

ABSTRACT

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Re-Imagining Cairo's Public Realm

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Preservation

Neoplastic intervention is derived from the medical term of *neoplasm*, which is an abnormal growth that continues to grow and evolve after the initial stimuli ceases. Architecturally, this neoplastic intervention at a more localized region will serve as scaffolding to catalyze revitalization by providing public space to a district of Cairo. With a civic space focused design, I aim to restructure an informal Cairo district to provide continuity, identity and architectural reform. This thesis studies the historic context of Cairo, analysis of case studies in slum reform in other regions, extract the DNA from these interventions, and apply it to a design for re-imagined public space in Cairo. The culminating proposal unites the study of the context of Cairo, existing public space in Cairo, precedent analysis, and the application of these analyses to propose a new public realm for a district in Cairo to serve as a paradigm for revitalization.

NEOPLASTIC INTERVENTION:
RE-IMAGINING CAIRO'S PUBLIC REALM

By

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_ Dedication

I dedicate this thesis to my family for supporting me throughout this journey, especially my Grandmother and cousins for hosting during my studies Cairo.

This would not have been possible without the patience, tolerance, and support of my wife, Kasey. I dedicate this to her, most of all.

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_ INTRODUCTION, DEFINITIONS & APPROACH

INTRODUCTION

Modern day Cairo is a megacity that is undergoing the stresses of coping with hyper-urbanization. The population has more than quadrupled in the past 50 years and this growth is applying extreme pressures to the urban environment. Overcrowding plagues the living conditions downtown which continues to force informal urban development on the outskirts of the city. These informal city regions are disjointed and create urbanization that does not foster fruitful living conditions. These living conditions, coupled with totalitarian political constructs, have suppressed a youthful and energetic population, which led to the rise of the Arab Spring in 2011. This uprising, along with family roots in Cairo, drew my attention and focus for design intervention.

Cairo has experienced many morphological shifts through its history, which has formed an intimate yet discontinuous experience. There's an original, historic core that serves as the epicenter for growth by which the subsequent periods of rule and mindsets of urban planning built upon. Each period of growth subsequently adds to the diverse urban experience. Outside of the historic core consists of British colonization, Parisian-based urban planning, ad hock informal development, and contemporary satellite city planning. The current mindset of the decision makers for future urban development insist

that decanting from the downtown and reestablishing in the desert satellite cities is the only way to handle the vastly growing population. Their 2050 master plan proposal is mass displacement of populations of people and demolishing an overwhelming amount of housing in order to create a symbolic mall that competes on a world stage. This plan, however, has complete disregard for the cities deep history and perhaps is not the correct course of action for moving forward.

UNDERSTANDING CAIRO'S METROPOLIS

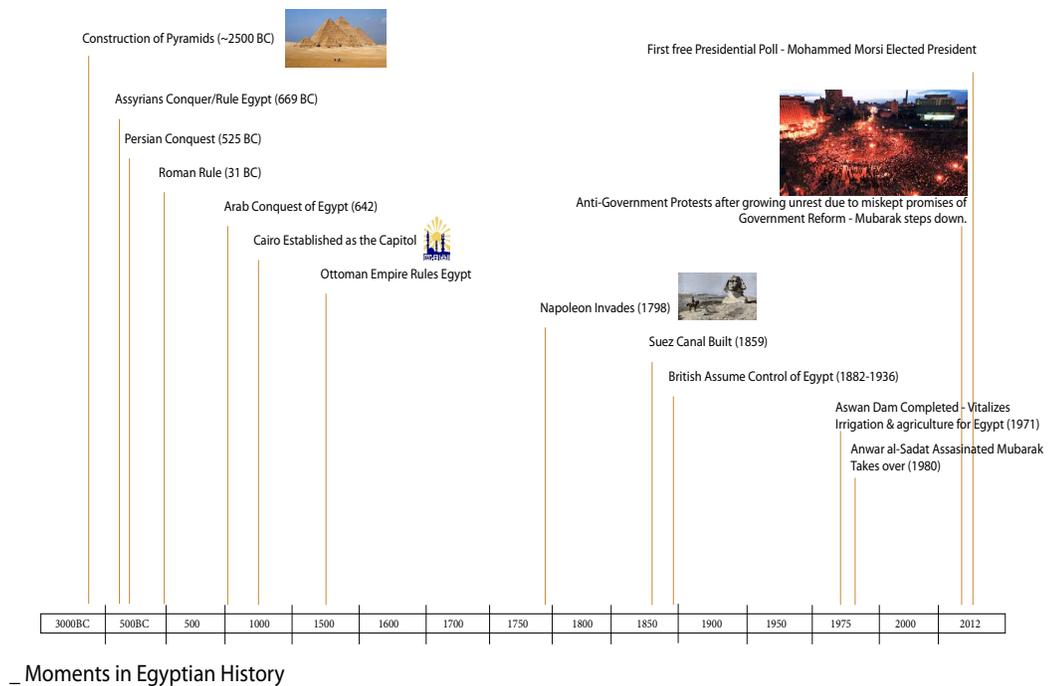


Figure 1 | Timeline of Significant Egyptian Moments

Source: Author

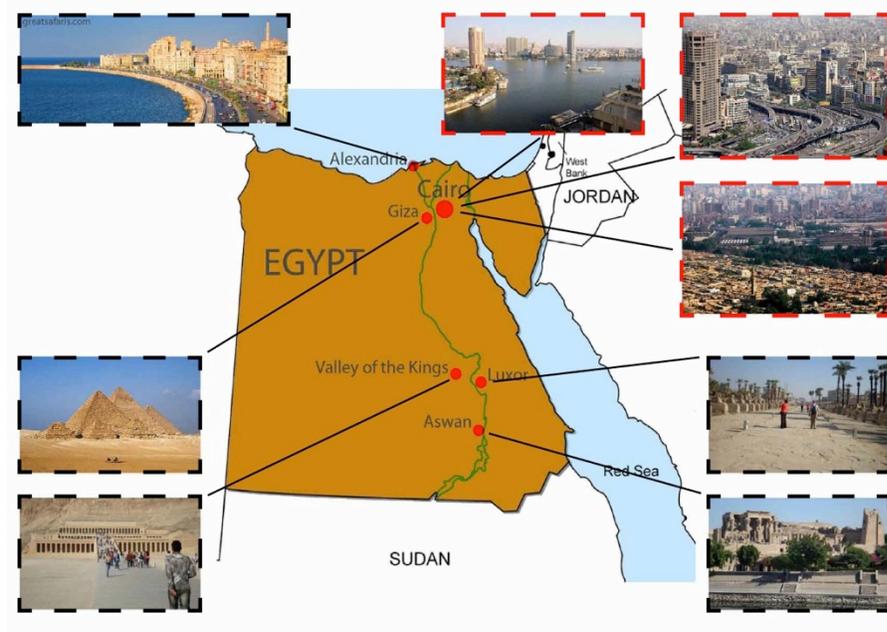


Figure 2 | Main Egyptian Cities

Source: Author

To understand the metropolis of today, one has to survey the explosive growth from 1950 to the present. The informal Cairo growth is the most influential portion of the development of Cairo in the post-World War II era. Informal Cairo is defined by the regions that were developed without any form of planning. During the war, development had come to a halt while the free-spending ways of the Allied armies had enriched the city's economy. The population was 2.8 million people in 1947 and with State organized development being frozen during the war, over-crowding and deteriorating

housing was becoming an issue. With the booming economic resources and need for more development, Cairo was primed for a quick urban expansion.¹



Figure 3 | Diagram of Contrasting City Fabric
(Source: Author)

Figure 4 | Cairo Growth

Source:

<http://www.greenstone.org/greenstone3/nzdl?a=d&d=HASH36d640644c86b4ce92061b.7.2.pp&c=envl&si b=1&dt=&ec=&et=&p.a=b&p.s=ClassifierBrowse&p.sa>

Housing stock in the 1960's deteriorated in Cairo and was coupled with a lack of state funded public housing projects. Cairenes, out of necessity, constructed mid-rise housing stock that built upon each other in an unplanned way on state and privately owned land. Known as "al-ijbar al-dhati", meaning forced self-reliance, the informal development became infill to the open space

¹ Sims, David. "Residential informality in greater Cairo: Typologies, representative areas, quantification, valuation and causal factors."

² ABT Associates, *The Informal Sector*. Main Report, USAID/Egypt, 1981.

in downtown. These developments were illegal but the state did not have many policies intact to stop the progression of this quick development. The inevitable expansion happened mainly at the expense of agricultural land. In the period up to 1967, most of the expansion was formal development in the areas of Mohedesiin, Dokki, Hadaek el Quba, Abbassia and Shobra. However, as discussed, the development stopped before the population growth trend was realized. The population began to soar to 3.4 million by 1960.



Figure 5 | Informal Housing Examples of Successful and Ruined Stock
(Source: UnHabitat and American University in Cairo)

These areas were the northern portions of Cairo at the Delta and the west bank of the Nile which housed much of the middle class. This was coupled



Figure 7 | 2050 Cairo Master Plan

Source: Cairo Ministry of Housing and Urban Development

During the War of Attrition, war with Israel, and the period leading to the 1973 war, focus urban planning development was tabled. However, with the growing population and the lack of housing development, citizens were forced to continue informal housing developments. With municipalities allocating most of their attention towards war efforts, there wasn't an availability of resources to control continual informal growth patterns.

Once the wars came to a close, devotion from the war shifted back to progressing the urban development. Instead of focusing on public housing to help alleviate some of the need for informal housing, infrastructure development was the priority. The state developed more avenues for vehicular access, public transit metro stations and establishing utility access for some informal regions. The "6th of October" bridge and overpass projects were started which enabled quick and easy vehicular east-west travel for Cairenes.

Towards the end of the 1970's, the State finally began to recognize the phenomena of the informal housing developments. In a study conducted in 1981, it was concluded that 80% of the development in the previous 10 years had been of informal nature². As a response to this development, the State launched a New Towns Policy in 1977. They wished to establish satellite towns outside of Cairo to encourage the abandonment of these informal regions. The town of 10th of Ramadan, 60km east of Cairo was established representing a shift in financial resources towards new satellite town development. This allocation of resources is still the predominant movement of urban planning in Cairo today.

Over time, downtown Cairenes have been leaving the historic urban cores not for the satellite cities, but rather for the fringe informal settlements. The causes are mainly the increasing commercialization of the downtown space and deterioration of the existing housing.³ This migration from the urban core is forcing over population of the informal areas which is depleting the already unpleasant living experiences. In a 2006 study, the informal areas were cited to house 65.6% of Greater Cairo's population. This migration is the direct opposite of the desired migration. The desert city migration that was intended by the creation of the satellite cities has been very much insignificant by

² ABT Associates, *The Informal Sector*. Main Report, USAID/Egypt, 1981.

³ The World Bank. *Urban Sector Update*. June 2008, p. 25, Section 1.26

comparison. The 2006 census recorded only 602,000 people as taking residence in the satellite towns.

The implementation of these towns hasn't been successful. Some factors in this failure are infrastructure costs, poor planning and risky real estate speculation. In order to establish new towns, the infrastructure has to be created from scratch as these new towns are in the desert. This endeavor is proving more costly than previously imagined, which has slowed progress. The budgets of these projects rely heavily on State investments and these investments have trickled to a slower pace. The private investments in these new towns were hurried investments that were trying to capitalize on speculation of land value. This speculation planned for up-market developments and the market demand wasn't viable, so these developments came to a halt. Thus, as housing stock in the downtown deteriorated, residents simply found refuge in the informal settlements.

INFORMAL CAIRO STIGMATIZATION

Informal areas are classified as such because they had been established illegally on agricultural lands ignoring zoning laws, construction codes, and land tenacity is insecure. A lack of infrastructure is common as informal regions are done without permits or government awareness. As a response, the generally low-income residents devised ways to secure basic services and access to metropolitan Cairo. In the 1980's, the government failed to

focus on the public housing development, which intensified the growth of informal housing.

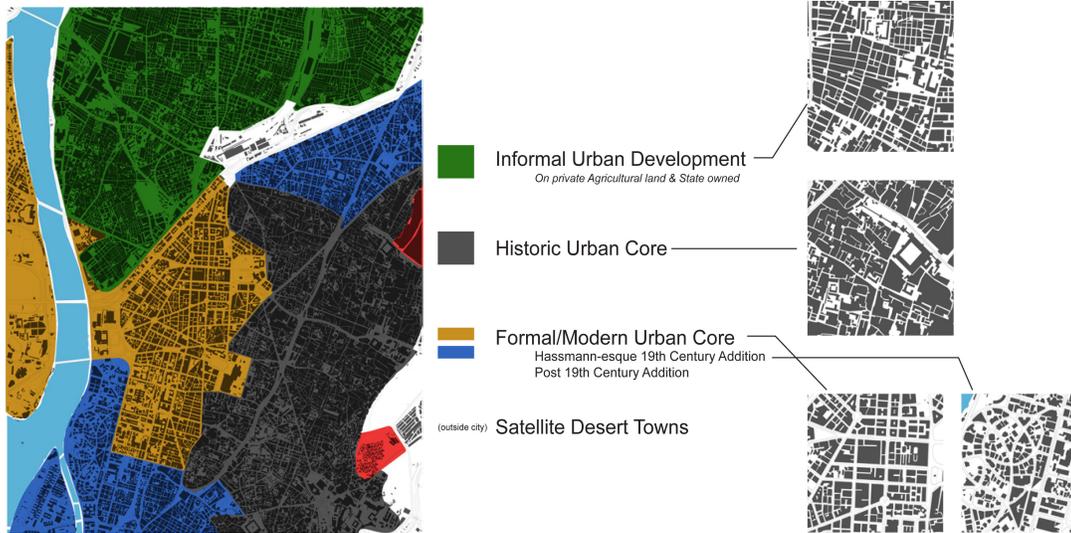


Figure 8 | City Morphology and Corresponding Fabric Types
 Source: Author



Figure 9 | City Morphology Based on Historical Developments
 Source: Author and Google Maps

Among Cairenes, there is a strong stigma against the social status of those living in the informal areas of Cairo. Known to locals as *manatiq al'ashwayi'at*, meaning unplanned and low class, informal areas have become a product of economic, political and social polarization in Egypt. This stigmatization of regions of Cairo serves as a political utility. In the short term, stigmatization

can allow for placement of blame for almost anything that ails a city in weak regimes and allow for unaccountability for national problems.⁴ A specific moment that intensified this characterization of informal areas in general was the 1992 Siege of Imbaba. A relatively unknown region, Imbaba was sieged by 16,000 security agents which drew public attention to informal regions. This region was the second most densely populated district in Egypt due to the exponential growth of the informal housing. The target of this siege was the Islamist Group (al-Gama'a al-Islamiya). This group was a threat to the State as they were developing a strong presence in the heart of the downtown preaching militant rhetoric and oppositional tactics. Between 1990-1993, 1,164 casualties had resulted from politically motivated violence. The government decided to make a statement against this Islamist group, so the siege was imminent.

The siege gained heavy press coverage which developed a rhetoric that debated, described and analyzed the events. The coverage it received ultimately formed a city-wide stigmatization of the informal housing and their residents. This stigmatization was “negative, paternalistic, pejorative, and dehumanizing” which formed an unfortunate link between Islamists and informal areas in general inciting hysteria among Cairenes.⁵ The depiction of

⁴ Singerman, Diane. *Cairo Contested: Governance, Urban Space, and Global Modernity*. Cairo, New York: The American University in Cairo Press, 2009.

⁵ Singerman, Diane. *Cairo Contested: Governance, Urban Space, and Global Modernity*. Cairo, New York: The American University in Cairo Press, 2009.

animalistic, inhumane residents forced an “others” discourse which served as a social divide. Yet, this ‘other’ has a population exceeding 50% of the entire city. The residents are working-class citizens who are forced to live with a stigma which generally does not apply.

This discourse of *us versus them* created a power paradigm which incited resentment in the residents of the informal areas. In an attempt to govern and establish rule over the informal regions to prevent further escalation of militant groups and uncontrolled sprawl, the result was alienation. “What is power without its objects? Authority is in some sense conferred by those who obey it. That they do so under extreme forms of constraint does not change their place in the balance, their indispensable role in granting authority its proper value.”⁶ Egypt, in its treatment of the informal urban regions through ignoring their existence and demonizing them, forced a growing unrest in the city as opposed to a subordinate people as the government sought to create.

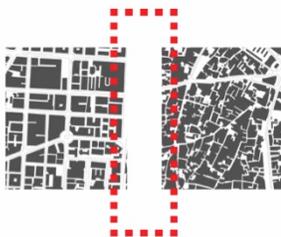
APPROACH

Cairo is a disconnected city in every sense. The government is in the process of reinventing itself, however is still disconnected from public interest despite its recent open elections. Socially, stigmas ensue and various populations avoid each other as a result of urban development patterns. Satellite cities and suburbs are upper class regions while the dense downtown is working class. Cairenes are more dedicated to the beautification of their home

⁶ Spurr, David. *The Rhetoric of Empire: Colonial Discourse in Journalism, Travel Writing, and Imperial Administration*. Durham: Duke University Press, 1993.

interiors and much less concerned with the interface of architecture and urban vitality. Cairo is a city experienced inside its walls, away from the public realm. Cairenes disconnected from one another. This disconnected nature be remedied through strategic architectural intervention. What becomes vital is calculating the precise location, or locations, to intervene. There are distinct regions in Cairo that can be generalized into formal, informal and historic Cairo that create pockets of differing urban experiences. At a nexus of these regions, I propose an urban intervention that can catalyze revitalization for a district.

Urban space in Cairo is a rare amenity. In today's politically charged, dense urban environment citizens are starving for change and use Tahrir Square as the canvas to demonstrate. Urban space is being used in a way that previously was forbidden under regime rule. I propose a building within a proposed urban design, that can be for the people which can celebrate the people past and present. A building to create place for social interaction and



Intervention at a nexus of fabric collisions

Figure 10 | Intervention Rationale

Source: Author

to promote transparent discourse with their elected government. This intervention, which I suggest is *neoplastic intervention*, can then catalyze local revitalization.

