

Second Home

by

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Abstract

This thesis proposes the design of a socially-driven building and public space located in a suburban neighborhood in Chihuahua, Chihuahua, Mexico. The goal of the project is to provide an environment that assists in the prevention of children entering the world of drug-related violence by encouraging the creation of good holding environments within the community. This element is currently missing from the community as these suburban developments were initially conceived as supporting infrastructure to the newly established light industry factories, colloquially referred to as *maquiladoras*. This in turn was part of a larger strategy by the government to reactivate the economy and employment in the 1960's and 1970's.

These neighborhoods have been home to rising levels of violence and crime over the last two decades. This affirmed historical patterns that saw the working class relegated to the outer-limits of the city, acting as spectators in the process of its evolution and facing difficult conditions, while maintaining minimum-wage jobs in order to support their houses.

The incidence of violence in these neighborhoods does not relate directly to conditions of poverty, but to the lack of institutions that can assist in the healthy development of children, a situation that local gangs easily take advantage of as these low-scale criminal organizations are usually a stepping stone into the world of drug-related violence. Drug cartels have increasingly begun to recruit children in order to restore losses suffered by the war against drugs that the Mexican government implemented in 2006.

The final design reflects the complex nature of the problem, and is informed by both the local history and development of the current situation as well as choices of materials, proper distribution of space, and sustainable strategies required by the geographic region in which it is located.

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Introduction

Chapter 1

It is the intention of this thesis to introduce the reader to the situation that the Mexican city of Chihuahua is currently facing regarding the vulnerability of children and teenagers to be absorbed into criminal activities related to the illegal drug trade. As well, it brings attention to the role of urban growth adopted by the government in amplifying social problems.

For the past 41 years, the urban sprawl experienced by the city of Chihuahua has had its foundations in the model of mass-produced housing and neighborhoods. It is estimated that 95% of the houses built in the city were developed by construction companies, a figure that includes affordable and middle income housing, as well as high-end developments.

In the last three years alone, 45 new housing developments have been approved by the municipal government, resulting in 10,789 new single-family houses that occupy an area of 3,485,882.94 sqm, an alarming number if we consider the fact that there are currently 49,294 abandoned houses in the city.

With the arrival of the maquiladoras and industrial parks to the city in the decade of 1970, this model of urbanism, which privileged the creation of new residential developments and urban sub-centers in the outer-limits of the city, resulted in communities of social isolation. The development of light industry continued to grow throughout the years, and the urban fabric of Chihuahua continued to expand as well, effectively piercing the boundaries set by natural occurrences, such as mountains, rivers and streams. Additionally, and even though people were closer to their places of work, another problem arose; as these developments lacked access to infrastructure that would allow people to access their basic needs for education, health and recreation and when these needs were available they involved long commuting times.

As years went by and these needs became more apparent, the government instituted a set of regulations that prompted construction companies to meet certain requirements of green areas and recreational spaces, as well as areas destined for educational purposes within the limits of every residential development, but since these areas are treated as donations to the city,¹ and it is in fact the municipal government who is in charge of providing proper maintenance, these areas have remained largely undeveloped as of today.

At present, the municipal government continues to use this model of urban growth with 3 to 5 new residential developments set to be built every year. The issues concerning this approach started gaining notoriety in the decade of 2000, as the city began to experience highly unusual high crime rates,² but it was not until 2006 that Chihuahua reached a breaking point and the

¹According to local regulations, donations in this type of neighborhoods constitute 15% of the total sellable area, from which 33% should be destined for green areas and recreational spaces.

Source: Reglamento sobre fusión, subdivisión, relotificación y fraccionamiento de terrenos para el municipio de Chihuahua. Accessed November 11th, 2015. <http://www.ordenjuridico.gob.mx/Documentos/Estatal/Chihuahua/-Todos%20los%20Municipios/w050601.pdf>

²By comparing the number of violent deaths registered in Chihuahua, which escalated from 2,304 deaths in 2000 to 8,992 deaths in 2010.

Source: Defunciones accidentales y violentas ocurridas en la entidad por lugar donde ocurrió la lesión según sexo. Instituto Nacional de Estadística y Geografía. Accessed November 11th, 2015. <http://www.inegi.org.mx/est/contenidos/proyectos/registros/vitales/consulta.asp?c=11800#>

government declared war against drug cartels.

In turn, as the cartels started experiencing heavy losses, they began to turn their attention to these suburban neighborhoods.

Lacking parental figures, with TV shows and news depicting drug lords as heroes, young people saw the opportunity with local gangs to achieve the lifestyle of their role models. Starting from a very young age, children became entangled with criminal activities to a point where there is an estimate of more than 30,000 children associated with delinquent organizations nationwide. Since declaring war on drugs, the government has spent millions in the militarization of public security, while at the same time, there has been almost no investment in socially-driven strategies that might prevent children and teenagers from joining the world of drug-related violence.

This thesis takes the position that we as architects have the obligation to improve the quality of the people through built space and the current situation afflicting the city begs the following question:

Can architecture promote social change and the involvement of a community in the prevention of children entering the world of drug-related violence?

As it will be demonstrated in the case study analysis in Chapter 2, Architecture has the ability to assist in the creation and development of socially healthy communities, and in order to support these claims, a theoretical project based on critical design points derived from the research and the case study analysis is presented in Chapter 3.

As the purpose of the research presented in this document relies heavily in the correct interpretation of concepts and ideas according to the context in which the problem is established, a qualitative method of research was chosen. The project consists of a gathering place aimed at creating a holding environment for the neighbors of the Paseos del Camino Real neighborhood, located in the southeast portion of the city, notorious for being one of the most violent areas in the city.

The thesis makes use of the knowledge presented by Christopher Alexander in his books *The Timeless Way of Building* and *A Pattern Language* in order to understand how space becomes alive, as well as Ray Oldenburg's *The Great Good Place*, where he emphasizes the importance of gathering places for a healthy social environment. Psychology journals and essays were also consulted in order to better understand how the needs of children and teenagers could be served through both program and design initiatives.

Conclusions drawn from the research were applied through an iterative design process and applied to the proposed project in Chapter 4.

Research

Chapter 2.1

● 2.1.1 Background

Founded in 1709, the city of Chihuahua is the state capital of Chihuahua, the largest state among the 31 entities and the Federal District that comprise the *United Mexican States*. Chihuahua is located in the northwestern area of Mexico and borders with the United States of America to the north, specifically with the states of New Mexico and Texas; the city also borders with the Mexican states of Sonora, Sinaloa, Durango and Coahuila.

Legend

- Chihuahua
- Chihuahuan desert
- Mexico City

- ① Sonora
- ② Sinaloa
- ③ Durango
- ④ Coahuila



Figure 1.1
Location of Chihuahua.
Source:
Own elaboration

Figure 1.1

Chihuahua is located in the middle of the *Chihuahuan desert* that extends from Coahuila on the Mexican side to Arizona and Texas on the American side, resulting in a dry and semi-arid weather with very few rainfalls during the year, occurring mostly between the months of June and September. Chihuahua enjoys hot summers - reaching up to 38° C on the hottest months- and mild winters, going as low as -10° C on rare occasions.

According to the last census in 2010, Chihuahua has a population of 819,543, from which the majority are women.¹ Chihuahua is also a city of young people, with the most part of the population's age ranging between 0 and 24 [Figure 1.2].

The heavy presence of maquiladoras in the state makes the manufacturing business one of the predominant economic activities of Chihuahua, with a great amount of these factories located in the border city of Juarez. The city of Chihuahua alone has approximately 79 maquiladoras divided into 6 industrial parks located in a corridor that stretches from the southeast edge of the city to the north.

¹ Censo de Población y Vivienda (2010) Panorama socio-demográfico de Chihuahua. Instituto Nacional de Estadística y Geografía INEGI. Accessed January 15th, 2015. http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/censos/poblacion/2010/panora_socio/chi/Panorama_Chih.pdf

Table 1.1

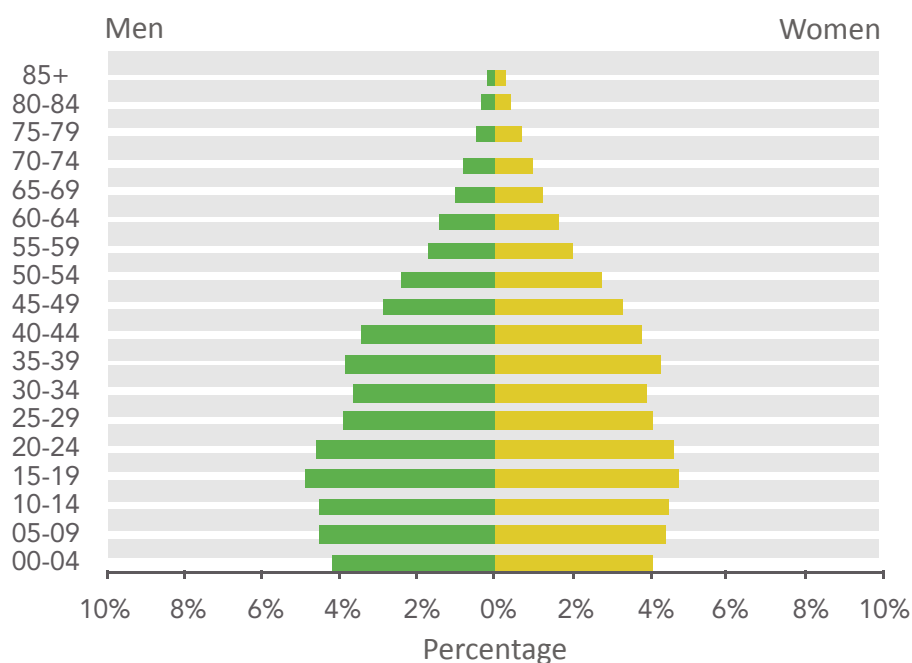


Table 1.1
 Division of population according to age groups.
 Source: IMPLAN. Situación actual y perspectivas de desarrollo urbano. Diagnóstico de Población. Visión 2040. (2009). Accessed January 15th, 2015.
http://www.implanchihuahua.gob.mx/pdu2040/pdf/diagnostico_poblacion.pdf

● 2.1.2 The Evolution of the City

In order to understand the problematic of the suburban neighborhoods in the city, it is necessary to study the process of evolution that culminated with the current model of urban growth adopted by the competent authorities, as well as the social and political implications that this process entailed.

There have been 5 major stages in the development of the city in terms of urban growth, starting with the establishment of the first settlements in the area in 1652, when silver mines were discovered in the vicinities of Santa Eulalia, a town located approximately 10 km from present-day Chihuahua. The discovery caught the attention of wealthy miners, but mining activities did not start until 1707.

It was then when two townships were established, one located next to the mines and another one up north, in the crossing of two rivers. As the population of these townships increased, it became necessary to establish the regional seat of the government. According to the military regulations of Spain, the Reales Ordenanzas, new settlements were to be located in valleys adjacent to rivers and forests, in order to supply sufficient water and wood to the new communities.

At the crossing of the Chuvíscar and the Sacramento rivers, the north-most township met these requirements and as a result, the establishment of the regional seat took place in October 12th, 1709; it was given the name of

Real de Minas de San Francisco de Cuéllar, a name that would only last until 1719 when it was changed to the San Felipe el Real de Chihuahua Villa. In 1788 the New Spain² saw a reorganization of its colonies in order to conform a unified form of government, effectively dividing the conquered land into 12 provinces or administrations, with Chihuahua being part of the Administration of Durango.



Image 1.1 Map of the urban fabric of San Felipe el Real de Chihuahua Villa during the period of 1707-1722. Source: Archivo Histórico de la ciudad de Chihuahua.

Figure 1.2



Legend

- Sacramento River
- Chuvíscar River
- Urban Fabric

² Name given by the spaniards to the region comprised by present-day Mexico.

³ Source:
Boletín de la Sociedad Chihuahuense de Estudios Históricos 1938-1970. Volume XII. #6

By the end of the 18th century, Chihuahua had a population of 720³ with the urban fabric measuring approximately 45 hectares. At that point, the population was concentrated in what today is the Historic Center of the city, which was confined by natural barriers such as rivers, streams, mountains and hills. Even though there was an evident distinction between social classes, they shared the same geographical point in the city.

The year of 1810 saw the beginning of the Mexican War of Independence, an 11 year armed conflict that ended the ruling of Spain over the conquered lands of Mexico. In spite of being a territory of great importance during the conflict, Chihuahua did not experience any major changes in terms of urbanism during that period. It was not until 1824, three years after the war ended, that the Federal Republic was established for the first time, resulting in the creation of the United Mexican States.

The **second stage** of growth happened when Chihuahua gained its autonomy

from the *Nueva Vizcaya*⁴ territory and became a state, while the San Felipe el Real de Chihuahua Villa gained the status of city and became its capital.

Up to this point, the indigenous groups living in the area of Chihuahua and its vicinities had made an agreement of peace, recognizing the superiority of the military force of the government in exchange for food rations, as well as the acknowledgement of a territory that they could occupy without any external influence, but when these supplies were withdrawn in 1831, the apaches and the comanches rose in arms in a conflict that lasted the next 50 years, a situation that kept the chihuahuan people living under a climate of constant insecurity and violence; the state's economy also suffered significant consequences, as investors began to retrieve their capital from the area.

It was not until the French Intervention⁵ that Chihuahua rose again from under the radar by hosting the mexican government lead by president Benito Juarez for a period of 2 years, thus becoming one of the most important political centers of the region, as well as the capital of the country.

The **third major phase** took place during the decade of 1880, as the country moved into an era of modernization when General Porfirio Diaz assumed the presidency of Mexico. In 1881, as the conflict with the apaches and comanches ended, new investments took place once again in the state. It was at this point that Chihuahua saw the introduction of modern infrastructure into the city, including electric street lighting, modern water distribution systems, sewer lines, streetcars and major railways, as well as telephone and telegraph lines.



Image 1.2 The introduction of streetcars was one of the many advancements of the process of modernization of the city. Source: Historic Archive of the Chihuahua.

⁴ At that point Chihuahua, along with Durango and New Mexico, comprised the Nueva Vizcaya territory.

⁵ The French Intervention was an armed conflict that took place between the years of 1861 and 1867, in which the second French Empire invaded Mexico.

Figure 1.3



Legend

- Sacramento River
- Chuvíscar River
- Urban Fabric

Source:
Own elaboration, based on information gathered from “Enciclopedia Universal Ilustrada Europeo-Americana. Tomo XVII: Chari-Dellw”. (Barcelona: Hijos de J. Espasa, 1979 Edition) pp. 285

⁶ Source:
Instituto Nacional de Estadística y Geografía. “Estadísticas Sociales del Porfiriato 1877-1910” Mexico. 1956. pp. 9. Accessed October 24, 2015. http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/integracion/pais/historicas/porfi/ESPI.pdf



Image 1.3 The design of the Quinta Gameros Villa, one of the most representative buildings of the city, took its inspiration from the prevailing parisian style of the time. Source: Historic Archive of the Chihuahua.

It was then that the city adopted the parisian model of urbanism, based on the work of Baron Haussmann, consisting in the extensive use of boulevards, parks and *quartiers*; suddenly, the northern area of Mexico was a place of vast economic interest, resulting in significant repercussions to the working class.

Between the years of 1883 and 1893 the government, now supported by the law, continued the process of repossessing vast amounts of land in the state belonging to several indigenous groups and farmers, conforming 19 *latifundia* measuring more than 100,000 hectares. By 1884, the social segregation became very evident; it was then, with the establishment of brewing, textile and wheat production industries, as well as the introduction of the railway, that the working class was created in the city. These facilities were located at the periphery of the city and many houses were built surrounding them. By 1900 the population had grown to 47,194.⁶

This period of economic flourishing did not last long; with the outbreak of the Mexican Revolution in 1910 several investors once again retrieved their capital from the city and its growth came to a grinding halt. Tired of the abuses of a predominantly capitalist and dictatorial government that favoured the high class, both the popular and the middle classes rose in arms. The armed conflict lasted roughly 10 years, after which the country underwent a deep social reorganization.

The aftermath of the revolution extended way through most of the 1920's and it was not until the end of decade that the country experienced a progressive process of reconstruction. The urban fabric of Chihuahua resumed its growth in early 1945, giving way to the **fourth stage**



Image 1.4 The Ciudad Deportiva sports complex, circa 1947.

Source: Historic Archive of the Chihuahua.

of development of the city, when 44 hectares of land were donated to the city by a particular; this land would later become the Ciudad Deportiva sports complex, located just north of the Chuvíscar River. This donation would also become the first campus of the *UACH* university, stimulating the construction of housing facilities surrounding the development.

Following the inauguration of the Ciudad Deportiva project in 1947, the city continued its expansion with the channelization of the Chuvíscar River in 1961, facilitating the connection between the Historic Center and the newly developed area in the north.

The **fifth and last stage** of major urban growth took place with the introduction of the maquiladoras in 1974, when the urban fabric started expanding at an accelerated rate to the north of the city. The arrival of the light industry factories was the result of a measure of the State's Government in order to counteract the deficit of jobs in relation to the amount of people in productive age in the state. The strategy consisted in creating jobs that required no prior experience and that represented low-cost labour for american companies. At that time, the strategy had already been implemented in the city of Juarez, with the establishment of the RCA factory in 1968, showing a modest amount of success.

Las Américas Industrial Park was the first industrial park to be established in the city of Chihuahua, with the Molduras de Pino factory being the first maquiladora to be built, followed by AC Nielsen and the Advance Rose maquiladora. The majority of the people employed were women; some of them were very young, even underaged, while others were single mothers. This resulted in the formal incorporation of women into the maquiladora

Legend

-  Regional limits
-  Historic Center
-  Area of Study
-  Main railways
-  Light industry

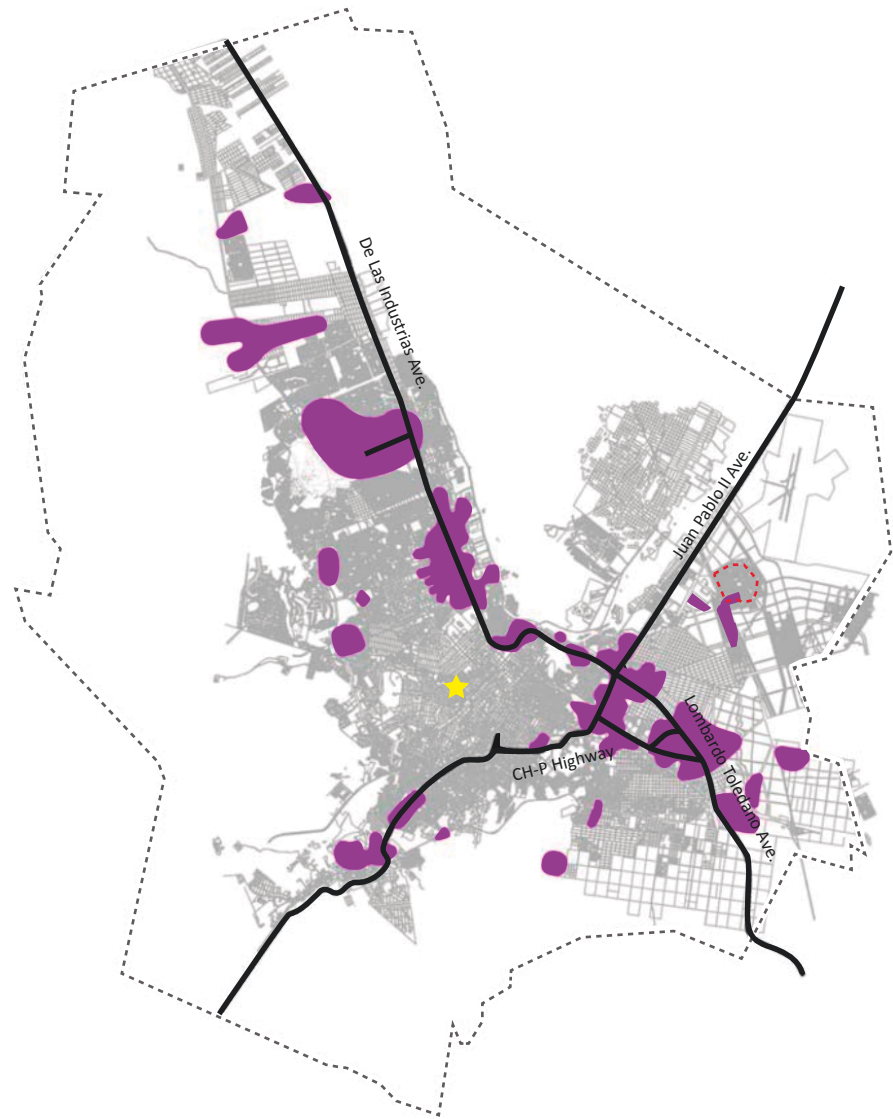


Figure 1.4: Location of the industrial sector in Chihuahua

Source: Plan Sectorial de Movilidad Urbana Sustentable de la Ciudad de Chihuahua. Informe de Diagnóstico. (2005-06). (pp. 78)

industry in the city.

With the constant arrival of the new maquiladoras during the decades of 1980 and 1990, people started mobilizing into the northwest portion of the city, densifying the area and leaving the downtown core. These new industrial parks were distributed along the existing trade routes, which include the Ferrocarril Central Mexicano, built in 1882, that connects México City and Juarez, and the Chihuahua-Pacífico railway, finished in 1961, that connects Chihuahua with the port of Tobolobampo in Sinaloa.

This process also brought significant consequences to the population growth, since a great number of peasants began migrating into the city in search of a better quality of life. During that time, the public sector began developing programs that would satisfy the demand of adequate and

affordable housing⁷ for the newly established workers and as a result, several housing developments were built in the surroundings of the maquiladoras, analogous to the American concept of suburbs, where tracts of land are subdivided into smaller lots which then are occupied by standardized houses.

In this particular scenario, the houses were built by private construction companies and sold through INFONAVIT, the government institution in charge of providing credit to the workers by discounting 5% of their salary in order for them to pay for their house, a debt that could take as long as 20 years to be cleared considering that the minimum wage in Mexico is approximately \$4.40 USD.⁸

This continuous expansion encouraged the creation of sub-centers in the outer-most areas of the city, where infrastructure was difficult to provide.

⁷ Source:
 Romo, M., Córdoba Bojórquez, G., Fuentes, C., Brugués, A. (2009) New housing stock in Chihuahua City, Mexico: Supply and Demand. Accessed January 13th, 2015. http://www.scielo.org.mx/-scielo.php?pid=S1405-84212012000300005&script=sci_arttext

⁸ As of February, 2015.

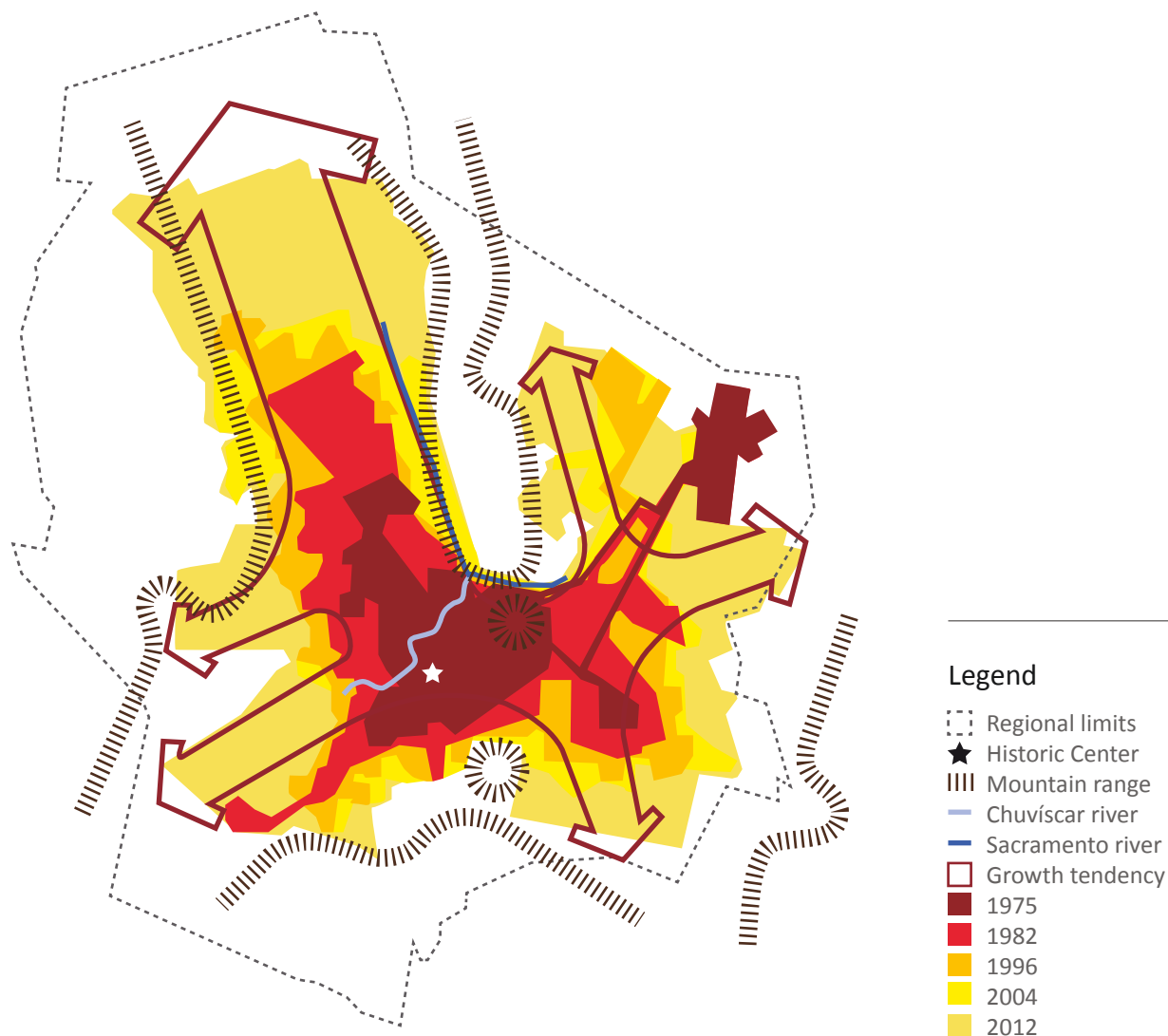


Figure 1.5: Evolution of the Urban Fabric, influenced by the conditions of the terrain
 Source: Urban Diagnose for the Sustainable Mobility Plan of Chihuahua, 2005-06.
 Accessed January 10, 2015. <http://www.gabriel diazmontemayor.com/Urban-Diagnose-for-the-Sustainable-Mobility-Plan-of-Chihuahua-2005-06>

As years went by, this model of suburban housing became the predominant way of building the city, to the extent that approximately 95% of the houses in Chihuahua were built by construction companies and every year there are 3 to 5 new suburban neighborhoods that get approved by the municipal government.

Since the 2nd United Nations Conference on Human Settlements that took place in Istanbul in 1996, a few changes concerning regulation in housing projects have been made, thus, developers are now conditioned to fulfill a series of requirements that ensure a better quality of life for the people, including access to clean water, adequate sewer lines, green spaces, schools and hospitals.

In Chihuahua, the problems with the suburban developments begin with the fact that these regulations benefit the construction companies instead of the people, as they generally provide the bare minimum in the matter of building materials and the required infrastructure in order to maximize profit.

In a typical suburban neighborhood, lots measure approximately 8.00 x 15.00 m with a built surface that ranges from 30-34 sqm to 55-65 sqm. The cost of these houses varies depending of the amount of built area, starting around the \$25,000 USD mark. The houses are usually built of .15 x .40 m concrete blocks and .10 m concrete slabs with single glazed windows.

⁹Source:
Reglamento sobre Fusión,
Relotificación y
Fraccionamiento de terrenos
para el municipio de
Chihuahua. (pp. 5)
Accesed January 15, 2015.
<http://www.ordenjuridico.gob.mx/Documentos/Estatal/Chihuahua/Todos%20los%20Municipios/wo50601.pdf>

According to the Urban Planning law in Chihuahua,⁹ each one of these neighborhoods are required to make a donation to the city of 15% of the total of buildable area, from which 33% is to be destined to green areas and recreational spaces, resulting in only 4.95% of the total of the buildable surface of the neighborhood.

The majority of the times, these areas represent residual spaces such as slopes, streams and buffer zones; these areas usually contain a few benches and trees, but are almost always kept in bad condition, as the competent authorities do not take responsibility for them and are usually unoccupied by day, but populated during the night by delinquents using them as meeting points. The remaining 10.5% of the donated area is used to provide educational facilities such as schools, daycares and community centers.

Due to its conditions of scarcity, the concept of suburbs in mexican society is often associated with low-income neighborhoods.

● 2.1.3 A Story of Violence

Although drug trafficking in Mexico can be dated back to the decade of 1960, it was not until the downfall of the cartels from Colombia in the 90's that it began to gain notoriety. In 1980, the Guadalajara cartel solely controlled the illegal drug trade in the country, smuggling heroin and marijuana into the U.S.. Over the next years, the organization began to deal with the Medellín cartel in order to transport colombian cocaine into the U.S., a situation that the Guadalajara cartel took advantage of as they also began to distribute the product in mexican soil.

