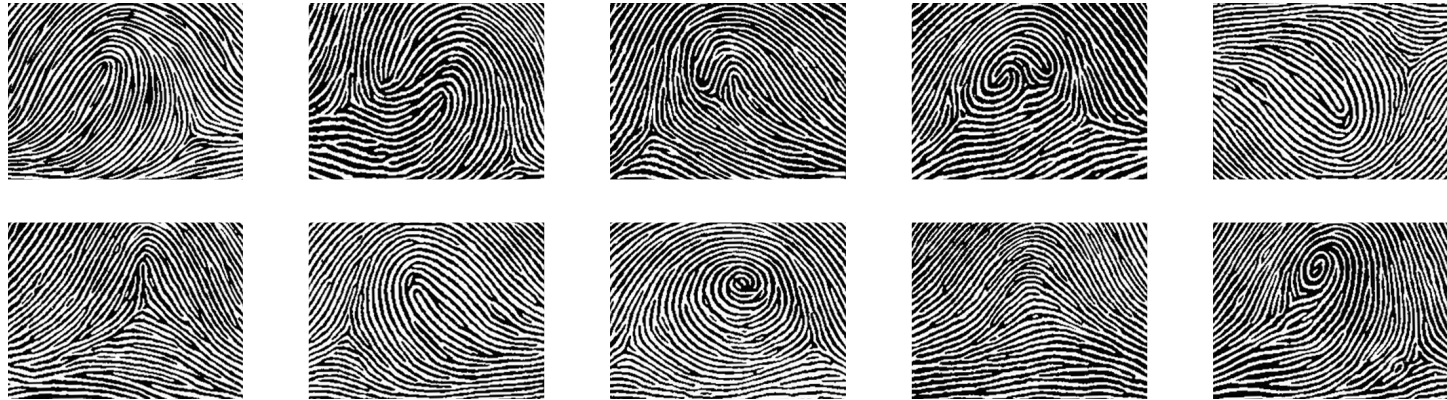


RE-DESIGN RE-HABILITATE



A L E X A N D E R K U H N

RE - DESIGN | RE - HABILITATE

by Alexander Kuhn

A Thesis submitted to the Graduate Faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Architecture
in
Architecture

Thesis Committee:

Heinrich Schnoedt (Chair)
Patrick Doan
Lisa Tucker

May 12, 2022
Blacksburg, Virginia

Keywords

Corrections | Rehabilitation | Prison Design | Urban Prisons | Micro-Urbanism

RE - DESIGN | RE - HABILITATE

ABSTRACT

During the last decade, criminal justice and prison reform in the United States has been at the core of many social organizations, rallies and protests throughout the country. While most concerns aim for increased policing, legislative change and the reduction of incarceration rates altogether, the current living conditions for inmates prove to have a significant impact on their psychological wellbeing and ultimately rehabilitation.

The experience of an inmate inside a prison appears to be only a small part of the wider issue, however. The U.S. currently holds the highest incarceration rates as well as the highest rate of re-offending in the world, creating a cycle that sustains high crime levels, lack of development opportunities and no coherent plan for a successful rehabilitation. This can be partially attributed to most inmates receiving poor preparation for the outside world, without incentivizing a return to a familiar environment. Together this creates a difficult barrier between the inmates and the general public.

The experience while serving a sentence can drastically affect the potential of re-offending. The seclusive approach of most jails and prisons in the US creates an internal society that differs greatly from the society to which inmates are exposed after their sentence has been served. A disassociation and hostility from the general public towards convicts further stigmatizes any interaction between them and the prisoners who ultimately will rejoin that same public.

While many of the challenges faced by inmates when re-introduced into the outside society can be alleviated by policy changes, also architecture has the potential to assist in the reform the internal experience of inmates. The hypothesis here proposes that the design of a prison should be closer to an analogy of the outside world in order to generate a greater familiarity with the structures of a society in which they ultimately will have to operate after rehabilitation.

