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THE MAKING OF A PLACE
APPEAL TO AN ARCHITECTURAL ORDER

Thesis submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Architecture.

December 1999

Samson kebede
To my father, kebede Wolde Ghiorghis
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ABSTRACT

This thesis project stems from the need of an architectural order, which will understand the historical genesis of the site and also help convey a clear meaning of its transformation process. At the same time, an attempt will be made to explore traditional Ethiopian design motifs and bring them into a modern reality.
TRADITIONAL MOTIFS

The excavated structure shown in this page is the remaining of a palace compound built by the Axumite civilization who reigned in Ethiopia between 1 and 4 A.D. It was the one time in Ethiopian history where Ethiopians enjoyed peace and prosperity. It was also during this time that language, religion and architecture flourished.

Axumite culture assumed an architectural character of its own. Almost all Axumite structures were built for permanence. It is seen in the massive constructional aspect of the buildings which involved materials of permanence such as stone and marble. On the other hand the scale of the buildings was also significantly large.

Almost all structures show qualities of rigidity and rationality, mostly square in outline. In most instances plans are recessed or projecting.

As it is seen from the reconstructed plans, staircases, columns and walls were placed according to a geometric principle. Harmony is achieved through balance and symmetry. A vertical hierarchy was established to accommodate public spaces at the bottom and private spaces at the top of the structure.
Walls consisting of rubble and earth mortar are reinforced by horizontal timbers let into the inner and outer surface of the wall. Additional lateral support is provided by short round timbers penetrating the thickness of the wall and projecting both inside and outside. These short timbers are slotted below to anchor the walls with the longitudinal timbers.

Ceilings were primarily flat and sometimes divided into rectangular panels of different sizes. The most important rooms had a coffered ceiling. However, the Axumites never used vaults and for this reason their ceilings remained unstable.

Windows and doors are also integral parts of the structure. The square timbers projecting from door and window corners help also strengthen the wall. Beside their structural contributions the arrangement of the columns and beams create also a decorative pattern that defines the entrance through a dialogue of light and dark. Foundations have also their own character. In most of the cases they are built above the ground level and form a pedestal. Sides are not vertical but are slanted and rise as shallow steps. The stepped character of the Axumite foundation is still a recurrent motif applied in Churches built in the region.

The Axumites practiced mixed construction which combined wooden beams, framing and supports with monolithic stone pannels, columns, slabs and large-scale and medium sized polished marble blocks. Dressed stones were laid with an earthen grout. However Axumite buildings were not very stable due to a weak cementing solution.

This monolithic stelae shows all the characteristics of the Axumite Architecture discussed above. The stela is symbolic of a multistory tower that shows the ambition of the Axumites to build high and the limitation they were faced with.
MEMORY OF A VISIT

One thousand year latter, Axumite architectural motifs reappeared in a different context in the northern region of Ethiopia known as Lalibela. Around 12 A.D., twelve structures serving for religious purpose were entirely carved out of solid rocks. The most notable one, “Betta Ghiorgis” was carved at a latter time and has a more refined character relative to the other ones. One can experience a powerful drama of descent while heading toward the entrance of the Church, which is a narrow carved corridor that ends in a semi-dark tunnel. Coming to the end of the tunnel one finds himself at the foot of the structure towering up to the sky. This dramatic outside/inside transition is accentuated by highlights and shadows displayed on the ascending stairs leading to the interior of the Church. Previous motifs were applied to all the Rocky Churches but only as a symbolic act. The construction of these monolithic structures involved only their excavation from the solid stone.
This urban design competition prepared by Mario Botta for a new layout for Biocca area in Milan Italy shows the complexities involved in a large project. Botta’s design approach for this specific case, consisted of seizing the opportunity to qualitatively transform the entire section of the city by creating intensity and multiplicity in conjunction with the already existing urban fabric. Particular attention was given to traffic congestion problems that the scale of the project can create at rush hours. On the other hand the after hour condition that will leave the city deserted and the perpetuation of the frontal separation from the surrounding residential districts were among the major concerns for the design. Botta’s response to this condition was to create a mixtures of function that comprises structures for work and recreation on the lower floors and residences above. By organizing these functions into vertical strata, a new order of relationship is established between parts while their autonomy is preserved.
In their attempt to design a new management center in Perugia Italy, Architects Mario Botta and Luigi Snozzi were faced with the duality of a fragmented older fabric on one side of the site and a developed area of recent buildings and a railroad network on the other. In opposition to the fragmented nature of the town, the architects proposed a large linear structure that addresses the complexity of the site by integrating elements of the old fabric inside the building. They also created an internal corridor that includes a transportation network. The corridor opens up to the new part of the city through the massive linear walls that contain the new administrative offices.