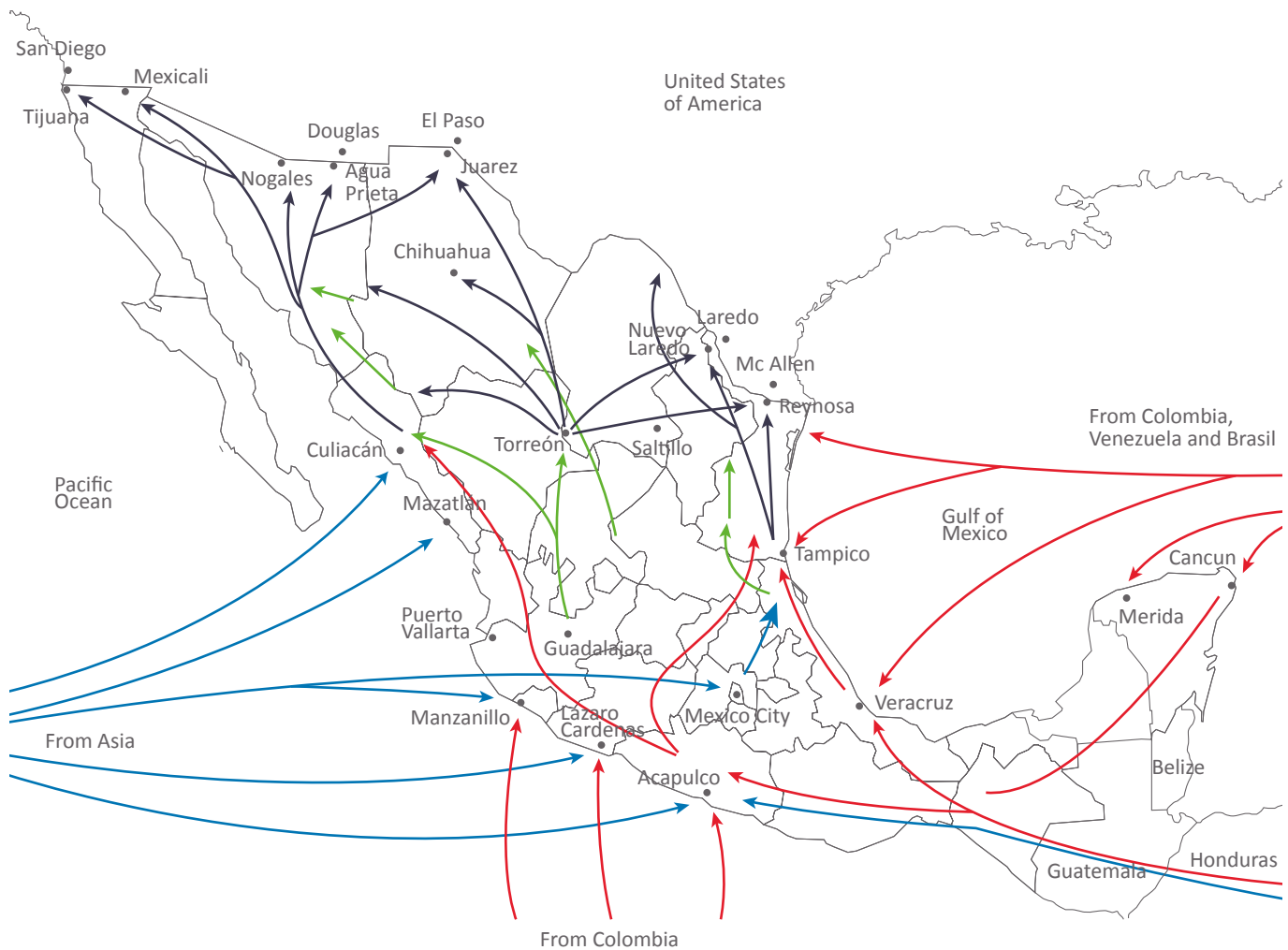
By the end of the decade, the leader of the cartel divided the territory into 5 sectors or *plazas* related to major drug transit routes in the country, in order to streamline the operations and to prevent a major collapse of the organization in case of a raid. These were:

- The *Tijuana cartel*, overseeing the operations in the northwest area of the country.
- The *Juarez cartel*, based in Juarez, Chihuahua. This cartel is in charge of the trafficking route that exports narcotics into the U.S. across El Paso, Texas.
- The *Sonora cartel*, with operations in the states of Sonora, Durango and San Luis Potosí, among others. This cartel ceased its operations in 1989.
- The *Gulf cartel*, based in the city of Matamoros, in Tamaulipas.
- The *Sinaloa cartel*, one of the oldest and most powerful cartels in Mexico. Its operations are based in the states of Chihuahua, Sinaloa, Durango and Baja California.

Since the division of the territory, many conflicts between old and new cartels disputing the plazas took place during the decade of 1990; by the beginning of the decade of 2000, it was widely understood, but never reported that the government had secret arrangements with each of these criminal organizations in which they allowed free passage of their product around any given city as long as it did not disturb the peace on the streets. It was not until the mexican government stopped these agreements and declared war against drugs on December 11th, 2006 that Mexico saw the beginning of an era of drug-related violence that affected the entire nation at a scale never seen before.

The government's measure encouraged military presence in key states in the country in a direct attack to the cartels; as the leaders of the criminal organizations were captured or killed, new disputes for the territories arose, resulting in a wave of violence that struck the country by surprise.

The cartels then resorted to other illegal activities in order to finance their operations, such as kidnappings, extortion, car thefts and murder. They also made very public acts of intimidation against the government and rival cartels that included hanging corpses with banners from elevated footbridges, triggering collective fear in the cities.



Legend

- Metamphetamine precursors
- Cocaine
- Marijuana / Meth
- All drugs

Figure 1.6: Drug trafficking routes in Mexico as of 2012. Source: Own elaboration, based on information gathered from <https://www.stratfor.com/sample/image/mexicos-drug-cartels> Accessed on February 11, 2015.

Many of the confrontations involving the military force and between cartels have taken place in major cities, with countless civilian lives lost as collateral damage. The cartels have also suffered major losses in their ranks, forcing them to recruit new individuals into their organizations, and as a result drug cartels are now known for recruiting neglected children from areas of scarcity.¹⁰

For the past decade, Mexico as a whole has been suffering from the aftermath of the war against drug cartels, with 121,199 detentions and 86,663 investigation folders¹¹ that are believed to be associated with drug-related violence. Its centric location in The Americas allowed Mexico to become one of the most important transit routes for the illegal drug trade.

As of 2010, there were 3,664 children detained in government raids against cartels, and there is an estimated number of more than 30,000 children working with delictive organizations in illegal activities related to drug

¹⁰ Source: Infancia y conflicto armado en México, Red por los Derechos de la Infancia en México, (2011) Accessed January 18, 2015. <http://www.derechosinfancia.org.mx/iaespanol.pdf>

¹¹ Accounting for intentional homicides. These folders do not account for the number of victims on each case, as there is an informal estimate of 120,000 deaths since the beginning of the conflict.

trafficking, including smuggling, extortion and kidnappings.

The activities in which they are involved are usually age-dependent; 9-10 year olds work as sentinels or *halcones*, keeping an eye on an specific area and reporting any developments to their superiors. Once they turn 12, children assist in the security of safe houses as well as the transportation of drugs until they become 16, when they are trusted with kidnappings and murders. Males are generally in charge of these endeavours, while females usually take care of the packaging of the narcotics.

It is also important to note that these children do not start working from the beginning with transnational cartels, but instead, they get lured by local gangs in their own neighborhoods;¹² this is the easiest way for children to enter the world of violence, as they might think that it is the only choice they have at the given moment. On the other hand, some children are coerced into working for these gangs, as they threaten to hurt their relatives in case they resist.

Education and the cultural aspects of these children also play an important role in the recruiting process of these gangs. As of 2010 there was an estimated number of 1,561,641 children and teenagers aged 5 to 17 in Mexico that did not attend school, or were employed;¹³ many of these children grew up on the so-called *Narcoculture*, a popular subculture in Mexico that glorifies drug lords and misplaces their aspirations to match those of who perform criminal activities. Moreover, the easy access to drugs and guns in their own neighborhoods make it for an enticing lifestyle.

Children involved in the world of drug-related violence have high expectations of money, power and recognition that otherwise they believe they would not experience. They also acknowledge that their life expectancy fluctuates from 3 to 5 years once they become involved, but they prefer, in their own words, to *live like kings for a small period of time than to live their whole life in poverty*.¹⁴

In this matter, the number of homicides in teenagers aged 15 to 17 escalated in the period of 2006 - 2010 to 994 deaths from the 503 deaths that the country experienced in the period concerning the years of 2000 to 2006;¹⁵ it is possible to assume that this escalation could be the result of the ongoing war against drugs.

The strategic approach of the government regarding the militarization of the public security remains questionable after 9 years, as it has been proven to be unsuccessful in reducing the incidence of drug-related violence and public insecurity, and in turn prompted the creation of a constant atmosphere of violence that the people of Mexico have grown to be accustomed to. In spite of the results so far, there has been a continuous increment in the military budget since 2006,¹⁶ with a tendency to keep increasing every year.

¹² Source: Infancia y conflicto armado en México, Red por los Derechos de la Infancia en México, (2011) Accessed January 18, 2015. <http://www.derechosinfancia.org.mx/iaespanol.pdf>

¹³ Source: IMJ-CIEJ, Encuesta Nacional de Juventud. (2005) INEGI/STPS, Resultados del módulo de Trabajo Infantil 2007, Encuesta Nacional de Ocupación y Empleo 2007.

¹⁴ Source: Interview conducted by psychology student Adriana Militza Ochoa Rascón as part of her professional practice requirements, with a teenager held in a juvenile detention center for charges of burglary.

¹⁵ Source: Database from Defunciones 1979 – 2009, SINAIS, SSA

¹⁶ 4,859 million USD in 2011.

¹⁷ Source:
Richard M. Lerner, and
Nancy L. Galambos (1998).
Adolescent Development:
Challenges and
Opportunities for Research,
Programs, and Policies.
Annual Review of Psychology
49, (pp. 413-446)

On the other hand, socially-driven interventions remain as unexplored territory, as they are scarce and under-financed.

The current situation makes us, professionals in the construction business, wonder if there is something architecture can do in order to assist in the prevention of drug-related violence? and if so, how?

¹⁸ Source:
Mark Abrahamson. Urban
Enclaves: Identity and Place
in America (New York: St.
Martin's Press 1995) pp.
152.

It has been stated that the cartels started recruiting children into their organizations in an effort to replace the losses suffered during the war, but what would it happen if we started taking care of the neglected children that aspire to become drug lords and instead, inspire them into developing their potential? Architecture has the ability to assist in the creation of a better quality of life for the people and their communities, but this particular endeavor requires the support of disciplines that study the human behavior, such as psychology and sociology, in order to provide an adequate strategy to approach the problem presented here.

¹⁹ Source:
Ruth D. Peterson, Lauren J.
Krivo and Mark A. Harris.
Disadvantage and
Neighborhood Violent
Crime: Do Local Institutions
Matter? in Journal of
Research in Crime and
Delinquency, #37 (2000)
pp. 31-63.

There are individual and contextual factors that can contribute to the development of criminal behavior in children, such as age, expectations from school, the conditions of the neighborhood in which they live in and the influence, or lack thereof, from their parents,¹⁷ and according to Abrahamson, children living in violent neighborhoods are prone to display antisocial or aggressive conducts, as this is where they develop their social, emotional and intellectual skills.¹⁸

²⁰ Source:
R. J. Bursik. Segregation and
Youth Criminal Violence: A
Review and Agenda in
Handbook of Youth and
Justice.
(New York:
Springer-Verlang New York
Inc. 2001). pp. 265-275.

The model of urban growth adopted by the municipal government of Chihuahua encourages the creation of isolated suburban neighborhoods, each time relegating the people to the outermost limits of the city. The problem lies with the faint presence of educational and recreational spaces within these communities, for which the government is responsible, and that most of the time are kept in bad condition. The occurrence of violence in the communities does not necessarily relates to poverty, but to the lack of institutions that assist in the healthy development of the youth.¹⁹

Many neighborhoods in the city follow this pattern, with most of them experiencing some degree of violence; one of the most remarkable examples is the Jardines de Oriente neighborhood, located in the southeast area of the city. This is considered to be the most dangerous neighborhood in Chihuahua, with many criminal acts taking place there, ranging from burglaries to homicides. Crime takes advantage of opportunity, and a quick glance of the neighborhood reveals the condition in which the educational and recreational areas are kept, as well as the amount of abandoned houses and the presence of numerous liquor stores in the area; all of these traits are known to stimulate the creation of violence.²⁰

Specific Design Question

Chapter 2.2

The prevailing situation of violence in the suburban neighborhoods of Chihuahua calls for the development of a strategy that takes into consideration the creation of tighter community bonds that assists with the protection and nourishment of children, effectively preventing their entrance into the world of drug-related crimes. Studies have shown that prevention programs can be more successful in decreasing the incidence of crime than responsive approaches,¹ by getting involved in the early stages of the lives of the children, before the antisocial behavior is developed, stopping the crime from happening in the first place.

Nowadays, we tend to forget that every piece of built architecture in the city has a social impact in the lives of the people; it shapes the way in which we relate to each other, the way we interact with one another; it is a photograph, a true reflection of the society at a specific moment in time.

The current condition of the suburban neighborhoods in the city of Chihuahua reflects a divided society, one that is indifferent to whatever is happening to their neighbors, one that became numb after living for so long in the same conditions of scarcity and violence with no hope for change in the foreseeable future. This can be attributed in part to the top-down dynamics in which these neighborhoods are being planned and built, repeating the approach of relegating low-income families into the outer-limits of the city, without having a say in the matter nor having any other options at their reach, a dynamic that often results in the creation of *dead* neighborhoods; this concept was better explained by Christopher Alexander in his book *A Pattern Language*,² in which he describes the richness of space that could be achieved if the people started designing their own houses, streets and communities rather than accepting whatever it is imposed to them by the local authorities, such as the case at hand.

According to Alexander, there are many design patterns that have the ability to help people design beautiful and meaningful places, such as temples and villages of the past in which people felt at home; these patterns -considered as hypotheses of the way to solve any design problem- form a timeless language. There are 253 patterns that focus on a variety of subjects at a variety of scales, from designing houses to the materials employed, gardens, and buildings; there are even patterns that explain the design of a simple door knob.

Architecture has many tools that can contribute to the creation of communities, allowing the inner life of the people to be reflected on the space they live in and encouraging social interaction. In his book *The Great Good Place*³ Ray Oldenburg emphasized the importance of

¹ Source:

Robert J. Zagar, Kenneth G. Busch, and John Russell Hughes. "Empirical Risk Factors for Delinquency and Best Treatments: Where Do We Go from Here?" Psychological Reports #104 (2009) pp. 279-308

² Source:

Christopher Alexander, Sara Ishikawa and Murray Silverstein. "A Pattern Language" in A Pattern Language: Towns, Buildings, Construction. (Oxford: Oxford University Press 1977) x.

³ Source:

Ray Oldenburg, "The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of a Community" (New York: Paragon Press, 1989), 22-42.

informal gathering places, and identified them as *Third Places*, where habits of public association can be created; these places have existed always in all societies and can include establishments such as barber shops and coffee houses, but can also be as simple as a bench under a tree in a park, or a set of stairs at the entrance of a public building in the middle of the day.

Oldenburg recognized a person's home as the *First Place*, whereas the workplace, where many hours of the day are spent everyday becomes the *Second Place*. Oldenburg then identified certain features that a space needs in order to become a Third Place:

- It must be located on **neutral ground**, meaning that there are no hosts and everyone is invited to come and go as they please.
- It must be a **leveler**, which means that one's economic status does not matter.
- Good natured **conversation** becomes the main activity.
- Third places must be **acesible and accomodating** in that anyone can go alone at any hour of the day and be sure to find acquaintances there.
- **Regulars** make the space come to life. Everyone was a newcomer at a given point, which is why it is important to have acceptance in order for everyone to enjoy the space.
- A Third Place must be **low-profile**. Substance over value, the space is not pretentious.
- The mood at a Third Place must always be **playful**, despite its low-key appearance.
- These spaces must have a **home away from home** feel to them.

On the other hand, there are many programs around the world that have successfully addressed the problematic of children living areas of risk, assisting in their healthy development. The Los Angeles-based Hobart Boulevard Elementary School hosts an educational program, *The Hobart Shakespeareans*,⁴ taught by school teacher Rafe Esquith, in which 5th graders coming from ethnic minorities living in a dangerous and drug-infested neighborhood are encouraged to succeed in life through a mix of intensive learning and recreational activities that culminate each year with the performance of a play by William Shakespeare. The success of the program lies with the creation of a holding environment among the children, one that they might not experience at home.

⁴ Source:
The Hobart Shakespeareans
Directed by Mel Stuart.
Los Angeles, CA: PBS, 2005.
DVD.

Another example is the *El Sistema* music education program in Venezuela. Founded in 1975, the program incorporates artistic, social and pedagogic features that aim at providing children at risk with access to classical music training in order to cultivate powerful values of responsibility, discipline and solidarity, while creating social bonds among them and with their communities.

It is an after-school program that consists of 4 hours of musical training and rehearsals per week, and in its 40 years of existence it has assisted in the healthy development of thousands of children and teenagers, allowing them to fulfil their dreams of self-realization.

The program currently consists of 285 pre-school orchestras (4-6 years old), 220 children's orchestras (7-16 years old), 180 juvenile orchestras (17-22 years old) involving more than 500,000 young musicians across Venezuela alone.⁵ The success of the program is such that it has also been implemented in the U.S. as the *El Sistema U.S.A.*

In a similar fashion, there is a local initiative in Chihuahua called *Programa de Escuelas de Tiempo Completo* (Full-time School Program) in which musical education programs are added to educational facilities throughout the State with the intention of building character, nurture talent and stimulate social interaction in children from an early age. As of December of 2014, 669 educational facilities have been added to the program.⁶

Mexican culture is known for being very family-oriented, with colorful traditions filled with music, food and long-lasting friendships, but these attributes seem to be constantly overshadowed by the contemporary way of living experienced by the people in the suburbs.

Among these deficiencies there is an opportunity to counteract the consequences of the urban fragmentation promoted by the model of suburban housing, while humanizing the space and retrieving the power of decision to the people. Since most of the proposed neighborhoods follow strict guidelines and are kept in similar conditions, it is possible to take advantage of the neglected green spaces and recreational areas and design appropriate interventions that act as social condensers, effectively assisting in the development of caring communities, while preventing the incidence of violence among the most vulnerable: the children.

In practice, the social implications of architecture commonly tend to be forgotten, but there is an undeniable truth that reminds us that architects have the moral obligation to contribute to the development of a better way of living; that any intervention, big or small, will have a repercussion in the way we experience the city.

⁵ Source:
Sistema Nacional de Orquestas y Coros Juveniles e Infantiles de Venezuela. Accessed on January 15, 2015. <http://fundamusical.org.ve/category/el-sistema/impacto-social/>

⁶ Source:
"Entregan Recursos de los Programas Escuelas de Calidad y Escuelas de Tiempo Completo". Secretaria de Educación y Deporte. Accessed October 22, 2015. <http://educacion.chihuahua.gob.mx/content/entregan-recursos-de-los-programas-escuelas-de-calidad-y-escuelas-de-tiempo-completo#sthash.WrlymSsV.dpuf>

The current situation of the new suburban developments in Chihuahua represents an issue that needs to be addressed not only at an urban scale, but at a social scale as well:

Can architecture promote social change and the involvement of a community in the prevention of children entering the world of drug-related violence?

Throughout the history of Chihuahua, low-income working families have continuously been relegated to the outer limits of the city, resulting in new breeds of social dynamics; each time people are forced to adopt new lifestyles imposed to them in the form of urban planning strategies; although these strategies are not ill-intended, this unilateral system does not allow the people to have a say in the way their cities are built.

In order for a project of this kind to succeed, it is necessary to adopt a bottom-up dynamic as presented by the Living Rooms project, where the people living in those neighborhoods are involved in the process of making decisions.

On the other hand, the wave of drug-related violence that continues to strike Chihuahua has also taken its toll in the social dynamics of the city. As part of its folklore, mexican communities have always been resilient, finding ways to appropriate the space and remain close, but the war between drug cartels keeps preventing social interactions from happening.

With the popularization of this war, young teenagers living in low-income neighborhoods became infatuated with the mystique surrounding the lifestyle of famous mexican drug lords. As the quality of life lowers, the likelihood of social conflict arises; the lack of social, educational and recreational infrastructure in the suburban developments may encourage juvenile delinquency, a scenario that calls for immediate attention.

This thesis proposes an intervention aimed at the re-appropriation of space by the neighbors of the suburban neighborhood of Paseos del Camino Real, while assisting in the creation of a healthy environment that encourages social interaction between neighbors, effectively creating a community with an increased sense of belonging, while providing special attention to the children of the community, in an effort to prevent them from entering into the world of violence.

Case Study Analysis

Chapter 2.3

The circumstances surrounding any project tend to be unique to its environment and specific context, but it is possible to get a better understanding of the problem at hand by studying analogous cases around the world and the conclusions they reached. The nature of the project, as well as its holistic approach urges us to search not only for architectural precedents, but also for social studies that may have relevant contributions to the matter at hand.

● 2.3.1 España Library Park

Medellín, Antioquía, Colombia.

In 2004 Sergio Fajardo, a mathematics professor at Los Andes University, took office as the Mayor of the city of Medellín, Antioquía in Colombia after an unconventional political campaign. Fajardo, together with a variety of professionals that included architects and sociologists, designed a strategy to transform the city and prevent crime by attacking the two major problems affecting Medellín: Social Inequity and Violence.

Using the analogy of two trees with very deep and entangled roots, they developed a scheme to *unearth* them at a simultaneously pace: the first step was to reduce violence using police force to maintain order in the public spaces and immediately implementing social interventions; these interventions included a program called *A Change of Skin* aimed at social inequity, in which the most important architectural projects and social programs were built in the most deprived neighborhoods, as a way of providing the communities with a sense of dignity, pride and belonging.

This was part of the bigger program called *Medellín, the Most Educated*, where each project was related to educational and learning processes with the motto “The quality of education starts by the dignity of the space”, making architecture a key player in the process of the transformation of Medellín. One of the most important programs during his administration was the creation of the Library Parks; these projects were conceived as a way for public spaces and education to become available for low-income communities.

Location:
Santo Domingo, Medellín.
Architect:
Giancarlo Mazzanti
Year of Completion:
2007
Built Area:
5,500 sqm

Five library parks opened in the city during his four year administration, with the most important one being the España Library Park. Commissioned in 2005 to colombian architect Giancarlo Mazzanti, this project acquired international recognition due to its location in one of the poorest neighborhoods in Medellín, as well as to the shape of the buildings that comprise the development, which is reminiscent of the geography of the site.

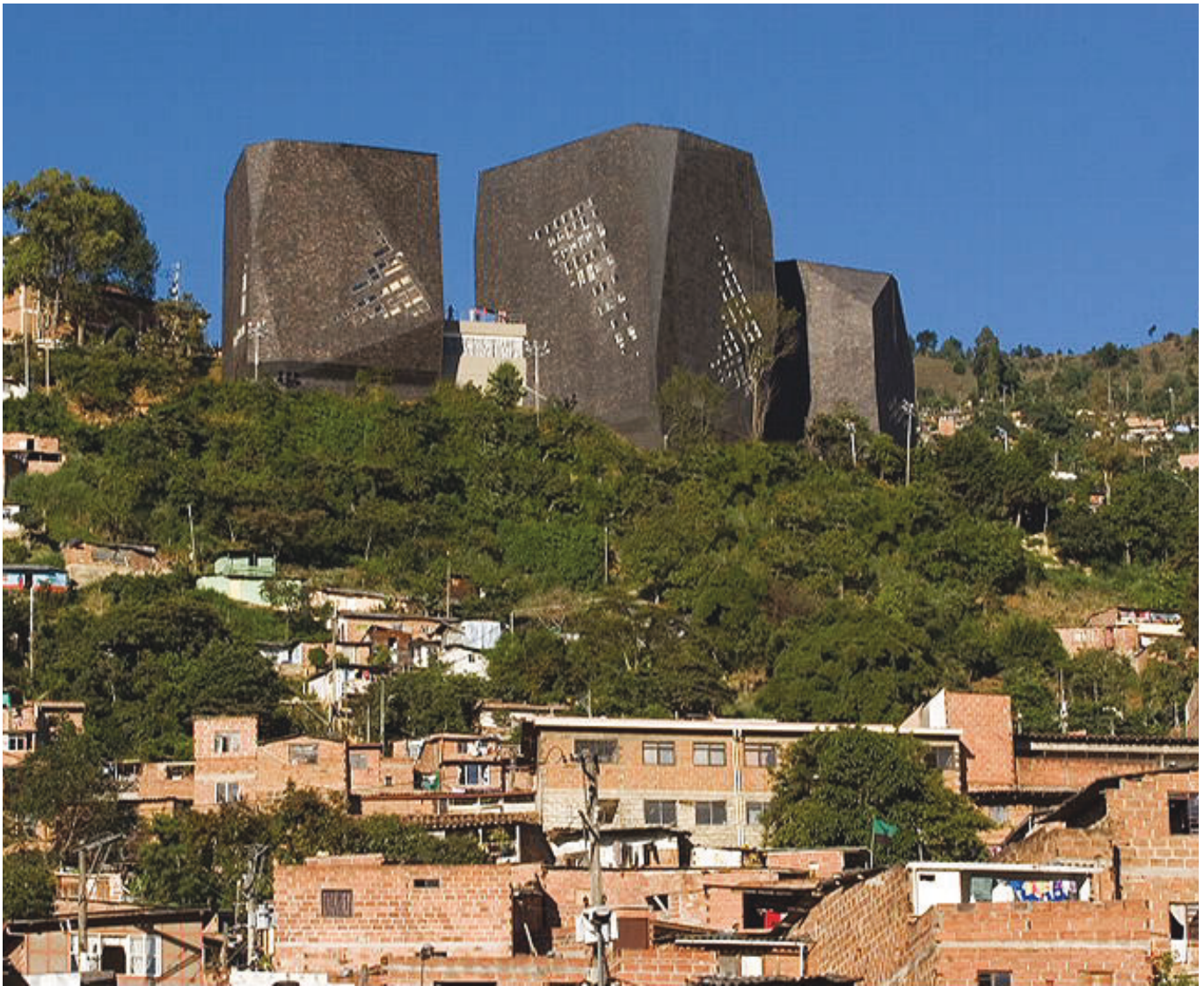


Image 2.1

The project is located in the Santo Domingo neighborhood which, at the time, was considered one of the most dangerous areas not only in the city, but in Latin America. Before the interventions, this area was controlled by colombian militants and was under a constant illegal curfew, preventing the locals from stepping outside their houses after 5:00 pm, resulting in a non-existent community life.

As a way to address this issues, the project is divided in two main structures, aiming at combining public spaces and green areas with educational and learning spaces:

1) **The buildings/ habitable rocks.** Designed as a symbol of unity, an icon for the city. Each one houses educational spaces:

- Community Center, accommodating classrooms and a daycare.
- Cultural Center, containing the library and multimedia facilities.
- Auditorium.

The shape of the buildings is reminiscent of the surrounding landscape while its skin, clad with black stone tiles, pays homage to the houses of the neighbors. The separated volumes allow each building to operate independently.

Source:

Arch Daily. España Library / Giancarlo Mazzanti. Accessed January 5th, 2015. <http://www.archdaily.com/2565/espana-library-giancarlo-mazzanti/>

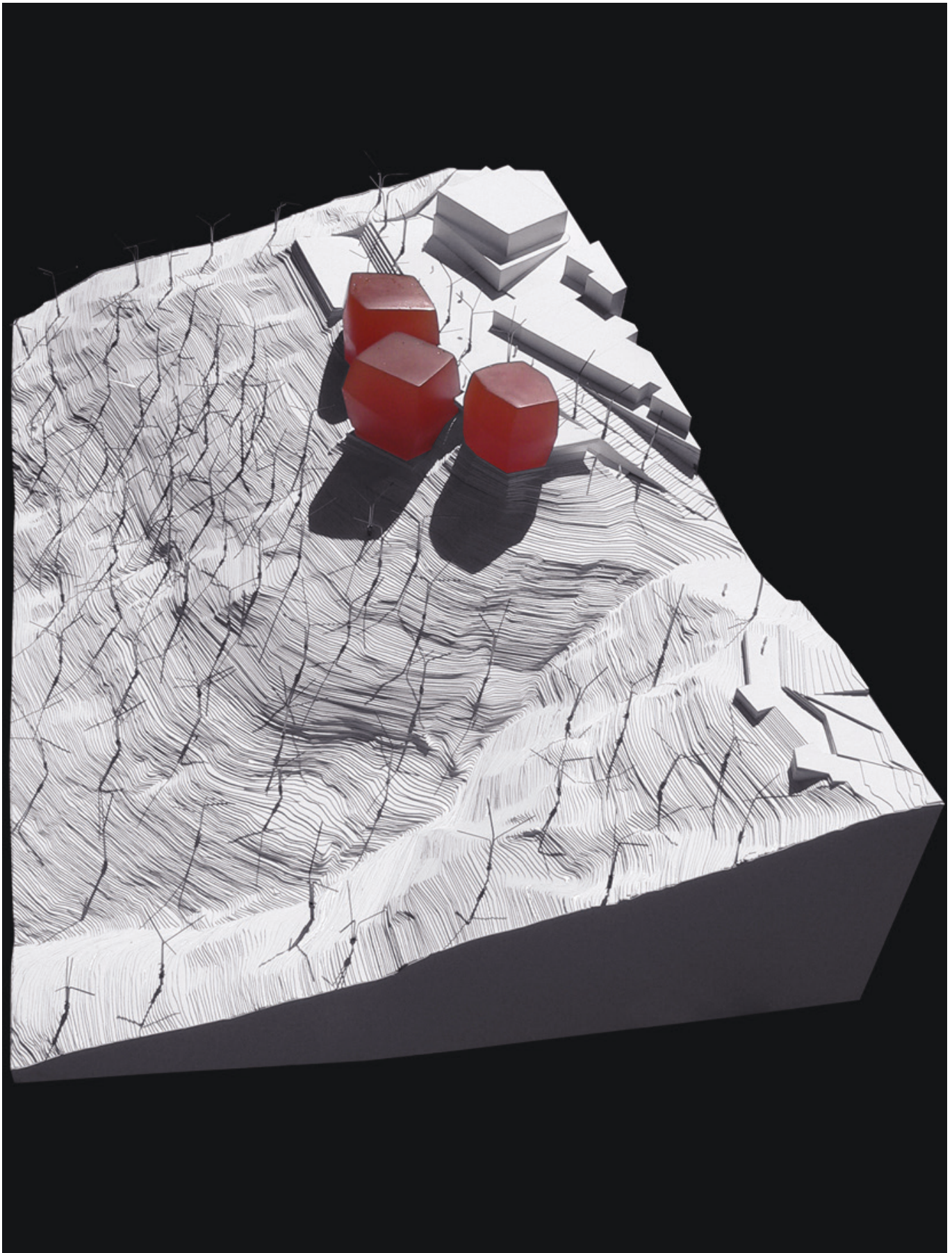


Image 2.2

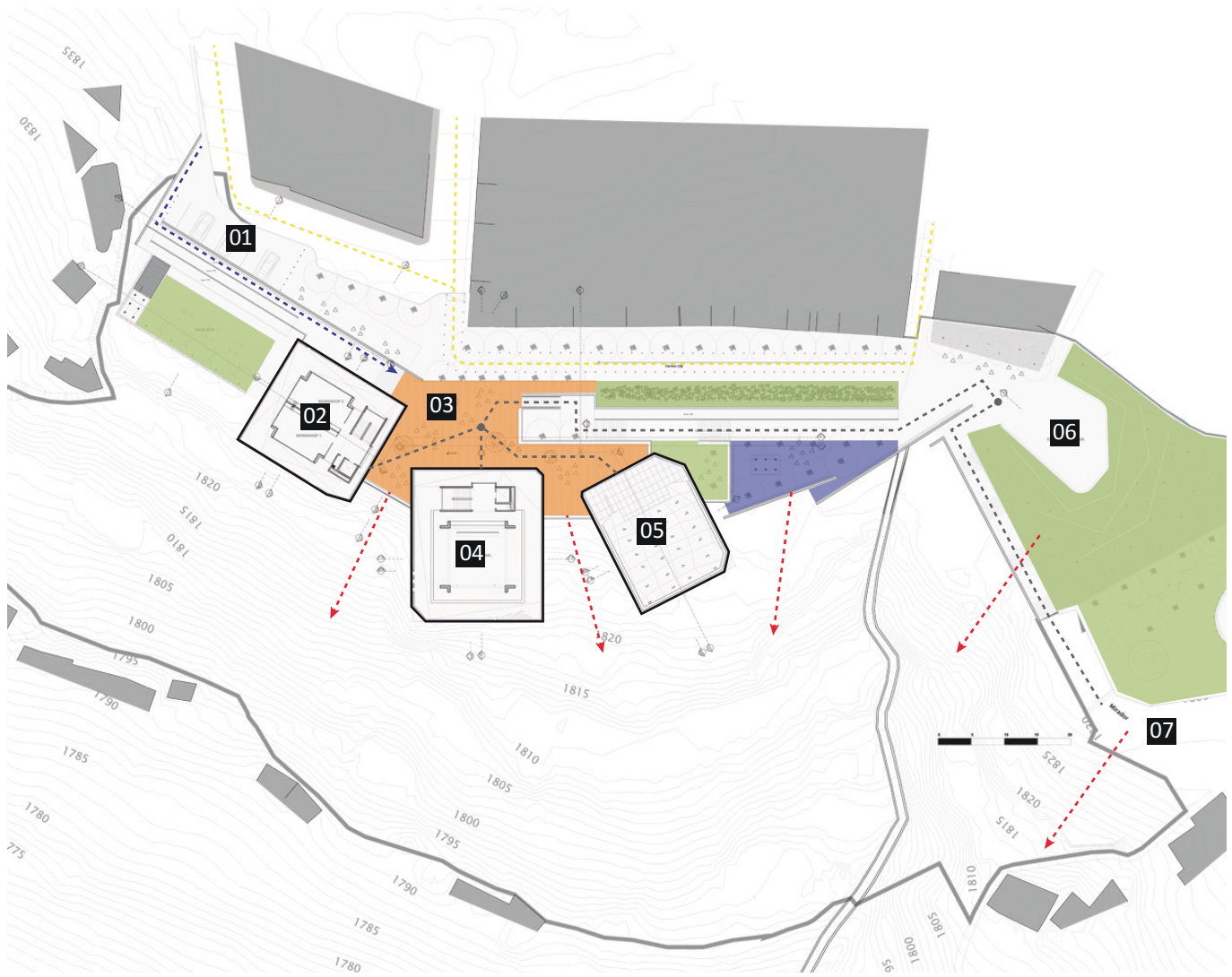


Figure 2.1

Legend

- Access Plaza
- Plaza
- Green Areas
- - - Views

- 01 Parking Space
- 02 Community Center
- 03 Main Plaza/ Admin. Office
- 04 Cultural Center
- 05 Auditorium
- 06 Outdoor Theatre / Market
- 07 Overhead Railway & Lookout

Source:
Arch Daily. España Library /
Giancarlo Mazzanti.