This project seeks to create a micro-urban condition within an urban prison through various architectural conditions. Home, neighborhood, city are ideological moments with architectural principles that form the basis of this design approach. The elongation of the typically short paths suggests a sense of commuting. A separation of functional spaces from living spaces, combined with spaces for integration where inmates and public can meet denotes the second major deviation from a typical prison program.

While still a controlled environment, it more parallels the lives of the general public, an attempt to diminish the experiential boundaries faced by inmates when they are released.

RE - DESIGN | RE - HABILITATE

GENERAL AUDIENCE ABSTRACT

Criminal justice and prison reform in the United States has been at the core of many social organizations, rallies and protests throughout the country. While most demands aim for increased policing, legislative change and the reduction of incarceration rates altogether, the current living conditions for inmates prove to have a significant impact on their psychological wellbeing and ultimately rehabilitation.

The U.S. currently holds the highest incarceration rates as well as the highest rates of recidivism in the world, forming a cycle that maintains high crime levels with no coherent plan for successful rehabilitation. This can be partially attributed to most inmates receiving poor preparation for the outside world, experiencing hostility and unfamiliarity upon release.

The seclusive approach of most jails and prisons in the US creates an internal society that differs greatly from the framework of our society. Disassociation and hostility from the general public towards convicts further stigmatizes any interaction between them and the prisoners. Many of these concerns could be addressed by policy changes, but architecture has the potential to reform the internal experience of inmates to assist their transition back into society .

The hypothesis here proposes that the design of a prison should be closer to an analogy of the outside world in order to generate a greater familiarity with the structures of a society in which they ultimately will have to operate after rehabilitation. While still a controlled environment, it more parallels the lives of the general public, an attempt to diminish the experiential boundaries faced by inmates when they are released.

ACKNOWLEDGEMENTS

A special thank you to my committee members Heinrich Schnoedt, Patrick Doan and Lisa Tucker for their guidance and input throughout the year. Also to Kay Edge for playing a vital role in my education throughout my time at Virginia Tech. Also to my family who has been supporting me throughout my career and especially to my mother, who has shown unconditional love and support throughout my life and my studies.

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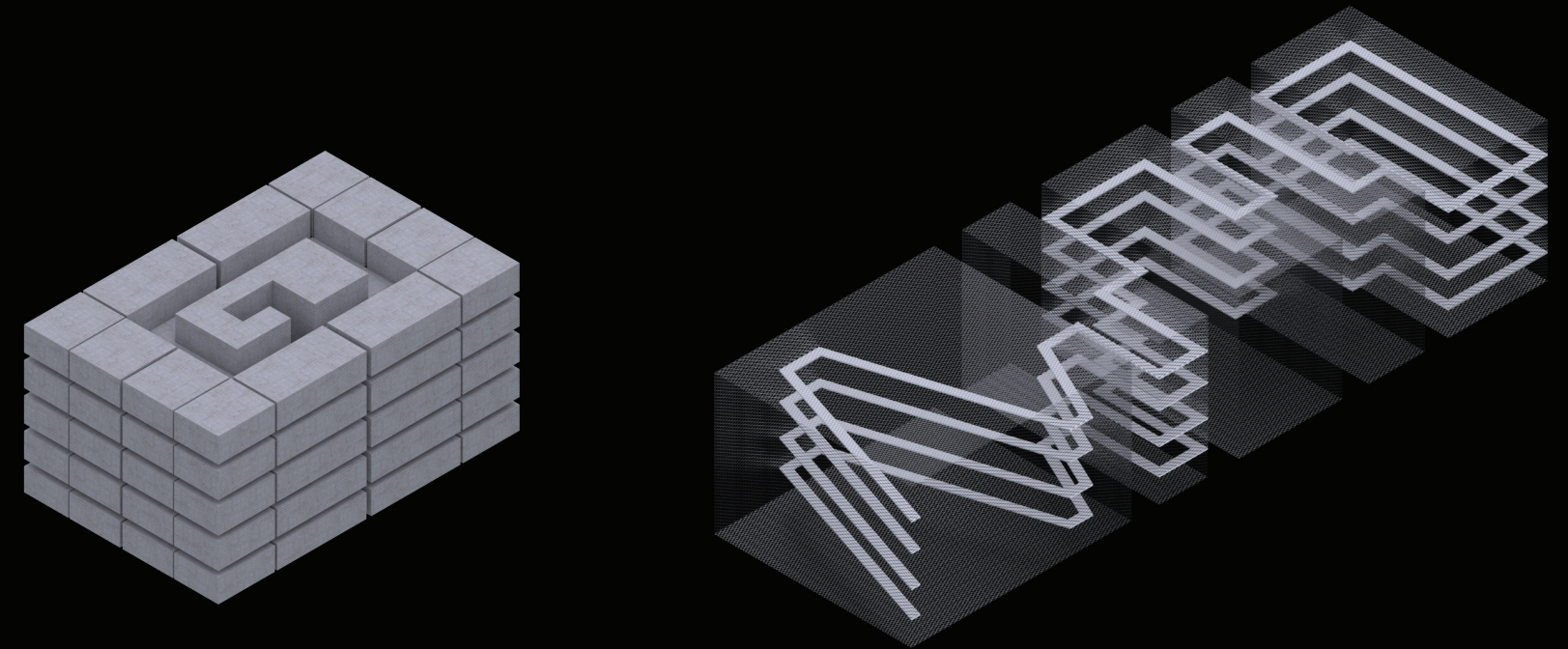
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A CONCEPTUAL BASIS FOR A PRISON