While working in this new urban scheme for the Vallee-du Fion in Lausanne Switzerland, Mario Botta was faced with a site that had an already established character: a network of industrial and commercial activities on one side and a large open space with a stream running through the middle on the other. Botta tackled the complexity of the site by establishing a system of vertical hierarchy. Office and commercial buildings were accommodated in the lower portion of the building facing toward the lake, while residential units occupy the upper levels. An internal pedestrian route follows the linear pattern of the building and facilitates circulation to different parts of the building.
HISTORICAL GENESIS OF THE SITE

The history of the site coincides with the birth of Addis Ababa, the capital city of the East African state of Ethiopia. It was in 1886 after his return from a victorious battle over the invading Italian troops that King Menelik the second of Ethiopia decided to make Addis the seat of his government. Beside its abundance in trees and its various hot springs, Addis is the geographic center of Ethiopia.

The first footprint of the city was the palace compound built by King Menelik. From the elevated ground of the site, one can get the best panoramic view of the farthest mountains spreading tens of kilometers away and the city in its entirety.

When the first blueprint for the city was drafted by the king’s wife, Empress Taitu, the major concern was to accommodate the returning soldiers at a close proximity from the palace compound. The site of the project was awarded to war accomplices who demonstrated heroic deeds.
The fate of the site changed as different urban design schemes were drafted for the city. In 1936 when the first zoning scheme was prepared by The Fascist Italian regime who occupied the city for five years, the site was labeled as a commercial district. In the years to follow a more refined master plan was devised by Architects Ignazio Guidi and Cesare Valle. The master plan revealed a radial development of the city making the palace as its focal point.

In the same year le Corbusier prepared a thematic sketch revealing his intentions for the city. Four major axises were defined towards the cardinal points as major road networks linking the capital to the provinces. Due to its close proximity to the palace, le Corbusier’s scheme treated the site as a transportation center. However Le Corbusier’s proposal was purely thematic due to a lack of proper regional documentation which didn’t exist at the time.
As time went by, other planning schemes were designed for the city by foreign as well as local planners and architects. In the latter schemes, emphasis was given to the development of the rapidly growing central business district and along the centrally located main road of the city. The historical importance of the site along the palace was overshadowed by a high density urban sprawl consisting mostly of substandard dwellings. At the present moment what is visible from the lower part of the city is a strong contrast between the high ground of the palace surrounded by large trees and the dense and disorderly urban setting that surrounds it.
Among African states, Ethiopia and Liberia are the only ones who safeguarded their independence during the European colonization era. Even though a major urban scheme was devised during the occupation of the country by Fascist Italy in 1936, very little was implemented when the country regained its independence five years later. For this reason Addis Ababa kept an indigenous flavor where one can find public and private functions meshed together in most areas of the city.