For the region, the city represents a center of rich culture, heritage and economy. The future of Cairo's development is vital to the region and may serve as

an example for other emerging countries. The city is aspiring to achieve prominence and step into the 21st century among the world leaders. As an alternative to wiping the city clean of much of its rich cultural significance, essentially abandoning the old city, this thesis will serve as a paradigm for how to engage historic cores and move a city forward into the 21st century.

_ URBAN THEORIES

URBAN HISTORY

Throughout time, cities around the world have experienced moments of disorientation, forcing reaction from urban designers. In the Renaissance, to rationalize medieval towns and reform land value, calculated plaza punctures and geometrical street realignments were implemented. In the Baroque era, Baron Haussmann conducted a form of urban bull-dozing to clear grand boulevards to bring back land value, health standards and organization.

Around this time, 1880's Egypt entered an accelerated movement towards modernization. Under Khedive Ismail, heavily influenced by Haussmann, a vast movement was initiated towards the beautification of Cairo. The medieval core of Cairo was considered too unsightly by Ismail, so he established a new planned town that grafted onto the core to the west closer to the Nile. Ismail developed a plan that was a three-pronged approach. Development of the western addition (Isma'iliya), rebuild the district of Azbakiya and orchestrate a master plan that would *unify* the medieval core

with the surrounding expansions in a Haussmann planning model.⁷ A new map of Cairo was created that introduced thoroughfares which traversed the city. These thoroughfares connected important nodes in and out of the city which significantly changed the character of the city, which was laced with narrow, tangled streets. Once Egypt became a republic in the 1950's, Egypt quickly sought to erase it's colonized past. Many of the landmark buildings established in the Ismail era were adaptively reused or demolished in favor of modernist towers and imposing buildings that would signal the republic arrival.

This constant shift of direction in planning and architectural identity plagues contemporary Cairo. It's a fragmented experience that has distinct contrasts of historic fragments, modernist planning, and informal infill. Cairo has the pieces to become a true "collage city"⁸ should the fragments begin to interact in such a way that they nurture and enrich each others experience.

HETEROTOPIA

Introduced by Michel Foucault in a lecture given in 1967, heterotopia is a term coined to describe "various institutions and places that interrupt the apparent continuity and normality of ordinary everyday space."⁹ Heterotopias create a disruption of the commonplace to which create new spaces that border

⁷ AlSayyad, Nezar. *Cairo: Histories of a City*. Cambridge, MA: The Belknap Press of Harvard University Press, 2011.

⁸ Rowe, Colin, and Fred Koetter. *Collage City*. London: The MIT Press, 1974.

⁹ Dehaene, Michiel, and Lieven De Cauter. *Heterotopia and the City: Public Space in a Postcivil Society*. London: Routledge, 2008.

between the public and the private realm. They are not definable in either category, thus being “other places”. Heterotopia is a foundational concept of urban space that served to hone neoplastic intervention.

Foucault’s introduces various types of heterotopic examples, yet one that pertains closely with the intent of this thesis is a heterotopia of difference. “The layering of public spaces in the same physical location brings counter-publics in contact and confrontation with each other.” Fragments of spacial orders coexist in the same physical space, which can facilitate the social production of heterotopias. These heterotopias create opportunities for confrontation and interactions of various publics.¹⁰ Spacially, the intersection of different fragments of spacial orders forces this confrontations of publics and creates urban vitality.

This application of Foucault’s “other places” will be critical in forming a rationale to an intervention at a node in informal Cairo. To demonstrate a method of urban revitalization, I will investigate a method of introducing an abnormal form in contrast to the regional form to produce a uniting features for the confrontation of social constructs that can begin to order a district out of balance.

COLLAGE CITY

¹⁰ Dehaene, Michiel, and Lieven De Cauter. *Heterotopia and the City: Public Space in a Postcivil Society*. London: Routledge, 2008.

Colin Rowe and Fred Koetter developed concept of Collage City as a response to modernist urbanism. Their argument urged the rejection of the modernist notion of a wide scope planning of utopian visions. Rather, the focus should rely on the urban actor at street level. Instead Rowe and Koetter advocated a more localized focus, the “actor” or resident within the city guiding development. In other words, the medium to small scale development as a piece meal approach to urbanism. This localized approach, they argued, allows for more intimate response to urban experiences and allow for the development of pocket utopias. These pocket utopias can bind different fragments of a city to unify and collage a city. The collisions of these pockets of smaller utopias help to enliven the city experience. This attention to the individualistic nature of this form of urbanism is the goal such that dynamic urban contrasts of experience result.

This concept is one that helps to inform the development of my intervention for Cairo. Currently, the city is a fragmented, discontinuous experience lacking strong unifying elements. Rowe and Koetter determined there were five essential elements that could enforce these utopian pocket experiences which could unify. Those five elements include memorable street, stabilizer, indeterminable set piece, public terraces, ambiguous and composite buildings and lastly nostalgia-producing buildings. The combination of these elements all point to the public realm of a city, a realm that, in Cairo, is underdeveloped. The inclusion of these elements in an intervention will be the introduction of a

rich urban environment to help revitalize the district. The “indeterminable set piece” should be the building itself, which serves as an anchor for the urban space. A point of reference and identity to an urban intervention. As I investigate ways to carve away urban fabric to create public space, existing nostalgia-producing buildings within Cairo will reveal themselves. Cairo is rich with culturally significant buildings and with calculated intervention, can be celebrated.

URBAN ACUPUNCTURE



Figure 11 | Diagram of Network Concept in Urban Acupuncture

Source:
<http://helsinkiacupuncture.blogspot.com>

Urban Acupuncture is an interesting corollary to collage city. Urban Acupuncture, the concept developed by Finnish architect Marco Casagrande, is the urbanism approach of attempting to have large effect through small intervention. Using Chinese medical theory as a metaphor, urban acupuncture focuses on the connection

of the human scale of space and how these connections impact the macro scale of the city. The interventions attempt to treat the city as a “complex organism of energy in which different ‘energy layers’ overlap with each other and influence how an urban area develops”.¹¹ It is a strategic connecting of points which are manipulated to create a system which Marco calls “3rd

¹¹ <http://helsinkiacupuncture.blogspot.com>

Generation Cities.” The concept of a system of micro interventions that have a macro effect is an example of bottom-up intervention that reinforces the strategy of district revitalization. Response to local issues that have more specific and pragmatic response to local need.

THEORY CRITIQUE & PROPOSED NEOPLASTIC INTERVENTION

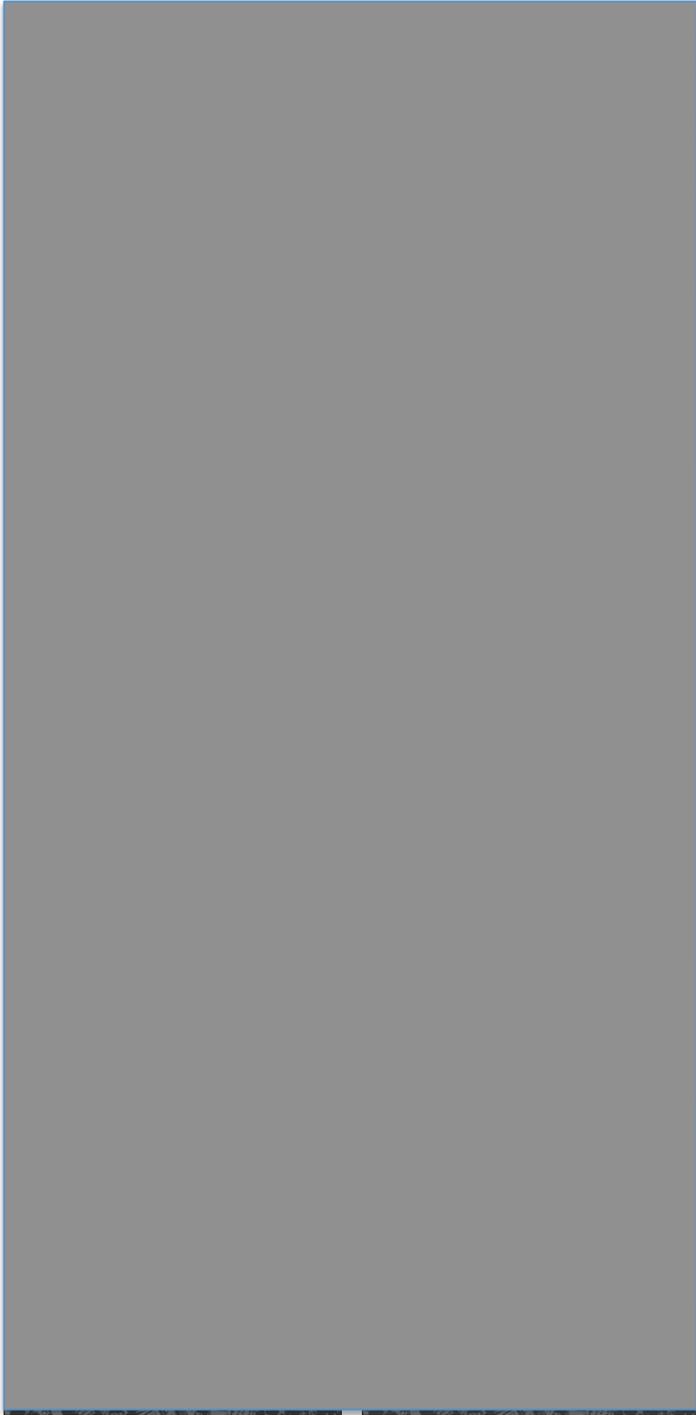
These theories all have local implications that allude to grander impact of the city life and vitality. Such approaches allow for romantic, experiential sequences through a city. These experiential moments within the city help to celebrate moments of time and place. One weakness, however, is the possibility of losing sight of strong overall connections to the rest of the city. In this thesis, it is imperative that the localized intervention find ways to tie to the larger gestalt of the city of Cairo.

The concept of “neoplastic intervention” is derived from the medical term of *neoplasm*, which is an abnormal growth that continues to grow and evolve after the initial stimuli ceases. Architecturally, this neoplastic intervention at a more localized region will serve as scaffolding to catalyze revitalization with a potential to rationalize and establish place to a district of Cairo. The concept of neoplastic architecture stems from the medical term neoplasm. An urbanism approach that I use in a unique manner, the concept of a neoplasm serves as an ideological principal towards my intervention strategy for revitalizing a region of informal Cairo. To catalyze urban revitalization, the

architecture I propose needs to behave differently than the regional context in an effort to force a distinct shift in urban experience.

_ CASE STUDIES

There are parallels in other regions of the world that are working to revitalize slum developments in and around city centers. In Colombia, Brazil and Venezuela architects are utilizing practices of calculated intervention within slums to help catalyze architectural reform. These case studies provide examples of program typology, contextual sensitivity and creation of place within hysteria of sprawling slums. Extracting the concepts from these projects will serve as guiding principles that will orient my design intervention.



**ORIOL BOHIGAS –
BARCELONA 1980-1992**

Oriol Bohigas was the Director of Urban Development in Barcelona in the 1980's. This era saw the deterioration of housing stock happening in the medieval core of the city and a lack of spacial continuity. When he began as the director, his mission was clear: through calculated public space introduction by clearly small portions of the city fabric, the district would benefit. "The new public spaces, however, were designed not only to

Figure 12 | Bohigas Barcelona Raval Public Space Interventions

Source: Author

settle historic debts, but to influence actively the urban environment" Bohigas himself noted, "among the methods and the specific instruments of the urban

planning department we have a clear direction. We will proceed directly with the public spaces with two goals: to make space of quality and at the same time create focus that can generate spontaneous transformations. It is evident that when a public space is built or rebuilt in a degraded neighborhood, this is a focused intervention, the motor of regeneration of the environment, stimulated by the users themselves.” Bohigas used rhetoric that was medically based as a metaphor for how he viewed the city as a living organism. He expressed the interventions as “metastatic, strategic, for reconstruction, and mainly supported by the design of public spaces, since they are the most immediately effective to achieve these goals. They are metastatic because a series of actions can be the focus of regeneration for the surroundings strategic, since in order that metastatic can be effective, the initial ‘infection’ has to be applied to the nerve centre of the neighborhood, of the city, of the metropolis.”¹²

In his interventions, public buildings developed, housing began to reform and urban street life began to see revitalization. The introduction of strategically placed public space served as metastatic interventions because they regenerated the surrounding areas. This case study is a direct example of the type of influence my Cairo intervention seeks to invoke.

FAVELLA BAIRRO PROJECT – JORGE MARIO JAUREGUI 2010

¹² Marshall, Tim. *Transforming Barcelona*. London: Routledge, 2004.

Latin America has experienced a large influx of informal housing that graft onto the formal city cores.

Much like the case with Cairo, in Brazil these informal areas do not

have access to infrastructure, amenities and are generally regarded as outsiders. The contrast of city to “slums” is apparent when looking aerial of the city and noticing the stark difference in city form.

Rio De Janeiro is a very similar parallel to Cairo as their favelas, or shantytowns, are located within the city’s fabric. Many of the typical South American favelas are located on the fringes of the main city’s. The Favela-Bairro project is an initiative that sought to transform the favelas from “noncity” areas into integrated, functioning environments.¹³

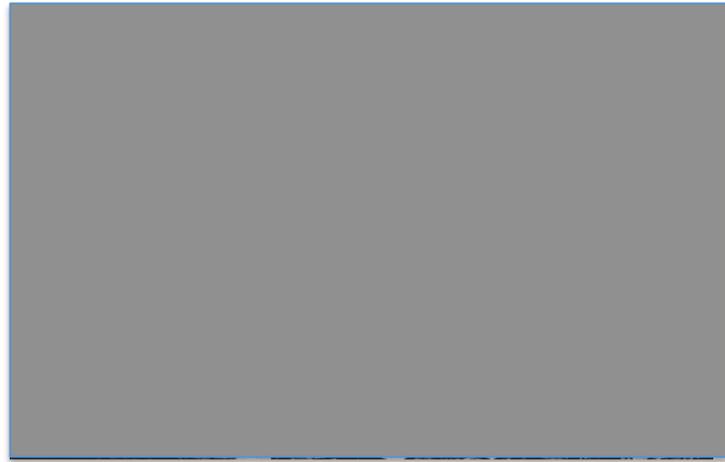


Figure 13 | Fringe "Slums" Versus Formal City in Brazil
Source: Google Images

¹³ Machado, Rodolfo. *The Favela-Bairro Project: Jorge Mario Jáuregui Architects*. Cambridge, MA: Harvard University Graduate School of Design, 2003.



Figure 14 | Favela Bairro Principle Intervention Sites

Source: Jorge Mario Jáuregui <http://www.jauregui.arq.br>

Led by Jorge Mario Jauregui, an architect based in Brazil, the goals of his revitalization had been to establish connections to the city center, infrastructure and rehabilitate the identity of the slums. In an effort funded by the Inter-American Development Bank, the project focus was transforming slum to neighborhood. This intervention was wide scope affecting around 253,000 residents in 73 communities.

The methodology for intervention was to introduce programs and urban space that could engage the residents and encourage further renewal outside of the project itself. Through establishing a sense of place and belonging, pride in the region would as a result force residents to care more for their urban environment. The types of catalyzing programs included schools, housing, sports facilities, health centers, transportation hubs and libraries. The system for implementing these programs was through the careful understanding of

the regional needs and calculated demolition of poor housing stock to clear for the placements of the interventions. The placements of these interventions act as a network to create movement systems through the former slums to enforce neighborhood characteristics.

The specific nodes of intervention are arranged in a manner that engages the community by focusing not only on the building, but on its urban design. The arrangement of the buildings and how they engage the context was important to the success of these urban activators. In the specific case of Centro Setorial, the mixture of sports fields, facilities, day care, public square introduction and a new street for regional access created a hub of activity catered to the needs of that specific district. To create the space from the dense urban fabric, there was an attitude of careful removal and relocation of existing housing to create amorphous space open space as opposed to formal geometries.

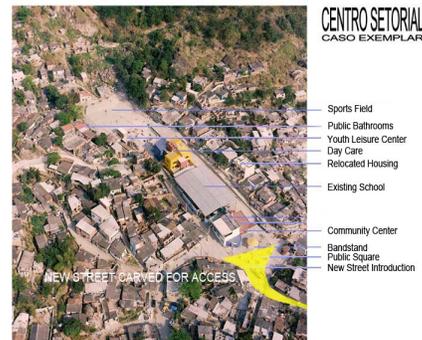
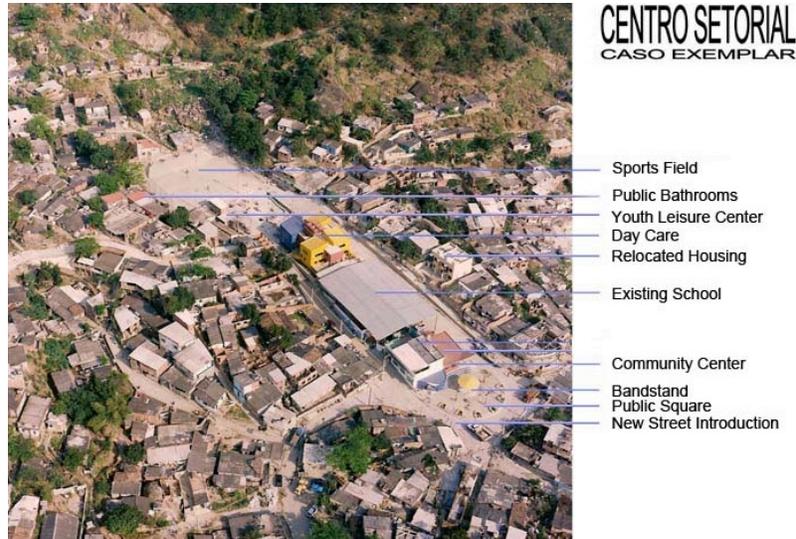


Figure 15 | Local Intervention and Diagrams of Public Space and Road Introduction
 Source: Jorge Mario Jáurequi and Author Overlays

This case study introduced the idea of a network of small interventions that would catalyze a district renewal effort, akin to Urban Acupuncture theory. What resulted was a network of activity nodes that tied a neighborhood together. By providing access to infrastructure, activity zones and services enabled the community to work together to enhance their home and identify as part of the larger city.