The most basic assumption in this thesis is that architecture can assist the rehabilitation of inmates through the formation of a quasi urban fabric based on the outside world.

In order for people to function in society, an atmosphere that is closer to the order and the context of the world outside might be a better preparation for a successful rehabilitation. The architecture within the walls of a prison orients itself on the layout of a city.

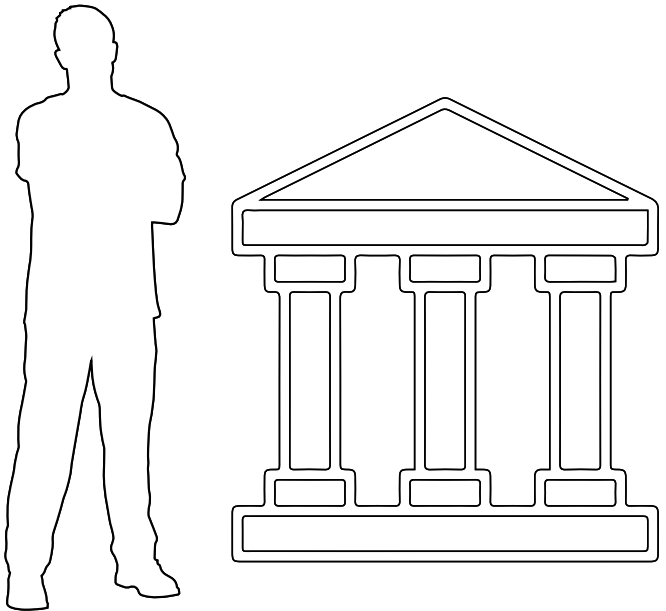
Incarceration requires a physical separation from the outside with set of building measures that tends to be opaque and impenetrable. Without neglecting safety standards however, one can speculate if adjusting current norms in prison toward a structure that is somewhat able to reflect the tendencies, culture and architectural conditions of life outside, inmates will be able to relate to those principles once their sentence has been served. A better relationship between the prison and the natural and the outside form new points of interaction between inmates and “outmates”.