2) **The plazas**, connecting the buildings and holding them together, while providing public spaces for recreational purposes and to develop community life, as well as to support entrepreneurial projects from the locals. This ensemble of plazas was also designed in a way that there is always a visual connection to the city.

Besides focusing on education and social interaction, this administration was also invested in transport, a policy that is reflected in the project. With the neighborhood being physically isolated from the city, the program included the construction of an overhead railway, making the area easily available for tourists to visit as well as to reduce significantly commuting times from the neighbors working in downtown Medellín.

The buildings were built out of a reinforced concrete core consisting of columns, beams and slabs from which the envelope of the building adheres, while the structure of the main plaza consists of steel columns

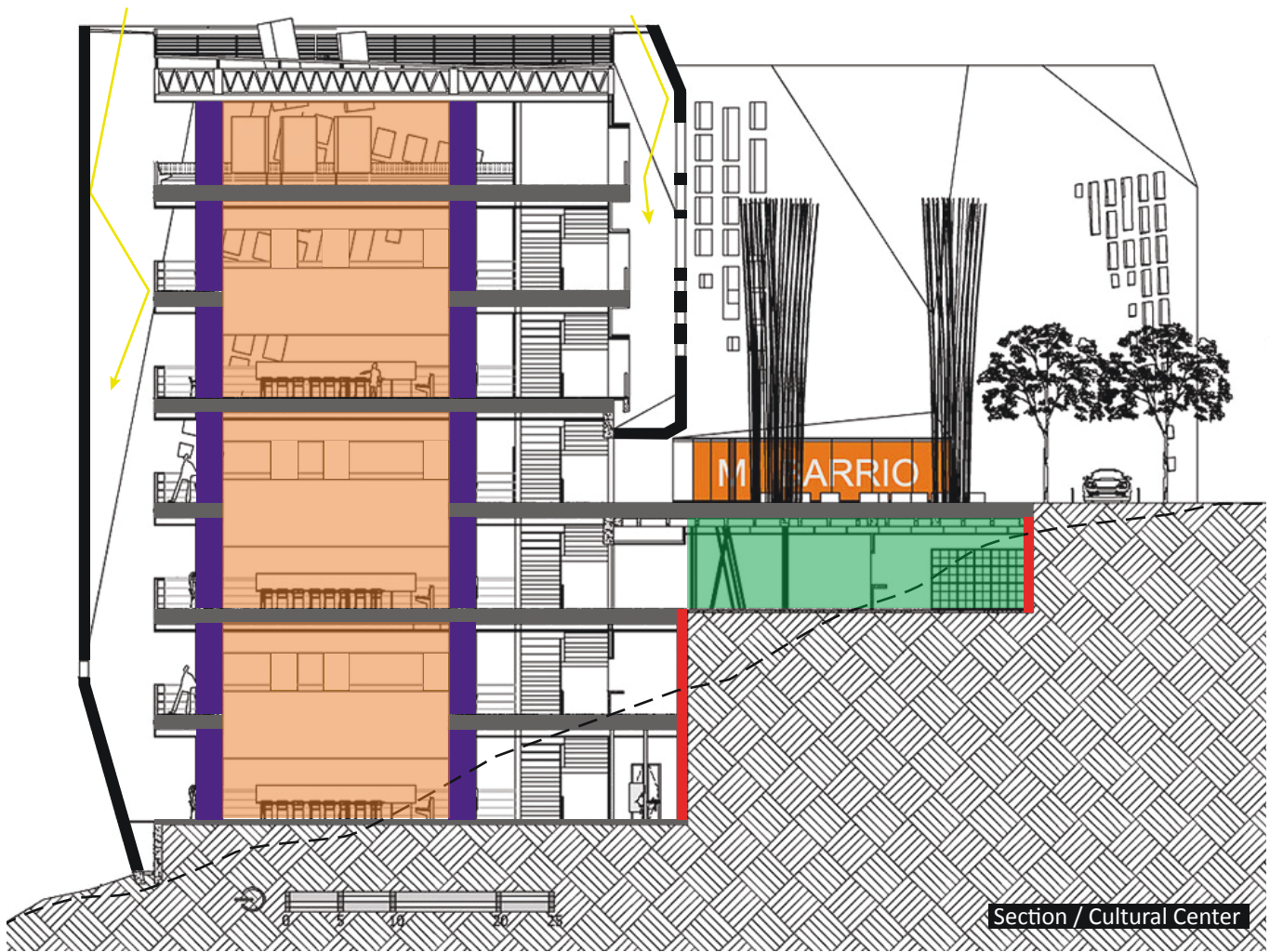


Figure 2.2

filled with concrete, in an effort to provide more grip to the surface of the terrain. Each building has different height, the tallest being the Cultural Center (7 stories tall, 32.06 m), followed by the Community Center (5 stories tall, 24.58 m) and the shortest being the Auditorium at 24.39 m, from which 7 m are buried underground. One of the main objectives of the project is to create holding environments through the creative disposition of space; taking advantage of an open floor plan, views throughout the building are encouraged while enclosed areas are kept to the minimum.

Materiality also played an important role in the design of the buildings: the envelope consists of black stone tiles, as a reinterpretation of the surrounding landscape. Inside the building windows are scarce, with natural light accessing mostly through skylights; the natural light then bounces through the white walls into the building's core, clad with wood, creating a peaceful environment intended for studying and reading. Vinyl floors of different colors and shapes were used profusely

Legend

- Core structure
- Concrete slabs
- Retaining walls
- Envelope / skin
- Administrative office
- Library
- Original slope
- Natural light

Source:
Arch Daily. España Library /
Giancarlo Mazzanti.

Image 2.3



a



b

Image 2.4



Image 2.5

c



d

Image 2.6

- a The library provides a healthy pastime for the children.
- b New life was injected into the neighborhood through the appropriation of the public space.
- c the neighborhood through the appropriation of the public space.
- d Open floor plan in the library allows a fluid perception of space.

Source:
Arch Daily. España Library by Giancarlo Mazzanti.

- Source:
- ¹ Instituto Nacional de Medicina Legal y Ciencias Forenses (INML).
 - ² Spanish for “Antioquía, the most educated”

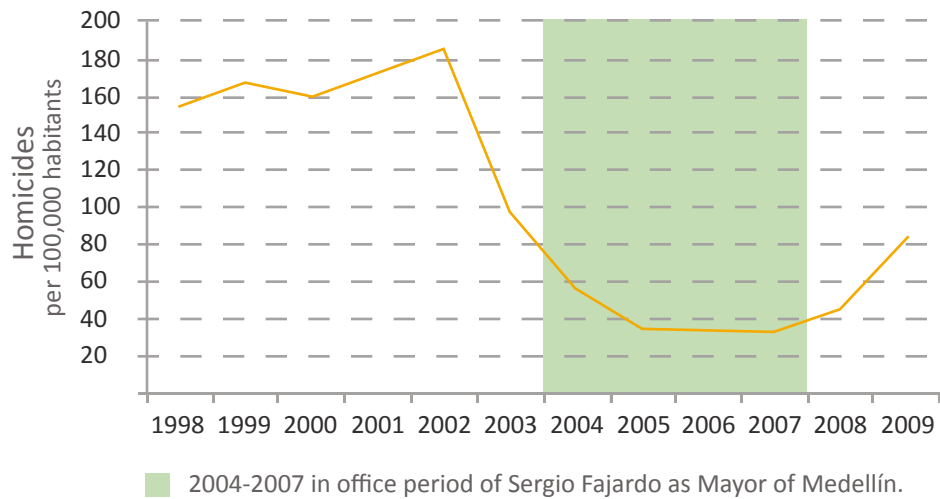
to delimitate each area.

The Auditorium became a crucial part of the development of the social life of the community; besides projecting movies and presenting lectures and theatrical plays, this is the space where decisions regarding the neighborhood are taken. Never before the people from the Santo Domingo neighborhood were able to take decisions concerning their community, making this an extraordinary achievement.

The spirit of entrepreneurship between the locals was encouraged by designing specific areas for the neighbors to show and sell their products. With the introduction of the market, people who preferred to stay at home became inspired and started their own small enterprises.

The same social strategies were implemented in the other four Library Parks that were built during Fajardo’s administration, resulting in better social conditions for the people of Medellín, better quality in education and improved quality of public spaces, as well as an exponential decrease in violence in the Department, reflected by its lower homicide rates.

Table 2.1 1998-2009 Homicide rate in Medellín, Colombia¹



Fajardo went on to become the governor of the Department of Antioquía in 2012, continuing with his *Medellín, la más educada* program, but in a broader and evolved version: *Antioquía, la más educada*.²

Image 2.7



Image 2.8

Built in 1927, the renovation of the Monte Carmelo Catholic Church represents the first phase of the Living Rooms project.

Source:
Google Earth.

● 2.3.2 Casa Familiar: Living Rooms

San Diego, California, U.S.A.

It is no secret that the border cities between the U.S.A. and Mexico have always been areas of conflict due to the illegal drug contraband that takes place there. Mexican border cities like Juarez in Chihuahua, Nuevo Laredo in Tamaulipas and Tijuana in Baja California commonly appear in studies ranking the most violent cities in the world¹; however, its American counterpart doesn't receive as much news coverage. American cities such as McAllen, Laredo and El Paso in Texas have also suffered the consequences of the on-going drug war between cartels.

Adjacent to the city of Tijuana, the american district of San Ysidro in San Diego houses one of the most busiest land port entries in the western hemisphere, with almost 50,000 vehicles and 50,000 pedestrians entering the U.S.A. every day. These circumstances made San Ysidro a very attractive spot for drug cartels to smuggle illegal drugs into the country. San Ysidro also houses *Casa Familiar*, a non-profit organization whose mission is to improve the quality of life of the community through educational programs, housing and community service, as well as assisting its economic development.

In a similar fashion Guatemalan architect Teddy Cruz, a professor at the University of California has devoted the last 15 years to study the social structure and the dynamics of immigrant settlements in the cities of Tijuana and San Diego, while criticizing the role of architects in areas of scarcity and proposing new ways of social interaction triggered by architecture. In 2001, Cruz was given the opportunity to work with Casa Familiar in two housing projects: Living Rooms and Abuelitos Senior Garden. These projects are located in one of the oldest neighborhoods of San Ysidro, and are part of the *Mi Pueblo Village Project*.

The Living Rooms housing project is conceived as an innovative development that proposes the conjunction of social entrepreneurship, cultural production and political participation with alternative and affordable housing. According to Cruz:

“Housing can be more than shelter; in conditions of poverty, it must be connected to micro-infrastructures and socioeconomic support systems. Housing can even be a neighborhood economic engine; it can be a site for the production of new social and cultural relations spawned by pedagogical programming carried out at the scale of the community.”²

Cruz studied the conditions of the neighborhood, identifying the grid pattern of the lots as well as the land use, effectively using it as the basis for his proposal. The low-income character of the neighborhood is equivalent to its mexican counterpart, with fenced lots and relatively small single family

¹ Business Insider.
“The 50 Most violent cities in the World”. Accessed January 17th, 2015.
<http://www.businessinsider.com/the-most-violent-cities-in-the-world-2014-11?op=1>

² “Learning from Tijuana: From the graveyards of corporate architecture to the informal settlements of Latin America”. Accessed Jan 17th, 2015.
http://www.canopycanopy.com/contents/learning_from_tijuana

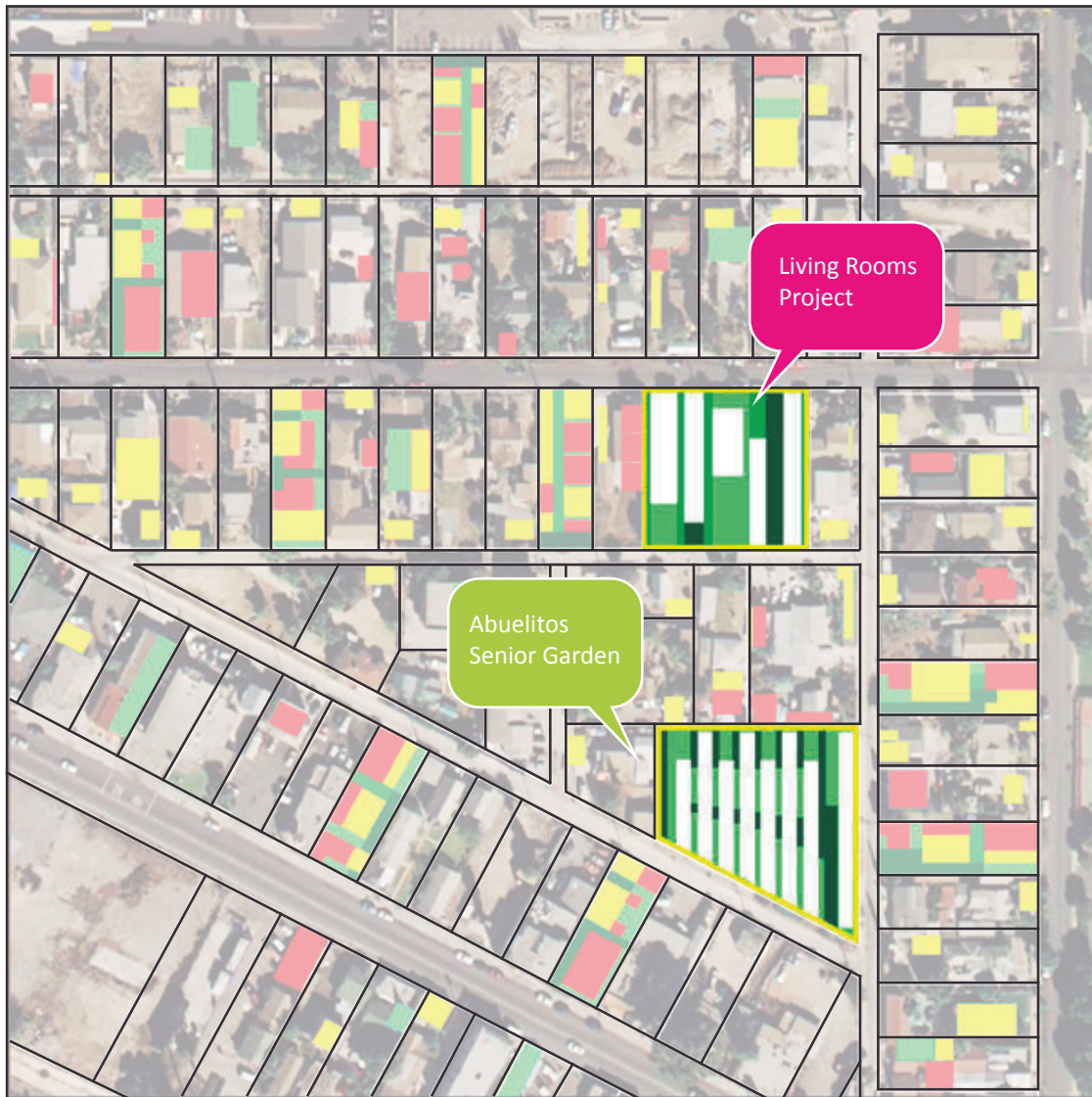


Figure 2.3

houses, though, the american neighborhood displays narrower streets than mexican suburbs, as well as back alleys, which are uncommon in mexican urbanism.

In this pilot project, a 1,300 sqm parcel with an old church is acquired by Casa Familiar. The parcel then gets subdivided into 5 narrow portions of land, as a way of delimitate the areas of the program, while providing the required infrastructure, such as a playground and a community garden. The church is then retrofitted to become a cultural incubator, while the fronting plaza becomes the focus of public life. Twelve housing units will be scattered through the site, each one with a specific program.:

Housing Type 1: *Young couples and single mothers with children.*

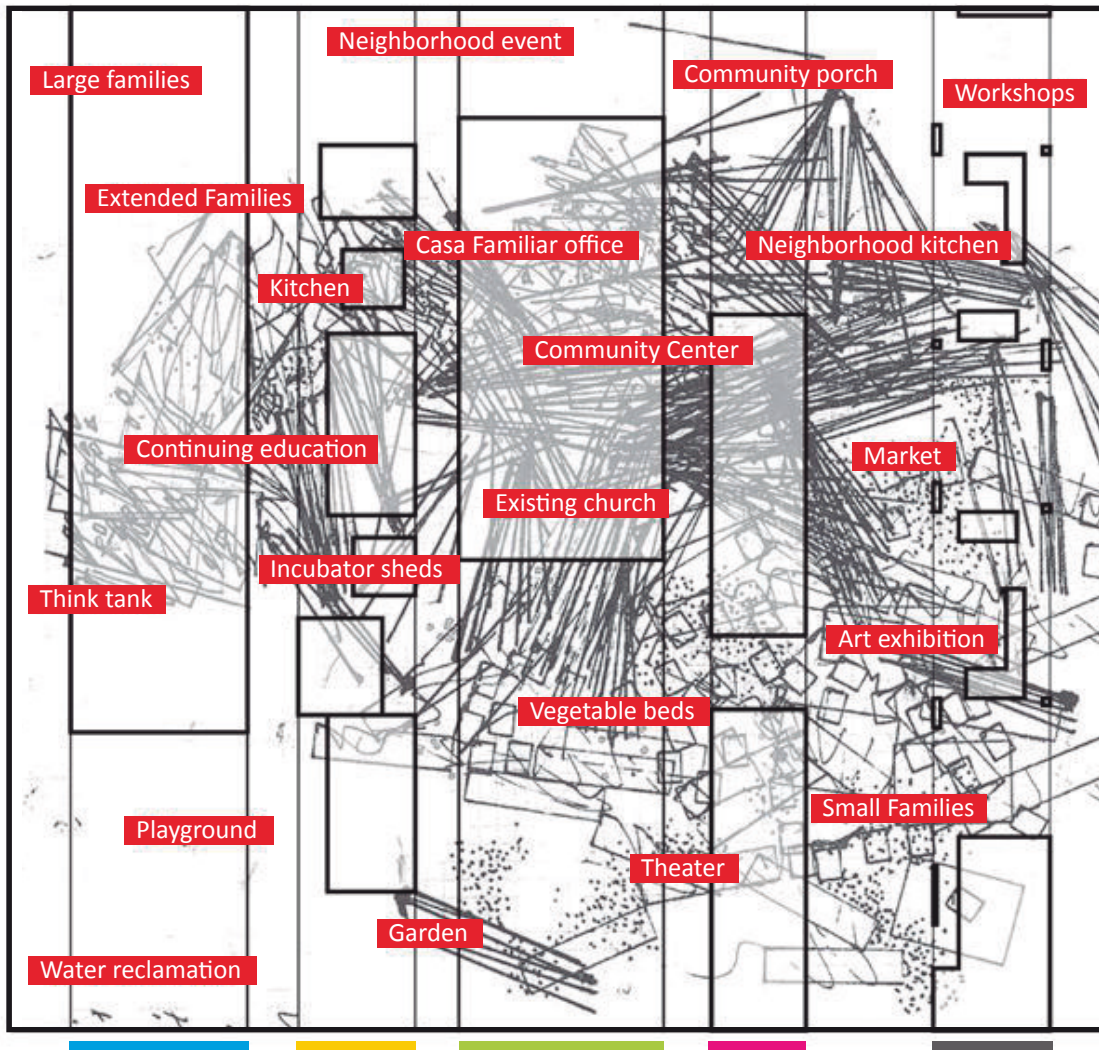
Mixed-type building that combines economic and cultural programs with a specific housing program. The ground level acts as a gathering place for the neighbors, combining sets of movable kitchens and urban

Parcel study.

Source:

MoMA | Small Scale, Big Change: Casa Familiar Living Rooms at the Border and Senior Housing with Childcare. Accessed Jan 23th, 2015. http://www.moma.org/interactives/exhibitions/2010/smallscalebigchange/projects/casa_familiar

Figure 2.4



furniture, in an effort to stimulate the spirit of entrepreneurship among the residents. These areas can also be accommodated to house workshops or informal markets on any given day.

Housing Type 2: *Live-Work duplex for artists.*

This housing type aims at encouraging creative and artistic expression through the implementation of unconventional models of financing for artists, exchanging social service for rent.

Housing Type 3: *Large families with grandmothers.*

Rooted in Mexican culture, grandmothers are viewed as pillars of the family and as so, it is common that past certain age they start living with their progeny. This way, grandmothers can take care of their grandsons whenever their parents are busy or unavailable. Cruz observed that this dynamic continued in Mexican families living in the U.S.A. and integrated it into the design of the project.

Housing Type 4: *Accessory buildings as alternative housing.*

Providing office space and complementing the main buildings.

Dynamic plan for Living Rooms at the Border, layered over Barry Le Va's drawing *Three Activities* (1968).

Source:
MoMA | Small Scale, Big Change: Casa Familiar Living Rooms at the Border and Senior Housing with Childcare.



Image 2.9

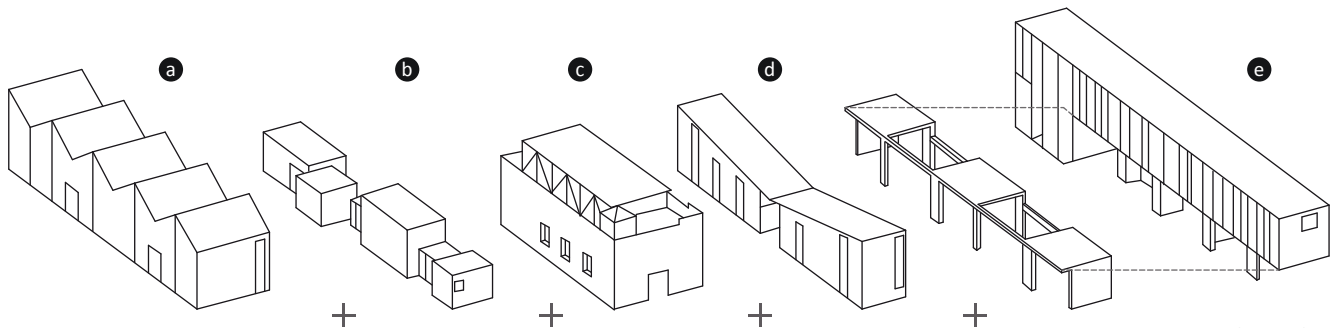


Figure 2.5

During the design phase, monthly workshops between Cruz and the community were organized as a way for them to become more invested with the enterprise. Important aspects of the project were discussed during these workshops, including the concepts of socio-political based design, economic growth at a local scale and the importance of public space. At some point, San Ysidro residents also took the role of architects as an exercise, designing their own projects using wooden blocks, an enriching experience according to Cruz.

The aesthetic aspect of the buildings is of less significance than the social agenda they serve. Coming from a mostly self-built environment in Tijuana, mexican immigrants continue to export this quality into the neighborhoods of San Ysidro. This project encourages this feature into the design of the buildings, resulting in the extensive use of recycled materials, while allowing the community to develop its own identity and sense of belonging.

Scale model of the Living Rooms project.

Simbology

- a Housing Type 3.
- b Housing Type 4.
- c Retroffited Church.
- d Housing Type 2.
- e Housing Type 1 with social programming located at ground level.

Source:
MoMA | Small Scale, Big Change: Casa Familiar Living Rooms at the Border and Senior Housing with Childcare.

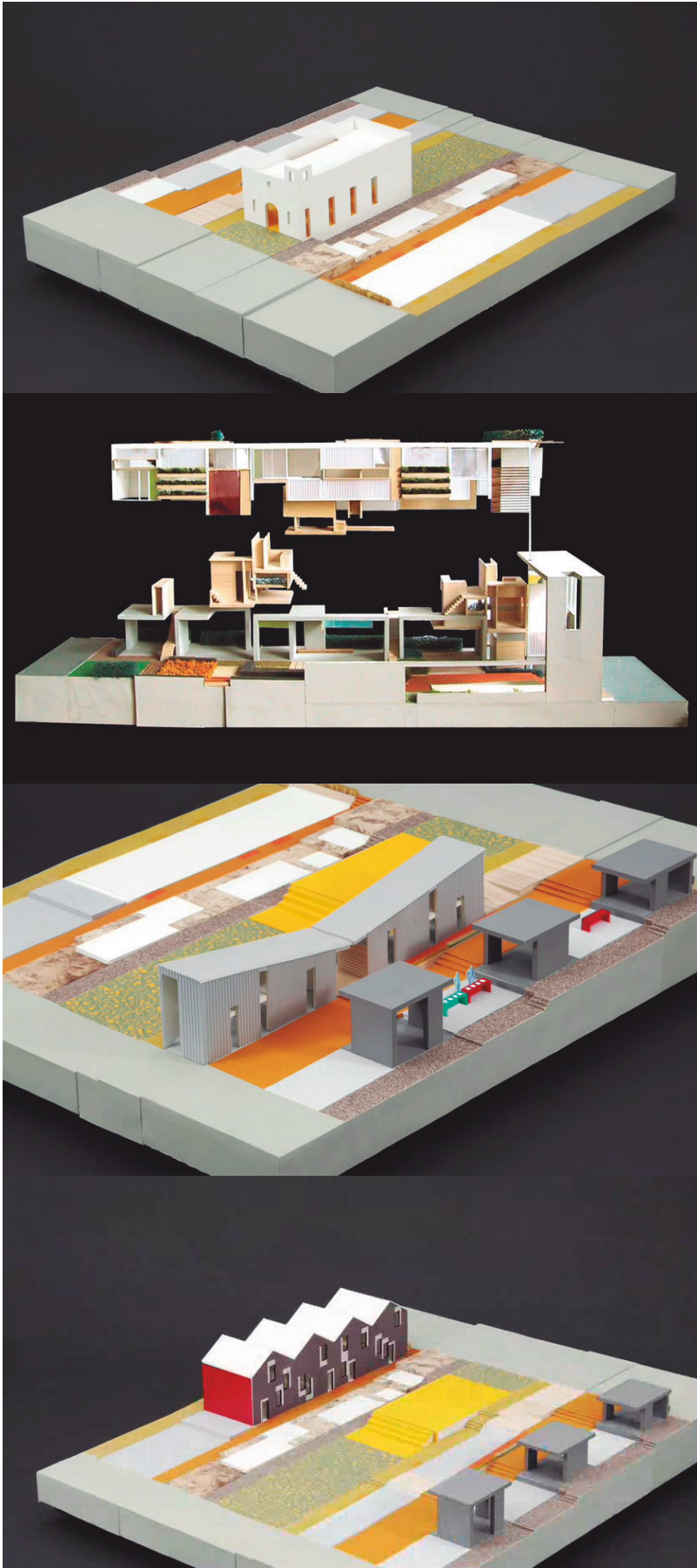


Image 2.10

Scale models depicting each phase of the construction of the Living Rooms Project.

Source:
MoMA | Small Scale, Big Change: Casa Familiar Living Rooms at the Border and Senior Housing with Childcare.



Image 2.11

Although approved in 2005 by the city's council, the development has faced financial difficulties given the uncommon nature of the project. Instead of applying for loans, Living Rooms is being funded through grants. Construction was set to start in 2012, but as of 2015, there have been no major developments.

Regarded as a *Healer of Spaces*³, Cruz continues to study the social dynamics in areas of scarcity with the Living Rooms project, aiming at rebuilding the community and providing the people with a sense of belonging and homeliness that has been missing. Social projects like these need to be developed from inside the community, by encouraging the people to take part in the process of making decisions. Here, Cruz compares himself to the director of an orchestra, arranging many of the elements that constitute an elaborated composition.

The Living Rooms project, along with the Abuelitos Senior Garden, aspires to become a pivotal point in the life of the community, enduring any economic and political factors that may obstruct its progress and demonstrating the healing potential of architecture.

³Arcelia Mac Gregor. Teddy Cruz: Healer of Spaces. *Ensamble Magazine*. November 2012 - January 2013, 14.