GROTAO COMMUNITY CENTER - SAN PAULO, BRAZIL

The city of Sao Paulo's Housing Authority set out to create a hub of revitalization in a slum region of San Paolo, Brazil. It's described by the

architect, Urban Think Tank, as “essentially a musical education factory... [it] is a vital catalyst in this area, expanding music programs into the favelas while beginning to form a new network that serves the youth.”¹⁴ The program consists of elements of bus transportation stations, soccer plazas, community

center space

and a music

school.

Taking

advantage of

it’s unique

topographical

concavity, the

building form

invites the

surrounding

favela inhabitants

inward towards

the building.

Urban Think Tank

studied the

regional

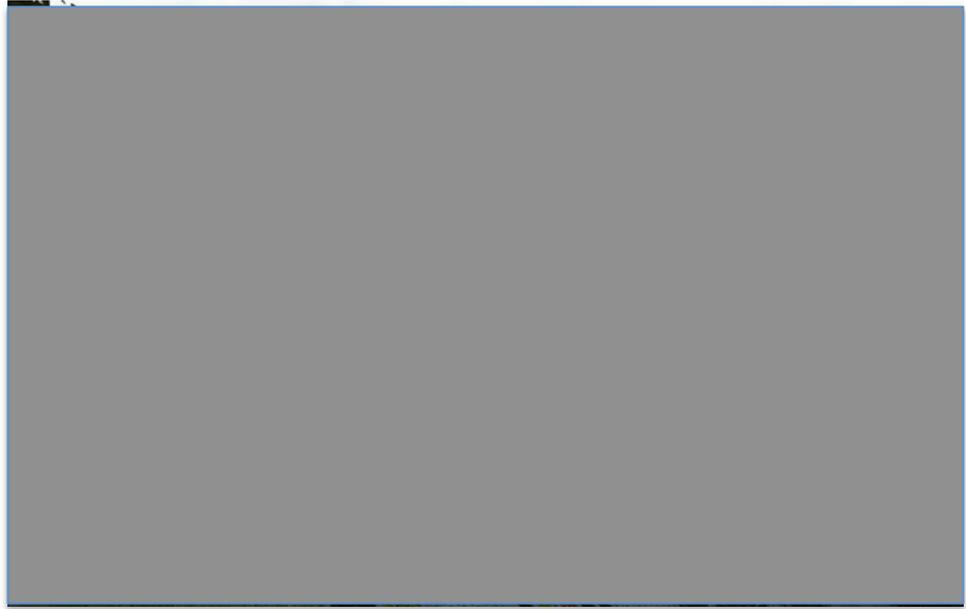


Figure 16 | Gratao Community Center Rendering and Section Illustrating Topographical Context and Promenade

Source: Urban Think Tank www.u-tt.com

¹⁴ Brillembourg, Alfredo. Urban Think Tank, "Gratao Community Center Project." Last modified 2012. Accessed December 13, 2012. www.u-tt.com.

culture to find what kind of activities would activate the building. They analyzed the needs of the region which they described as a need for equal housing, employment, access to technology, services, educations and resources while providing spacial solutions for the myriad of urban challenges to this site. Beyond the function of the building, Urban Think Tank worked to design with sensitivity to the regional architectural form. The cubic form of the favelas is read clearly in the massing of the Gratao Community Center and choice of local materials allow the building, although larger in scale, to seem as part of the neighborhood. These design decisions to study the area and respond programmatically and aesthetically made the building seem less foreign to truly serve as a great representation of a community center. This lesson is one that I intend to apply to the building in Cairo.

ADANA CITY HALL & CULTURAL CENTER

The Adana City Hall and Cultural Center building, designed by MTF Proje, serves as a programmatic precedent. The collage of political and social functions within one building is a programmatic example for a building that could catalyze social activity. The Adana City Hall and Cultural Center's concept was to graft to the site conditions, which were mostly green areas. A building growing from the land. Half of the building is below the topography with the land extending up and over most of it. The basic parti is a cranked bar building that funnels towards the entrance. The building is a multi-function space beyond a city hall and cultural center. It is a city library, wedding venue, city information area and flexible workshops.



Figure 17 | Adana City Hall and Cultural Center Plan
Source: MTF Proje

The city hall is separated from the cultural center from a pragmatic standpoint, however there is a symbolic gesture to this separation. The meeting hall is a distinct portion of the building and is articulated in a unique way. The meeting area with its unique wooden articulation was specifically designed to respond to the image of the residents of the Adana municipality.



Figure 18 | Adana City Hall and Cultural Center Perspective Illustrating Articulated Massing
Source: MTF Proje

Another aspect of this project is the tectonic response to the climatic issues of Turkey. Similar to Cairo, Turkey has a hot climate with minimal cloud cover. The natural air ventilation and daylight shading techniques were designed to reduce energy load requirements. In addition, the green roof reduces the heat absorbed by the building . An atrium divides the building into two pieces, essentially creating a courtyard to allow hot air to rise to the top of the atrium allowing for a comfort zone in the lower levels.

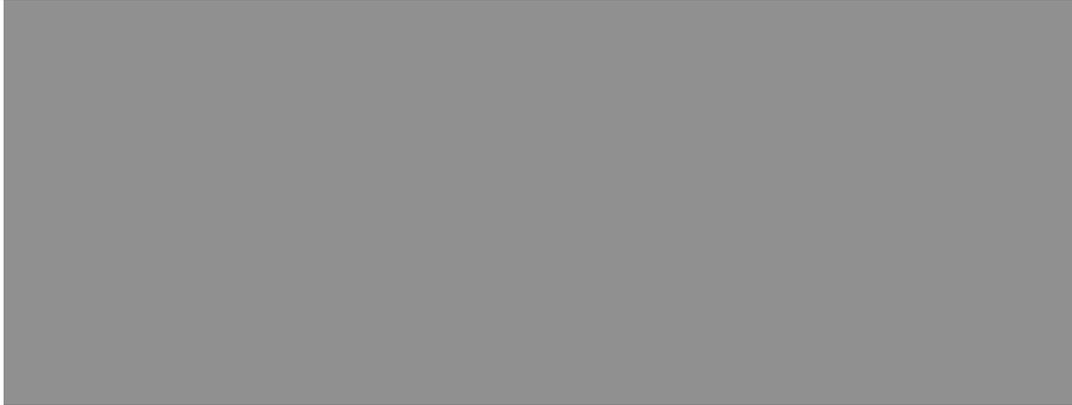


Figure 19 | Adana City Hall and Cultural Center Section
Source: MTF Proje

This project introduces symbolic gestures about building massing and programmatic placement within the massing. In this specific project, the city hall was the dominant massing of the building with elegant wooden cladding that expressed the importance of that function. Moving forward, I will be mindful of articulated massing and sustainable response to Cairo's climate. In Cairo, the struggle is this balance of power and the oppressed and the function of the building should be responsive to that. The government is *for* the people and *by* the people in a democracy and this building should be that representation.

_ POLITICAL, SOCIAL, ECONOMIC CONTEXT

CAIRO'S JOB SECTOR AND HOUSING CONFLICT

Cairo is the epicenter of political and economic power in Egypt, thus the density. Greater Cairo has 43% of the public sector jobs available in Egypt, 40% of the private sector jobs, and 49% of its industrial jobs. The major

universities and healthcare industries find their home in Cairo, which are not reflected in these statistics.

Despite the strong presence of most of the Egyptian jobs, the housing stock is extremely limited. In a downtown neighborhood of Zamalek, there's overcrowded, noisy, smog rich, traffic-ridden urban fabric with no green space. The upper-class citizens live in the newly established desert communities. These upper class citizens only constitute 10% of the population. Meanwhile, the working class has very few options for housing: unpaved, narrow urban neighborhoods built over former farmland or extremely illegal housing stock built over commoned state land.

CAIRO'S CITY GOVERNMENT – OR LACK THEREOF

The urban development crisis needs strong central and local government presence and regulations to deal with the urban crisis. However, Cairo's "administrative powers are far weaker than they should be for a mega-city of such tremendous regional and global political influence and status."¹⁵ The municipal government presence is almost missing and as a result, the locals suffer. Cairo's government is characterized by excessive centralization, lack of transparency, and communication failures between administrative bodies and the people. To compound the structural failure, Cairo faces an enormity of issues to contend with that only magnify the lack of local presence. The

¹⁵ Singerman, Diane. *Cairo Contested: Governance, Urban Space, and Global Modernity*. Cairo, New York: The American University in Cairo Press, 2009.

citizens of Cairo have no easily accessible body to report to, no agency visibility to report issues in local communities.

The umbrella model for governing, especially as it relates to the urban development, makes for difficult coordination of policies for the metropolis as a whole.

The administrative power is split into three main governorates which are divided into multiple districts. The first governate is Cairo proper, which constitutes

the densest portion of the

city from the east bank of the Nile to the Muqqattam Hills. The second governate is Giza, east of Cairo proper. Giza consists of farms, deserts, villages, and the ancient pyramids. The third main governorate is Qalyubia, the northern most portions of Cairo.

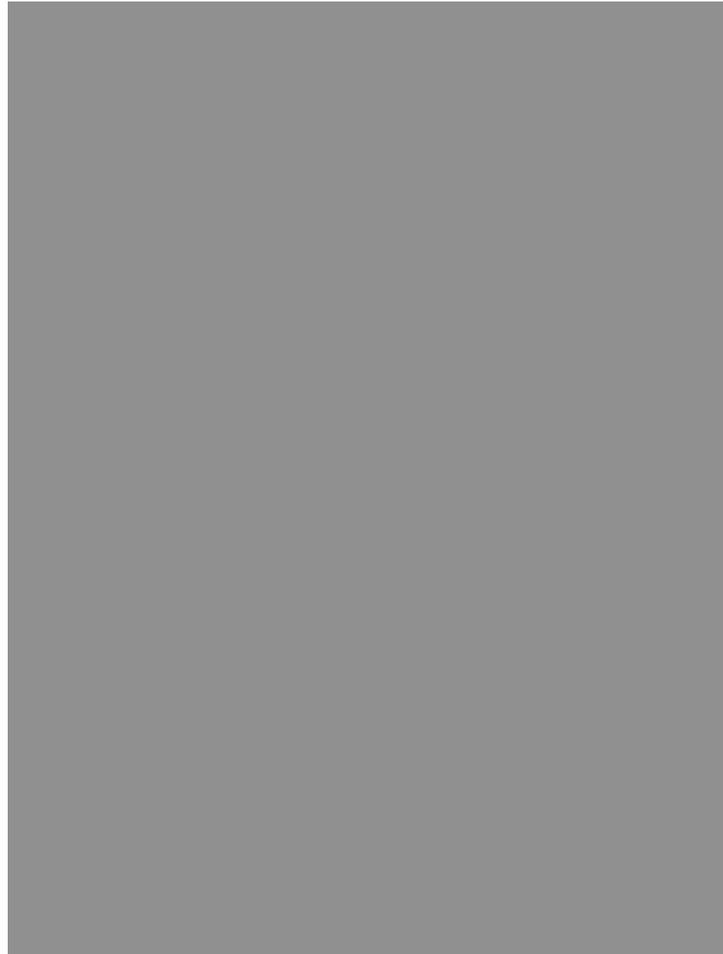


Figure 20 | Cairo Governorates Map

Source: Egypt State Information Services <http://www.sis.gov.eg>

The umbrella organization creates grand planning schemes, yet has no power to enforce them due to the struggle between the three main governorates. These three governorates struggle for power and the citizens suffer as a result. “The principal fault of the system is the absence of autonomous, accountable, and accessible municipal decision-making.” Instead of establishing municipalities, Egypt is intensifying their backing of privatization of local reform. The idea of “al-ijbar al-dhati”, forced self-reliance, is the only source of reform for local areas. The government will provide infrastructure or

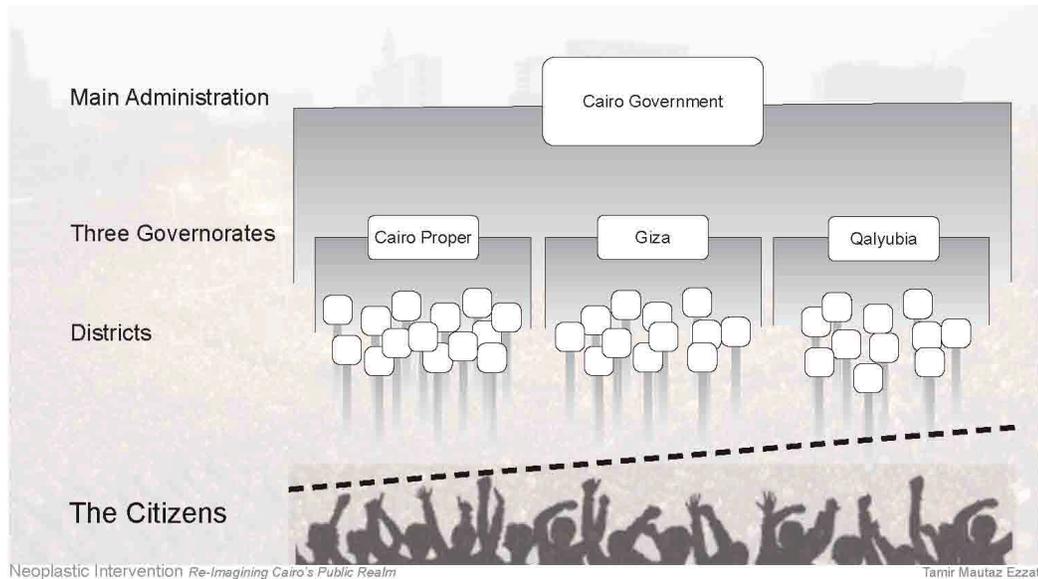


Figure 21 | Government Structure Diagram

Source: Author

services to an area, as long as the locals can generate the funds for the projects. The rise of NGO's (non-governmental organizations) has been the only saving grace for reform of urban life in small pockets of Cairo.

POPULATION

Statistics

- Current Population: 72.5 Million (2006 Census)
- Rate of Growth: 2.03% Growth per annum
- 37.5% Youth (less than 15 years of age)
- 49.6% Illiteracy in Rural Areas, 26.6% Illiteracy in Urban Areas

Density

Where Do People Live?

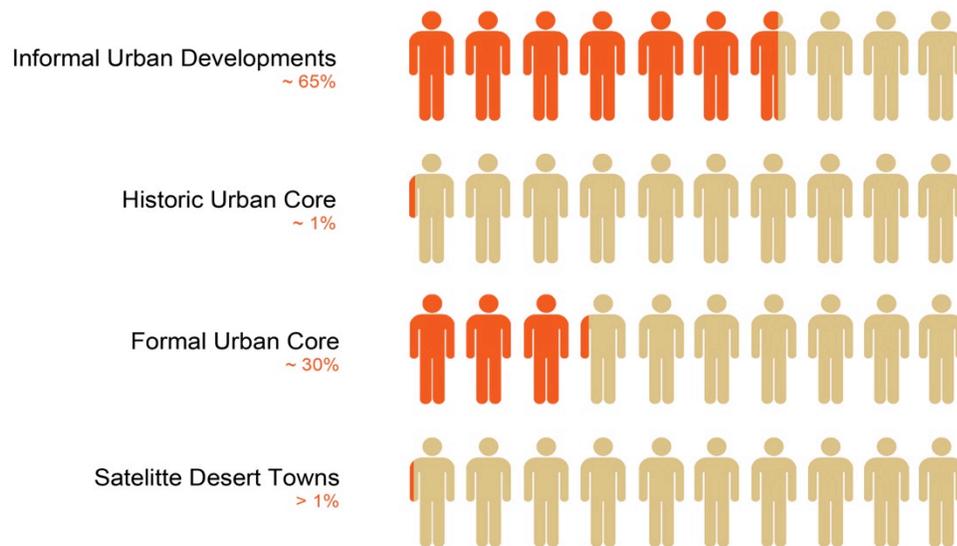


Figure 22 | Distribution of Population in Greater Cairo Region

Source: The World Bank (Data) Author (Image)

- 40,000 inhabitants per km²

Despite the migration trends of the move to informal housing, Egyptians on the whole tend to have a high “stay at home” inertia. In the 1996 census, only 6.3% of the total population changed residences in a ten year period. What

this information clarifies is that Egyptians tend to create their home base and have a high devotion to their region of choice. Their personal investment in a neighborhood may be much higher than other regions that may have a higher turnover rate.

ECONOMIC STATE

Country	Gross Domestic Product	Gross Domestic Product (per capita)	Gross National Income (per capita)
Turkey	773,091,360,340	10,498	10,410
Saudi Arabia	576,824,000,000	16,423	16,250
United Arab Emirates	360,245,074,960	45,653	41,940
Yemen	360,245,074,960	1,361	1,070
Iran, Islamic Repub.	331,014,973,186	4,526	4,520
Israel	242,928,731,135	28,522	25,510
Egypt, Arab Rep.	229,530,568,260	2,698	2,160
Pakistan	211,091,994,819	1,019	1,120
Kuwait	176,590,075,215	45,437	48,900
Qatar	172,981,588,421	72,398	80,440
Iraq	115,388,468,974	2,532	2,640
Morocco	100,221,001,988	2,795	2,970
Oman	71,781,535,039	20,791	19,260
Syrian Arab Repub.	59,147,033,452	2,893	2,750
Lebanon	42,185,230,768	9,227	9,110
Jordan	28,840,197,019	4,370	4,380
Cyprus	24,689,602,446	28,779	29,450
Bahrain	22,945,456,867	18,184	4,520
Afghanistan	20,343,461,030	501	410
USA	15,094,000,000,000	48,442	46,080

Compared to the general Middle East Region, Egypt's gross domestic product is just below the region leaders. There is capitol available to invest in public infrastructure.