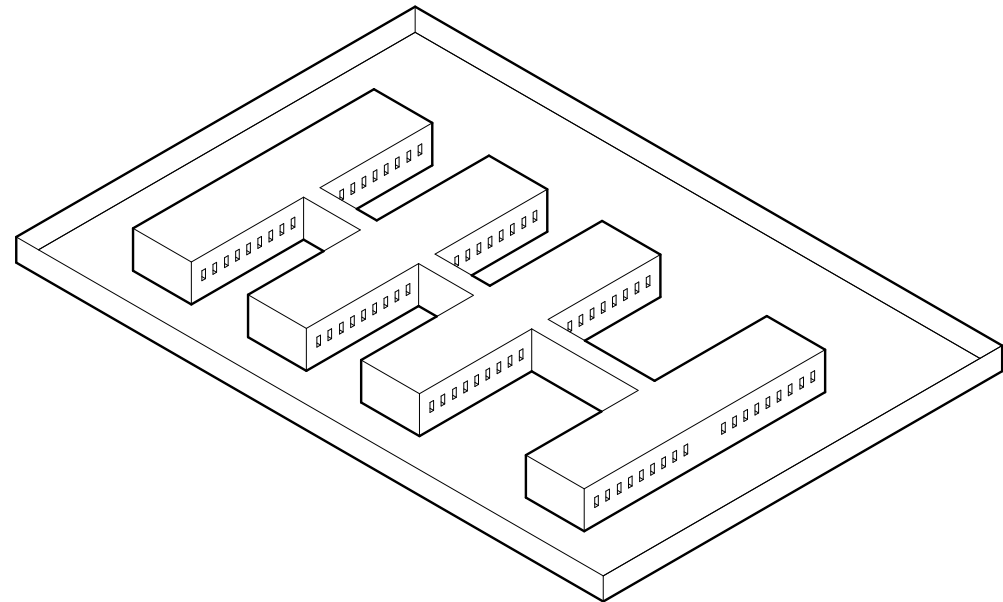
USER GROUP

The architectural proposal here does not challenge current structure of rehabilitation based on incremental stages. Instead, it targets the final period of incarceration before inmates are released. Generally the function of the prison system is based on three primary pillars: To protect the public, punish the offenders and rehabilitate inmates. Over time, many different strategies have been tested to both punish and rehabilitate, but none have succeeded. Attempting to punish and rehabilitate simultaneously has been proven to be ineffective, inhumane and arguably impossible. Instead, this project assumes a sequence of punishment first serving time in a conventional prison, followed by an architecture-assisted rehabilitation during the last portion of the sentence in a prison that approximates the outside world.