Rendering depicting community life in the Living Rooms project.

Source:
MoMA | Small Scale, Big Change: Casa Familiar Living Rooms at the Border and Senior Housing with Childcare.



Image x.x

● 2.3.3 El Guadual Children Center

Villa Rica, Cauca, Colombia.

Built in 2013 in Villa Rica, Cauca in Colombia, the Guadual Children Center services approximately 200 newborns and 300 children aged 0-5, as well as 100 pregnant mothers, providing early education, food and recreational services, as part of the *De Cero a Siempre* program, a nation-wide strategy in which private and public sectors, civil societies and international organizations joined forces in favor of children living in poverty.

View from the main entrance into the inner courtyard.

Source:
Arch Daily. El Guadual Children Center / Daniel Joseph Feldman Mowerman + Iván Dario Quiñones Sanchez. Accessed October 21, 2015. <http://www.archdaily.com/534059/centro-de-desarrollo-infantil-el-guadual-daniel-joseph-feldman-mowerman-ivan-dario-quinones-sanchez>

Children and teenagers of the local community were actively involved during the design stages of the center in order to boost the sense of belonging and appreciation; in addition, more than 60 local workers were in charge of the construction of the building and after it was finished 30 local women were trained and certified as early educators in order to run the center.

The Children Center was conceived as a low tech, energy-efficient building; several strategies were used to this end, including the use of local materials such as bamboo, crossed ventilation and rain-water harvesting in each of the classrooms, as well as the extensive use of



Carrera 16 Street

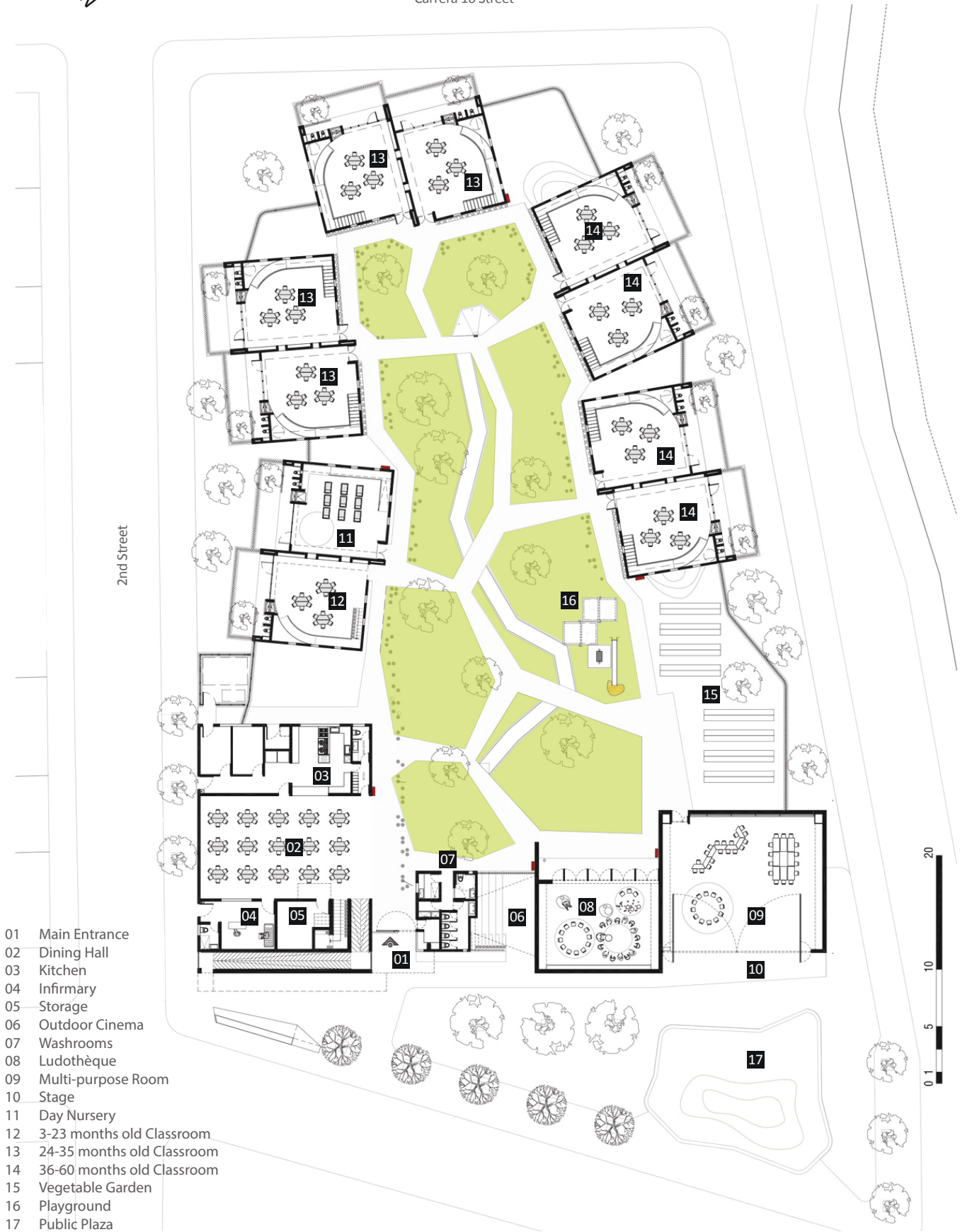


Figure 2.6

natural light in every space.

The project consists of a series of volumes disposed over the perimeter of the site, which in turn creates a central courtyard for the children to safely play and explore. Each one of the 10 classrooms are equipped with modular furniture, washrooms and a small garden located in the back, in accordance with the *Reggio Emilia pedagogic philosophy*, a program which focuses in allowing children to learn through experiences such as exploration and observation in an enriching environment, while encouraging social interaction with other children.

The disposition of the program allows the main entrance to be constantly monitored, providing a safe place for the children without becoming restrictive.

The ludothèque and the multi-purpose room are located at the northwest portion of the building, facing the street; of these two spaces, the multi-purpose room has the ability to open itself to the civic plaza, allowing it to become a stage that can be used at night and during the weekends.

The structural system of the building is comprised of load-bearing

Because of its design, each classroom is able to operate without using energy of any kind.

Source:
Arch Daily. El Guadual
Children Center / Daniel
Joseph Feldman Mowerman +
Iván Dario Quiñones Sanchez.



Image x.x



Image x.x

concrete walls and a multi-layered bamboo and polycarbonate roof. The classrooms are further protected from solar incidence through the use of a bamboo pergola; in the same fashion, the fences that set the boundaries of the building are made out of bamboo poles, allowing certain transparency with the street.

The children are encouraged to explore and discover their surroundings on their own in the inner courtyard, as part of the educational philosophy; among other outdoor activities, one of the most important lessons comes from the vegetable garden that was included in the program, as a way to teach children about the importance of agriculture and our connection to nature.

The project offers generous sidewalks and green areas for the people around the site; it also wishes to make a connection with the surrounding environment by allowing the community to get involved with the activities that take place there; for example, we can find an outdoor cinema facing the street in which anyone can sit down and enjoy an evening movie with the rest of their neighbors.

This project - along with the España Library Park and the Casa Familiar

Children learn the importance of agriculture by experience, thanks to the vegetable garden on site.

Source:
Arch Daily. El Guadual
Children Center / Daniel
Joseph Feldman Mowerman +
Iván Dario Quiñones Sanchez.

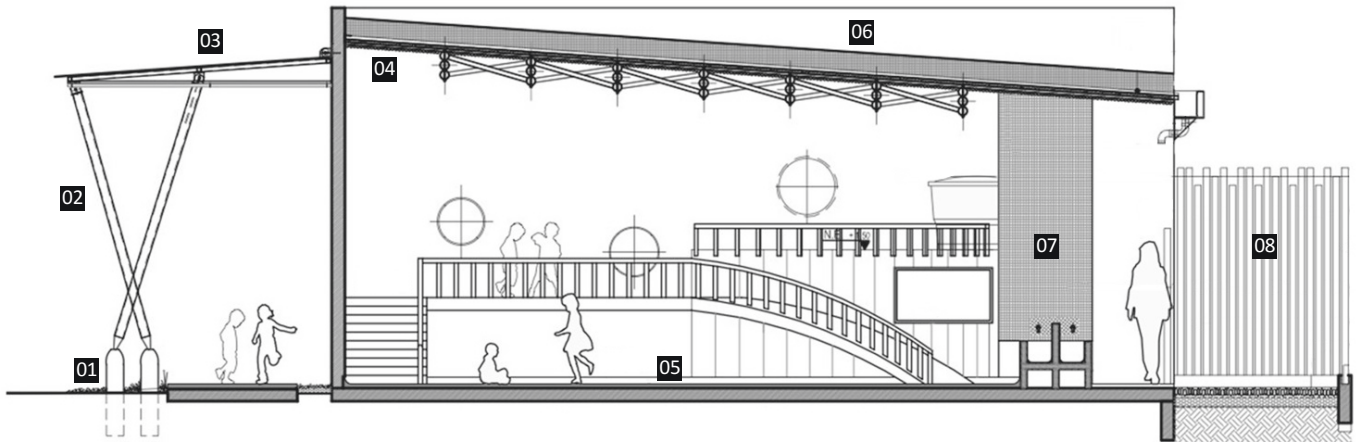


Figure 2.7

project- is a perfect example of architecture joining forces with the final users of the project in order to satisfy the requirements of the community in which it is located.

As we have studied in this chapter, these projects ended up fulfilling the need of the people for a space besides their home to call their own; a space for which they actively contributed to the design and construction, and that are proud to pass on for the next generations to enjoy. These projects also became milestones of each of their communities, assisting in the creation of places of important social interaction where it was needed the most.

- 01 Concrete Pedestal
- 02 Bamboo pole Columns
- 03 Ceiling made out of hard reed
- 04 Bamboo ceiling
- 05 Concrete Slab
- 06 Metal roofing and Polycarbonate sheets
- 07 Washrooms
- 08 Private Garden

Source:
 Arch Daily. El Guadual
 Children Center / Daniel
 Joseph Feldman Mowerman +
 Iván Dario Quiñones Sanchez.

Critical Design Points

Chapter 2.4

Taking into consideration the research and the case studies, a list of critical points of design was developed in order to ensure the success of the project:

- There should be a deep involvement of the community during the development of the project; by arranging design charades with the neighbors there is a better chance of preventing the imposition of unneeded programs, as well as proposing new ideas that could enrich their experience and satisfy their need for social inclusion, following the example of the Living Rooms project.
- The *scale of the intervention* should be designed according to the scale of the built environment surrounding the site.
- The project should make use of *sustainable strategies*, such as passive ventilation, heating, cooling and shading, according to the climate of Chihuahua.
- The use of local and low-maintenance *materials* in order to keep low costs of operation.
- The project will promote the use of *indigenous vegetation* such as oak trees as well as combining grass and gravel, effectively preventing the waste of water.
- The design should focus primarily in the creation of spaces that assist the healthy *development of the community and the nourishment of the children and teenagers*.
- Kickstarter campaigns and grants can be used as alternatives to traditional *funding*.
- The building should be able to be *built in stages*, as the flow of capital might vary during the construction process.
- Given the case, any member of the community should be able to make general *repairs* in the buildings.
- The project should comply with any *normative* regarding use of land, number of sanitary facilities and building accessibility.
- The project should encourage the continuous involvement of the community in the programs and the *follow-up work* once the project is built.

Area of Study

Chapter 3.1

● 3.1.1 Light Industry and Suburban Neighborhoods in southeast Chihuahua

The addition of the Avalos Industrial Park in the decade of 1990 triggered the expansion of the urban fabric towards the northeast area of the city. Construction companies began developing tracts of land in order to provide accommodation for the employees working at the maquiladoras, resulting in 5 new suburban neighborhoods as of 2015.

Legend

- Urban Fabric
- ★ Downtown
- Site Location
- Chuvíscar River
- Sacramento River

Source:

Evaluación de factibilidad de
Densificación Urbana (2006)
Instituto Municipal de
Planeación.
Accessed June 15th, 2015.
<http://www.implanchihuahua.gob.mx/P-DU2040/eeu/Informededen-sificacion.pdf>



Figure 3.1

¹ Source:
Plan de Desarrollo Urbano
2040. Cuarta Actualización
(2013). Instituto Municipal de
Planeación.
Accessed November 11th,
2015.
<http://www.implanchihuahua.gob.mx/PDU2040/>

According to the 2040 Urban Development Plan of Chihuahua (PDU 2040),¹ the municipal government recently approved the expansion of the existing industrial park, as well as the development of further phases (stages) of every neighborhood in the area in the near future.

The latest revision of the UDP in 2013 approved the addition of an extra 29,700 ha destined for residential developments within the area compared to the previous revision, as well as the introduction of a higher density (46-60 houses/ha in some cases).

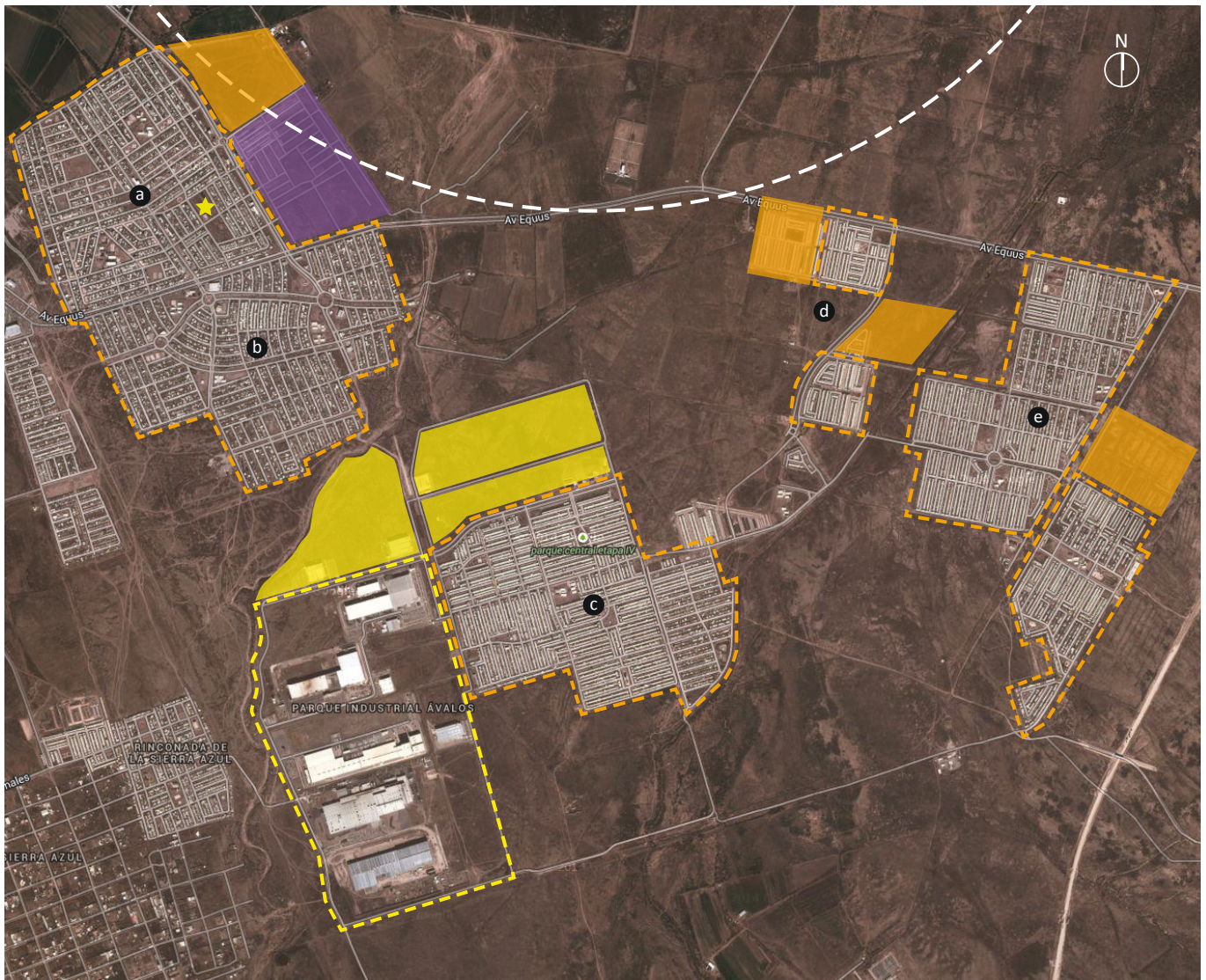


Figure 3.2

Legend

- ★ Proposed Site
- Existing suburban developments [36-45 houses/ha]
- Recently approved housing developments [36-45 houses/ha]
- Recently approved housing developments [46-60 houses/ha]
- Avalos Industrial Park
- Recently approved light industrial zones
- Area of risk [floods]
- a Paseos del Camino Real
- b Jardines de Oriente
- c Praderas del Sur [I,II & IV]
- d Puerta Savona [I,II,III & IV]
- e Punta de Naranjos Oriente [I,II,III,IV,V & VI]

This means that there will be more houses in the same amount of land, while the area destined for green spaces, leisure and sports only received an increment of .93 ha. At present, this cluster of suburban neighborhoods display a wide range of issues, with the most preoccupying one being the wave of violence that has struck its communities in its short time of existence. Because of its recent inception and future development, this area represents an adequate candidate to test the premises presented in this document.

Once the area of study was established, a number of factors were taken into consideration in order to choose an appropriate site for the project, such as the location and size of the available land within the

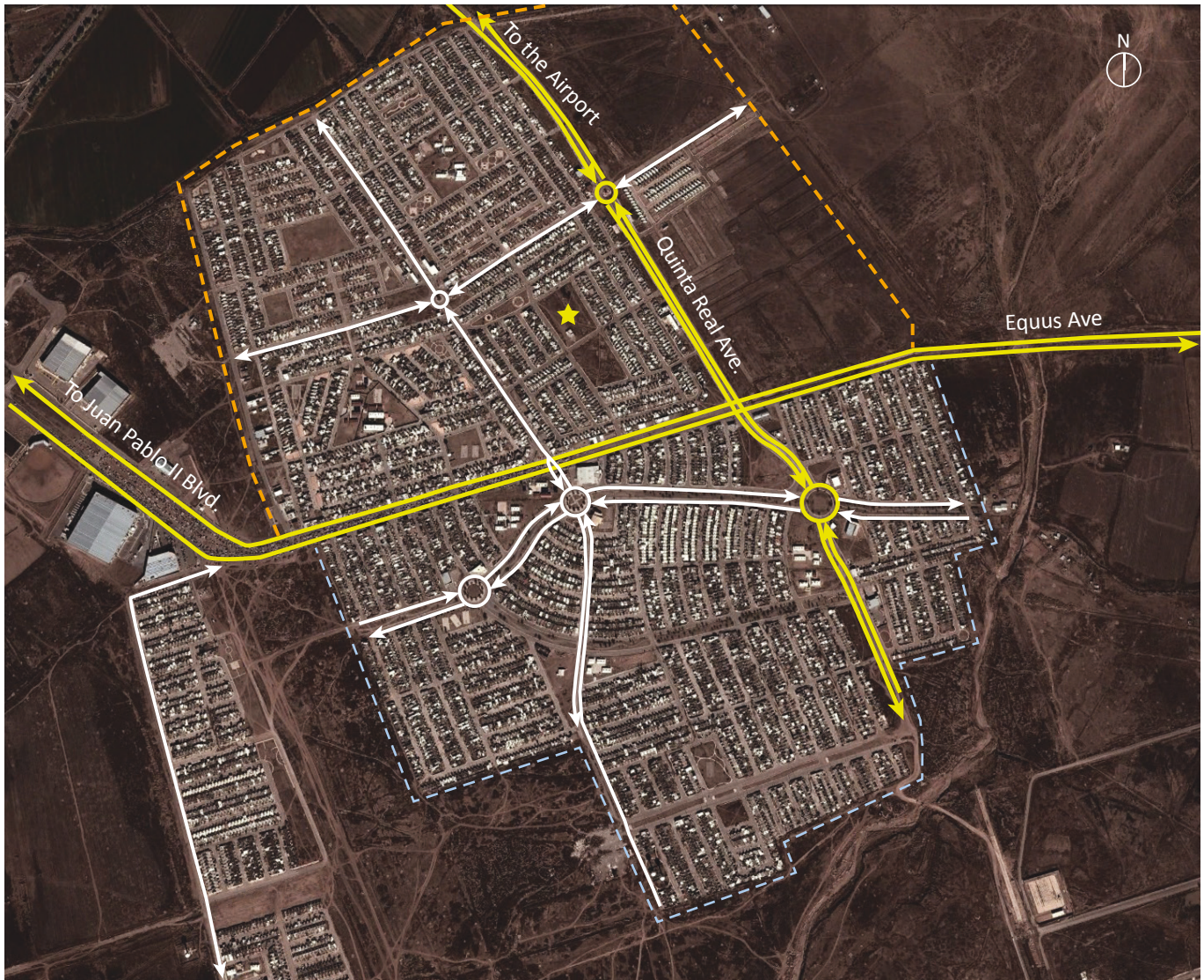


Figure 3.3

Legend

- ★ Proposed Site
- Primary roads
- Secondary roads
- ▭ Paseos del Camino Real
- ▭ Jardines de Oriente

area of study, the distance to main roads, the available infrastructure and, most importantly, the potential area of influence.

● **3.1.2 Paseos del Camino Real neighborhood.**

All these requirements point to a site located in the relatively new *Paseos del Camino Real* neighborhood, a development owned by the Frinsa Construction Company. With an area of 21,194.14 sqm the site provides enough space to propose a multidisciplinary project that allows us to address the problematics of the neighborhood.

Source:
 Prestigio Frinsa:
 Plan Maestro & Google Earth.
 Accessed June 15th, 2014.
<http://www.prestigiofrinsa.com/site/caminoreal.php>

The development is accesible via Equus Ave. to the southwest and the Quinta Real Ave. to the northeast, both main roads lead into the Juan Pablo II Blvd. an arterial road that connects these suburbs to the city as well as to the International Airport of Chihuahua and a major Bus station. There is also a rehabilitation center for children with disabilities (CRIT) located along the Juan Pablo II Blvd. This center receives a great number



Figure 3.4

Legend

- | | | |
|----------------------------------|------------------------------|----------------------------------|
| ★ Proposed Site | ● Green Areas | 5 School |
| --- Phase 1 | ▼ Sports Facilities | 6 School |
| --- Phase 2 | ■ Commercial Areas | 7 Suraci Kindergarten |
| --- Phase 3 | 1 Maquila | 8 Francisco Villa Primary School |
| --- Phase 4 | 2 Tori Norawa Kindergarten | 9 Ley Supermarket |
| --- Phase 5 [Under construction] | 3 Camino Real Primary School | 10 Car Wash |
| --- Phase 6 [Recently approved] | 4 Camino Real Secondary | 11 Community Center |

of people each year from different cities in the state, making the location of the project a possible place of interest for these people.

The site is in close proximity to Jardines de Oriente neighborhood, one of the most dangerous areas in the city; this area constantly makes headlines because of the number of executions and violent crimes that take place there.

Source:
 Prestigio Frinsa:
 Plan Maestro & Google Earth.
 Accessed June 15th, 2014.
<http://www.prestigiofrinsa.com/site/caminoreal.php>

● 3.1.3 Residential Area

The neighborhood consists of 120 sqm lots (8 m front x 15 m deep) with five different base model houses to choose, with built areas ranging from 34 to 60 sqm. The construction process was divided into four phases over the years. The construction system used consists of .15 x .20 x .40 m concrete blocks with .10 m concrete slabs and no insulation; single glazed windows complete the building's envelope. Optional finishes such as ceramic floors are available at an extra cost.

Self-construction plays an important role in Mexican suburban developments, since these houses might fit the needs from its inhabitants in the beginning, but they might need to be reconditioned on the long run to satisfy the requirements of the family. One of the most common modifications include the addition of steel fences in response to the increase in violent crimes committed in the area.

Even though most of the houses in this neighbourhood are abandoned and show signs of vandalism, the developers already started construction of its 5th and 6th phase, a 49.432 ha addition to the neighborhood.

● Recreative Areas

Public spaces and green areas represent an approximate of 5% of the total area of these types of housing developments; most of them consist of playgrounds and basketball courts with the occasional soccer court, as well as few benches in poor conditions. The green areas remain undeveloped.

● Education

The neighborhood offers educational institutions ranging from kindergartens to primary and secondary schools, fitted with areas destined for playgrounds and green spaces that also remain undeveloped. There is a community center that has been recently built on the corner of Equus avenue and the Paseos del Pastizal avenue.

● Commercial Area

Most of the commercial area of the neighborhood is located along Equus Avenue and the Paseos del Pastizal Avenue. The area consists mainly of self-owned convenience stores and small shops, sometimes adapted from houses. Liquor stores are common in the neighborhood and are spread throughout the area.

There is also a medium-sized supermarket within the area of study that satisfies the demands from the adjacent neighborhoods. On Sundays, an informal market takes place on the median strip of the Equus Avenue starting around 7:00 am and lasting for the most part of the day.

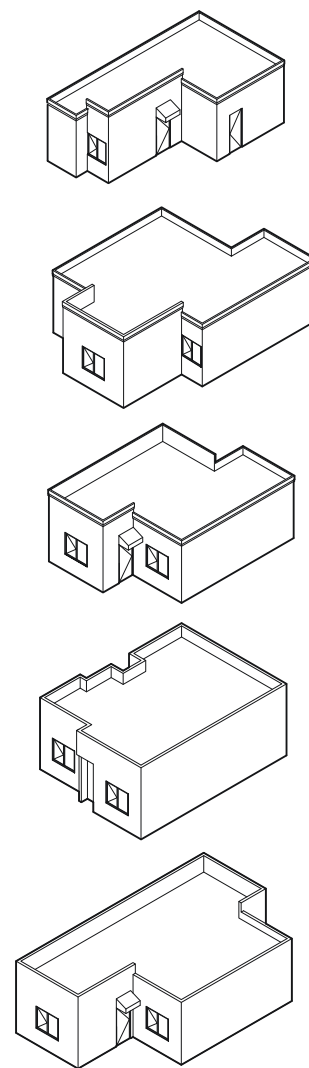


Figure 3.5

Frinsa offers five different model houses, starting at an approximate cost of \$26,513.84 USD for a one bedroom house. (See appendix for floor plans).

Source:
Prestigio Frinsa:
Plan Maestro & Google Earth.
Accessed June 15th, 2014.
<http://www.prestigiofrinsa.com/site/caminoreal.php>



Images 3.1 - 3.4.

- a One of the first modifications made to the new houses by their owners is to add steel fences to prevent burglaries.
- b The area has primary and secondary schools scattered through the neighborhood, many of them are kept in bad conditions.
- c Green spaces and recreative areas often remain undeveloped or kept in bad condition.
- d Typical Sunday morning at the informal market located in Equus Ave.

The Paseos del Camino Real neighborhood exemplifies the typical appropriation of space by the locals in Mexico, from the modifications made to the houses to the informal market on Sundays, but the thing missing from the neighborhood remains the same: social cohesion; this becomes particularly evident when walking down the streets by the condition in which public property is kept.

In addition to the long work days for the parents, one could argue that beyond their own properties, the neighbors do not have any interest in their surroundings, as long as they feel comfortable in their houses at the end of the day; in this scenario, healthy socializing and its positive benefits, might have lost its importance, a situation that could be contributing to the current state of violence that Chihuahua has been experiencing for the past 10 years.

Source: Gogle Earth.

● 3.1.4 Proposed Site

The site consists of a piece of land measuring 11,674.20 sqm that is located in the southeast area of the neighborhood, with another lot of similar size across the street. According to the master plan provided by Frinsa, the area is destined for green spaces and/or recreative areas. The lot currently remains vacant, and it is only occupied by a small shed that appears to be self-built by the locals and that is used as a church for the community.



Image 3.5 / Source: Google Earth

Simbology

--- Proposed Site

According to the PDU2040 the adjacent lot is destined for educational purposes, a situation that the proposed project could take advantage of; it currently displays an undeveloped system of walkways and a few recently planted trees.

Every house in the neighborhood has an outdoor garage with the capacity for one car. If one household has more than one car, they have to park it on the street; the width of the streets on the neighborhood varies from 10 m to 10.5 m, allowing for 1 car to be parked on one side of the street and leaving two open lanes.

Many of the houses adjacent to the site remain vacant and many show signs of

graffiti on their exterior walls, a situation that could be explained because of the way the houses are delivered to their new owners, without any extras such as fences that could prevent, or at least complicate things for these people; it is also one of the first modifications made to the houses.



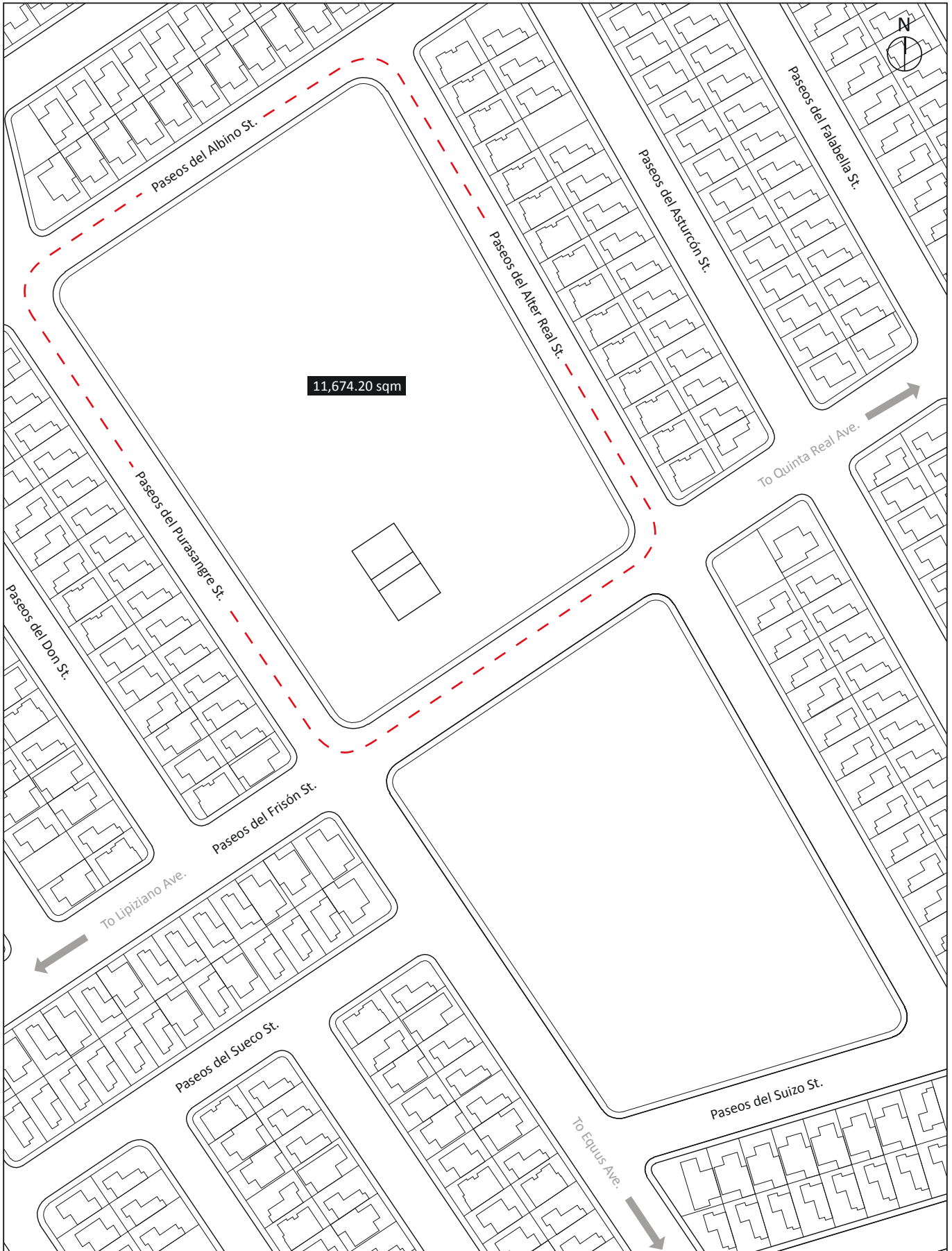
Image 3.6 / Source: Google Earth.