The zonning of Addis Ababa was prepared accordingly to reserve the indigenous culture of the city.
In the zonning, the site is labelled for government use. Adjacent to it is a strict residential zone involving substandard housing. Lately large commercial buildings were built at a close proximity to the site. At the present moment the fate of the site is jeopardized by the recent developments that are contrary to the historical nature of the site.
THE PROGRAM

The program of this theses project primarily focuses in an office structure, housing State Senators coming from the different regions of Ethiopia to the capital city Addis Ababa. The Senators will remain in the capital city until their election time expires. Given the fact that the city is experiencing a tremendous shortage of housing and the ones available being located outside the core of the city, the program incorporates living quarters in conjunction with the offices. A large auditorium, shopping and recreational areas, community rooms and limited parking are also an integral part of the program.
THE PROJECT

THE BEGINNING

In the search for a rational start for the project it was necessary to look at the forces of the site at different scales. One of the component of the site was the long narrow curved road surrounding the palace compound. By finding the center of this curve and extending it to the major axis of the city in a perpendicular manner, it was possible to determine the axis of symmetry for the project. Doing so not only helped define the orientation and scale of the project in order to relate it to other large structures that are parallel to the principal axis of the capital city but also created a triangular connection to other major urban nodes.

The major axis of Addis is a six lane highway which culminates on each of its side with major urban nodes. The city hall on the north bound and the main train terminal linking the capital with other regions on the south constitutes the two ends of the main road of Addis. All along the main road are spread major public buildings such as the main post office and the general hospital building which are close in scale to the project.
Once the line of symmetry was established a geometric trace was put in place to locate the space defining elements such as the major walls, columns and the floor elements. This geometric trace not only helped control the overall design of the building but also helped to make rational design decisions as opposed to arbitrary ones.

**ORGANIZATION OF SPACE**

The intent of this plan is to show the repartition of the service space as one moves from the ground up. The residential plans are only represented by grid lines to avoid the confusion. The spaces are organized along a corridor that brings an impression of an urban street inside the building. When moving from one end of the building to the other one has to experience enclosed, semi-enclosed and open spaces. This organized journey is accentuated by light shining from the glazed roof openings. The building is adapted to the topography of the site in a manner that transitions from one sector of the building to the other are accentuated with differences in level that add dramatic effects of descents or ascents.
The office spaces of the first level of the building are more public in nature than the other three. They are mainly used by elected officials to interact with visitors from their respective provinces. These offices are also facing a public corridor that extends all along the front facade of the building.
The organization of the office spaces at the second level is more private in nature and is intended to accommodate auditors, accountants, planners and their clerical aides.
The nature of the spaces of the third level is private. Each official has a private office and a balcony, since they are direct aides to the senators.

The fourth level is the culmination of the vertical spatial hierarchy established for the building and is a totally private space for the senators. The fourth level has a large office space with a private conference room and a balcony. It is also connected to the roof top plaza on the residential side. From the partially glazed roof, light travels all the way to the first level through the centrally located openings.
THE VIEW/DIALOGUE

The stepped character and the dual nature of the building are the result of the existing dialogue between the palace situated at the higher ground and the residences at the lower end of the site. In an attempt to save the view of the city from the palace, the building was restricted to a medium rise building.

The stepped character of the building opened up the possibilities of using the rooftop of the residential side for outdoor activities. The service corridor in the middle part is where the duality between private and public looses its intensity since both are served by this space.
THE TREASHOLD

The entrance to the building slopes down gently and away from the street level. Thus the in-between space is used for circulation, open terraces and green areas and kept away from the pedestrian and vehicular interference at the street level. This descent also creates a detour from the main street and gives the general public the opportunity to be part of the building without interfering with the office activity.

The public corridor extending from the entrance level and going around the perimeter of the office side of the building culminates on the rooftop of the restaurant at the south end. From here on can have the most panoramic view of the city.
VERTICAL CIRCULATION
To reinforce the vertical spatial hierarchy imposed, and to facilitate vertical inter-office communications each province has its own individual stairs. Beside their representational values the stairs can facilitate a quick exit in case of fire emergency.
THE WATER CASCADE

When King Menelik Decided to make Addis the Capital City, he was influenced by the availability of hot springs in close proximity to the site. This project incorporates a waterfall cascade in conjunction with a large seating area overlooking the city.
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