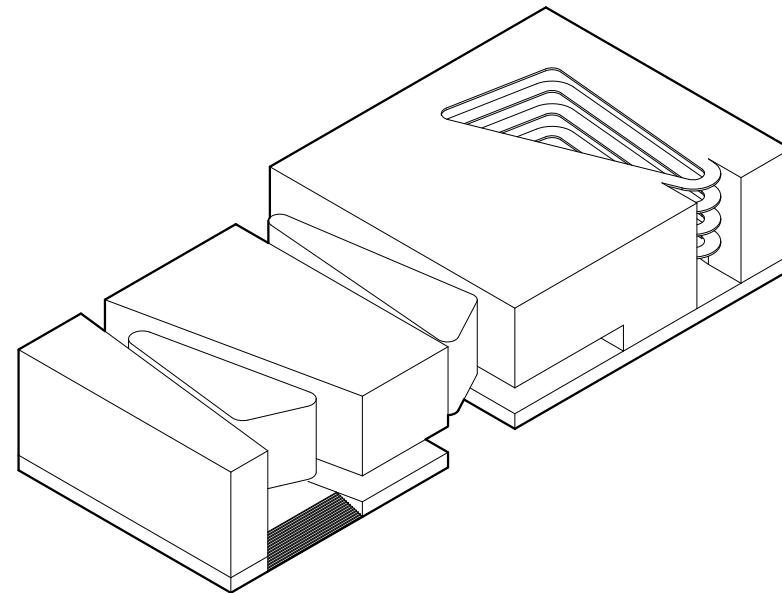
15-YEAR SENTENCE BY COURT



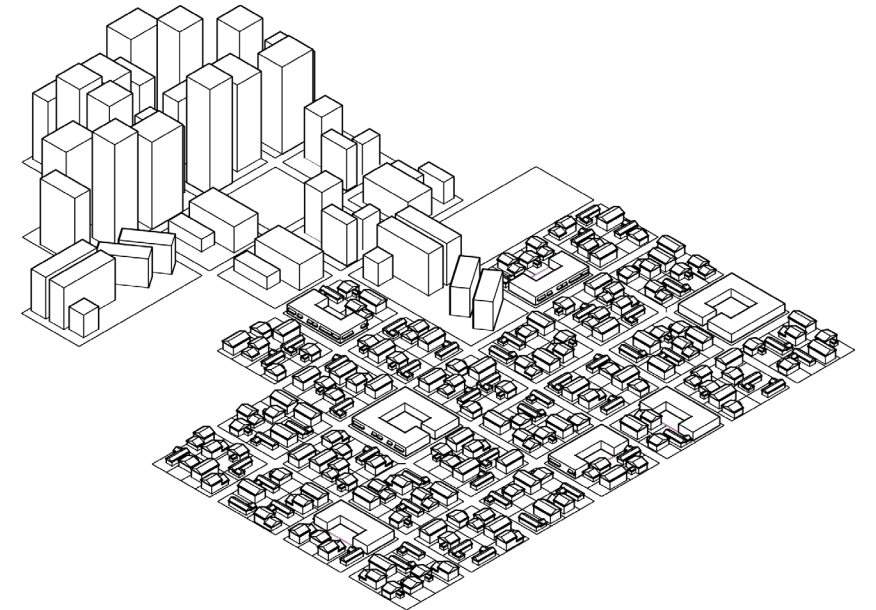
12 SERVED IN CONVENTIONAL PRISON

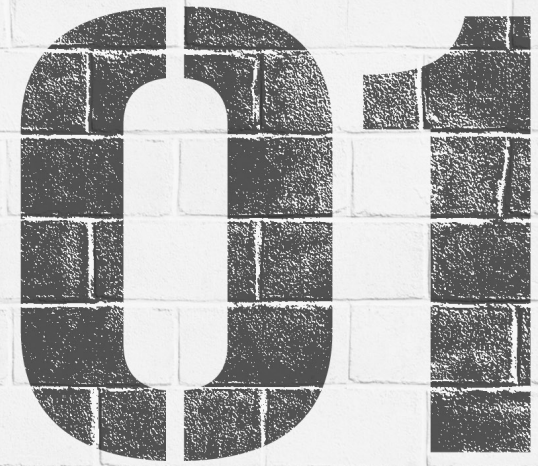


3 SERVED IN NEW PRISON



RELEASED BACK INTO SOCIETY





PREFACE

THE PURPOSE OF PRISONS

Public Protection, Punishment and Rehabilitation are typically cited as the main reasons for incarceration and custodial facilities. The custodial imprisonment, especially in the U.S., is disproportionately focused on punishment and public protection. While there has been a gradual shift towards the rehabilitative potential of prisons, there are numerous challenges emerge. Any changes require support and approval of the public, a cost-efficient model for the government and some promise that the duration of incarceration is a substantial deterrent to re-offending.

The evolution of prisons, however, demonstrates how the physical building has repeatedly been used as a vessel for psychological alteration. In that context, it is clear that prison architecture often has historically been used as a form of intimidation and suppression. However, other recent examples show the potential for an architectural environment to positively affect human behavior and support a shift toward constructive rehabilitation.