During the weekdays this area remains almost deserted, with very few people going only to the nearest convenience store; at the same time newcomers are often frowned upon.



Image 3.7 / Source: Google Earth.

Figure 3.6



Program

Chapter 3.2

Children born in Chihuahua during the past decade have become very susceptible to the influence of the drug-related business. Nowadays, Mexican society is being constantly bombarded with news and television shows depicting drug lords as heroes, negatively affecting the perception of those who are easily impressed. Juvenile delinquency takes advantage of opportunity. Given the circumstances of the children living in suburban neighborhoods of Chihuahua such as Paseos del Camino Real, they currently represent an easy target for delinquents looking to recruit.

According to studies conducted in 2000¹, it is possible to reduce the incidence of delinquency in low-income neighbourhoods by providing educational infrastructure, such as schools and libraries, as well as recreational spaces and leisure centres. It is also important to consider the role that community bonding plays in the matter; the projects presented in Chapter 2.3 succeeded in creating a stronger, healthier community by getting the people invested in the projects.

By implementing a holistic approach that targets both the healthy development of the children and the re-integration of the community, it is possible to assist in the social change that has been missing from these neighborhoods since their conception.

The project aims to develop three main components of human nature: body (physical activities), mind (knowledge) and soul (artistic expression). It is of vital importance to acknowledge and nourish the interests of the children, while introducing them to new ones. In light of the research presented here, the following program is proposed to address the current situation of the suburban neighborhood of Paseos del Camino Real, in Chihuahua, Chihuahua, Mexico:

Artists Studio

Conceived as the space where the creativity in teenagers is nourished and encouraged. Here, the basic principles and techniques of fine arts including painting, sculpture, theatre, music and dance can be taught. An exhibition hall is considered in order to allow the artists to show their work.

Workshops

The project proposes after-school job development workshops where the teenagers can learn a variety of trades such as carpentry, blacksmithing, technical drawing, needlework and building work, to name a few. The strategy consists in having elderly people living in the neighborhood share their expertise in a specific trade with new generations while continuing to be productive themselves.

¹ Source:
Ruth D. Peterson, Lauren J. Krivo and Mark A. Harris. "Disadvantage and Neighborhood Violent Crime: Do Local Institutions Matter?" in *Journal of Research in Crime and Delinquency*, #37 (2000) pp. 31-63.



Green Areas and Playgrounds

Currently there are 3 main recreation parks that serve the city. The oldest one is the Ciudad Deportiva near the Historic Center- which is considered by many as the lung of the city-, Unidad Deportiva Sur, located in the southeast area of the city, and more recently the Presa del Rejón Park. As the expansion of the city continues over the next decades, it is important to consider green spaces and recreational areas in this sector of the city. Given its climate, native vegetation is proposed extensively throughout the project, with structures that can provide shade during the summer.

Walkways and Bicycle Paths

The development of Chihuahua as a city has always given priority to the automobile, actively diminishing bicycles as means of transportation; in addition to this, recreative use of the bicycle is limited to a few parks around the city and the Presa del Rejón Park, a popular spot for cyclists and runners. This project proposes a cycle circuit around the site, in an effort to allow the people to discover a new side of their neighborhood.

Cafés

Cafés have always played an important role as social gathering points and, continuing with the concept of Third Places, the project proposes a café in order to enhance social cohesion between the neighbors.

Image 3.8

Presa del Rejón Metropolitan Park. Source: Author

One of the first examples of a ludothèque is “*Toy Loan*” in Los Angeles, California, in the U.S. in 1934 and “*Lekotek*”, in Sweden. Founded in 1963, Lekotek’s vision states that “toys and play empower children to reach their potential and increase the inclusion within the family and community”.* Lekotek’s concept also includes a “Toy Library” program that fits a specific toy to the learning needs of a particular child. In the sixties, the UNESCO (United Nations Educational, Scientific and Cultural Organization) built several ludothèques in prisons, schools, hospitals and community centers in France, Spain, Australia, Italy and Portugal, to name a few, eventually making its way to latin american countries like Brazil, Argentina and Peru. Brazil currently has the most ludothèques in Latin America with 350. The decade of 1990 saw the introduction of a series of ludothèques in Colombia thanks to the program “Una Ludoteca Para Tí” (“A Toy Library for You”), an effort between many organizations, including the partnership between OMEP-Canada.**

Sources:

* Lekotek. Accessed January 1st, 2015. <http://www.lekotek.org/general-info/about-lekotek/mission>

**OMEP-Canada. Accessed January 1st, 2015. <http://omep-canada.org/accomplishments/>

Ludothèque

Proposed as the heart of the project, a ludothèque (or *Toy Library*) can be defined as the dedicated space that contributes to the physical and cognitive development of children through the use of carefully designed games that nurture their curiosity, encouraging the exploration of their surroundings and the use of their imagination, while boosting their social skills and creating a sense of belonging within a safe and tolerant environment. Usually, every group of children is supervised by a professional. Ludothèques are suited for children ages 4 to 12.

Because of its nurturing nature, ludothèques should be located primarily in areas that display social and educational risks², effectively acting as a prevention strategy against the development of delinquency in children. In order to achieve the desired effect and enrich the experience, the ludothèque should include the following spaces:

- *Entrance Hall/ Reception desk.* To regulate and monitor the entrance of people into the building.
- *4 - 6 years old Area.* This area should contain the appropriate equipment according to the age of the children. Capacity: 12-15 children.
- *6 - 12 years old Area.* Appropriate space for children in this age range. Capacity: 12-15 children.
- *Infirmery.* Equipped to take care of minor injuries.
- *Educational Kitchen.* Allowing the children to cultivate a sense of responsibility while developing their sensory system through touch, smell and taste.
- *Dining Room.* Common space, aimed at developing social interaction between children.
- *Library.* Suited with age-appropriate literature.
- *Educational Garden & Playground.* Destined to nurture the children’s relationship with nature.
- *Washrooms.* Sanitary facilities.
- *Administrative Office.*
- *Storage Room & Mechanical Room.*

Skateboard & Graffiti Park

Skateboarding is considered both a sport and a recreational activity, but it is also a popular method of transportation for teenagers. Skateboarding culture is often linked to graffiti, but in Chihuahua there aren’t many places where teenagers can practice those activities. The Graffiti Park will offer a space for graffiti artists to creatively express themselves in a designated area. Monthly contests could be arranged in order to encourage healthy competition among the people.

Rock n’ Roll Garden

Following the steps of the El Sistema program, the Rock n’ Roll Garden is proposed as a space for the children to develop their musical curiosity.

²María Borja. Les Ludoteques: Joguines i Societat. (Barcelona: Rosa Sensat & Edicions 62: 1982)

Library

A library is a very important component of the community, where history and fantasy come together, enriching the imagination of the readers. It is also a place of social gathering, where people can connect through similar interests. As with the workshops, elderly people can assist in the proper functioning of the building. The following areas must be included in the building:

- *Entrance Hall / Exhibition Hall.* providing a space for the work created at the workshops
- *Auditorium.* Used for lectures and important events, as well as to accommodate weekly or monthly meetings with the neighbors.
- *Reading/ Study Area.* Main area of the building.
- *Multi-purpose Room.* Separate from the main area, it is suited for multiple activities, such as small lectures or reading clubs or other activities.
- *Multimedia Section.* Accustomed with electronic resources such as movies, audio files and PC's.
- *Washrooms.* Sanitary facilities.
- *Storage.*

Sports Facilities

Sports play an important role in the physical, emotional and social development of children. Besides the health benefits of physical activity, sports are known for building character and aiding in the development of leadership traits among young people. The social nature of sports encourage the development of values such as discipline, responsibility and competition, while boosting social inclusion and creating a sense of belonging, diverting the children's attention from delinquent behavior. The project proposes the following sports facilities:

- *Basketball court.* Basketball is one of the most popular sports in Chihuahua, exporting many distinguished players into world-renowned leagues such as the NBA.
- *Soccer field.* Regarded as the most popular sport in Mexico because of its competitive nature, unmatched passion and loyal following.
- *Workout Stations.* Effectively creating a workout loop throughout the site.

Place of Worship

Faith is a very important part of mexican culture. Approximately 91% of the population in Mexico belong to the roman catholic church. The church located on the site offers mass every sunday.

Outdoor Cinema

Used as an excuse for the people to get out of their houses and enjoy the experience of watching a movie with their family, friends and neighbors. The outdoor cinema can also be used to exhibit the work done by the members of the cinematography workshop.

Informal Market / Commercial Initiatives

Tianguis markets have deep roots in Mexican tradition; it is an informal market where many types of merchandise is sold, from perishables to crafts, clothing and even cars nowadays. These markets are set on a specific day of the week, usually Sundays, from very early in the morning until the afternoon. The project considers providing the neighbors with an area devoted specifically to this kind of market, encouraging entrepreneurship among the neighbors.

Wi-Fi Spots

New generations were born in a society that is dependant of online social networks such as Facebook, Instagram and Youtube. Nowadays, people are more attracted to public spaces that provide internet connectivity. By supplying a wireless connection throughout the project, people can experience the benefits of outdoor interactions with their neighbors while allowing them to still be connected through social media.

Design Process

Chapter 3.3

Since the beginning of the project, it was widely understood that it was going to be a challenge to incorporate such a diverse program within the boundaries of the chosen site; as a result, scale became the first problem we encountered, as it was of paramount importance to have a building that did not feel imposed to the neighborhood. Consequently, the building was thought to be only one story high.

Once that the height of the building was defined, the next challenge was to make the whole site accesible for the the people to wander, encouraging them to enjoy healthy outdoor activities. Taking its inspiration from the Presa del Rejón Metropolitan Park, a bicycle loop was incorporated into the design.

During the early stages of the design process, there was the idea of merging the two available pieces of land within the neighborhood, resulting in the creation of a superblock that could easily accomodate the program. In this iteration of the project (refer to image 3.9) a main building was located within the axis of the Paseos del Frisón street. There was a pronounced arrangement of the program, where the sports facilities were located in the southmost portion of the lot; this approach would allow sufficient area for two basketball courts and one soccer court.

On the other hand, the educational program was located right in the middle of the site, enclosed in a circular building, while the artistic programming was located in the northmost area.

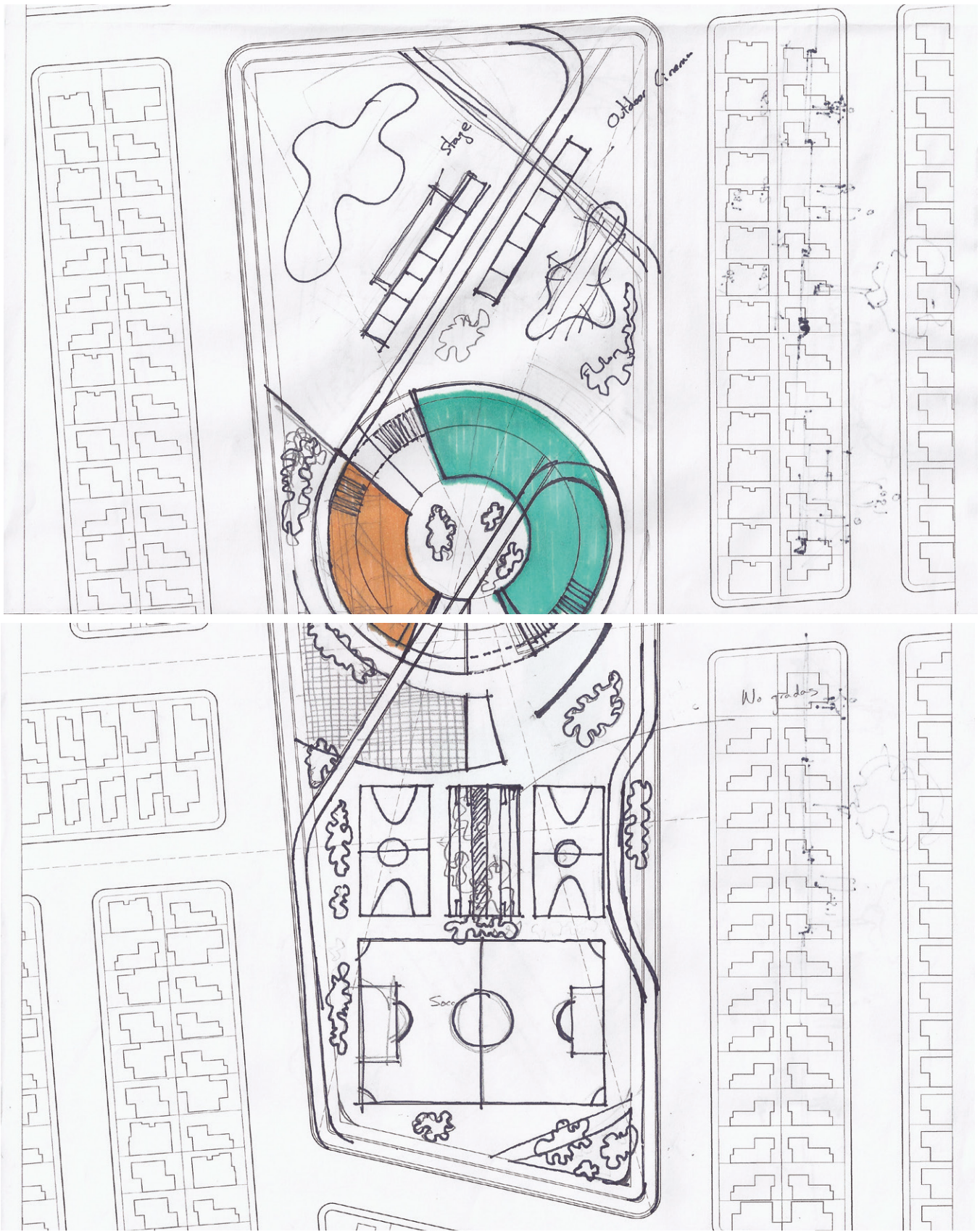


Image 3.9 / At the beginning, both land lots were considered for the project in order to create a superblock with the main building located within the axis of the Paseos del Frisón street. A bicycle loop was considered as an important part of the design, allowing the cyclists to have access to the roof of the building.

At this stage, the project was grouped in three main areas, consistent with programs that encourage the development of the mind (knowledge) , the soul (creativity) and the body (physical activities) of the children. The buildings were tilted in order to prevent the creation of barriers between the project and the houses, allowing the space to be both contained and accesible at the same time. The placement of the buildings also allowed their entrances to face each other, while creating plazas among the main corridor that can be used as points of social encounter, as well as to host informal markets on the weekends; the placement also favors solar orientation and prevailing winds.

As the process continued, the layout did not feel as a unified project, which resulted in a complete redesign of each of its elements.



Image 3.10

After this iteration, the Paseos del Frisón Street was reopened after re-evaluating the consequences of closing an important road within the neighborhood.

In this iteration, the project now consisted of two main areas, the main building and the area destined for the outdoor activities. The shape of the building enclosed an inner courtyard reminiscent of the courtyard houses that were common in Chihuahua at the beginning of the XX century; this layout allowed the exploration of the concepts of permeable barriers, with openings that allowed both a visual and physical connection between the courtyard and the neighbouring houses.

This was done as a way to provide the notion of safety among the users: a sheltered place that did not feel restrictive to people, in accordance to the idea of Third Places. Concrete walls were also used as a resource to contain the space, as well as to guide the people through the gardens.

This is where the final design began to take form.



Image 3.11

This iteration began to explore the relationship between the building and the neighbouring houses, as well as the concept of permeable barriers.

When consulting the 2040 Urban Development Plan of Chihuahua it was decided that it was better for the project to occupy only the top lot, as it could complement the planned educational infrastructure and work as a after-school space. The concept of the courtyard house is more apparent in this iteration of the project, while introducing a more complex and intricate design for the bicycle loop that would invite the users to explore the site by accessing the roof of the building.

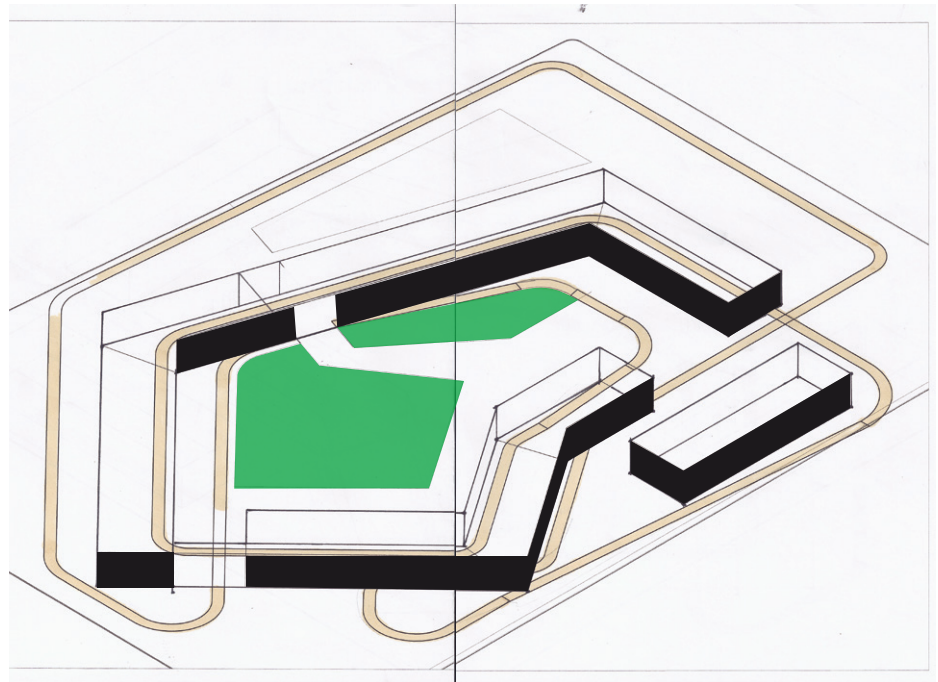


Image 3.12

The design of the bicycle route became more complex and allowed the users to explore the courtyard and the roof in a single unified pathway.

It was clear beyond this point that there was the need to provide the building with a permeable character, allowing views from the neighborhood into the courtyard and viceversa, while preventing the creation of obvious barriers between the houses and the building; as a result multiple access points were considered.

The shape of the building responded directly to the surrounding environment, as way to ease the transition between the houses and the street into the building and the courtyard. As a result, the building acquired a very distinctive polygonal shape that allowed the placement of every programmed space in relation with the amount of area needed for each case; as a result, the library and the ludothèque were located at the longest section of the building. The servant spaces, such as washrooms and storage areas were located on the nodes of the building as a way to make the most out of the resulting irregular spaces.

It became very evident that with this iteration the courtyard was to play a significant role in the design; it is here where most of the social interactions between the neighbors were to take place. The idea was to access all of the programmed spaces through the courtyard, allowing people to experience the activities that were taking place there at any given time of the day. As a result, the community garden, as well as the rock n'roll garden were placed at the center of the courtyard.

The community's church was left at a similar location as the original, but it soon became apparent that it was creating barriers with the neighbouring houses, as well as alleys within the building, a situation that could become detrimental to the purpose of the project.

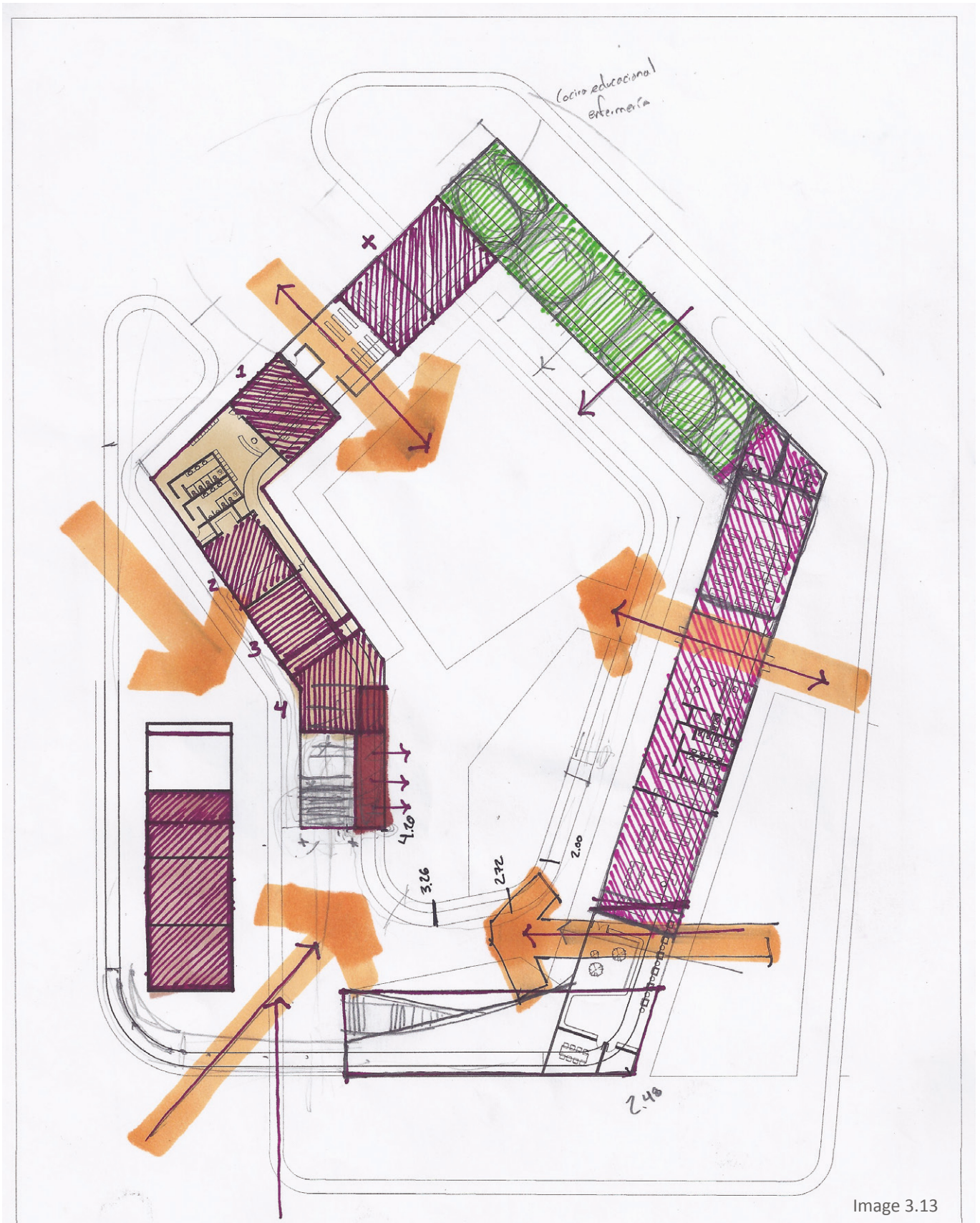


Image 3.13

It became very evident that with this iteration the courtyard was to play a significant role in the design; at the same time the building received a permeable character that allowed a continuous visual and physical connection with the neighbouring houses.

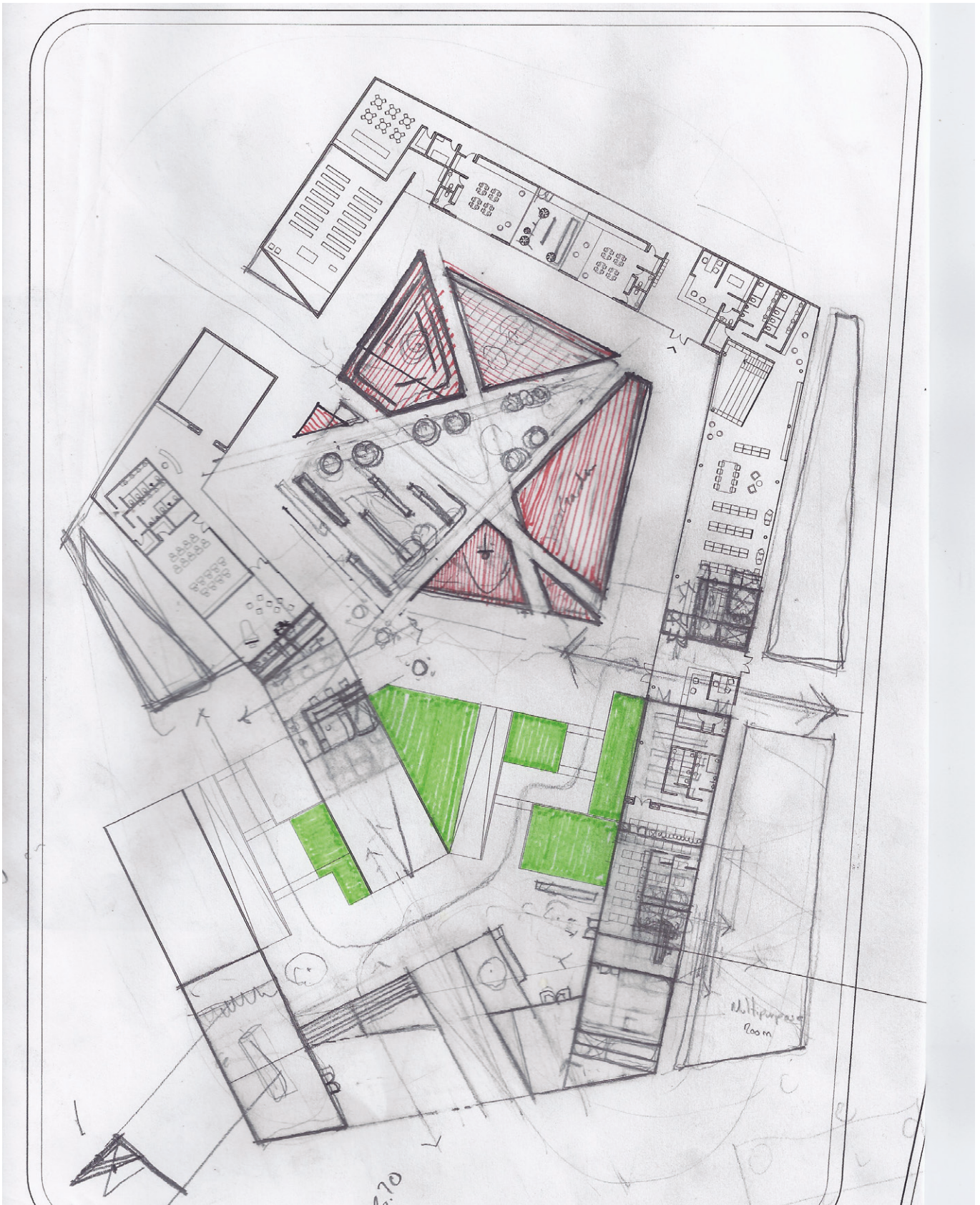


Image 3.14 / Landscape design was used extensively to support the programming, stitching together the different uses in the project. It was also used to ease the transition of the ramps from the ground floor level into the roof, while reducing the amount of unusable space left by the ramps.

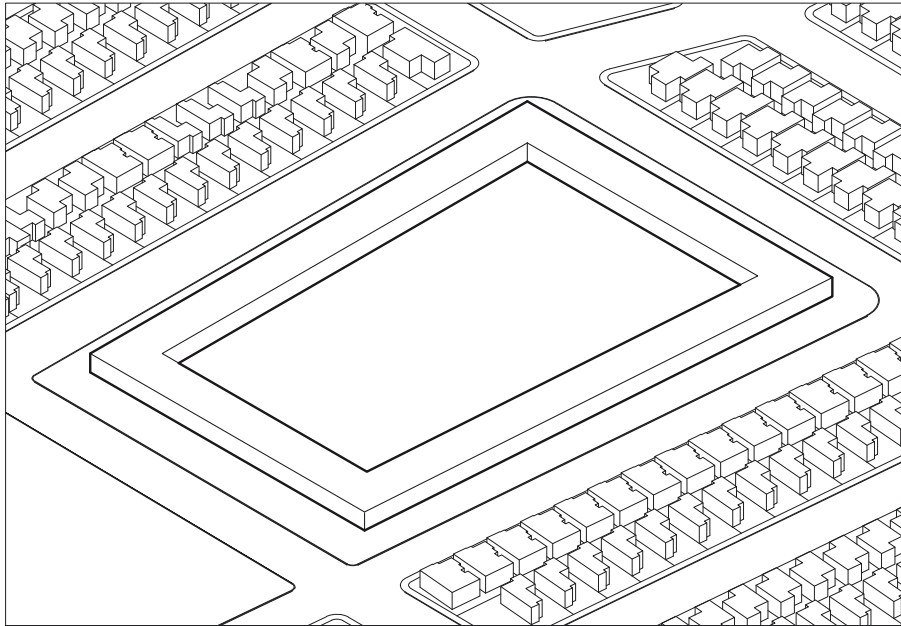


Figure 3.7

The Courtyard House

Based on the model of the courtyard houses found in downtown Chihuahua, the project is conceived as a structure capable of containing a great amount of space destined for the interaction between neighbors, while providing a sense of safety among the users. The width of the building is similar to those of the lots found in the neighborhood.

