing-floating volumes leading to a contemporary city that demonstrates greater structural integrity.

Form and Context: The development of context saw the synthesis of form, where macroscopic forces had direct implications for architectural invention and intervention. Form and context are two sides of the same process, providing an equivalence relation between site characteristics and formal synthesis. The site necessitated the development of the city's central core, as an act of modern and local cultural preservation. The emerging forms reflect the active vibrancy of a people at the threshold of the contemporary world. It is a story about the elephant and the dragon, where the rational and the unpredictable work together for the survival of their new city. Rational cores are represented in the central market-agera and library sections, where their canopies structurally symbolize the elephant above a gold statue in the central city-festival space. The magic and unpredictability of the dragon envelops and protects these rational cores, in a city whose very essence is a radical departure of modern urban form.

Systemic Subsets: The goal of any rational plan is to provide enough programmatic subsets that are adequately independent from one another to make structural adjustments in a sufficient amount of time. The programs are therefore very open and adaptable to the evolving functions of the city, where waterways, agricultural preserves and parklands mediate differing regions. The

market-agera is comprised of a two-tiered modular structural system that is sculpted for a variety of functions to form a den of clustered jewel-like places, where vibrant colors are associated with the most celebrated spaces. The central festival area is surrounded by commercial premises connected by bridges along with a relatively independent city hall. The digital library has a central circulation space rising from the ground plane, that allows the program to evolve around a central core. The continuity of the circle is represented in section, forming the upper perimeter of the dome that diametrically connects to the ground relating earth and sky. The circle is centered around the most celebrated space, creating a unity between center and periphery. Quiet study areas are located next to outside windows overlooking the city. Committee meeting and teaching rooms are at each corner of the plan, that extend onto a band of interior-exterior internet cafe's framed by openings in the undulating facade. A rotational narrative along the library's periphery is created by a series of stairs, pathways and ramps that spiral up the edge of the building towards the top of the roof cupola, where its plan forms a relief of light and shadow uncovering new programs. Square-pixelated areas are reserved for services, such as washrooms, storage and HVAC systems. The very idea of a "digital" library affords greater flexibility of space, since much of the information would be stored in a digital archive base or accessed through the internet.

Technology and Architecture: The development of new technologies is intrinsic to the development of new architecture. Given the continuity between the first moments of creation to antiquity and beyond modernity, the same basic notions of scientific and technological development continue to arise. Whether it is the architect or the scientist that is formative in its development, technology has a direct effect on the broad evolution of architecture. With each

invention, a new potential arises for typological adaptation. The increasing complexity of the modern world requires that the architect invent new forms, resulting in the continual generation of novel technologies.

The Accident: The accident occurs in the design process when a misfit element becomes functional. We are all in fact a collection of accidents, and from our very inception, it was an accident that caused the first formation of life, where the unfolding adaptations of our species were driven by genetic changes that became functional for survival. The accident is intrinsic to invention, and it is as subconscious to our own making as the evolutionary processes that have afforded us the ability to create. At the building scale, the accidental dislocation of the library truss system from the floor plate allowed the glass envelope to become more flexible resulting in an undulating structural system that is less predictable. Glass reflected light and shadow uncover a new realm for which to experience architecture in ways that are unforeseen, and whose beauty provides a glimpse into future manifestations. The revolutionary urbanisms that spontaneously mark the evolution of Kilamba are as accidental as the first formation of elemental commodities revealing its unfolding history. The city as a work of art is a continually emerging artefact within traditional and modern cosmological frameworks that are manifested at all urban scales. In time, the struggle and renewal of a people will reveal a city-artefact placed centuries into the future that defies our rational understanding. In this way, the accident is beyond light and dark, where invention occurs at the threshold between them.

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APPENDIX

Figures for Kilamba:

Total Cost: 3.5 billion USD

Project length: 4 years

Total size: 8.8 sqkm

Number of Buildings (generally eight-story): 710 buildings of several heights

Number of Apartments: 20 thousand (different apartment areas (110 sqm, 120 sqm, 150 sqm))

Sample price for 3-bedroom condo: 350,000 USD

Sample rental listing for 1-bedroom condo: \$209 CAD/per night

Shops: 246

Sewage treatment plant: 1

Water treatment plant: 1

Commercial premises: 100

Number of schools: 40 approx.

Construction cost / sqft =

$\$3,500,000,000 / (20,000 \text{ (apartments)} * 1300 \text{ sqft (avg. size)}) = \mathbf{\$135 \text{ per sqft USD}}$

July 2012: **220 apartments had been sold out of the first release of 2,800**

Credit has been approved to the National State Budget by the Angolan Executive to the value of 2,9 billion kwanzas, equivalent to 17,4 million US dollars for the construction of a second stage of the development of the city of Kilamba, with the construction of over 10 thousand new apartments.

“Our intention is to begin the second and later a third phase of the project (city of Kilamba). For this reason, we created a coordinating office for the development of the city of Kilamba, the city of Camama and the city of Cacuaco. An office that will promote and lead the efforts in all sectors, including companies and other stakeholders that want to participate in the construction of these cities”,⁶⁸ explained the Head of State two years ago.

Angolan Average Annual Salary: ⁶⁹

POLLS: 130

AVERAGE GROSS SALARY: AOA \$8,120,141

AVERAGE NET SALARY: AOA \$6,860,856

MOST FREQUENT GROSS: AOA \$31,120

MOST FREQUENT (USD): **US\$ 292**

Available Credit:

The capital city of Luanda lacks housing and has some of the world’s most expensive real-estate. The hotels are extremely expensive for visitors, and researchers have been known to rent a room in someone’s house for \$100 per day.

According to the official Angolan news agency, some 40,000 people moved into Kilamba after taking advantage of long-term, low-cost mortgages to buy flats with prices ranging from \$70,000 USD to \$140,000 USD. People stood in line for days to buy such homes.⁷⁰

⁶⁸ Angola Today. “Government approves second phase of the City of Kilamba for 17,4 million USD.” <http://www.angola-today.com/news/kilamba/>

⁶⁹ Average Salary Survey. <http://www.averagesalarysurvey.com/angola>

⁷⁰ The China-Africa Research Initiative Blog. “China in Africa: The Real Story.” <http://www.chinaafricarealstory.com/2014/04/chinese-built-angolan-ghost-town-wakes.html>

Untested Property Market:

Most of the country's small middle class who could afford the apartments with a mortgage, already have homes. The lack of land registry documentation has been a hurdle to the access of bank credit for others and many people also feel uncertain about the feasibility of investing in Angola's untested property market. The government insists that Kilamba "City" will be successful once the land title deeds are processed.

Angolan way of life:

Angolan anthropologist Antonio Tomas, of Makerere University in Uganda, questions the viability of the high-rise project, since it is a model that has often failed elsewhere. In a lecture, he spoke of a "style of housing [that] really does not fit with the Angolan way of life. People have an average [of] six children, so they need space to extend. That can't happen with these rigid apartments." He further says, "Kilamba seems to be more of a vanity project to give Angola a chance to show off to other countries what it can build, rather than a planned response to solving social problems like housing."

Angela de Branco Lima Mingas, the director of architecture at the Lusitana University of Angola, observes that the county's housing projects were sometimes rushed to fulfil political motives without considering their full impact. She said that there was an apparent lack of green space relative to the population density which could have been alleviated, among other things, by the input from local architects and communities.⁷¹

⁷¹ Mail and Guardian. "Angola's trophy city a 'ghost town'." <http://mg.co.za/article/2012-11-23-00-angolan-trophy-city-a-ghost-town/>