Figure 23 | Gross Domestic Product and Per Capita Regional Comparative Information

Source: World Bank

establishments are found in Egypt. Cairo is the largest city in Egypt, and Africa, and has the capitol to invest in strategic urban renewal.

SOCIAL IDENTITY

Cairo is a city that is mostly lived indoors. The lack of public space and air quality is a main driver towards this interior experience. The social contract within Cairo is built upon the betterment of the interior housing experience.

Greater Cairo has captured, and continues to capture, a large share of national public and private investment. Most business enterprises focus their development in Cairo. Cairo serves as the dominant portal to the global market for Egypt, 83% of all foreign

Little mind is paid towards the urban experience and towards social meandering and discovery.¹⁶ Culturally, high activity zones are indoor cafés, urban “clubs” (paid gym memberships) and restaurants. Virtually no public amenities exist due to security concerns that were raised in the 1980’s in the rise of Islamic Fundamentalist movements. For Egyptians to socialize, it is a planned, formal matter. Urban discovery isn’t a viable or fruitful experience.

In my visit to Cairo, I surveyed the public realm of the city. What I found is a region that is in the midst of rapid change. Artistic expression is rampant in the city in the form of graffiti. This is a notion towards the idea of taking back the city as well as feeling liberated to have free expression. In other ways,



Citizens are now, like never before, seeking creative outlet and are painting the town with their previously repressed creativity

Figure 24 | Graffiti In Cairo

Source: Author

police still canvas the areas to shuffle public gathering so people do not loiter in one place for too long. There is an intense back and forth where citizens are testing the boundaries of the new/developing government powers.

¹⁶ Singerman, Diane, and Paul Amar. *Cairo Cosmopolitan: Politics, Culture, and Urban Space in the New Globalized Middle East*. Cairo, New York: The American University in Cairo Press, 2009.

Public space is being demanded in a way never before experienced in Cairo. The need for public amenities and facilities are rising with each moment of triumph the people of Cairo feel they achieve. A center to express their thoughts, ideas and ambitions is not in existence and could serve as a valuable asset to the region as they move forward.

_ CAIRO LAND-USE & INFRASTRUCTURE

TRANSIT SYSTEMS



Figure 25 | Downtown Cairo Primary and Secondary Streets and Transit Lines
Source: Author

LAND USE, LANDMARKS AND FIGURE GROUND

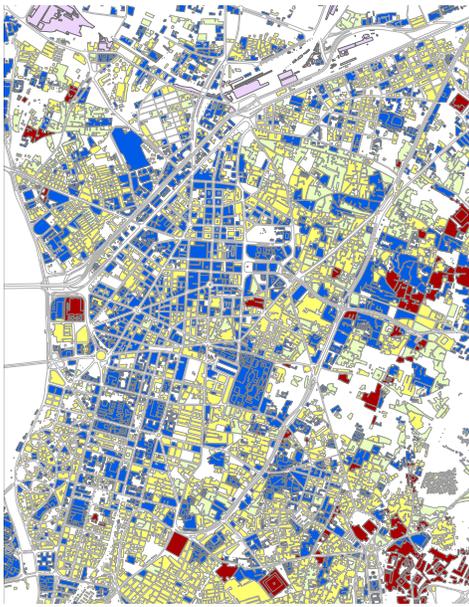


Figure 28 | Land Use Diagram of Downtown Cairo
Source: Author

The overlays of transit systems reveals the formal, wide boulevard streets of the formal fabric and their collisions with the historic and informal fabric. Within this fabric, the metro system was introduced in Cairo and

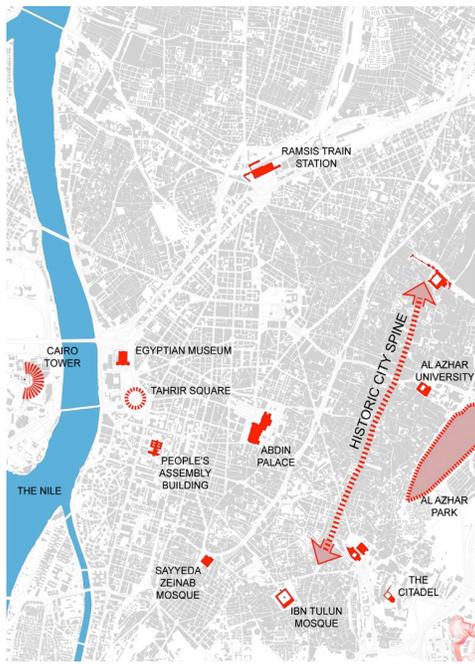


Figure 26 | Landmarks
Source: Author



Figure 27 | Figure Ground of Downtown
Source: Author

is currently the most extensive metro system in Africa. The metro system poses the

greatest opportunity for development along the collisions of the green and yellow lines at the Attaba metro stop.

_ SUMMARY OF FINDINGS

SITE SELECTION & ANALYSIS

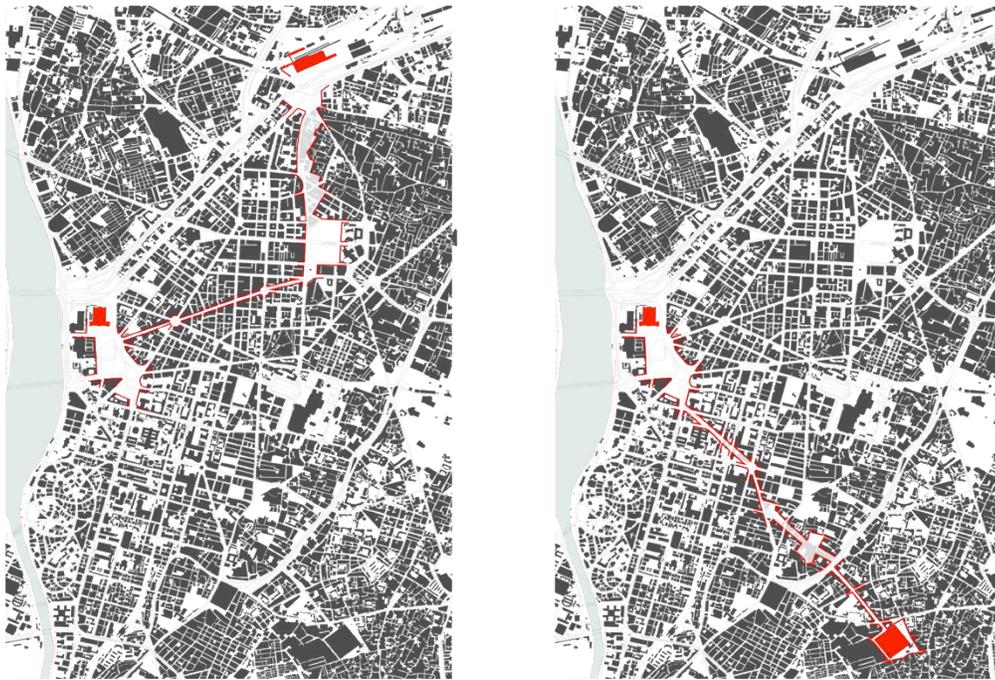


Figure 29 | Urban Parti Diagrams for Intervention Linking Modern Cairo to Informal Cairo
Source: Author

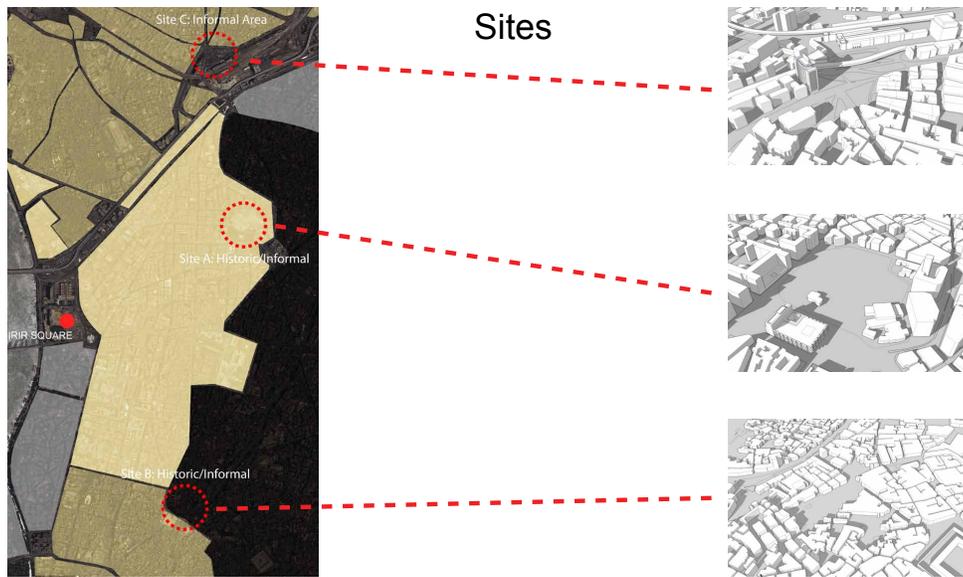


Figure 30 | Possible Site Selections at Nexuses of Formal and Informal Fabric
Source: Author

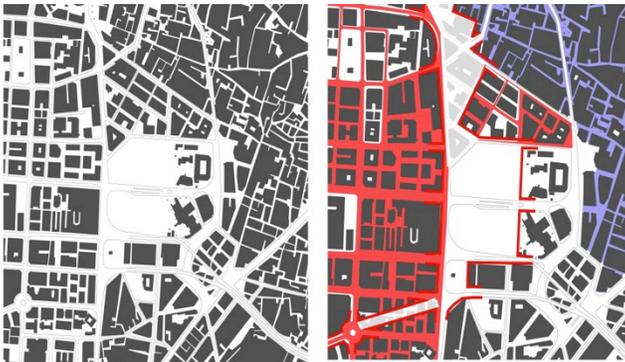
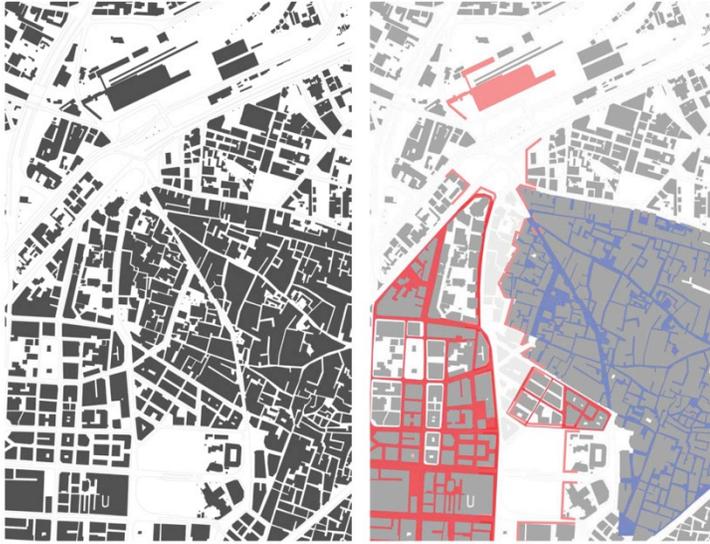


Figure 31 | Site Conditions, Contrasting Fabric Types
Source: Author

I have chosen three different locations to study architectural interventions based on the distinct collisions of formal and informal city fabric. These collisions are shown to the left. Sites A and B are along the spine for a possible Urban intervention linking Ramses Train Station and the a vacant site to the south. The third site is along the second urban parti intervention from Figure 24 that is aiming to connect Ibn Tulun to the modern,

formal portions of the city. By placing an intervention in or along this urban parti, I am studying the ways in which I can catalyze revitalization. The forms of these architectural interventions are the subject of refinement, but are begun based on certain cultural influences and precedent forms.

_ PROGRAM & PARTI

INITIAL PARTI STUDIES & SITE PLACEMENT

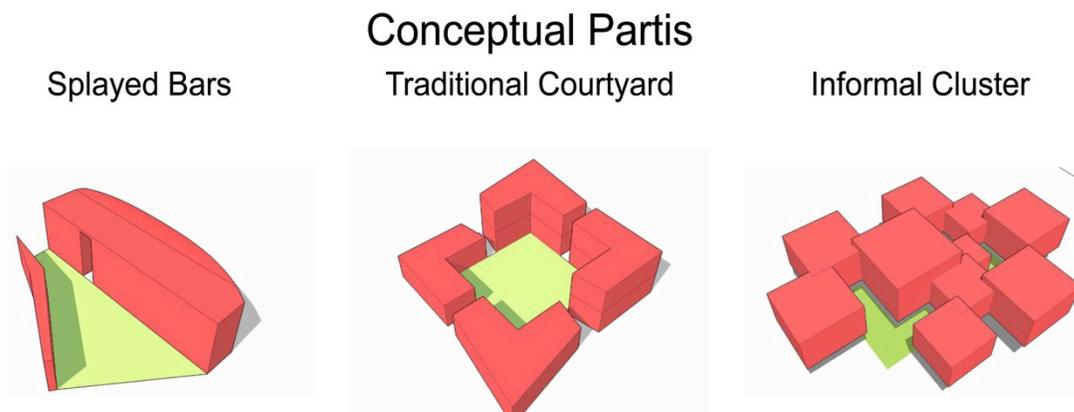


Figure 32 | Three Basic Parti Studies: Splayed Bars, Courtyard, Informal Clustering

Source: Author

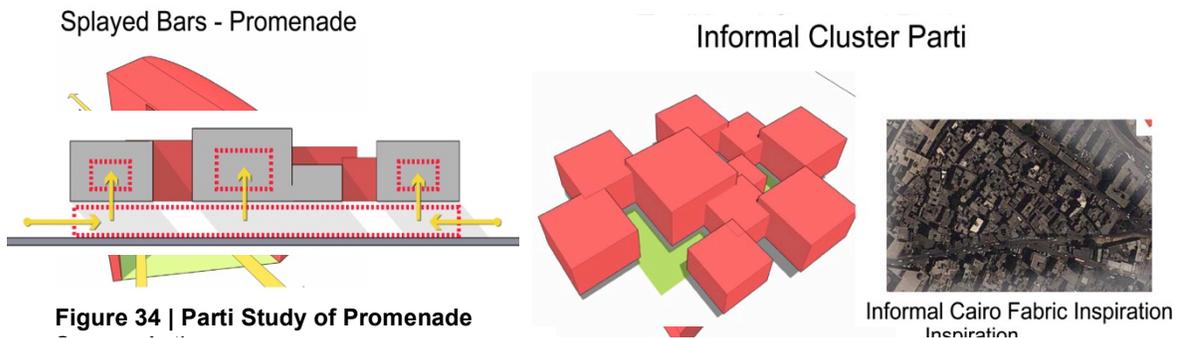


Figure 34 | Parti Study of Promenade

Figure 35 | Raising the Building off the Ground for Social Gathering Below; Cluster Form Based off of Informal Cairo Fabric

Source: Author

Cultural Part Example
Source: Author

These initial schemes are studies about the relationship of building to urban space. These different schemes present the introduction of public, open

space in different arrangements and are the start to a more elaborate study to come. In the splayed bar scheme, adapted from the Adana City Hall and Cultural Center precedent, the urban space is funneled into a pinching joint where the entrance to either bar is found. This pinching location is meant to be a metaphorical moment of clarity where political power overlaps with the people. The building can act as a symbolic representation of the current aspirations of the Egyptian people and their government model.

The courtyard study is the usage of urban space as a destination within the building. The building itself acting as a threshold to this gathering space. This is a realistic alternative, as security of urban space is important to Cairo. This could be a way to address the functional issues with urban space introduction, should that become an important aspect of the design. The form of the courtyard is a typology well known in Cairo in mosque partis and I based the specific study on one of the oldest mosques, Ibn Tulun. The building could start to be massed asymmetrically speaking symbolically about the relationship of city hall and cultural center, as in the case of the splayed bar parti.

The cluster parti is a another study that has been inspired by the culture of Cairo: informal Cairo buildings. The informal fabric of the city is one that represents ingenuity, self reliance and determination. As undesirable as the informal developments are urbanistically, the informal fabric represents a

distinct cultural phenomenon and could be celebrated with the form of this building. The apparent irrational clustering of simply arranged blocks could house specific functions and overlap at corners for circulation. The building would be raised to promote the urban space usage to happen underneath the building, which would promote sun shading.

PROGRAM ALTERNATIVES & ANALYSIS

City Hall and Cultural Center

Egypt government has an umbrella power and limited to non-existent local power. This lack of local government haults progress in local sectors because there isn't a strong enough presence of local government. A program that could really spark a regional renewal process could be a city hall/local

municipality building that could house community functions. This program could enable local government presence in a tangible, visible way. This could

create a central location and house district-focused initiatives which could help fund regionalized renewal.