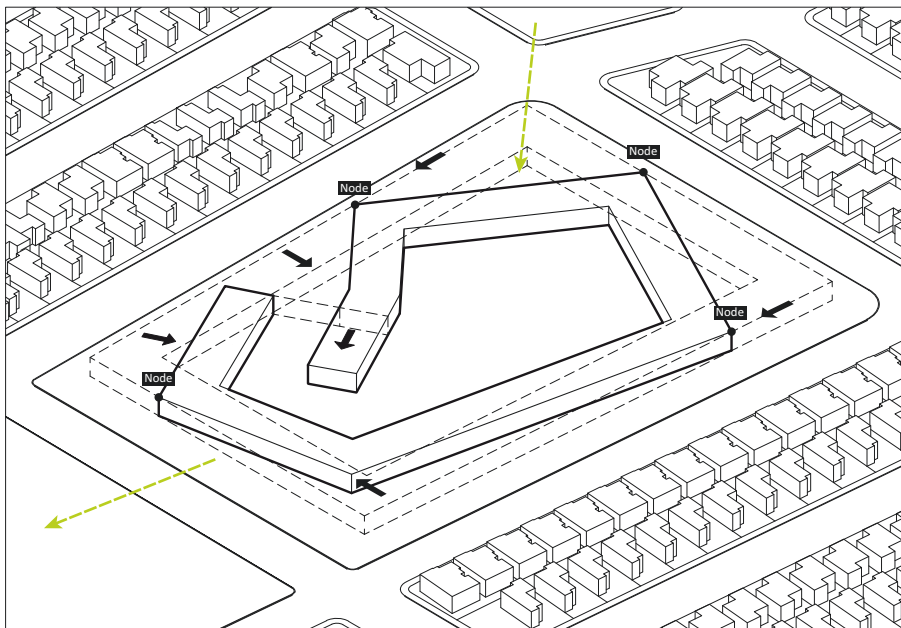


Figure 3.8

Geometry

The geometry of the building responds to the distinctive features of the neighborhood, establishing a green corridor that connects the existing recreational areas while avoiding the creation of evident physical barriers between the building and the houses.

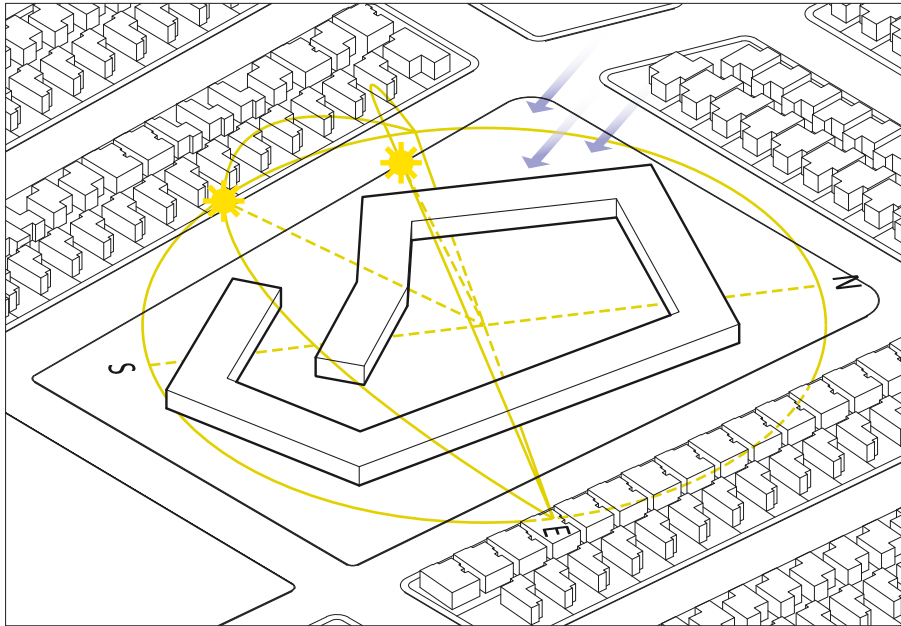


Figure 3.9

Solar Orientation

Most of the living spaces in the building are south-oriented, allowing these areas to be naturally lit during most part of the day. Direct solar radiation is controlled by the appropriate use of shading elements.

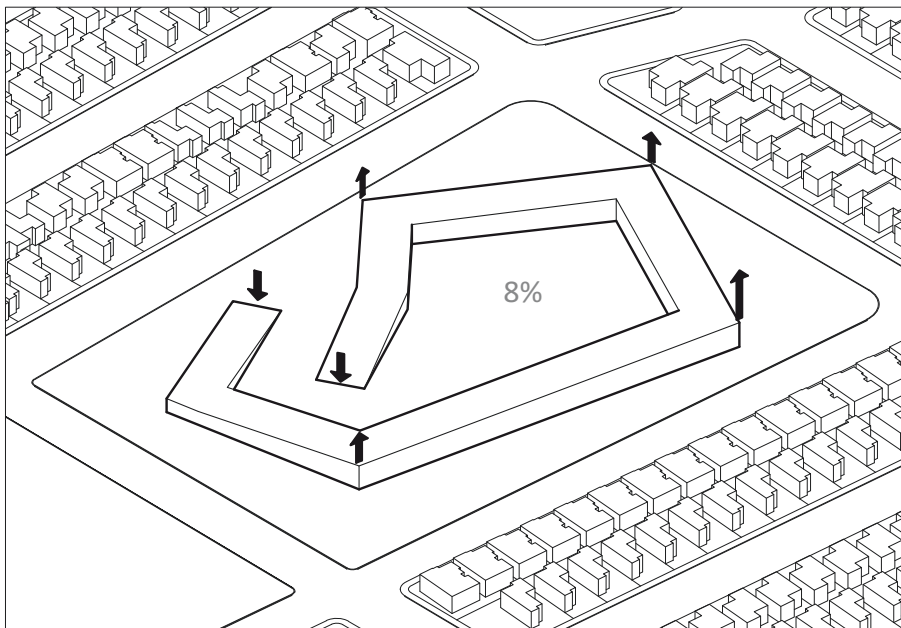


Figure 3.10

Slope

The use of recreational spaces is extended to the roof with pedestrian ramps making it accessible for everyone.

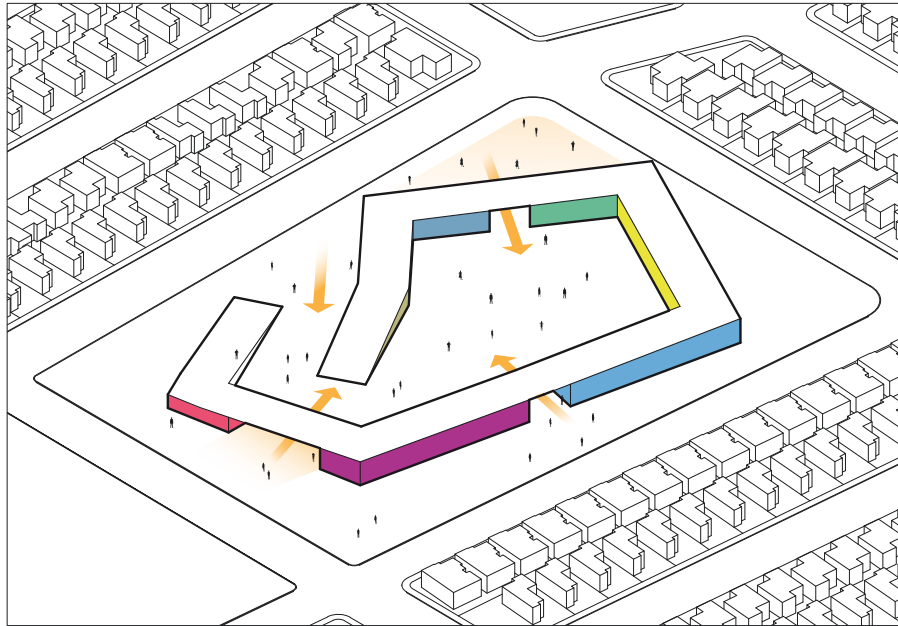


Figure 3.11

Access & Program

The project is divided in 7 main areas, all of which overlook the courtyard, stimulating the social interaction and making the space come to life; the disposition of the access points allows both visual and physical connections from the neighborhood to the courtyard and viceversa.

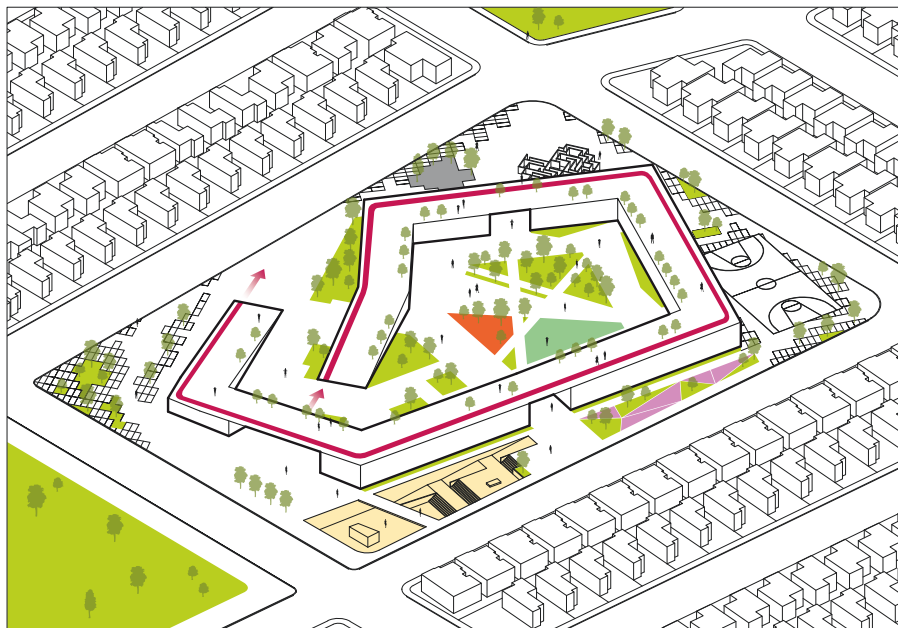


Figure 3.12

Green Spaces & Recreational Areas

The project seeks to rediscover the climatic benefits of having a green courtyard in the center of the building. Many of the social interactions take place outdoors, both in the courtyard and the perimeter of the building, making the surrounding area come to life. The bicycle route and the sports facilities encourage the neighbors to become physically active.

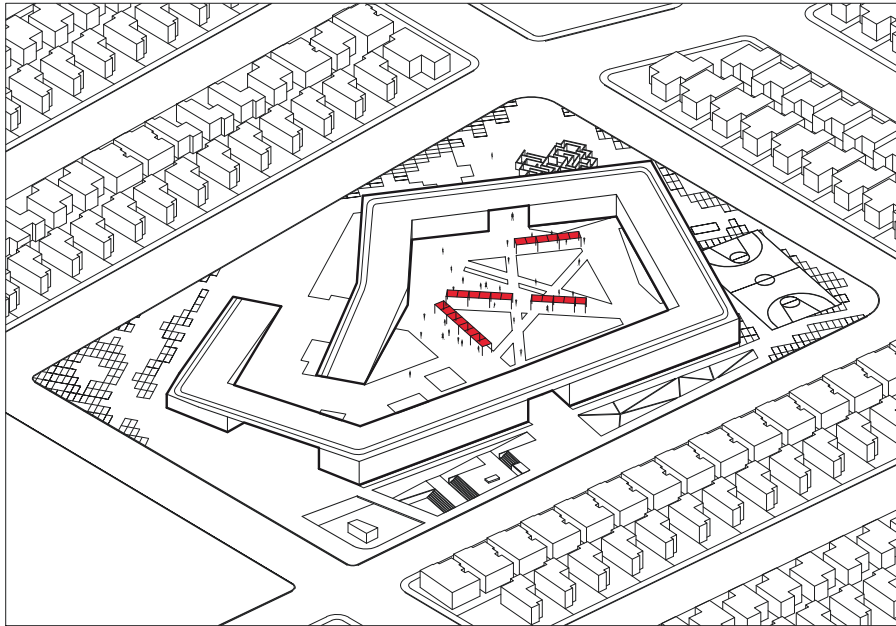


Figure 3.13

Social Appropriation

The inner courtyard encourages the appropriation of the space by the users, allowing well-established activities such as the informal market on Sundays to take place.

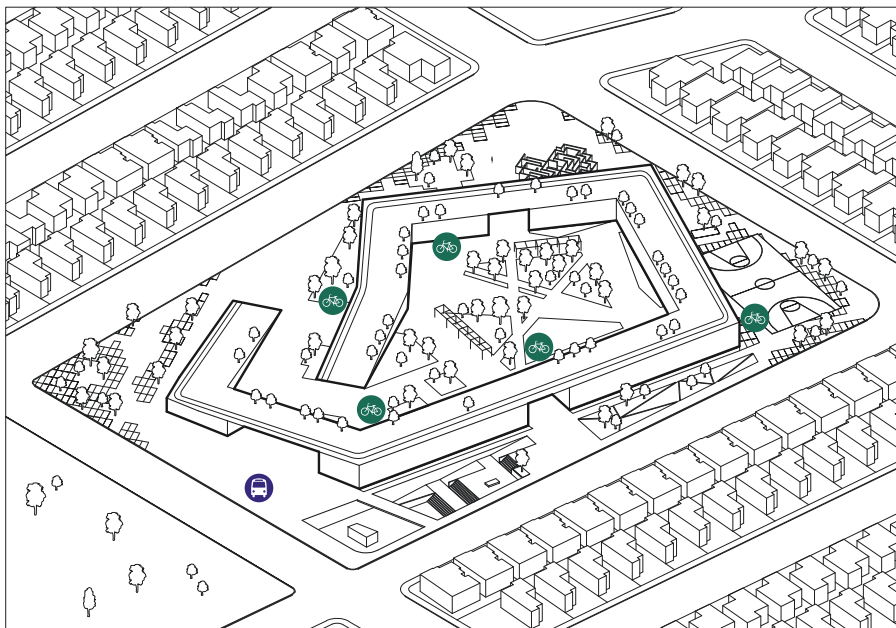
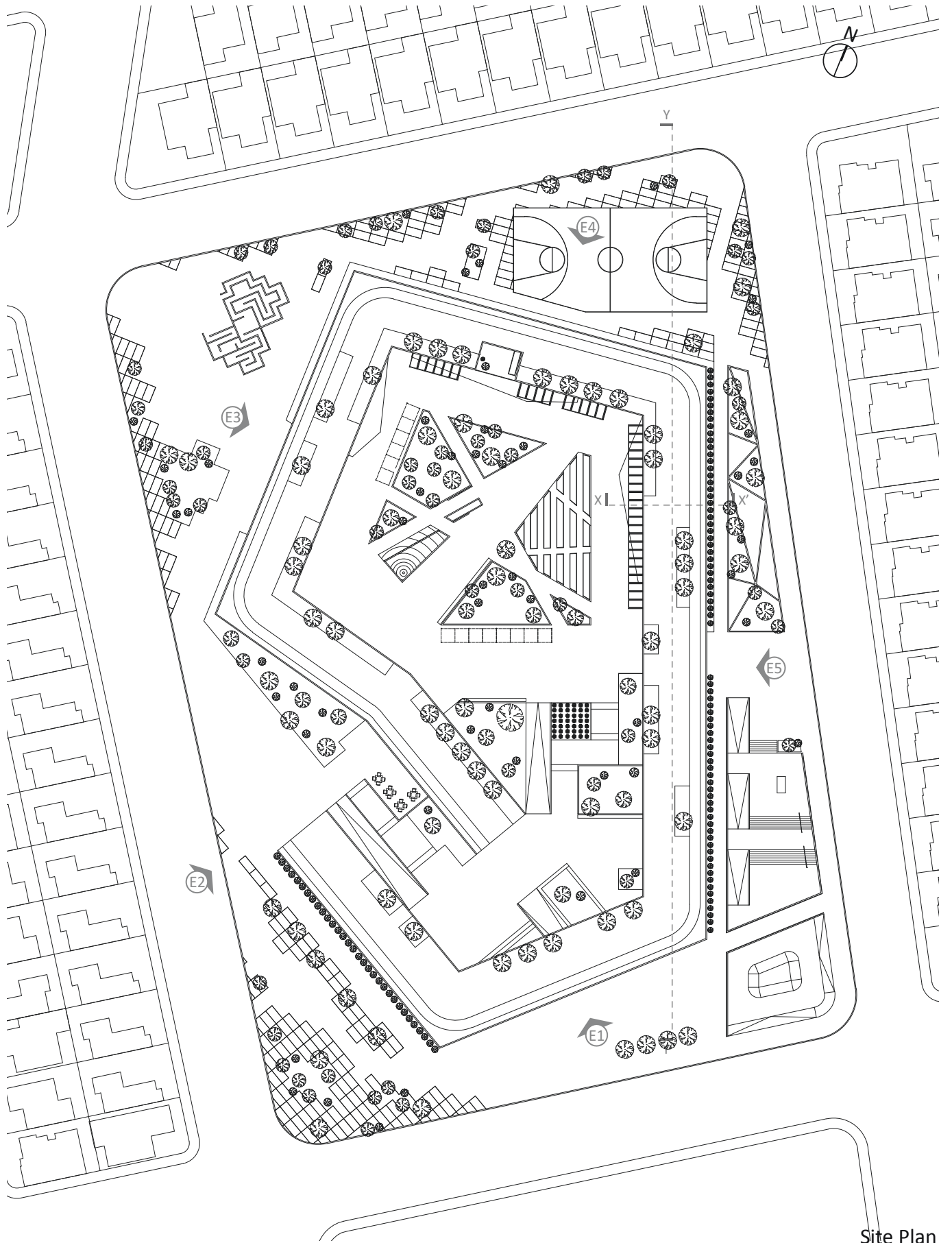


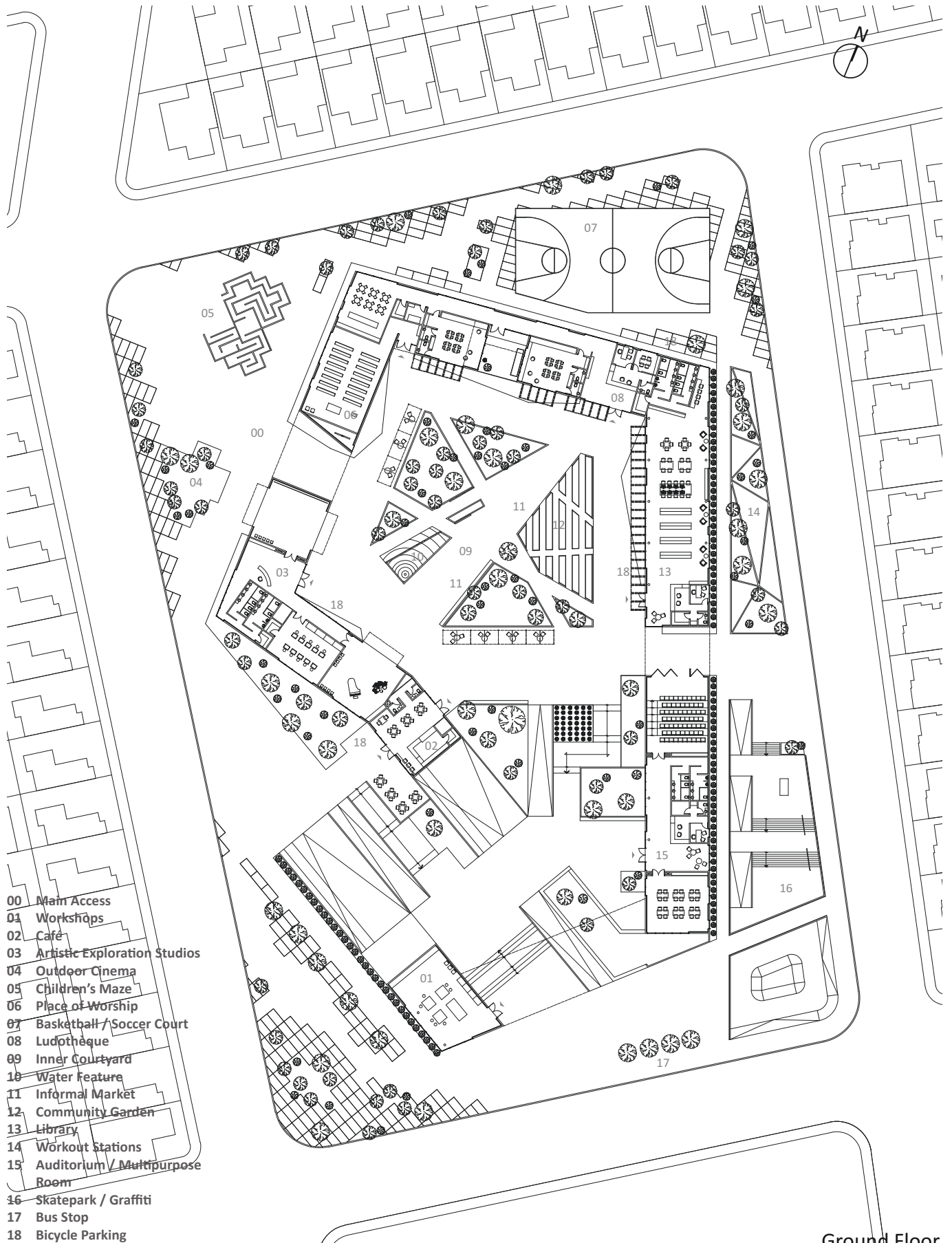
Figure 3.14

Transport

The main bus stop was placed at Paseos del Frisón Street in order to facilitate boarding for the passengers, as well as to encourage people to wander the site when returning from work. The use of bicycle is promoted by the bicycle parking spots scattered throughout the building.

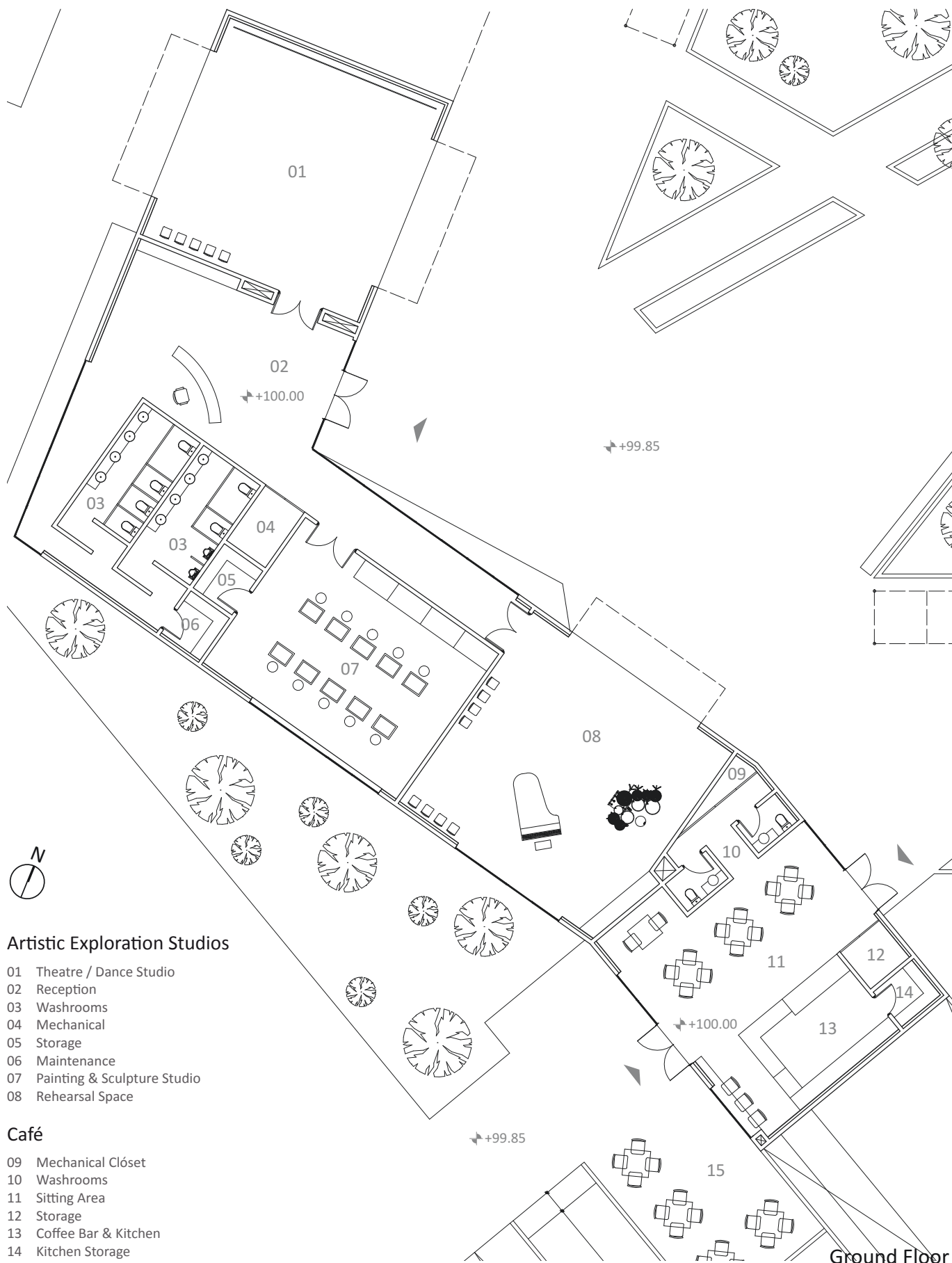


Site Plan
1:750



- 00 Main Access
- 01 Workshops
- 02 Cafe
- 03 Artistic Exploration Studios
- 04 Outdoor Cinema
- 05 Children's Maze
- 06 Place of Worship
- 07 Basketball / Soccer Court
- 08 Ludothèque
- 09 Inner Courtyard
- 10 Water Feature
- 11 Informal Market
- 12 Community Garden
- 13 Library
- 14 Workout Stations
- 15 Auditorium / Multipurpose Room
- 16 Skatepark / Graffiti
- 17 Bus Stop
- 18 Bicycle Parking

Ground Floor
1:750



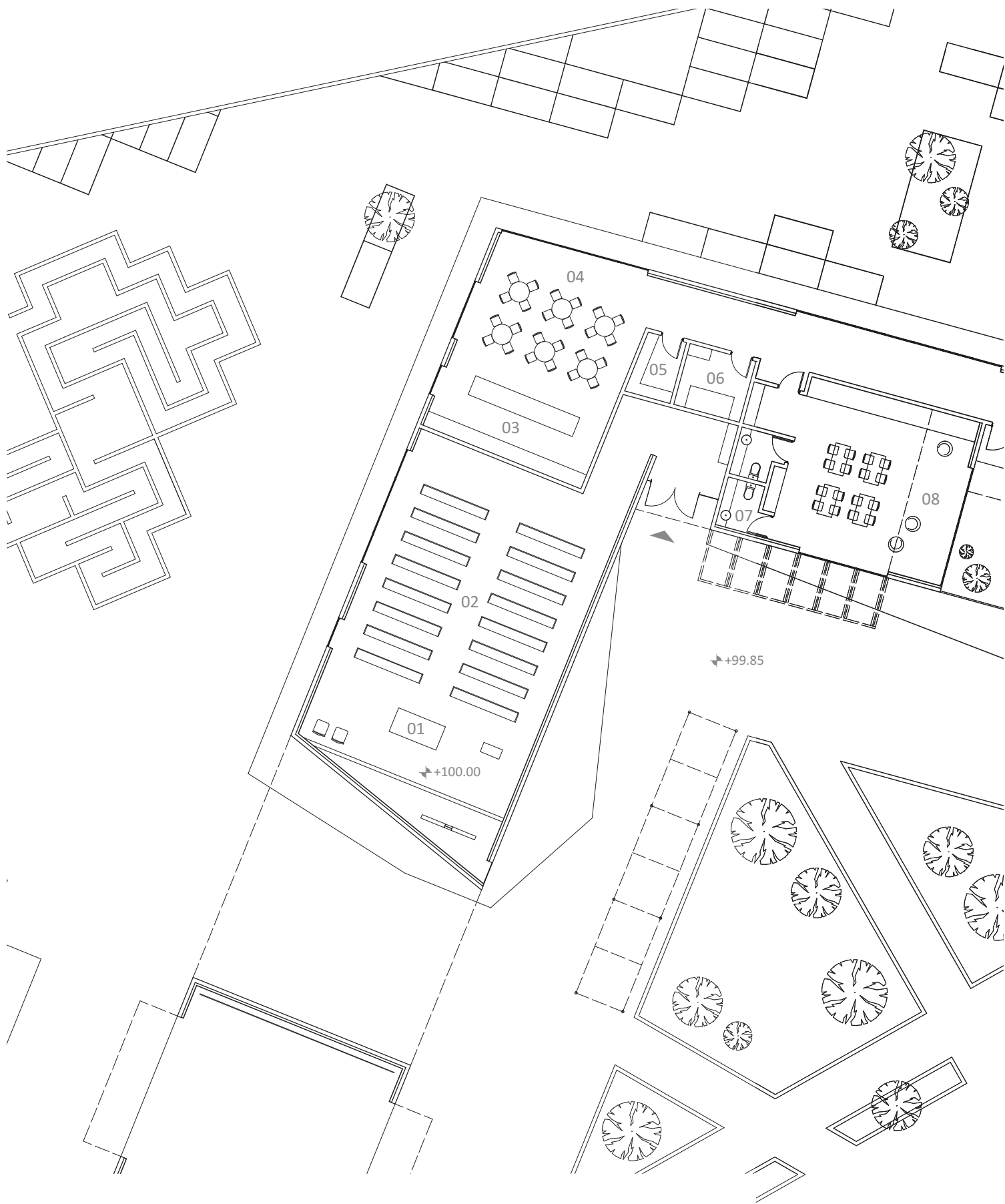
Artistic Exploration Studios

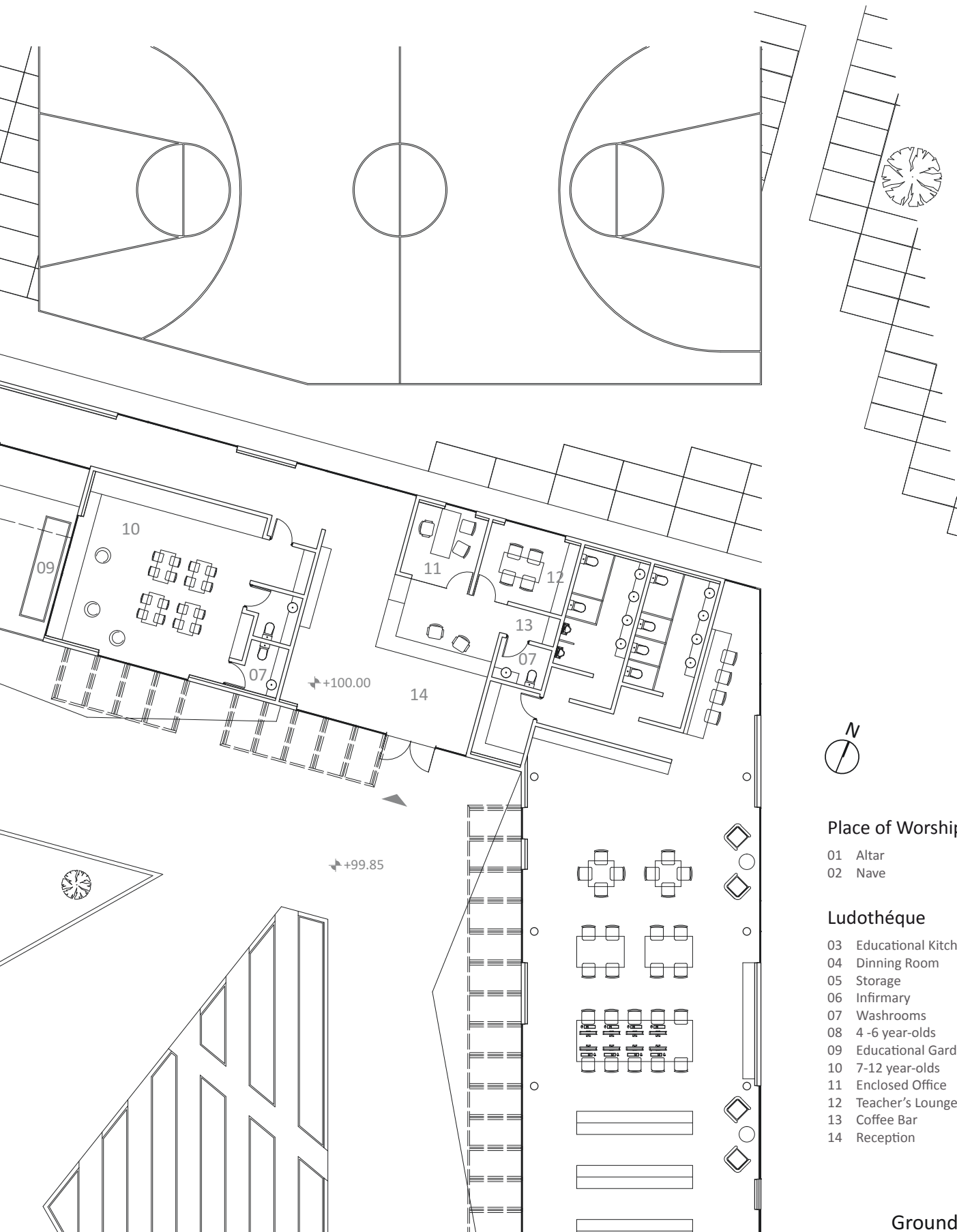
- 01 Theatre / Dance Studio
- 02 Reception
- 03 Washrooms
- 04 Mechanical
- 05 Storage
- 06 Maintenance
- 07 Painting & Sculpture Studio
- 08 Rehearsal Space

Café

- 09 Mechanical Clóset
- 10 Washrooms
- 11 Sitting Area
- 12 Storage
- 13 Coffee Bar & Kitchen
- 14 Kitchen Storage
- 15 Outdoor Sitting Area

Ground Floor
1:250





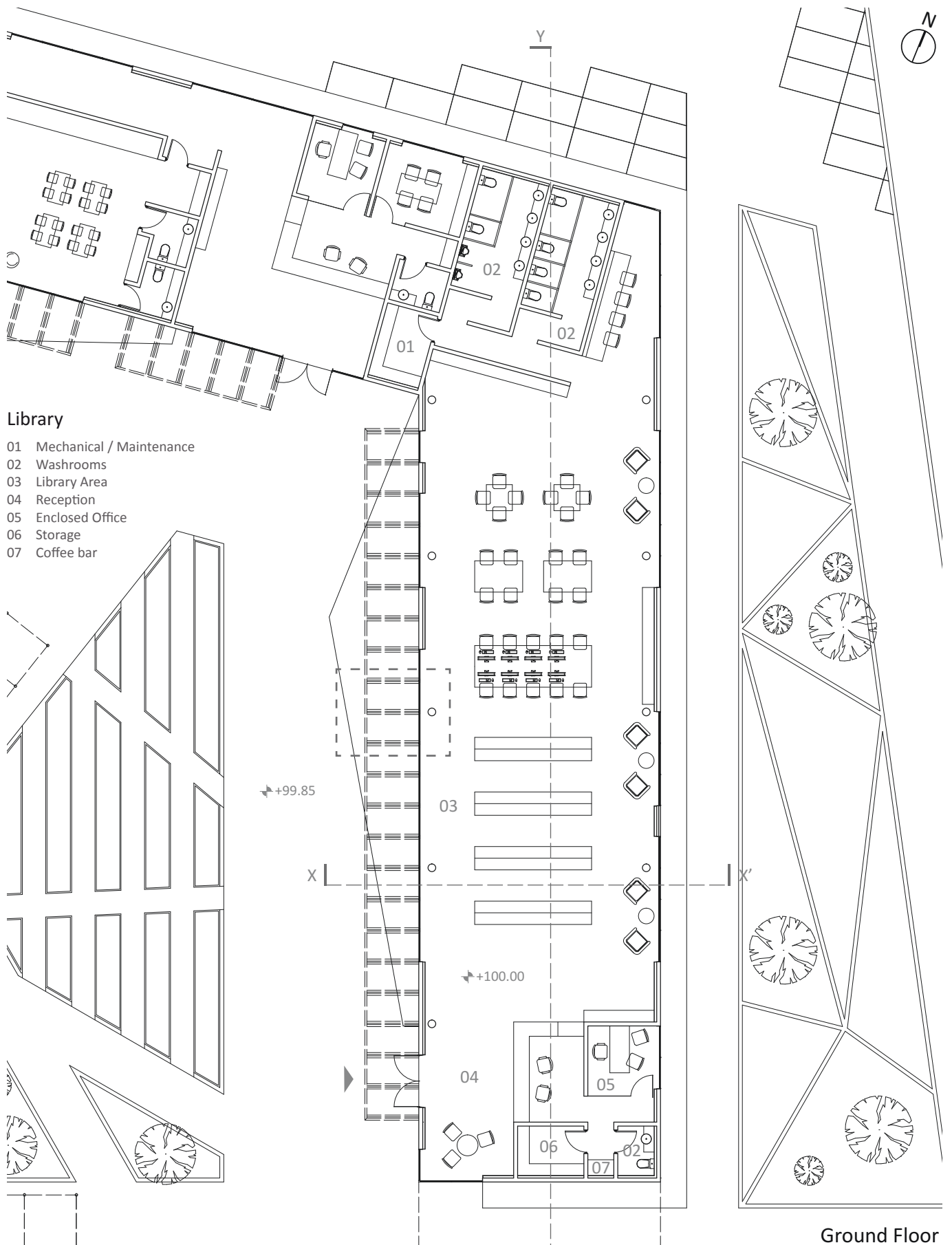
Place of Worship

- 01 Altar
- 02 Nave

Ludothèque

- 03 Educational Kitchen
- 04 Dinning Room
- 05 Storage
- 06 Infirmary
- 07 Washrooms
- 08 4-6 year-olds
- 09 Educational Garden
- 10 7-12 year-olds
- 11 Enclosed Office
- 12 Teacher's Lounge
- 13 Coffee Bar
- 14 Reception

Ground Floor
1:250



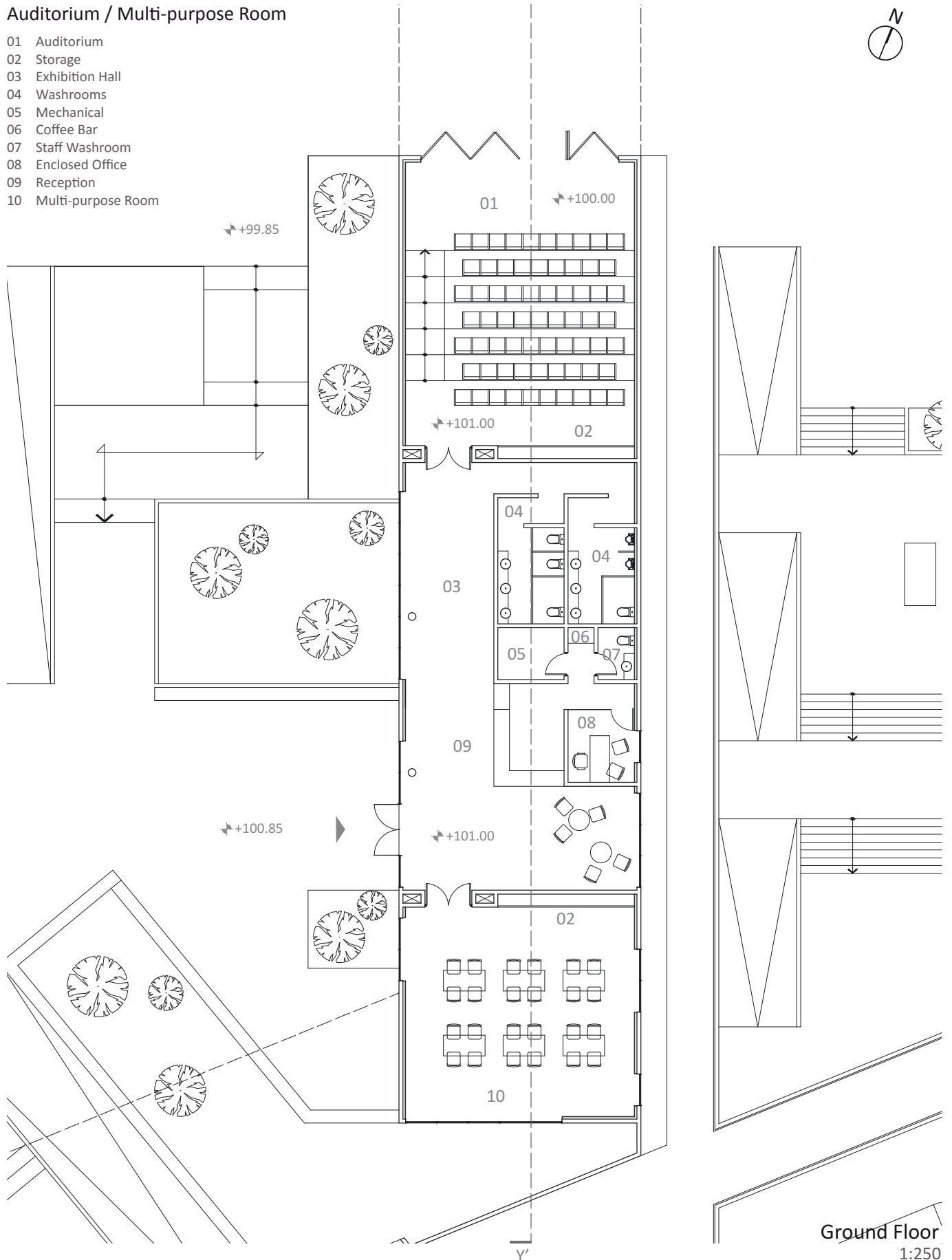
Library

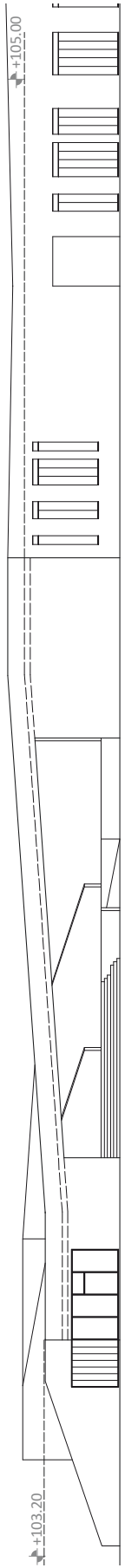
- 01 Mechanical / Maintenance
- 02 Washrooms
- 03 Library Area
- 04 Reception
- 05 Enclosed Office
- 06 Storage
- 07 Coffee bar

Ground Floor
1:250

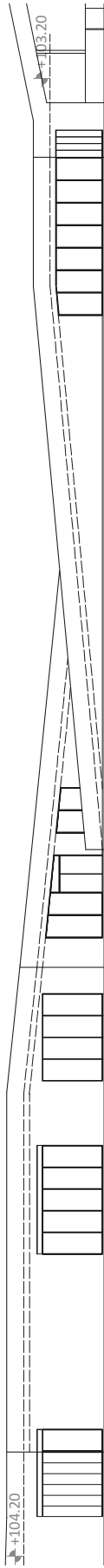
Auditorium / Multi-purpose Room

- 01 Auditorium
- 02 Storage
- 03 Exhibition Hall
- 04 Washrooms
- 05 Mechanical
- 06 Coffee Bar
- 07 Staff Washroom
- 08 Enclosed Office
- 09 Reception
- 10 Multi-purpose Room

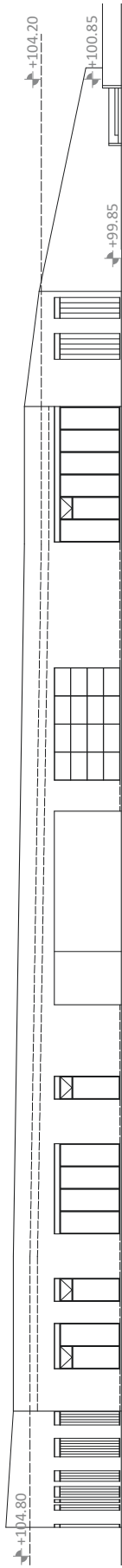




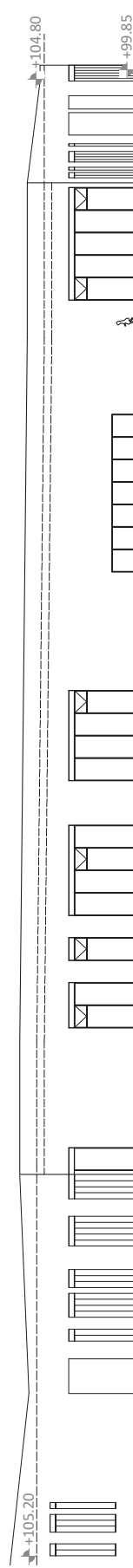
E1 Elevation
n/s



E2 Elevation
n/s



E3 Elevation
n/s



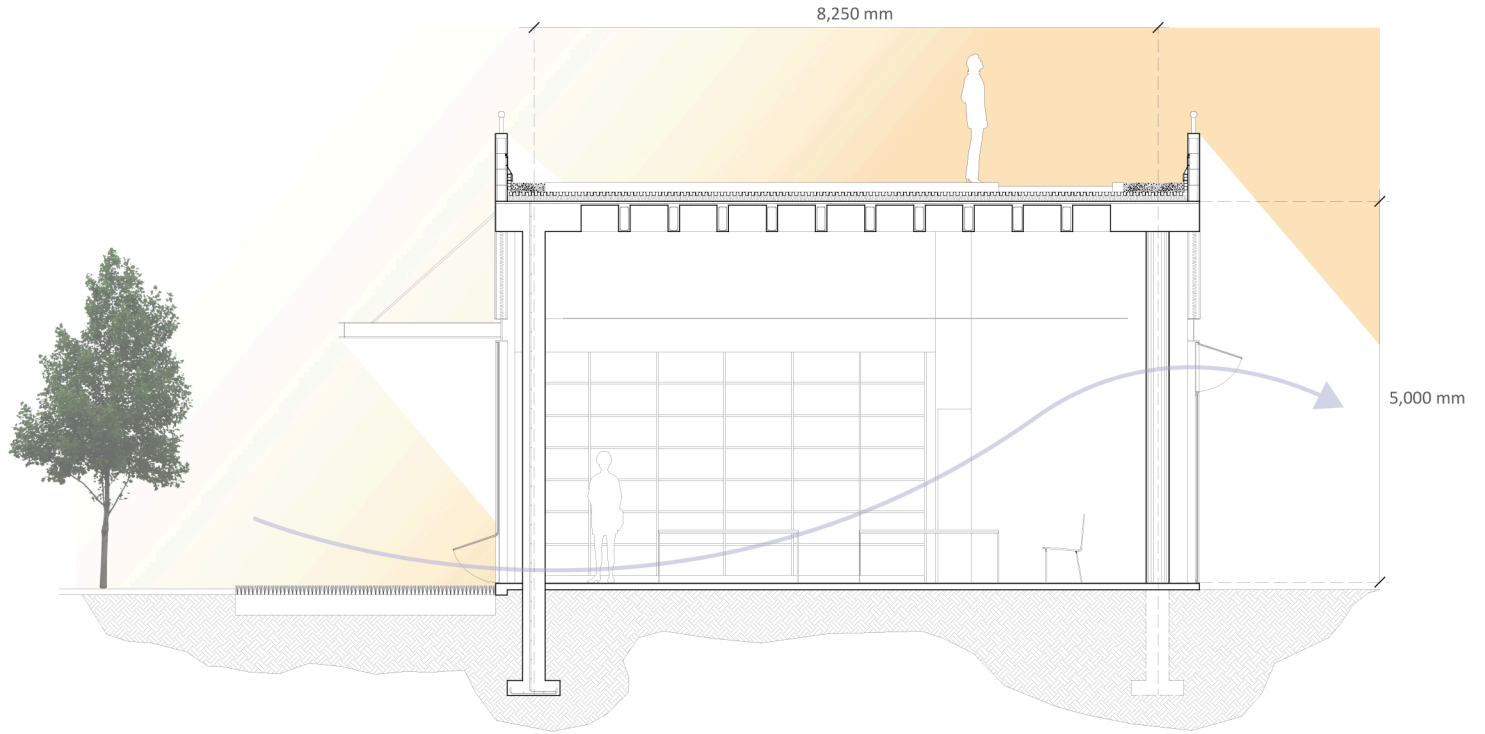
E4 Elevation
n/s



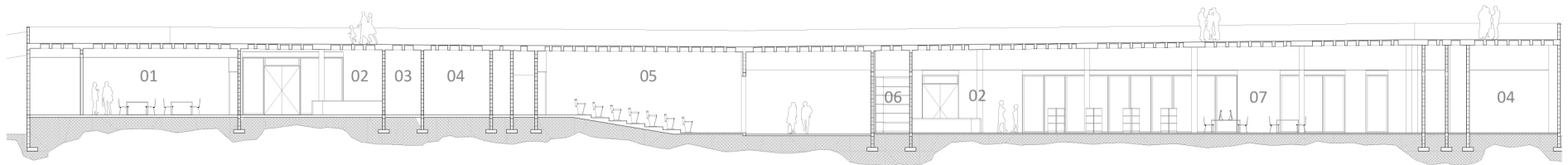
E5 Elevation
n/s

To promote cross ventilation in the building we have operable windows in the southwest orientation, taking advantage of the dominant winds, allowing fresh air that is pre-cooled by the proposed vegetation of the site, while operable windows placed at a height of 3,200 mm on the northeast orientation force the stale air out of the building. During the winter, the operable windows remain closed to maximize heat storage.

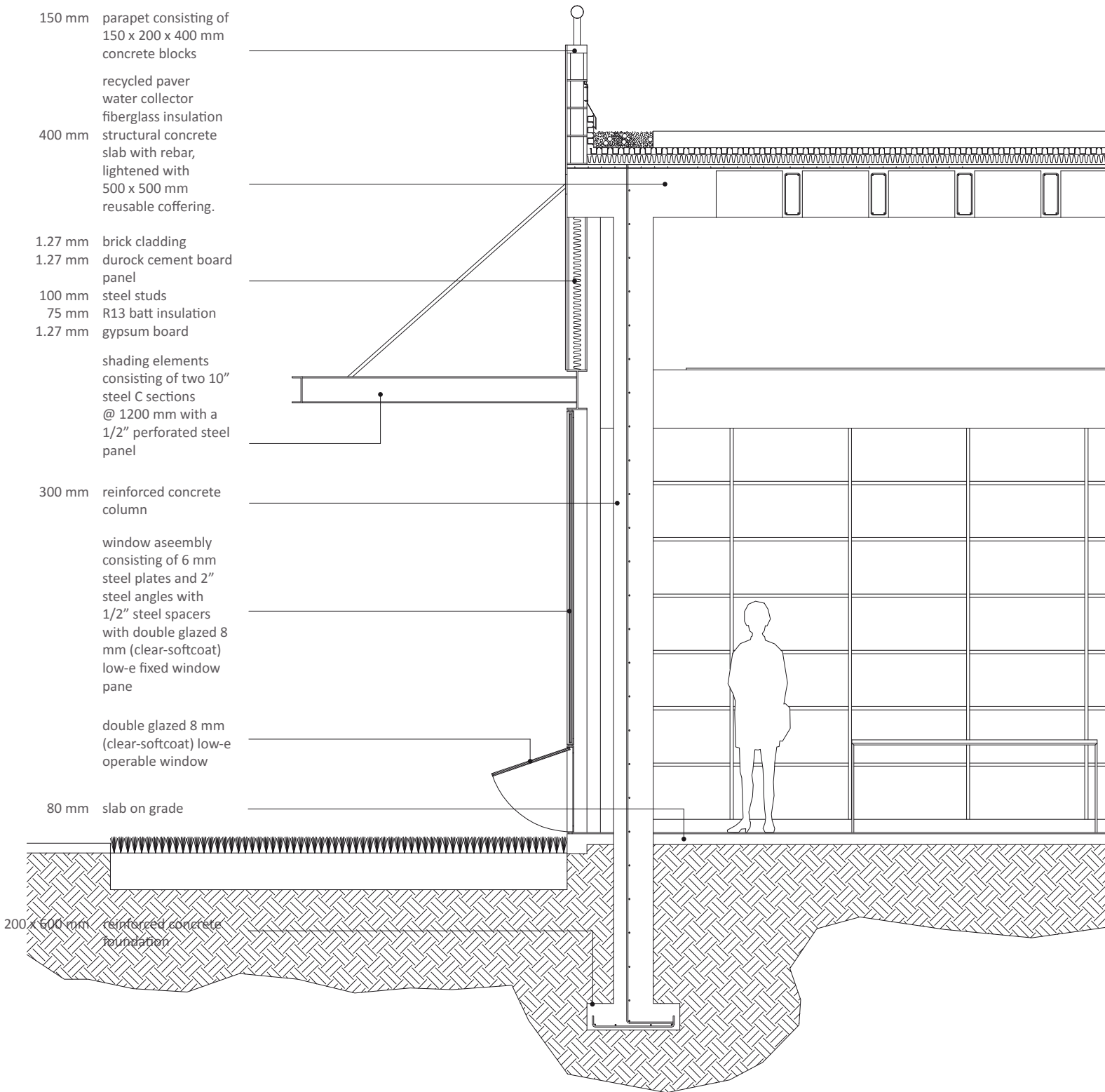
Shading devices are positioned in the most critical orientations in order to reduce the amount of heat produced by direct sunlight entering the building; a patch of grass surrounds the entirety of the building, effectively reducing the *heat island effect*.

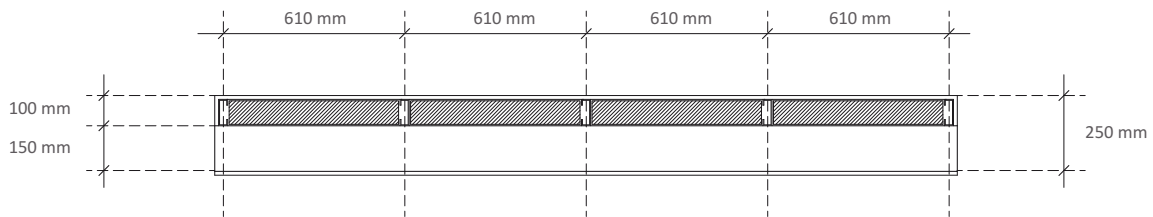
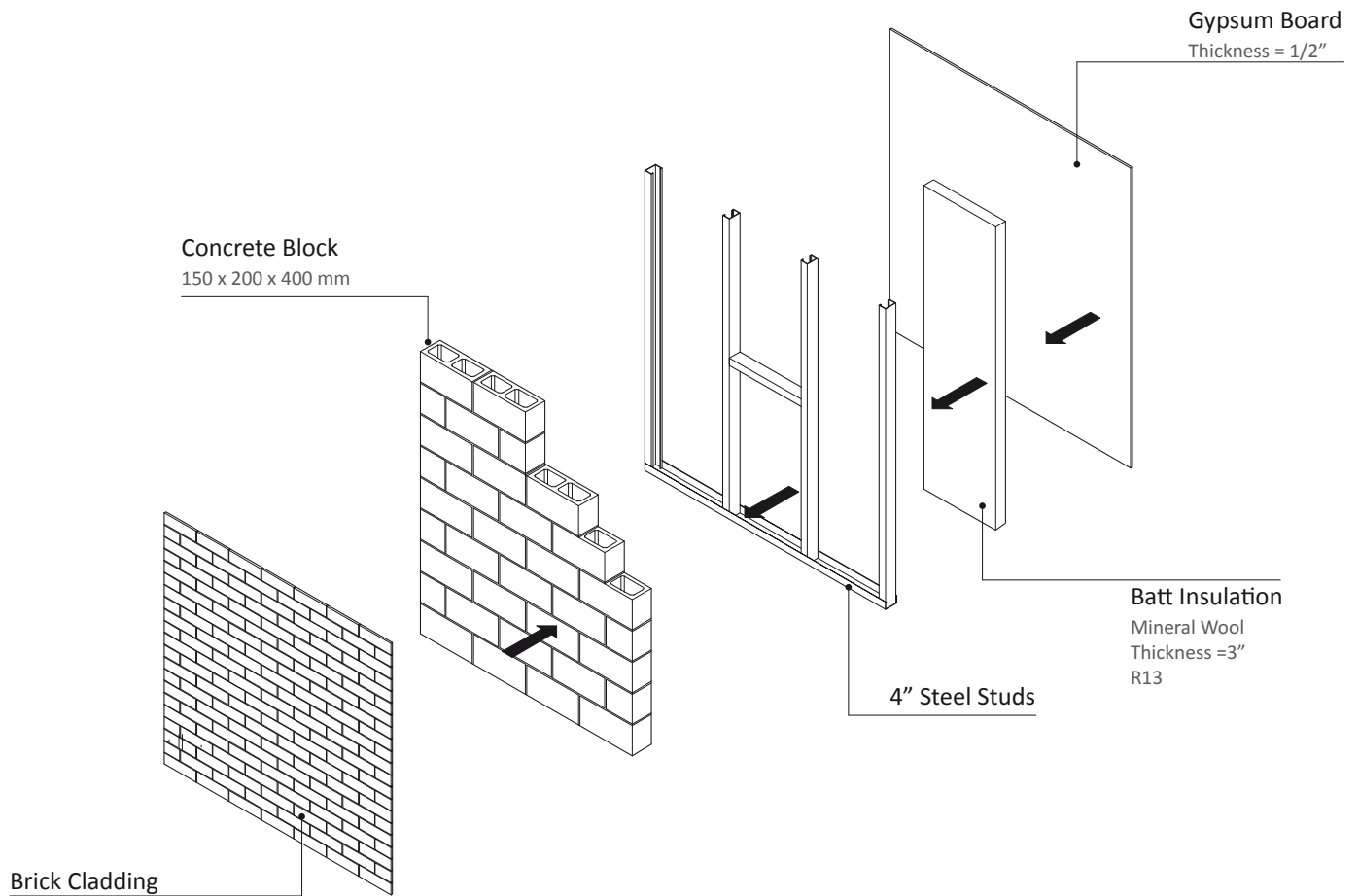


X-X' Section
1:100



- Y-Y' Section
n/s
- 01 Multi-purpose Room
 - 02 Reception
 - 03 Mechanical
 - 04 Washrooms
 - 05 Auditorium
 - 06 Storage
 - 07 Library Area

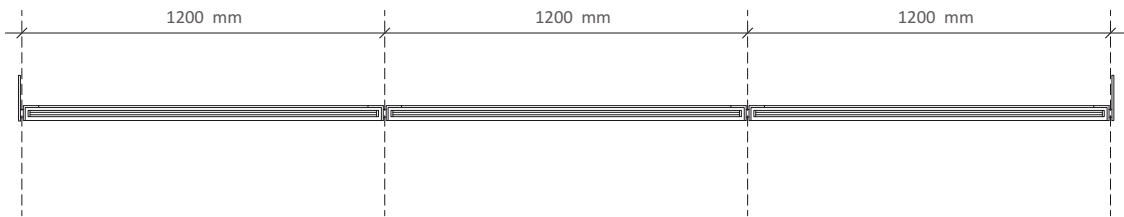
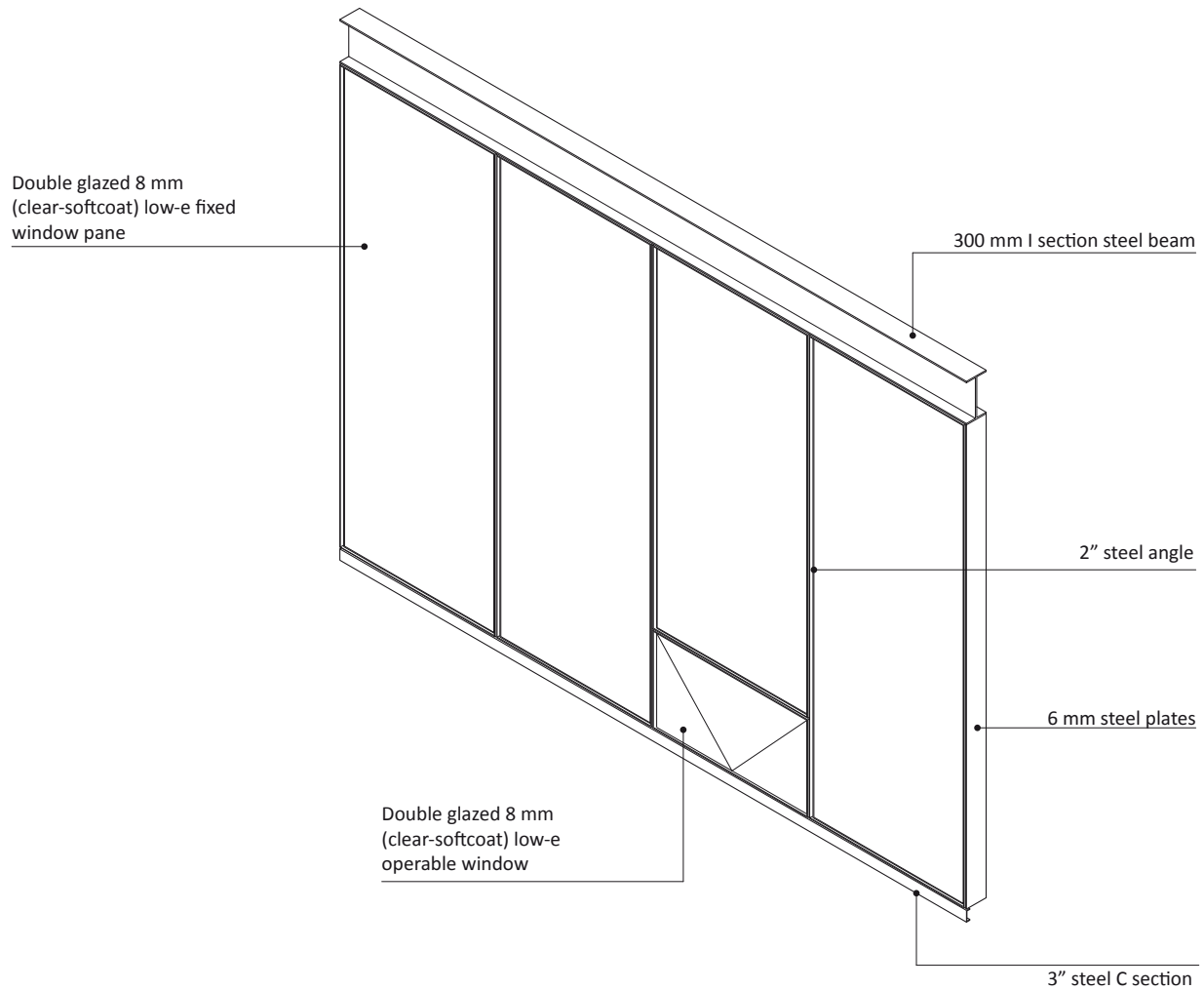




Typical Load Bearing Wall Detail
1:20

The structural system is composed of load bearing walls consisting of 150 x 200 x 400 mm concrete block and a 400 mm structural concrete slab with rebar, lightened with 500 x 500 mm reusable coffering, in order to reduce the amount of concrete needed for the slab. A combination of load bearing walls and 300 mm round concrete columns are also used in the Library and the Auditorium, allowing the extensive use of glazing in the living spaces.