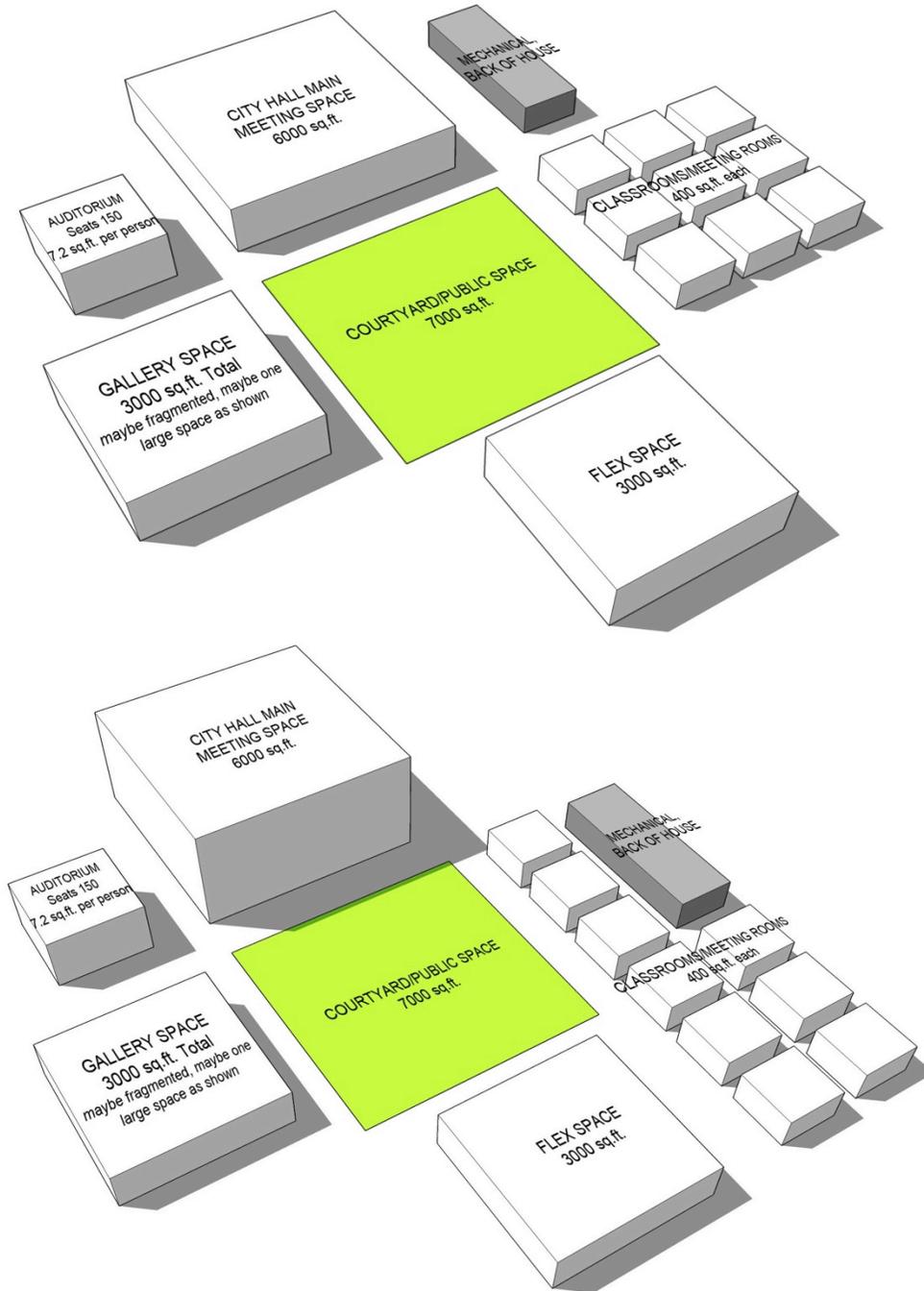


Figure 36 | Programmatic Massing Studies and Allocation of Spaces
Source: Author

Celebrating the Egyptian heritage, recent youth uprising and venue for self expression could be housed in the same building as a city hall. The joining of these two functions would force a level of transparency not apparent in Egypt's history. Space for educational functions, meeting halls, gallery space, flex community rooms and city information kiosks would be the main aspects of this portion of the building.

In figure 32, investigations of spacial relationships of these partis have begun in order to discern volumetrics of the programmatic aspects as well as their heirarchical arrangements. These studies have begun to inform me about which partis are most condusive towards my end goal of combining political and social functions in a symbiotic relationship. Also, they allow me to understand the size of the building and the eventual footprint I may create. Many more of these studies will be conducted in order to hone both parti and programmatic aspects and to fully understand how they can engage urban space.

The transformation of urban space usage has been swift in Cairo since the revolution. It is now commonplace to find graffiti, social congregation, and protesting in a formerly oppressed urban culture. The engaging and inclusion of public urban space is a gesture towards progress for the region. The people of Egypt wish to have public space for more than just demonstrations, but for congregation, interaction and socialization.

To organize the events during the 2011 uprising, technology was the major vessel used for organizing urban demonstrations. Technology access would need to be a major focus of this with possibilities of building being a place of broadcasting messages and culture.

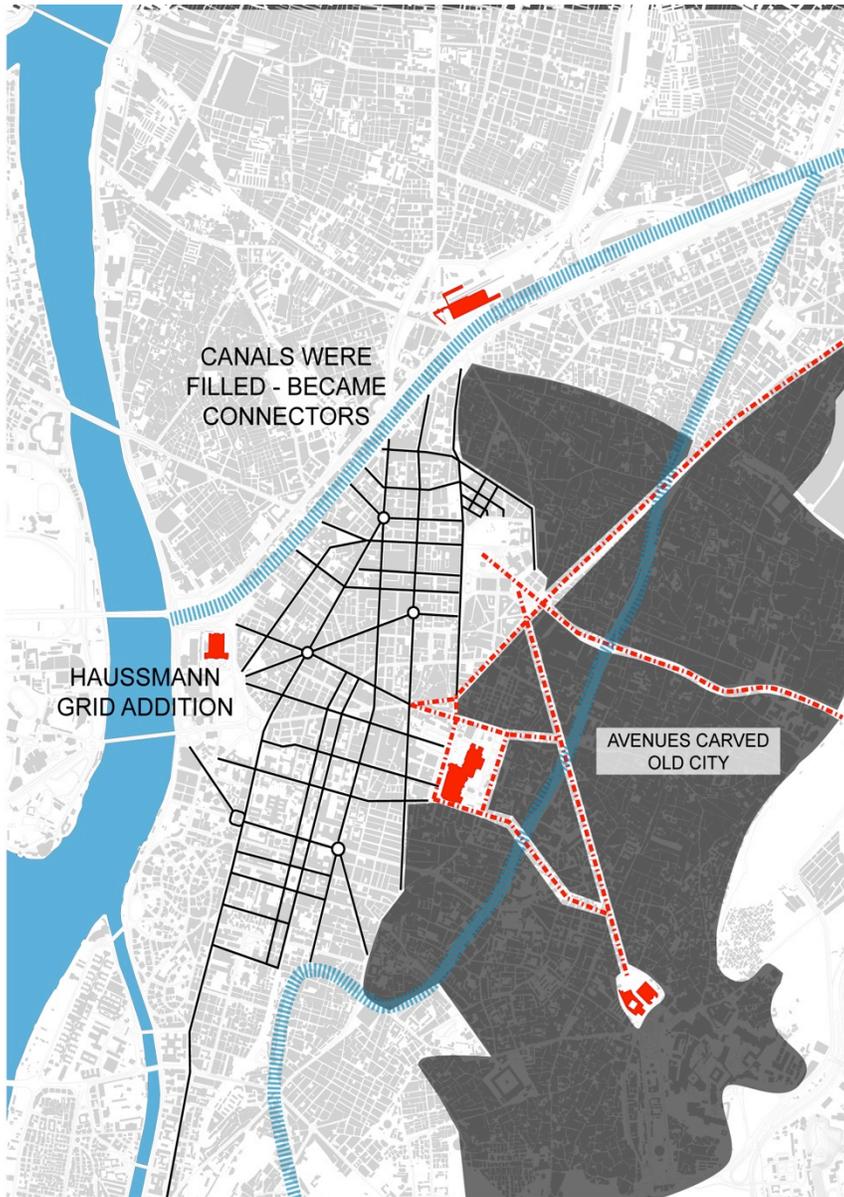
_ DESIGN RESPONSE

CAIRO'S ARCHITECTURAL KIT OF PARTS ANALYSIS

While in Cairo, I sought to understand the salient features of the region, what the street life was like, and what comprised public space. Repetitive forms of the Historic City, the scale of the modern downtown, and other features of the city are among the features that comprise this “kit of parts” that would inform my design direction.

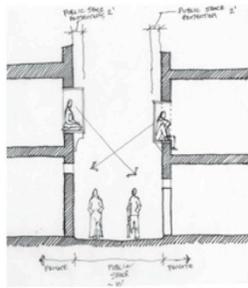
In the Historic City, I studied how the city embraced its inhabitants. What interested me most was what comprised public space, private space, and the space in between. The understanding of space in Cairo is far different than what I understand in western culture. The street itself, the main public space, in Historic Cairo is transformed constantly. Vendors, people, traffic and goods occupy and share the space on an informal rotation. Wide open spaces don't exist, as the street itself is a shaded experience due to its narrow dimension. Wide open spaces aren't useful in Cairo as Cairenes celebrate density and

the social interaction with people of their area. These spaces exist in the modern areas of the city, the 19th century addition to the city. These larger spaces are occupied on the edges, not experienced as a whole. These are

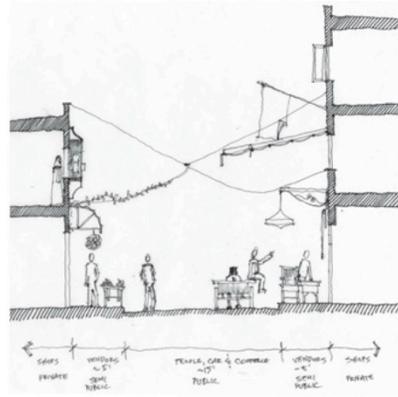


not protected, proportioned spaces and negatively contribute to the region.

Figure 37 | 19th Century Ismail City Addition
Source: Author



Residential



Main Thoroughfare

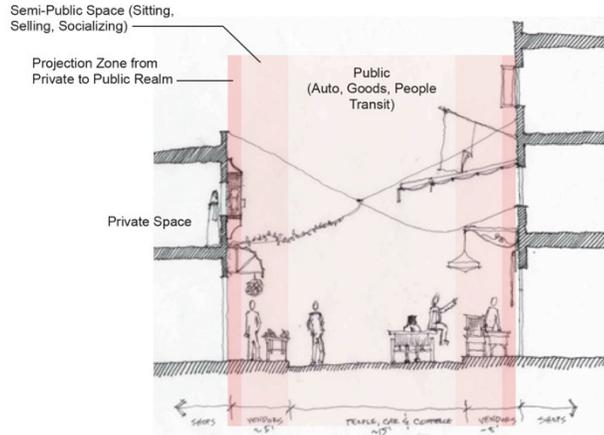
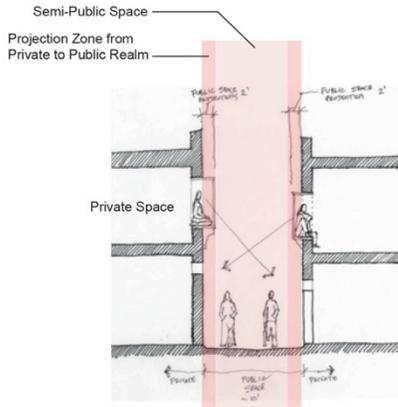
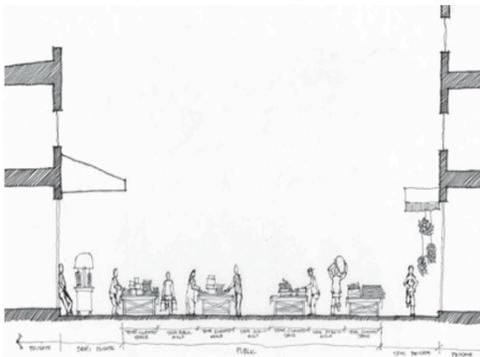
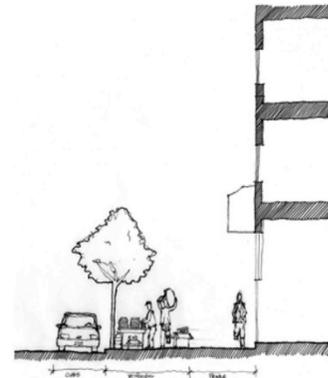


Figure 39 | Historic Cairo Street Studies
Source: Author



Residential



Commercial

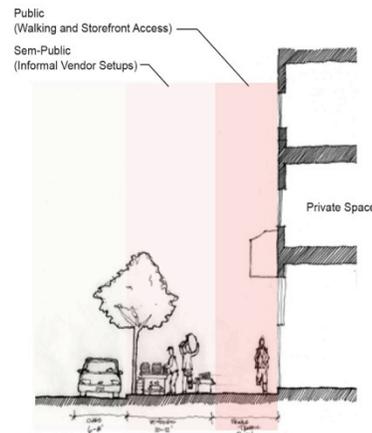
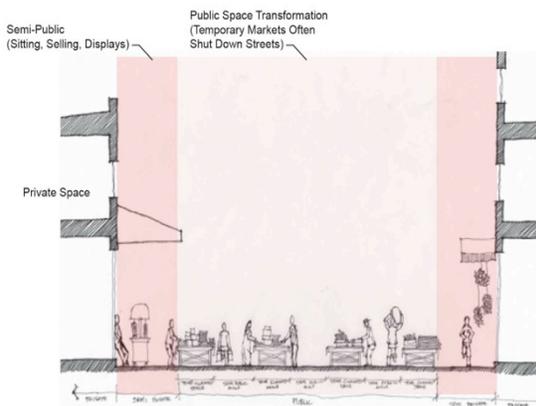
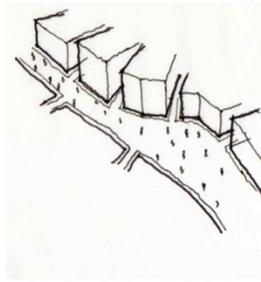


Figure 38 | Modern Cairo Street Studies
Source: Author

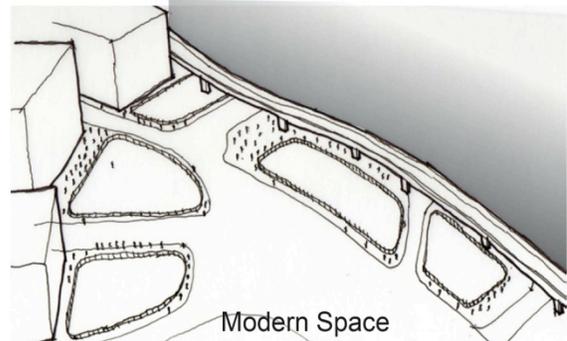
Defined Edge, Vibrant Pedestrian Space



Open, Undefined, Unfriendly



Historic Street Space



Modern Space

Figure 40 | Cairo Public Space Comparisons – Small and Large
Source: Author

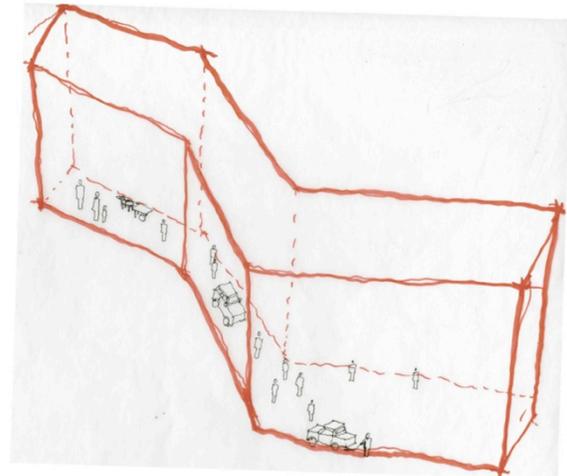
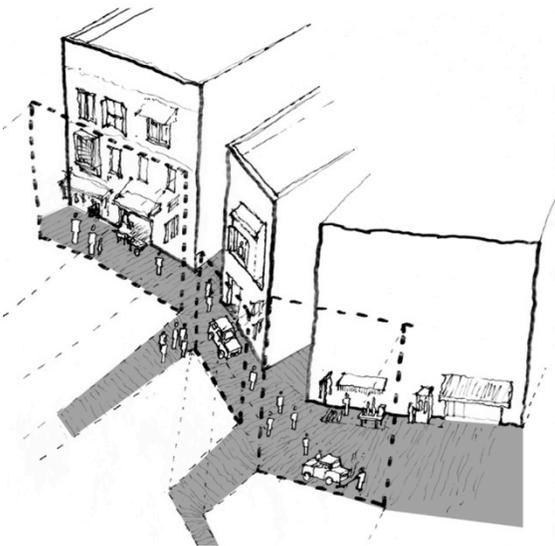


Figure 41 | Street as Space Diagram
Source: Author

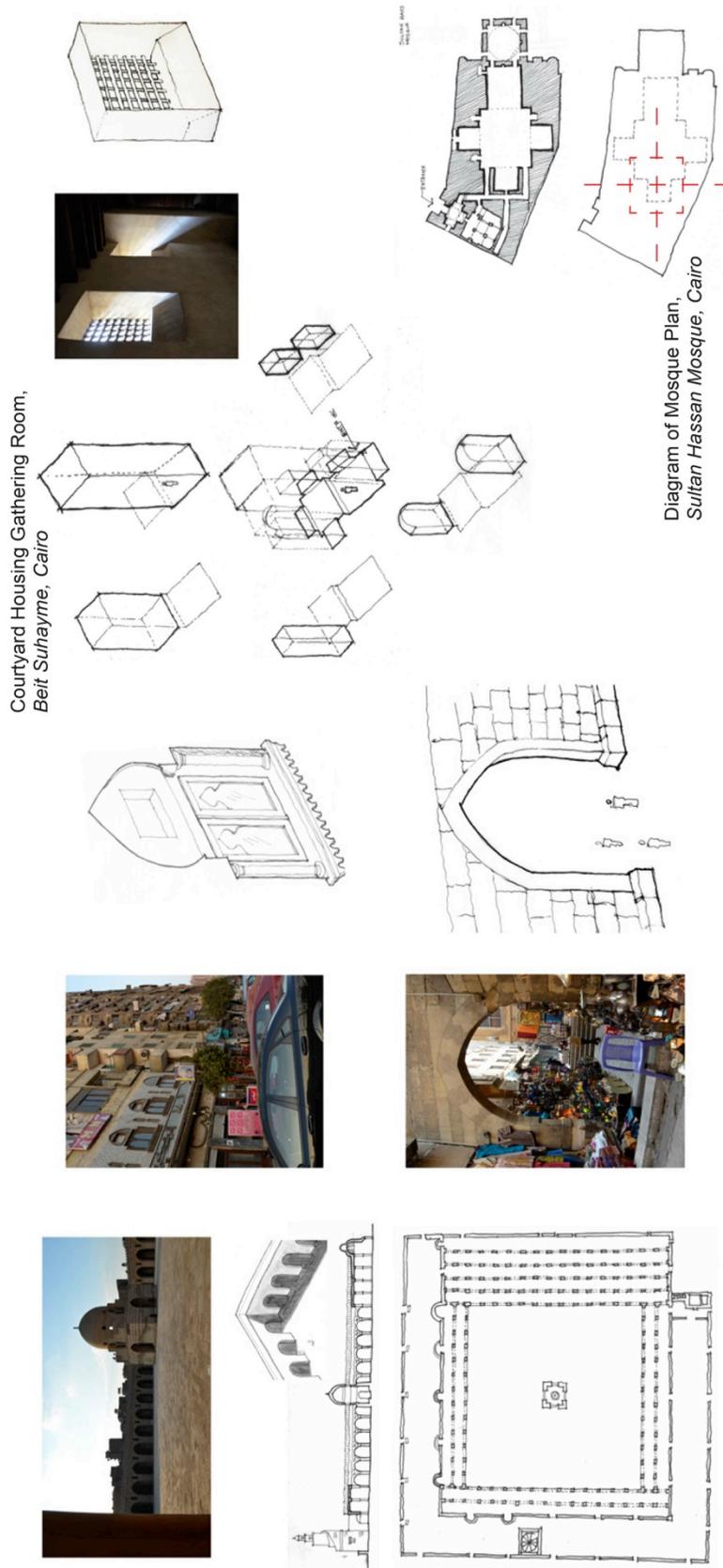
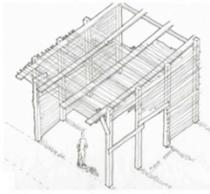
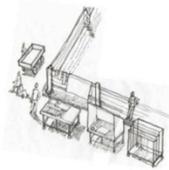


Figure 42 | Cairene Kit of Part Analysis
Source: Author



Informally Constructed Markets in areas Between Historic and Haussmann Downtown City



Movable Markets in the Haussmann Downtown City

Figure 43 | Cairene Vender Typologies
Source: Author

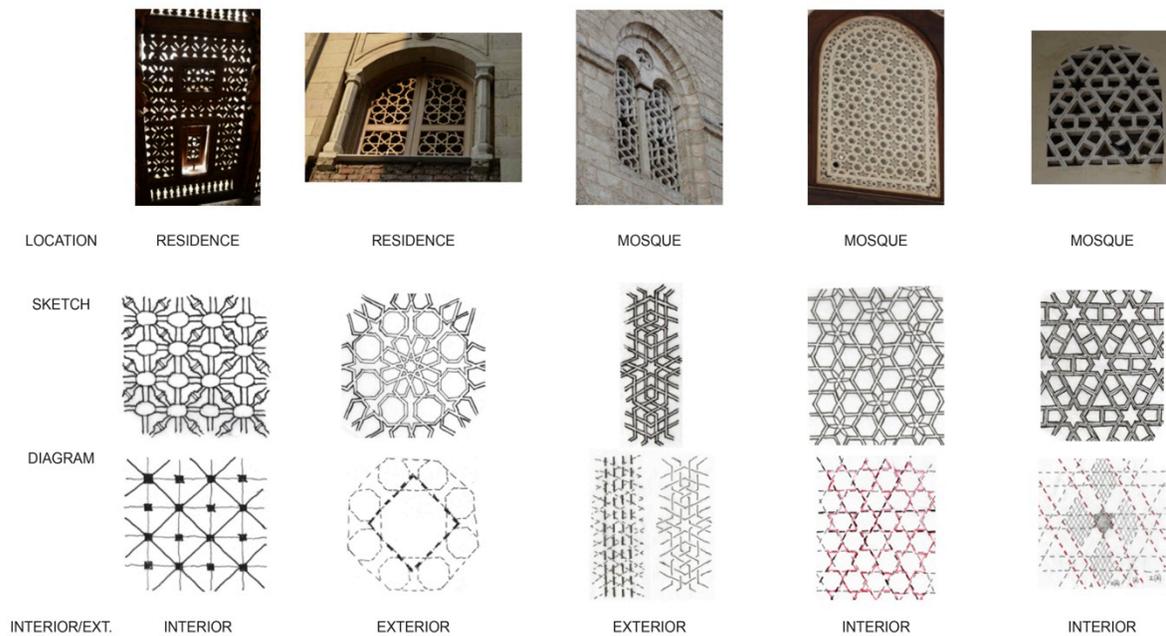


Figure 44 | Arabesque Pattern Studies

At various scales, I studied the various entities of the city. Mosque typologies as a form of public space, vender existences, and the arabesque patterning of the city. What I studied most was the way buildings formed and captured space and the way people interacted within that space.

The mosque is the most understood form of public space, a safe space. The scale and form of the mosque as a public space was an underlying feature I sought to transform and use in the creation of a civic center for Cairo. This civic center would allow a canvas for the people to deliberate, discuss, and express their ambitions for the city and their communities.

THE THESIS

Through site analysis and field surveys in Cairo during the winter term, I decided to develop the site connecting Ibn Tulun Mosque to the downtown modern center of Cairo. The site is ripe for development and in an area of Cairo that was infill that took place organically after the 19th Century Haussmann addition was planned next to the Historic City. This area adds no positively contributing features to the region with housing that is either abandoned or dilapidated. In this site, I designed a public-based civic center that would allow for the community to grow, revitalize and reinvest in it's city.

Neoplasm

(medical definition) an abnormal growth that continues to grow even after initial stimuli ceases

"Neoplastic intervention" is the concept that by placing a somewhat foreign architectural "growth" to a target area, it can catalyze revitalization to the immediate surroundings over time.

Top Down Master Plan vs. Surgical Intervention

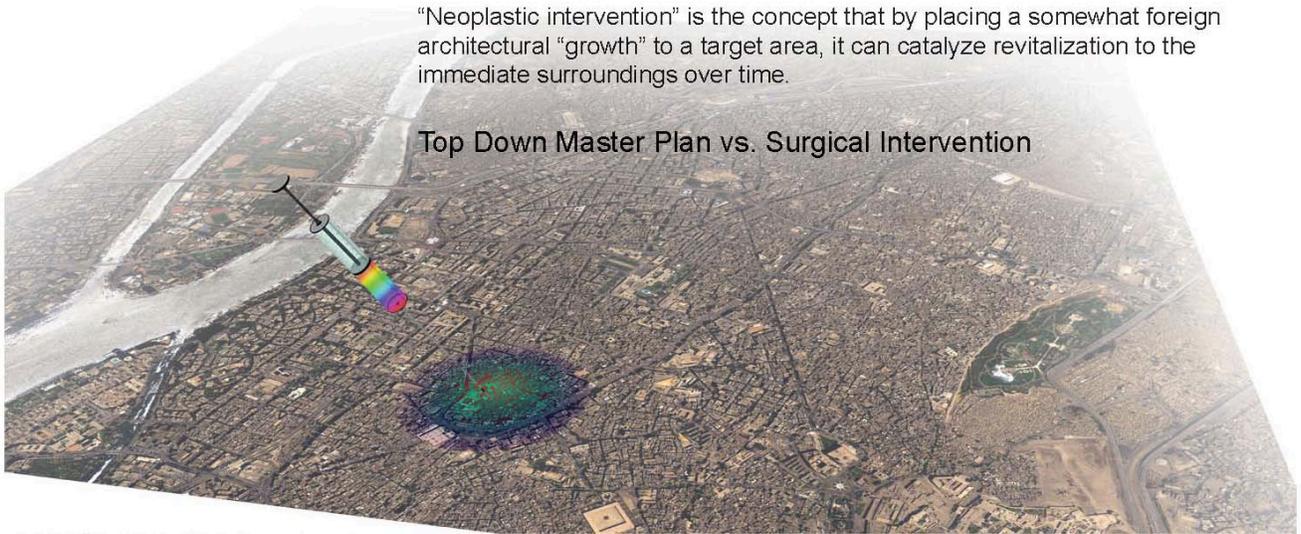


Figure 45 | Diagram of the Urban Strategy of Neoplastic Intervention
Source: Author

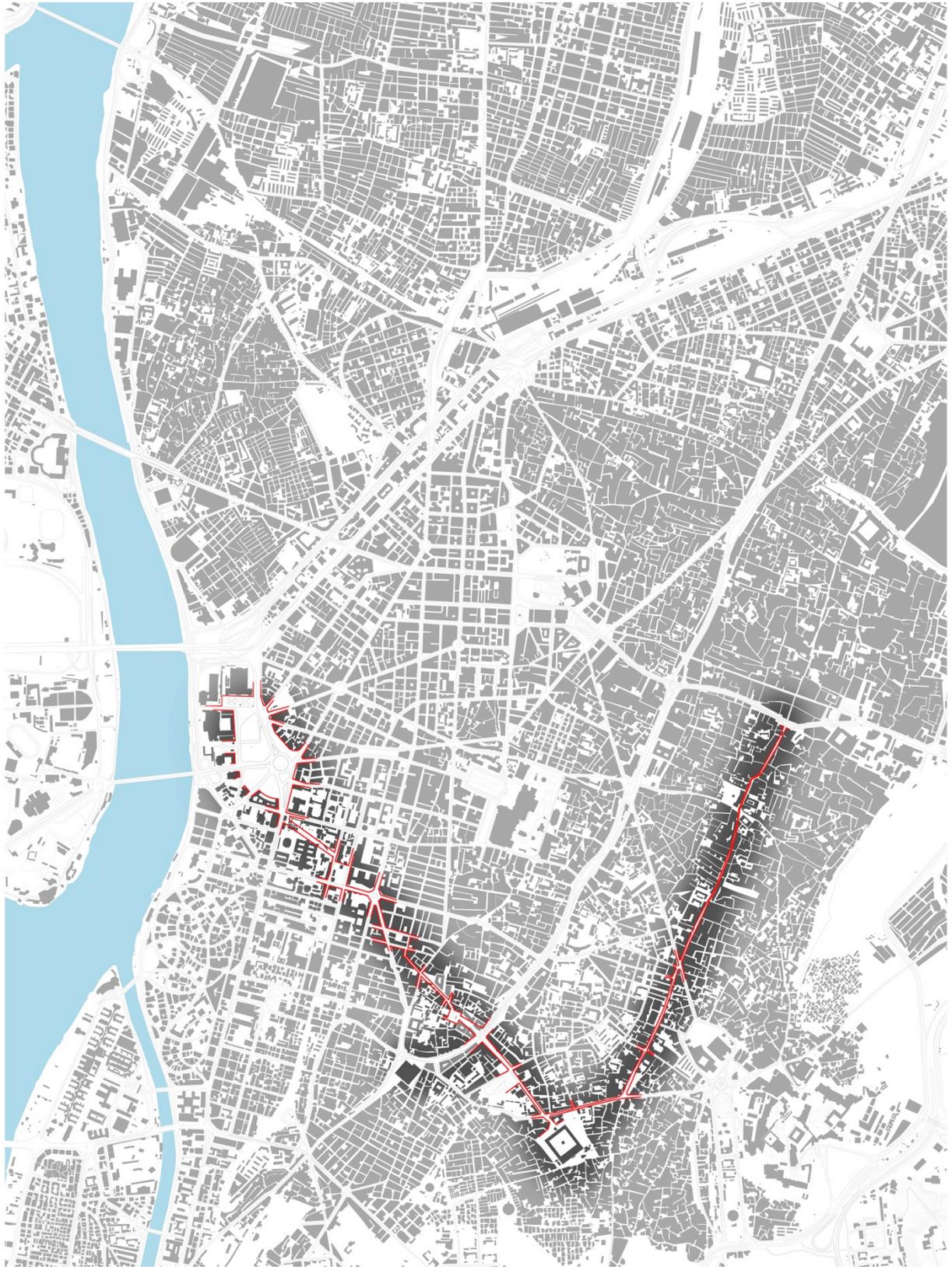
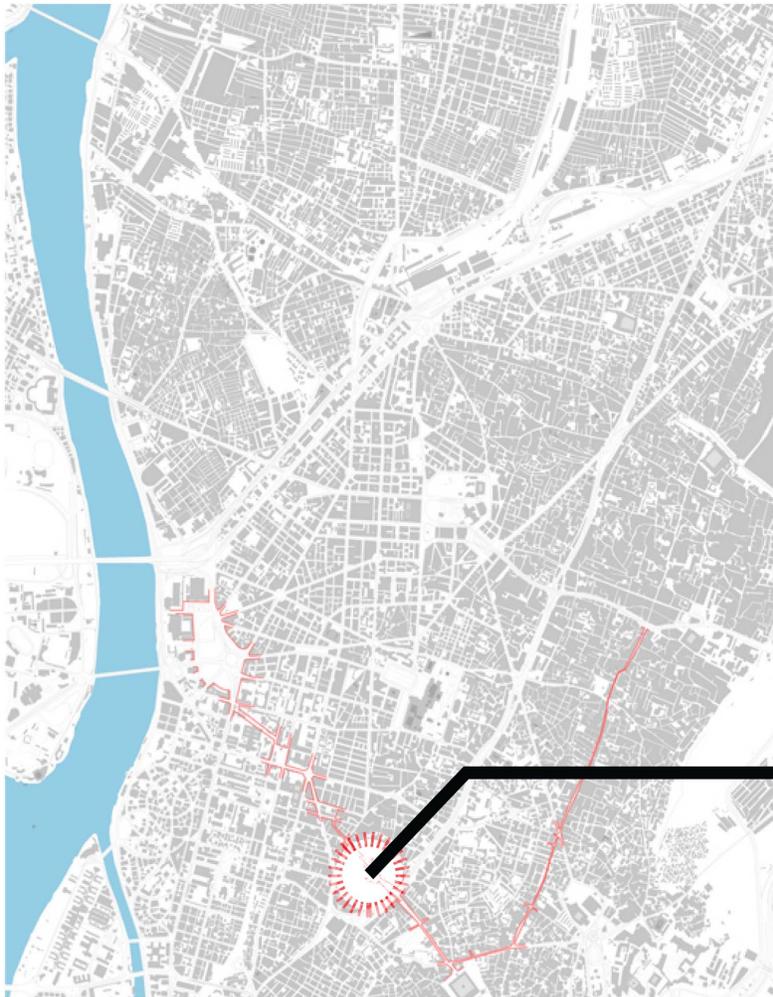


Figure 46 | Urban Porosity/ Connection Design Intent
Source: Author



Site Location

Figure 47 | Site Proper Along Urban Route
Source: Author



Figure 48 | Existing Site Conditions
Source: Author



1



3



2



4

Figure 49 | Existing Site Imagery
Source: Author



Figure 50 | Site Area of Demolition
Source: Author

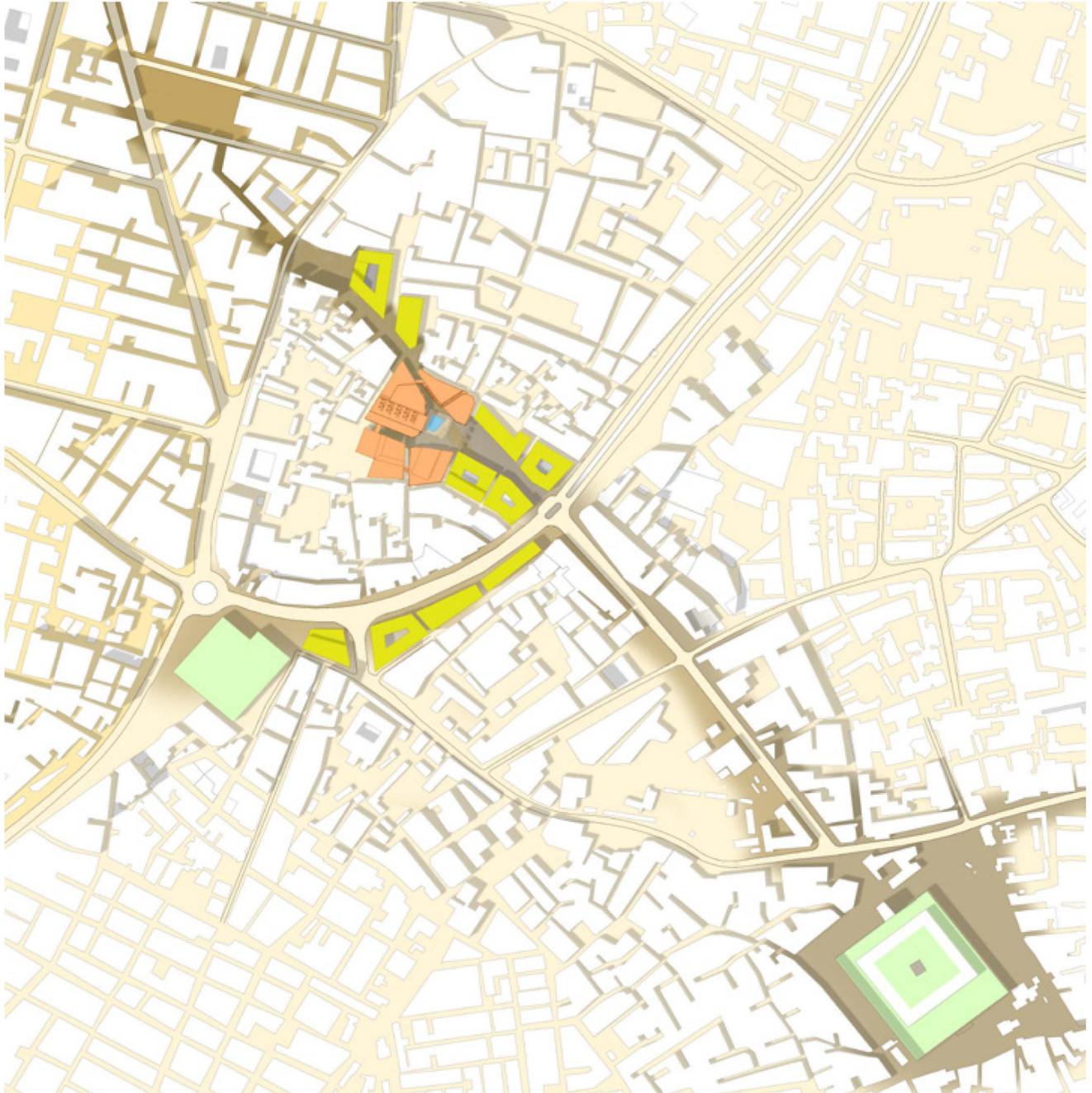


Figure 51 | Rendered Roof Plan

Affordable housing would line the existing street networks and nest the new civic complex in it's context.