The composite system of concrete block and gypsum board allows the building to become efficient in terms of heat gain and loss by adding a 3" R13 mineral wool insulation, while keeping the costs down. Brick cladding is added due to its low-maintenance and its timeless looks.



Window Assembly Detail
1:20

Glazing is used extensively in the project to allow visual connections from the living spaces in the building to the courtyard, and due to the local climate, it is critical to use a double glass, energy efficient glazing system. The distance of 1,200 mm between axes in the window assembly is derived from the distance between supporting members in the concrete block / concrete slab system (6,000 mm), allowing the glass pane to be properly installed without warping or bending.

Operable windows are considered in almost every window assembly in the building in order to allow the use of passive ventilation.

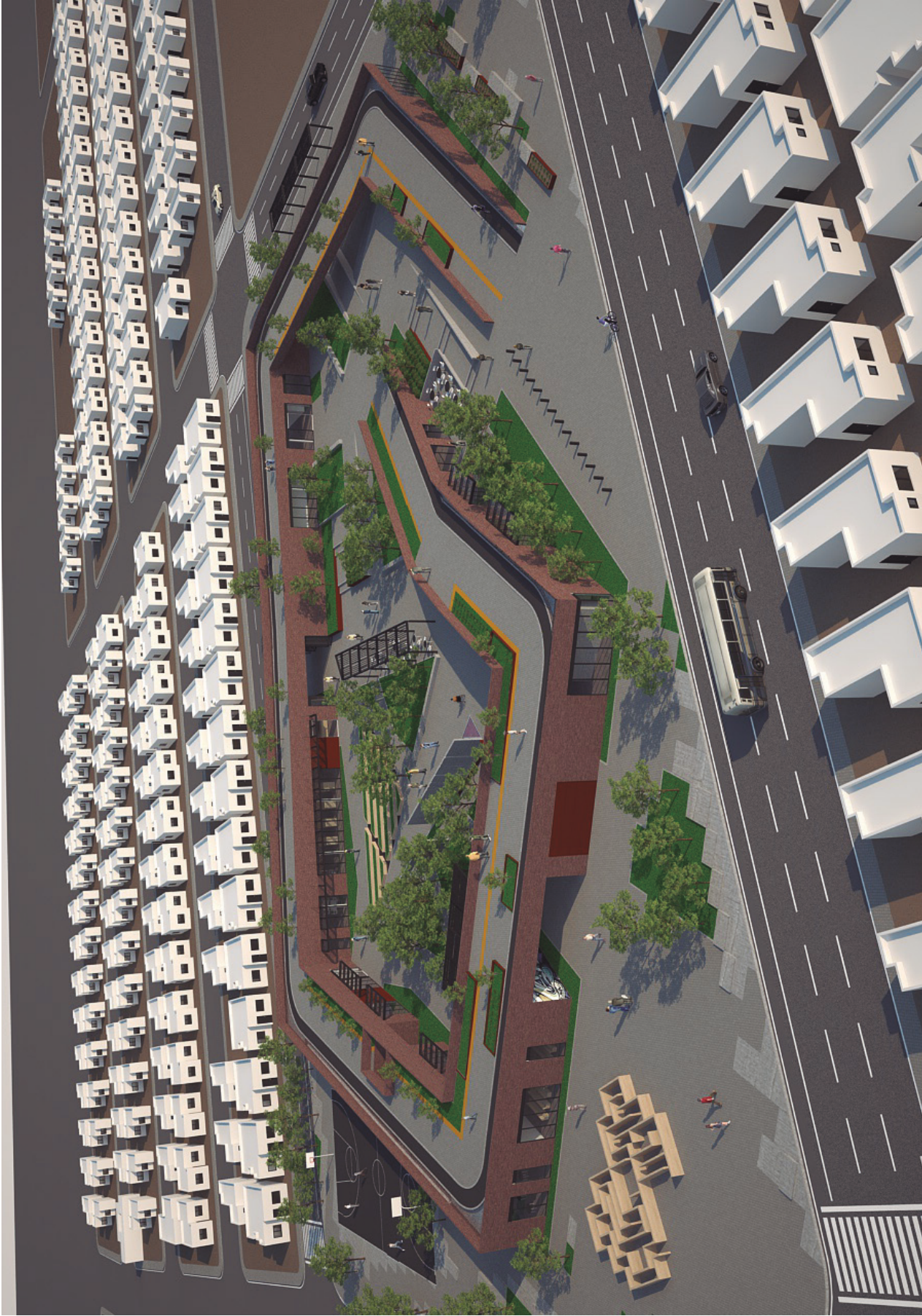


Image 3.15. Overall view of the project. The porous nature of the building allows it to constantly maintain both visual and physical connections to the adjacent houses in the neighborhood.



Image 3.16. The concrete walls serve the purpose of containing the space within the courtyard, allowing it to develop a well defined character. People are encouraged to walk around them, to sit down and enjoy their coffee under the steel pergolas while listening to the sound of the streams created by the water features.



Image 3.17. Glazing on both sides of the building contribute to the overall sense of permeability in the design. Like the library (shown) most of the spaces are naturally lit during most part of the day.



Image 3.18. As you arrive by the main entrance, the courtyard reveals itself to the people, where many activities are taking place at the same time: a local band gets ready for their weekly practice session while conversations take place in the sitting area; meanwhile, the community garden begins to take form as the street vendors are waiting for the 6:00pm computer class at the library to be over.



Image 3.19. Sunday mornings are filled with skateboarders and cyclists getting ready to ride the loop; sundays also mean that time of the week where the grand-parents get to spoil the little ones with traditional homemade ice-cream and popsicles from one of the neighbor's street carts.



Image 3.20. Instead of crossing through uncultivated bushes and dirt, people can now walk through a green corridor in order to get to the grocery store to make their weekly purchases.



Image 3.21. The best time to take advantage of the basketball / soccer court is when the sun begins to set. Because of its location, people passing by might become interested in joining the game.

Conclusions

Chapter 4

Instead of focusing its attention on preventive measures that could contribute to reduce the involvement of children and teenagers with criminal activities associated with the drug trade, most of the resources in Mexico are currently being spent in approaches that do little to stem drug-related violence.

As observed in the case studies presented in Chapter 2.3, Architecture has been able to contribute to the creation of holding environments that encourage social inclusion in otherwise reclusive environments: the Santo Domingo neighborhood in Medellín went from being one of the most dangerous areas in Colombia to becoming a famous attraction for the tourists thanks to the implementation of the España Library Park and the Metrocable transport system, and while the Living Rooms project, located in the district of San Ysidro in San Diego, is still waiting for funding to begin its construction, its agenda has already rendered results by bringing to the table the subject of the social dynamics involved in the reconstruction of the community of Mexican immigrants living in the neighborhood.

The Second Home project draws important aspects of the case studies, such as the process they followed before, during and after its construction, as well as the pro-social implications these projects had on the people involved, as seen in Chapter 2.4, and applies them to the local context of Chihuahua.

The city of Chihuahua is currently undergoing a major renewal of its transport infrastructure, but this strategy is lacking in terms of the educational and recreational infrastructure required by the population. If we take into consideration the fact that the urban fabric, consisting largely of a single typology, is scheduled to continue its disproportionate growth over the next decades, it is here where the Second Home project becomes significant.

As more suburban developments are being approved every year, it is important to provide them with the necessary educational and recreational infrastructure to support a vibrant and sustainable social matrix.

The purpose of this thesis has been to plant the seeds of positive social change that our city desperately needs in order to benefit coming generations. This design was conceived as a pilot project, a living symbol that architecture through its settings, materials and character can influence human behavior in a positive manner.

The holistic approach of the project, determined by the program presented in Chapter 3.2, intends to provide the neighbors with a wide range of spaces designed to nurture the natural hunger children and teenagers have to

flourish and become successful and relevant in their specific area of interest, while guiding their attention away from unhealthy role models and influences.

The choice of materials was based on ease of availability, low maintenance costs and straightforward installation, allowing almost all of its components to be built, with some guidance, by people with little or no experience in construction.

Additional measures were taken in order to ensure that the building is energy-efficient, including south-oriented louvers, strategically placed native vegetation and adequate insulation in both walls and roofs.

This project could also potentially provide employment for the neighbors even when the construction is finished, as its operation relies heavily upon and takes advantage of the knowledge and expertise from local elders and caregivers.

Post-script

During the course of the development of this thesis, a private sponsor manifested his interest in funding the project, with the intention of setting a local example of what we can do to improve the conditions of neighborhoods experiencing similar conditions throughout the city.

The project is currently set to be donated to the municipal government of Chihuahua in an effort to raise conscience about the benefits of designing Architecture with an specific social purpose, but as with any built project of this kind, it is difficult to predict whether the people will effectively embrace the space, but it is expected that with further involvement of the neighbors, this project could potentially become successful.

If the project were to be built, it would be valuable to measure its success across a range of issues, including levels of violence, community building and the welfare of young people. Further research would be necessary in order to verify the accuracy of the points stated.

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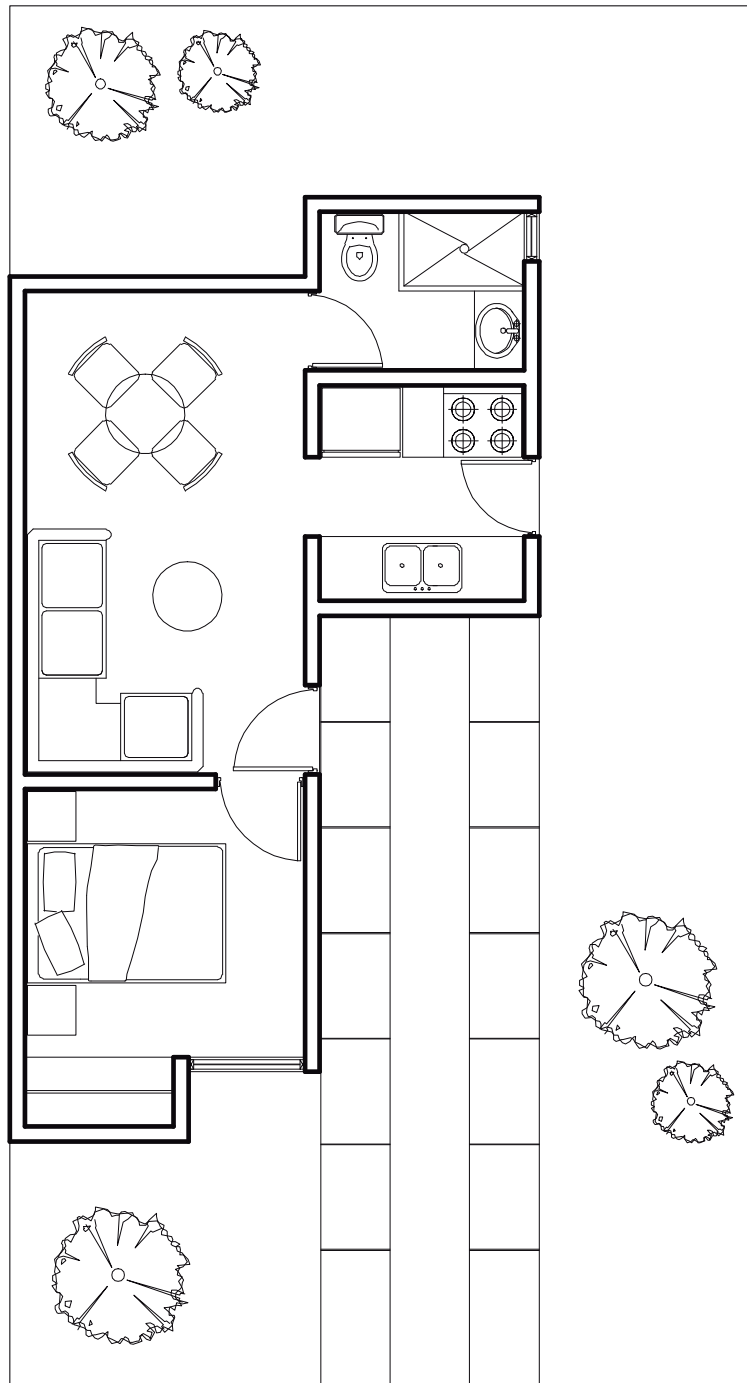
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November 2012 - January 2013, pp. 14.

Appendices

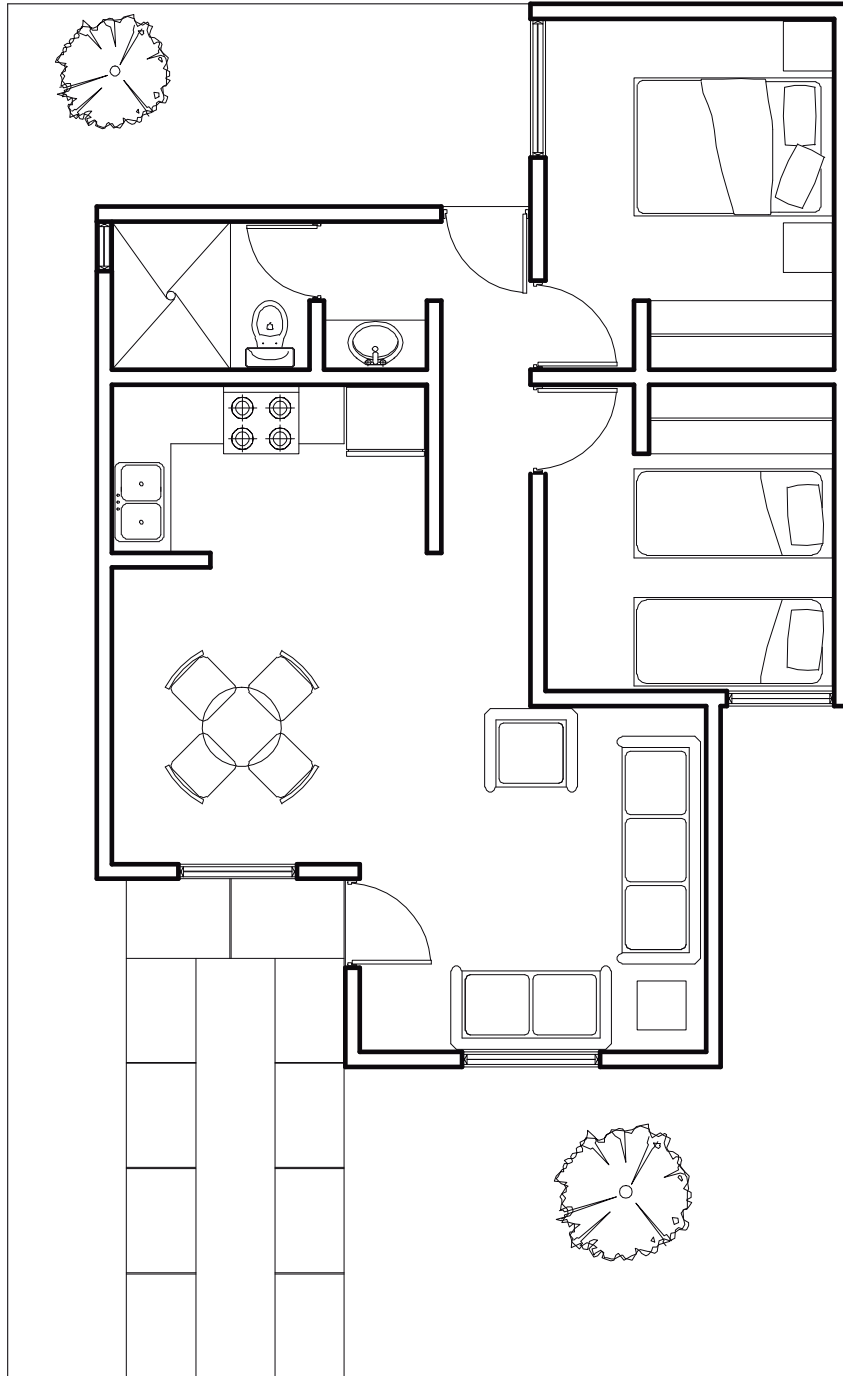


Floor Plan

San Guillermo Model (1 bedroom)

Lot Dimensions: 8.00 m x 15.00 m
Lot Area: 120 sqm
Built Area: 34.00 sqm
Approximate Cost: \$26,513.84 USD

Concrete block walls
& concrete slabs
Vinyl floor finish.

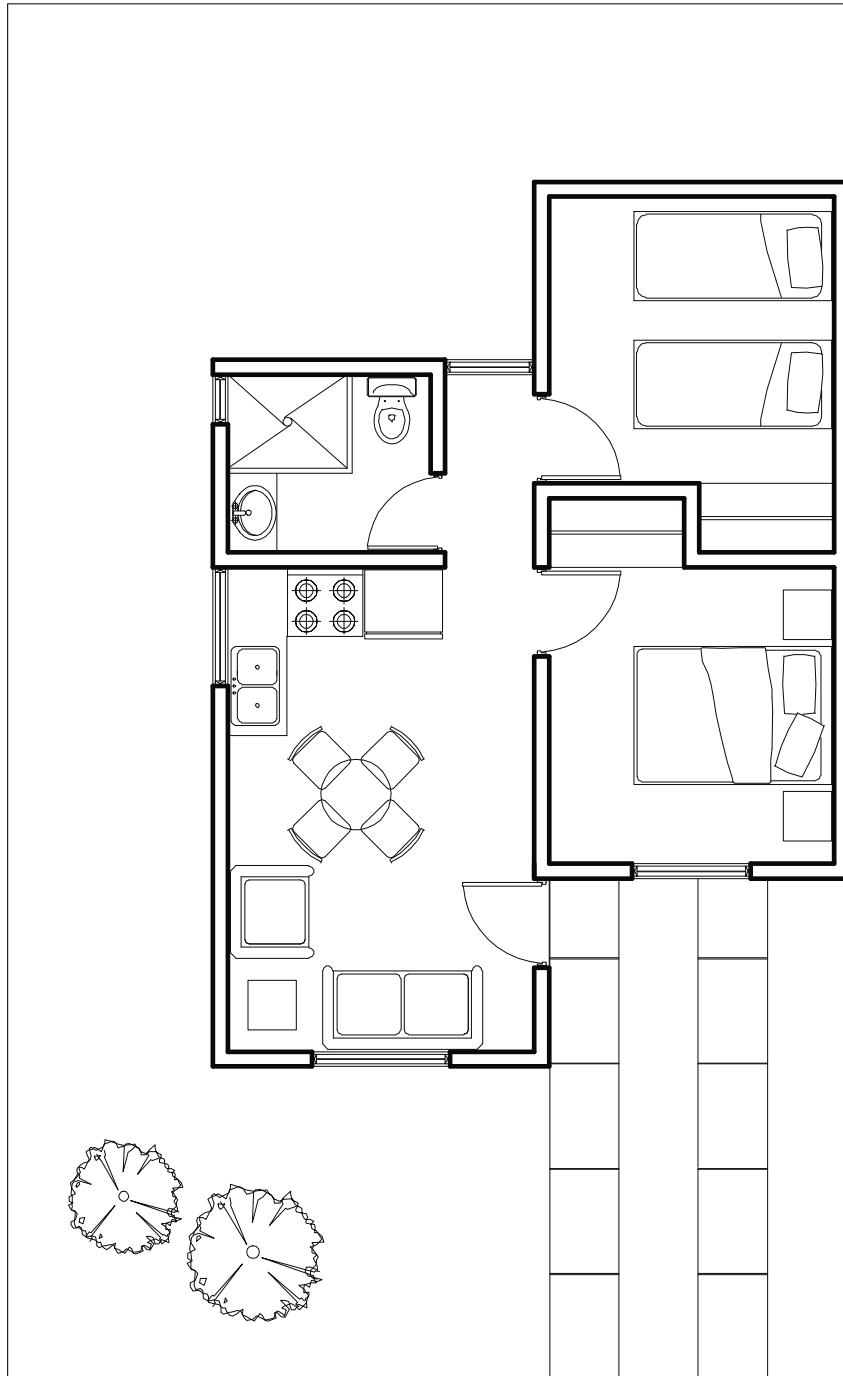


Floor Plan

San Guillermo Model
(2 bedrooms)

Lot Dimensions: 8.00 m x 15.00 m
Lot Area: 120 sqm
Built Area: 44.00 sqm
Approximate Cost: \$ N/A

Concrete block walls
& concrete slabs
Vinyl floor finish.

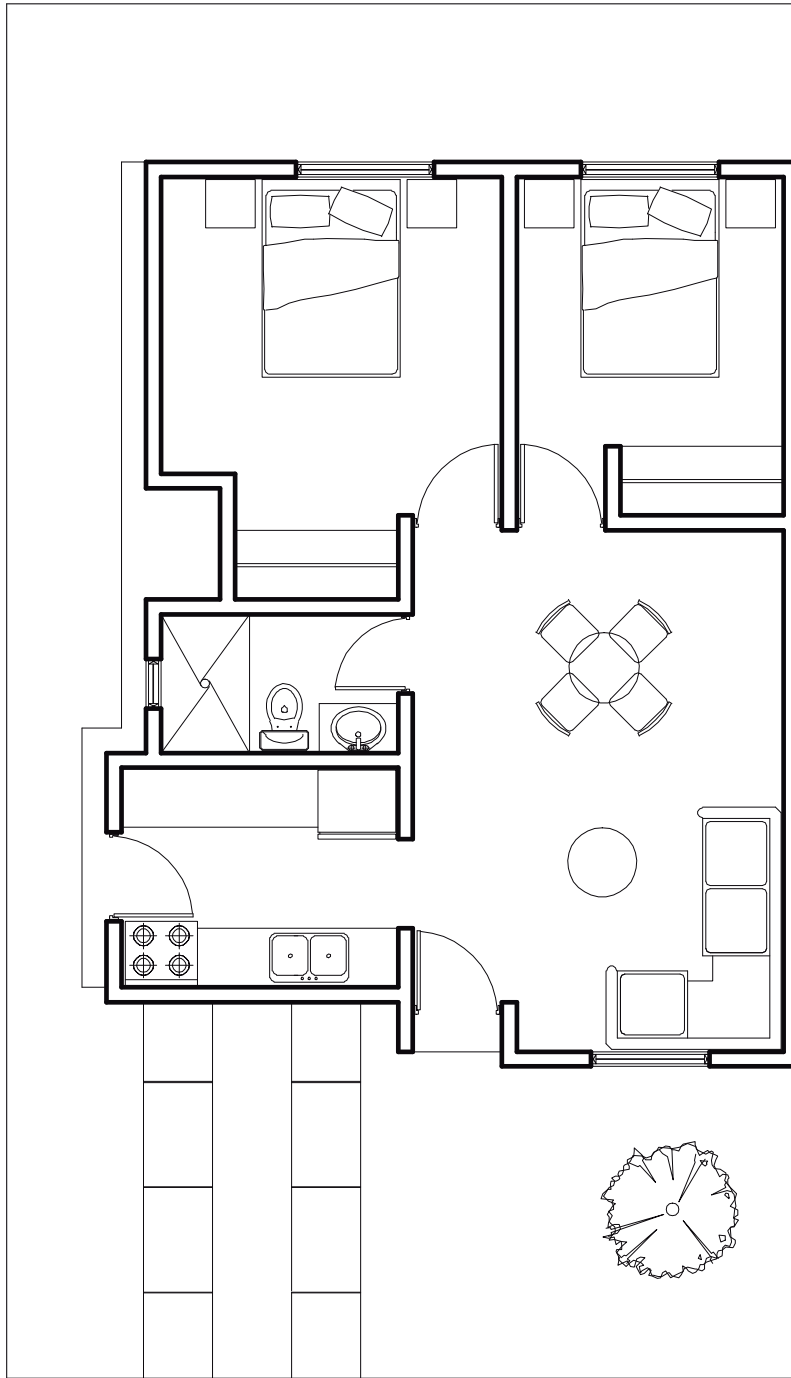


Floor Plan

Santa Anita Model
(2 bedrooms)

Lot Dimensions: 8.00 m x 15.00 m
Lot Area: 120 sqm
Built Area: 40.00 sqm
Approximate Cost: \$ N/A

Concrete block walls
& concrete slabs.
Concrete floor finish.

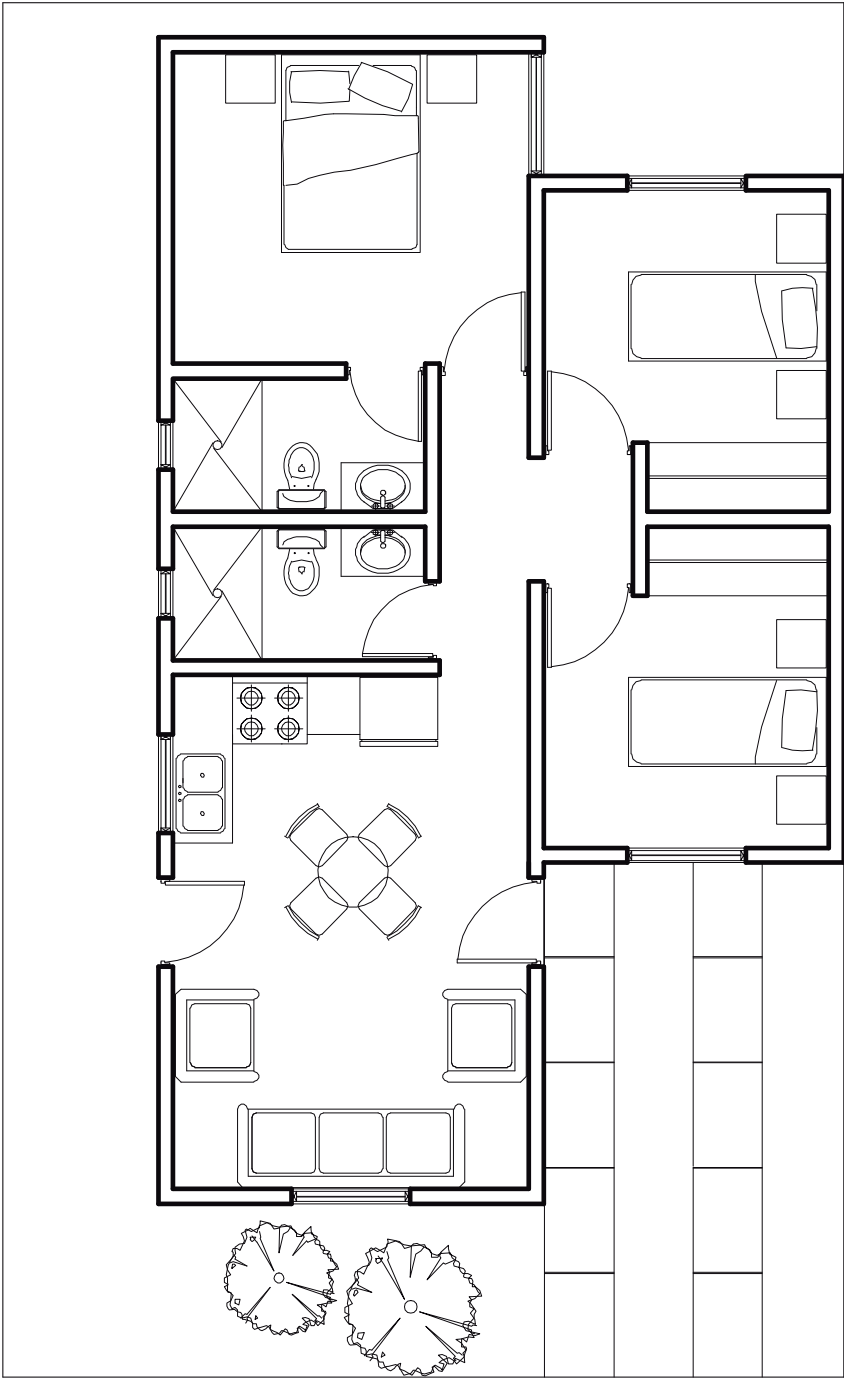


Floor Plan

Santa Eulalia Model
(2 bedrooms)

Lot Dimensions: 8.00 m x 15.00 m
Lot Area: 120 sqm
Built Area: 54 sqm
Approximate Cost: \$33,076.92 USD

Concrete block walls
& concrete slabs
Ceramic tile floors.



Floor Plan

Regina Model
(3 bedrooms)

Lot Dimensions: 8.00 m x 15.00 m
Lot Area: 120 sqm
Built Area: 65 sqm
Approximate Cost: \$ N/A

Concrete block walls
& concrete slabs
Ceramic tile floors.

Glossary

Drug Cartel. Criminal organization that controls the illegal drug market.

Industrial Park. Specific area in the city destined for the purpose of industrial development.

INFONAVIT. Instituto Nacional de la Vivienda para los Trabajadores.

Latifundium. Very extensive parcel of privately owned land.

Maquiladoras. Light industry factories.

Quartier. (french) Neighborhood.

Regional Seat. Area within a specific region where the municipal government is stationed.

Suburb. Residential area that is commonly developed in the outer limits of a city.

UACH. Universidad Autónoma de Chihuahua.