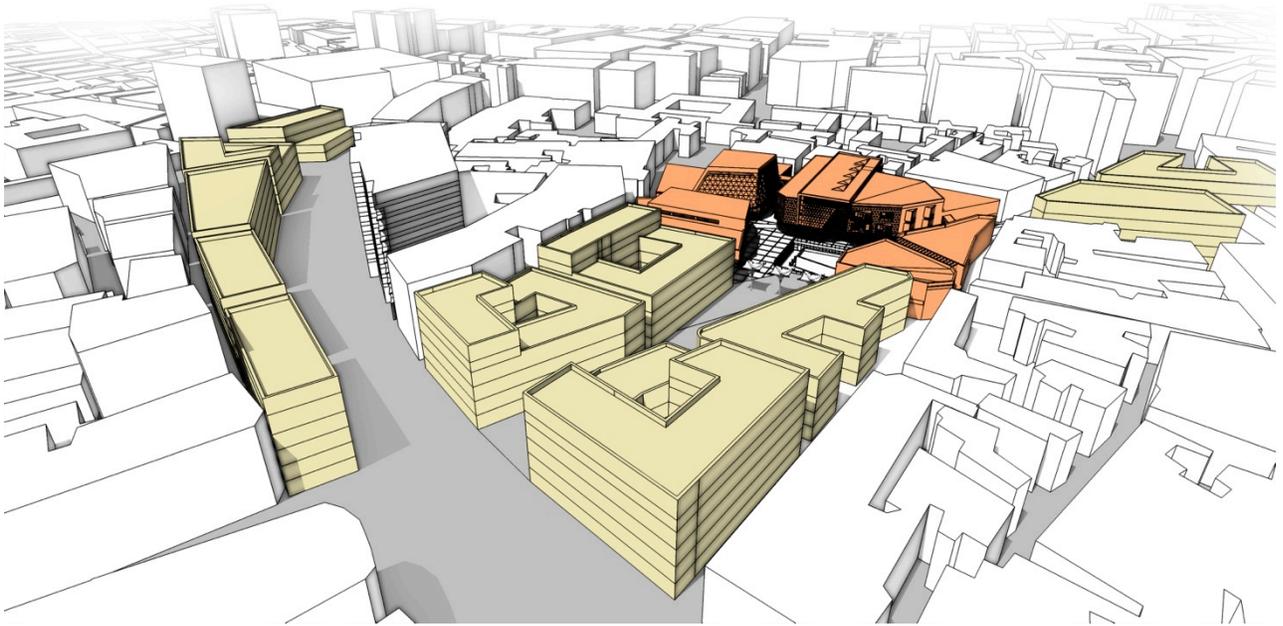


Figure 53 | Proposed Affordable Housing and Building Intervention Bird's Eye View
Source: Author

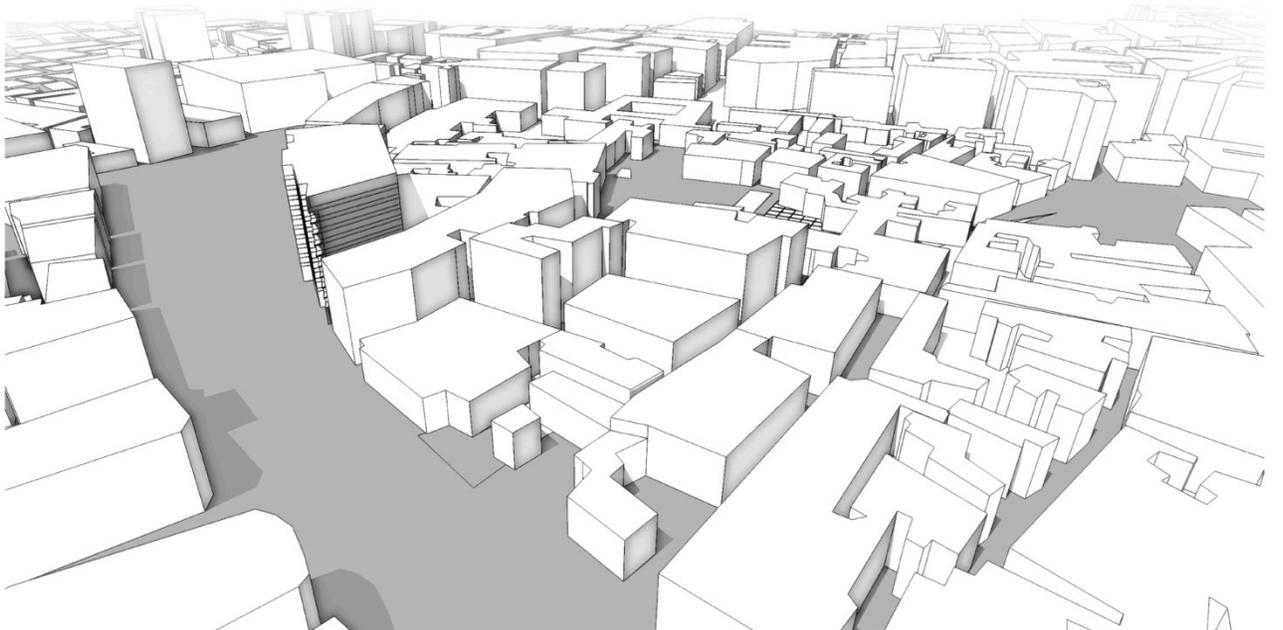
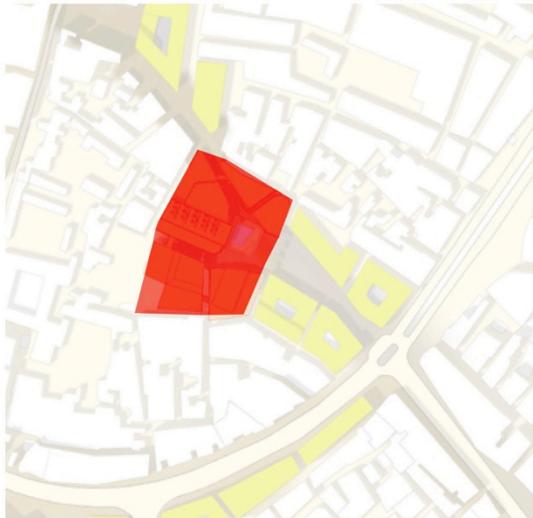
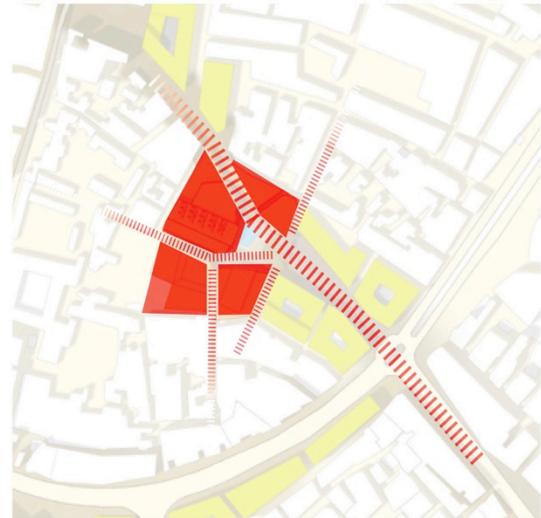


Figure 52 | Existing Conditions Bird's Eye View
Source: Author



Building Area

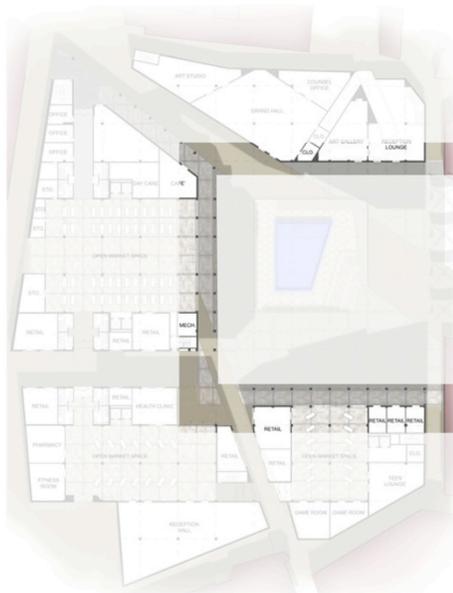


Existing Grid & Proposed Passage
Carve the Building Form

Figure 54 | Building Carved by Existing Street Grid Diagram
Source: Author



Figure 55 | Nolli Plan of Building in Context
Source: Author



Ground Floor Plan

Traditionally, public space is an enclosed experience, usually provided by the walls of a mosque. By adapting the mosque to serve as the form-creating driver for my public space, I transform a contextual typology.

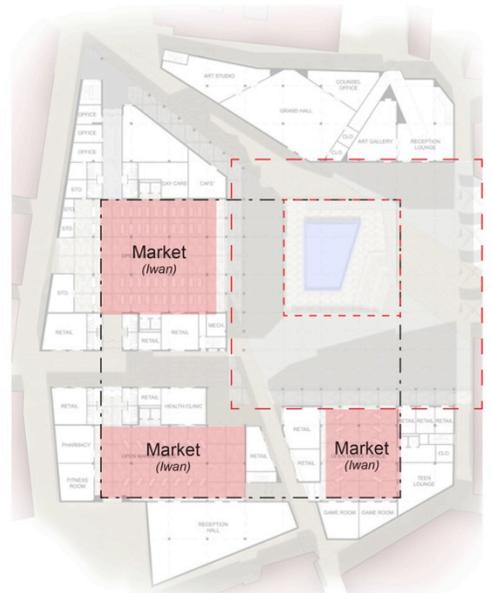


Figure 56 | Ground Floor Mosque Adaptation and Iwan Transformation
Source: Author

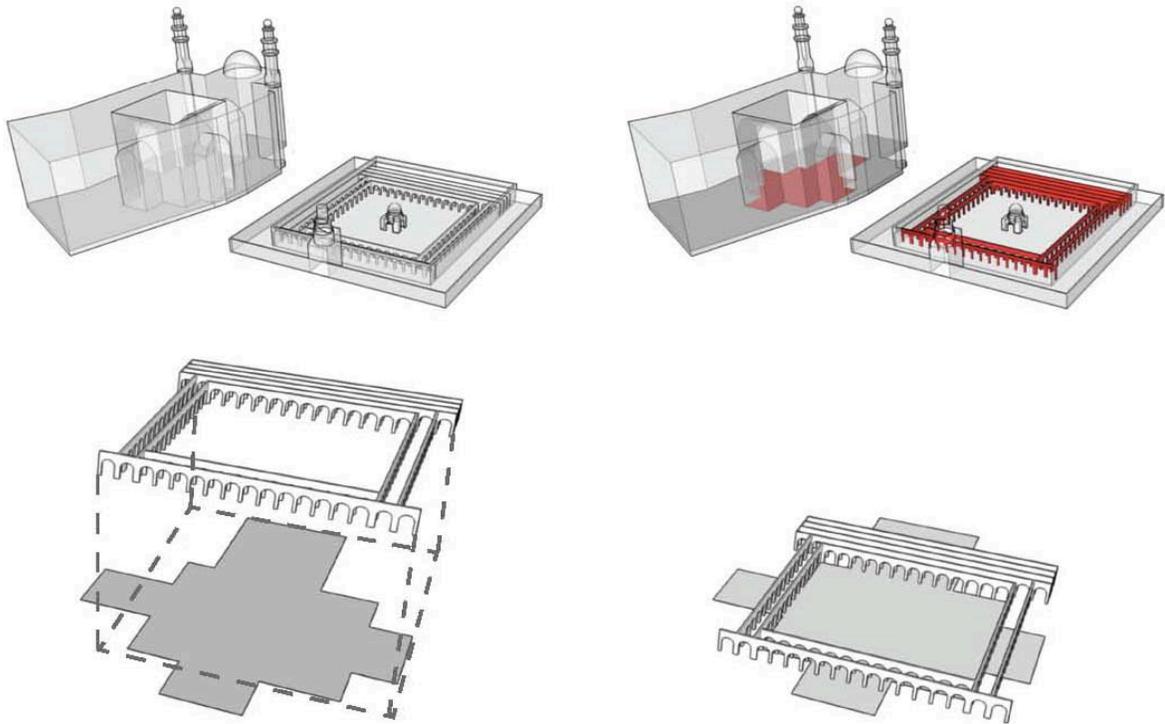
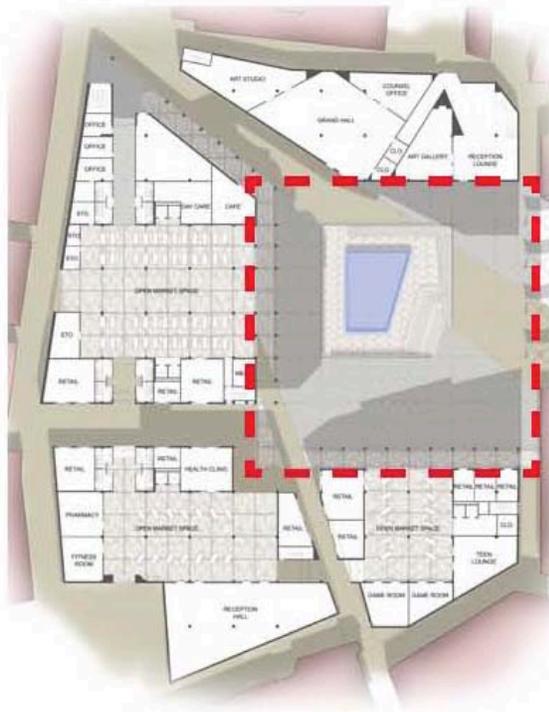


Figure 57 | Sultan Hassan and Ibn Tulun Forms and Hybridization
Source: Author



Ground Floor Plan



Second Floor Plan

Figure 59 | Ground Floor Form and Upper Floor Form
Source: Author

The buildings serve to protect, shade, and embrace the public realm of the space.

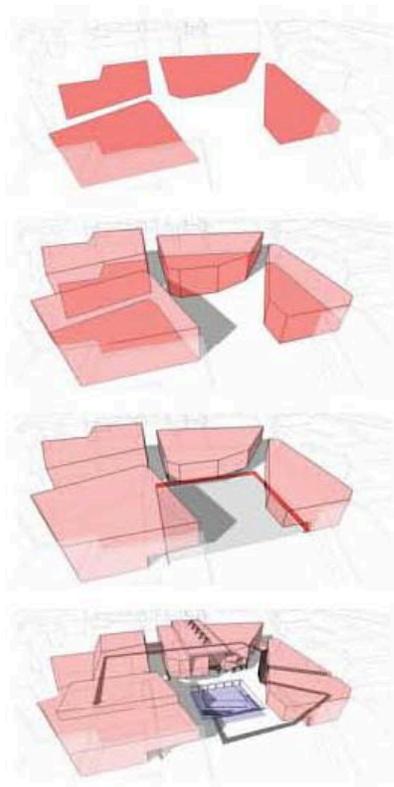


Figure 58 | Building Massing, Carved Route and Ground Floor
Source: Author

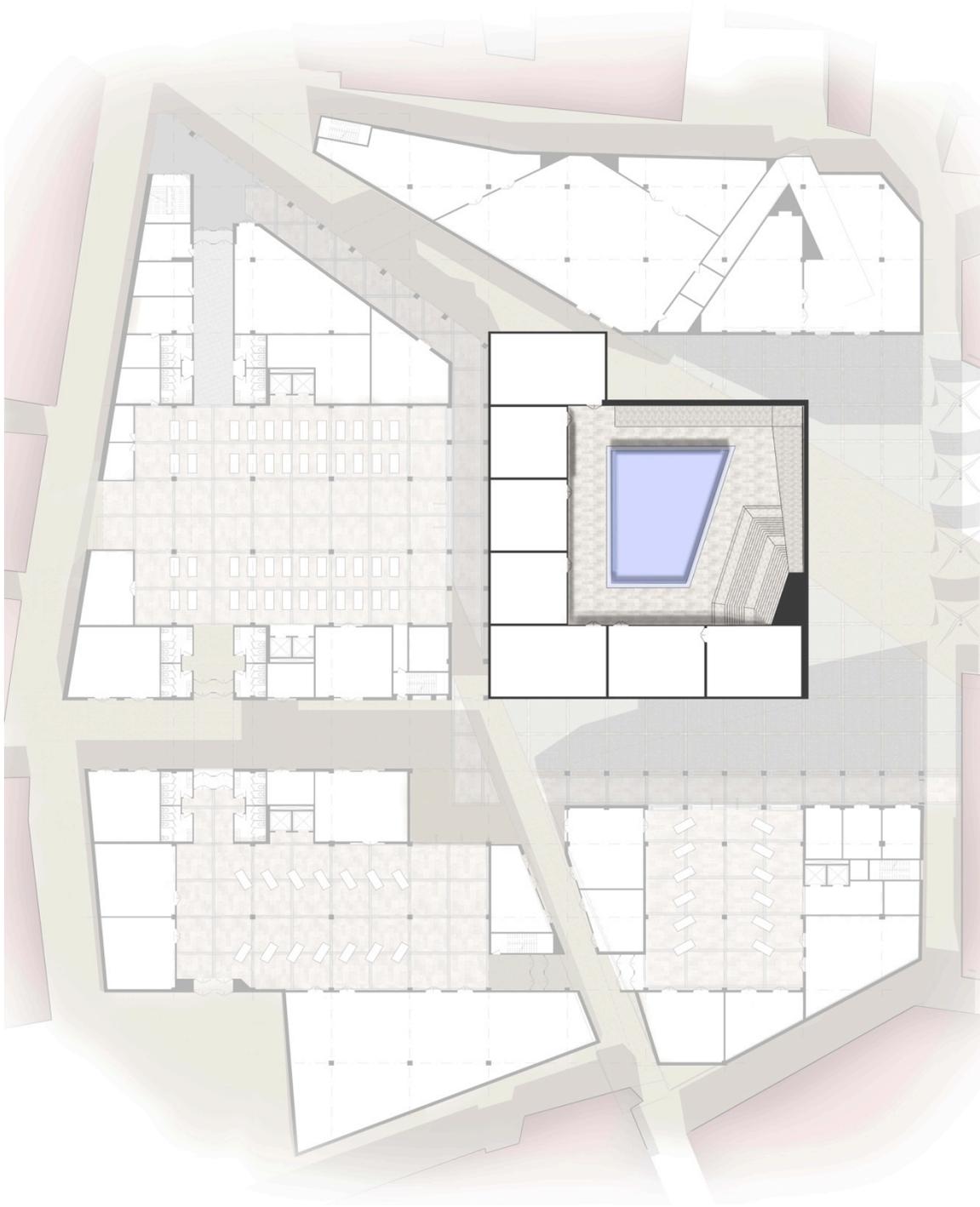


Figure 60 | Courtyard Floor Plan
Author: Source

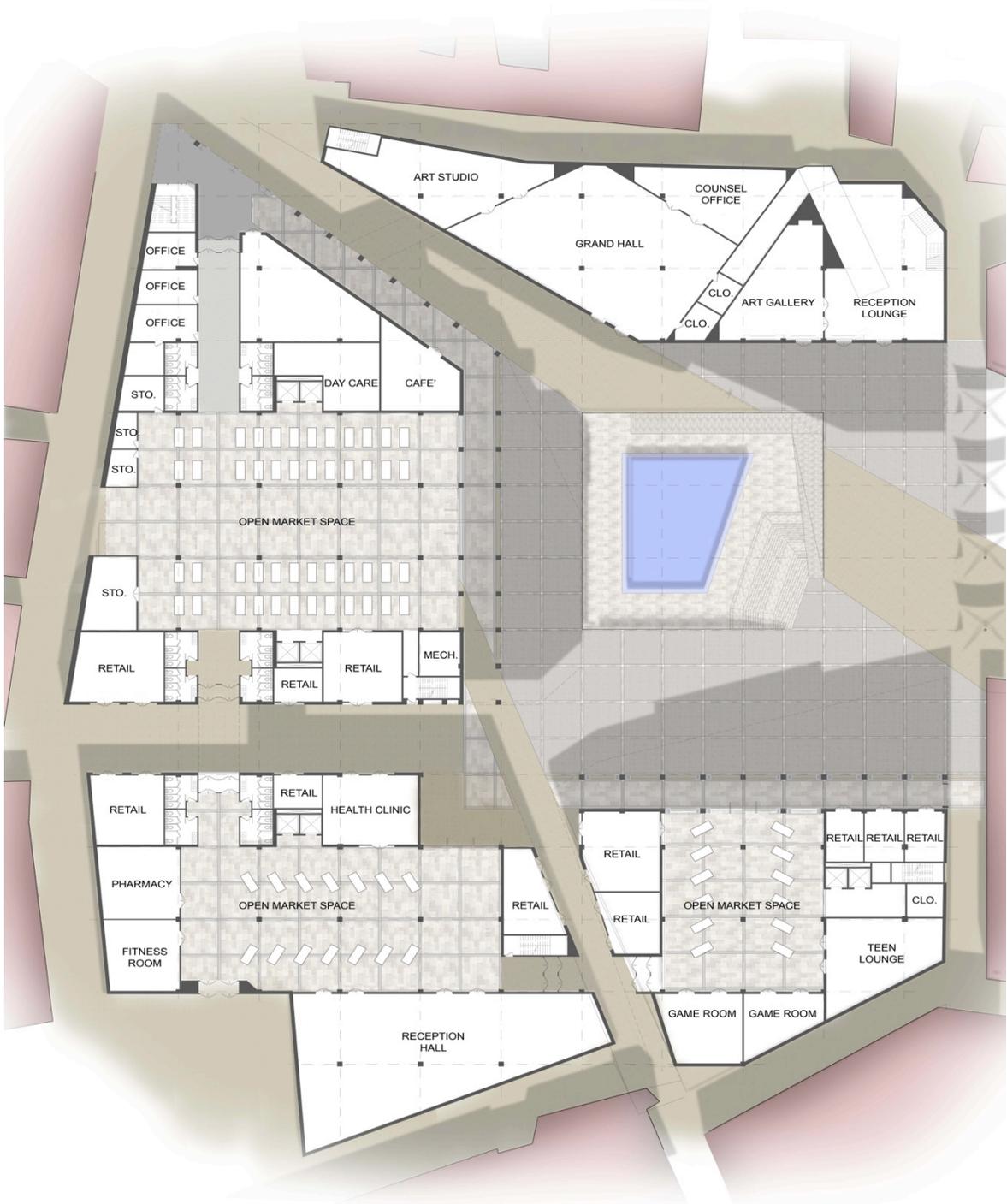


Figure 61 | Ground Floor Plan
 Source: Author



Figure 62 | Second Floor Plan
 Source: Author

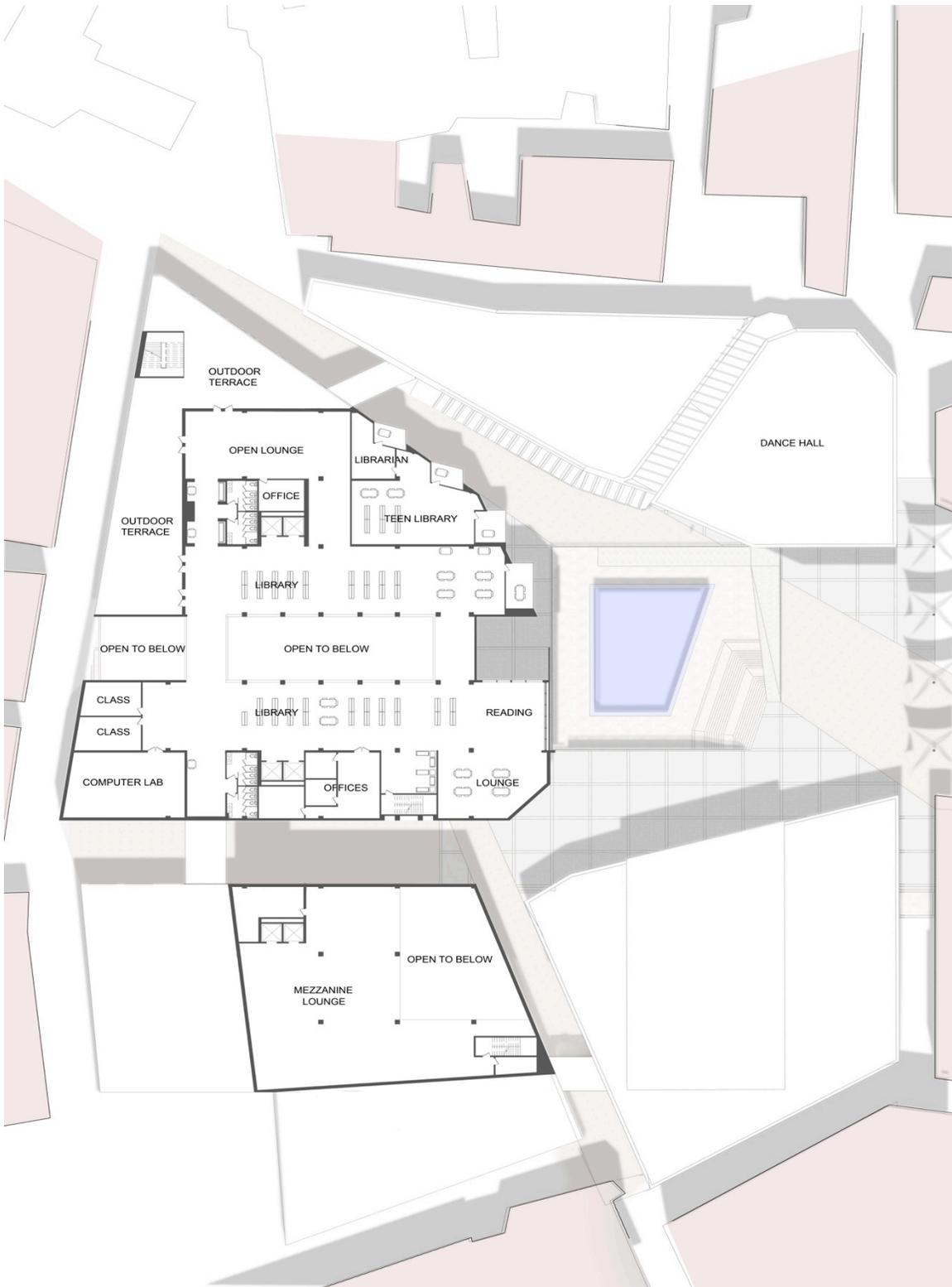


Figure 63 | Third Floor Plan
Source: Author

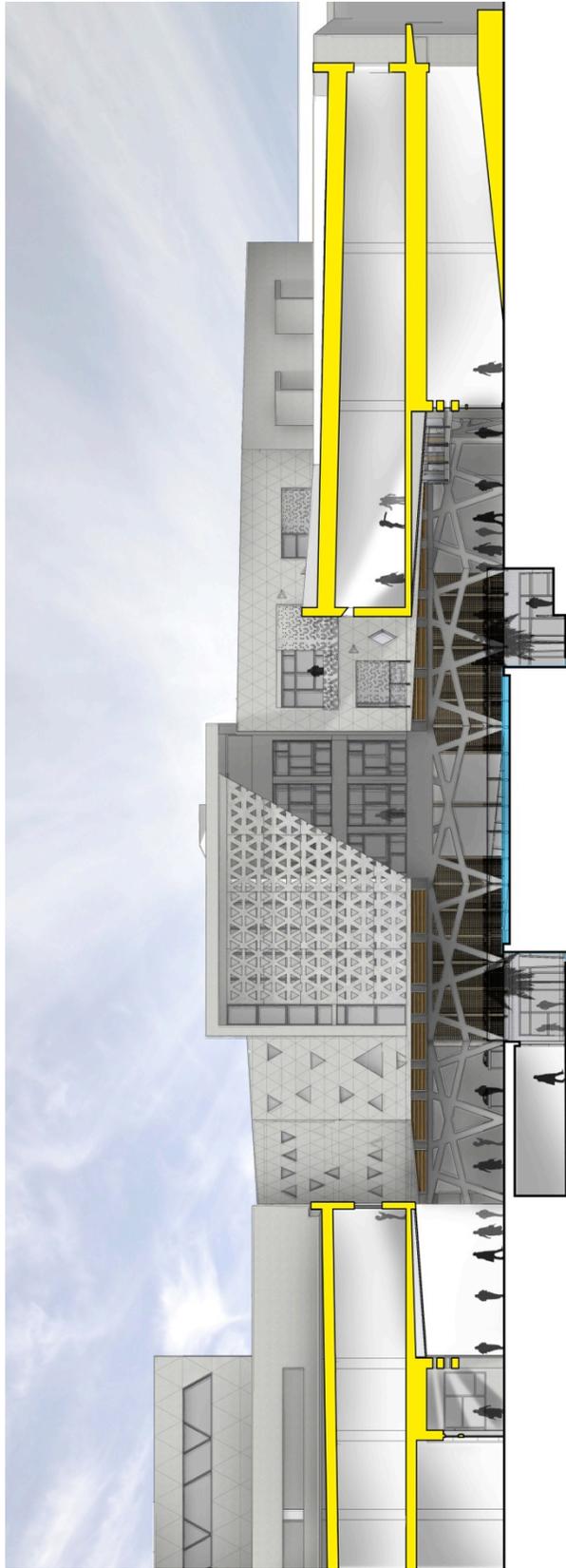


Figure 64 | Courtyard & Building Section
Source: Author

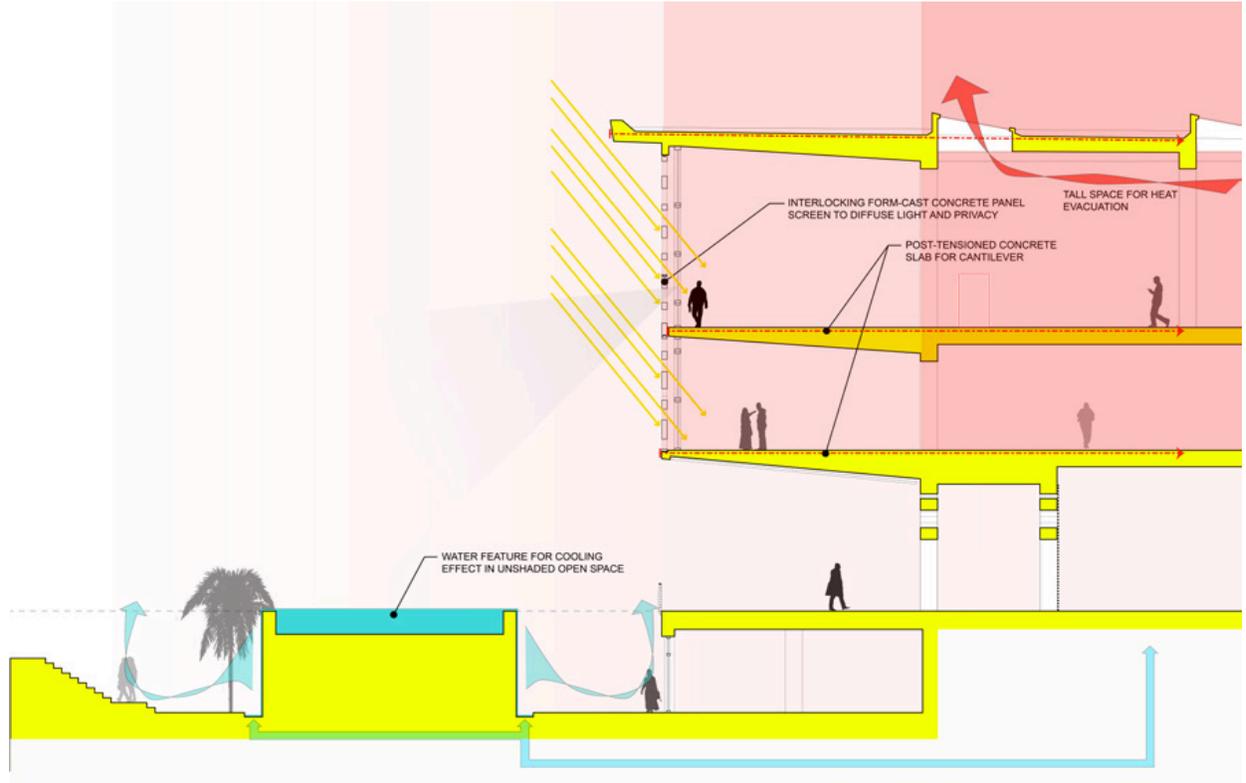


Figure 65 | Building and Square Section
Source: Author

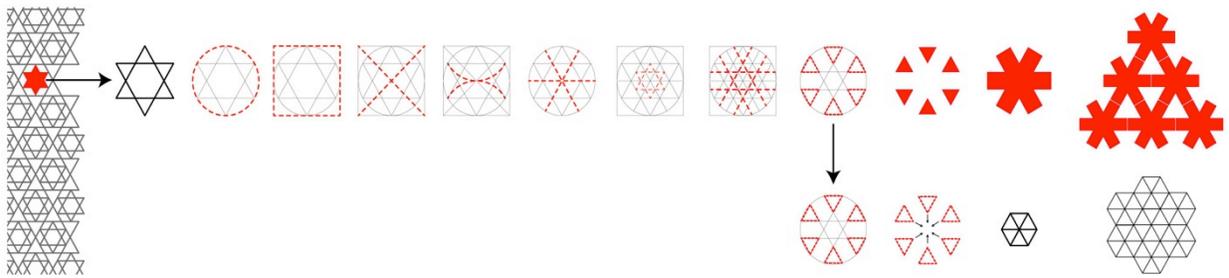


Figure 66 | Arabesque Pattern Analysis & Transformation for Facade Patterning
Source: Author



Figure 67 | Aerial Perspective of the Civic Complex
Source: Author



Figure 68 | Entrance Perspective into the Civic Complex
Source: Author



Figure 69 | Entrance to Square from Northern Approach
Source: Author



Figure 70 | Colonnade Between Market and Square
Source: Author



Figure 71 | Entrance From Side Cairo Street
Source: Author



Figure 72 | Entrance From Side Cairo Street
Source: Author



Figure 73 | Sunken Courtyard Experience
Source: Author



Figure 75 | In Iwan Market Space
Source: Author



Figure 74 | Inside Library Space
Source: Author



Figure 76 | Experience Within the Square
Source: Author



Figure 77 | The Part Affects the System that is The City of Cairo
Source: Author

_ REFLECTIONS & CONCLUSIONS

Through this thesis exploration, I sought to demonstrate a paradigm of urban revitalization that could be utilized in a dense, historic region in Cairo. Cairo is on a course towards change and as these changes occur, the city should evolve with it. Cairo is a city frozen in time. To propel the city forward, giving the city back to it's people will ultimately provide an environment that will enable growth. This thesis sought to accommodate the needs of the community and provide public services in one locale that would ignite social interaction and political discourse on a scale that has never been accomplished in Cairo. Through architecture and surgical interventions, the system that is the city can be altered and shift the direction of development for generations to come. Much like how I sought to transform the islamic/arabesque pattern system on the smallest scale to create a modern pattern for facades, the city can respond in the same way. The part of the city can be transformed to affect the whole.

Glossary

ashwa'eyat – Informal Cairo

al-ijbar al-dhati – Forced Self Reliance

Ibn Tulun – A Mosque of Ahmad Ibn Tulun, the oldest mosque in the city built in 876. The largest and oldest mosque in Cairo. Quintessential example of a Cairene Mosque typology.

Iwan – A space within a Madrasa, or place for learning, opening off of the center courtyard.

Neoplastic Intervention – based on the medical term of *neoplasm* (which is an abnormal growth that continues to grow and evolve after the initial stimuli ceases), is a term I use to describe the architectural intervention of urban intervention to revitalize a district, an intervention that continues to spawn regional renewal beyond the initial intervention.

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