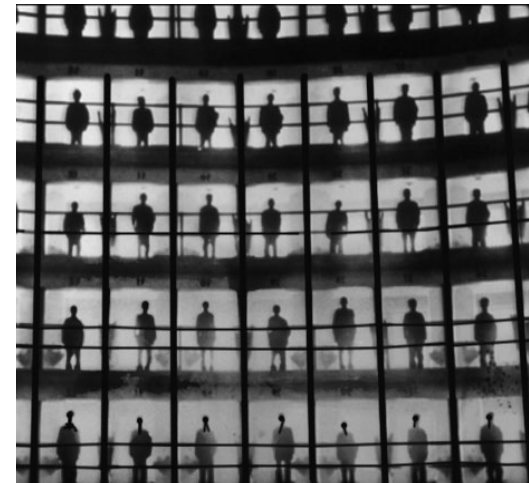


Fig 1



Fig 2

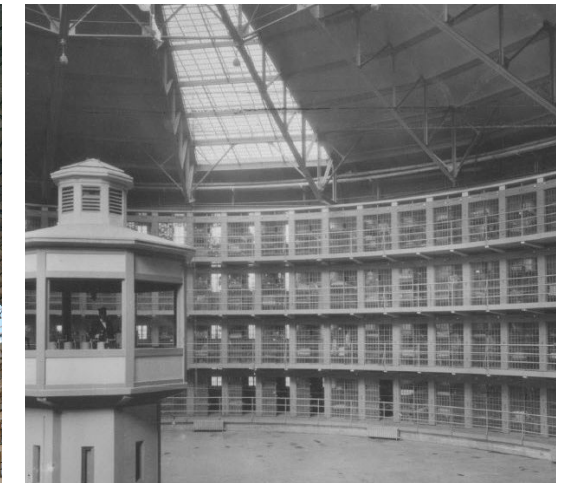


Fig 3

THE PSYCHOLOGY OF PRISON WALLS

Perhaps the most influential and infamous development in prison architecture was the Panopticon attributed to Jeremy Bentham. His belief that all parts of society can be altered if they are subject to observation was concretized in a style of building that consists of a central guard tower surrounded by a radial array of cells. It allows the guard to see all the inmates, when in turn, the inmates would never know whether or not they are being watched. This state of constant observation had detrimental psychological effects on the inmates and induced a state of visible but unverifiable power.

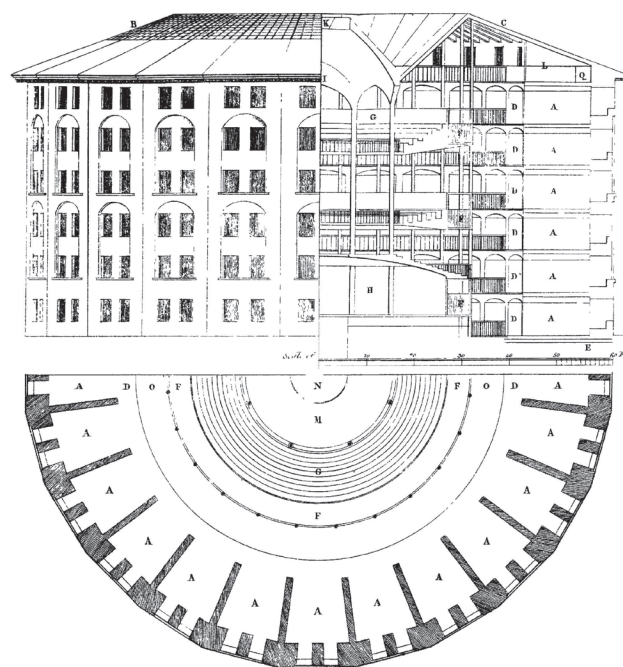


Fig 4



Fig 5

TYPES OF PRISON ARCHITECTURE

In most current prison buildings, facilities are consolidated into one contiguous structure. The Telephone Pole design, radial design and courtyard design all provide efficiency in terms of movement and functional flow but fail to provide clear separation between spaces and instead rely on a system of repetition. This sense of confinement and monotony often leads to high levels of frustration and tension inside the prison, resulting in violence between inmates and/or prison staff.

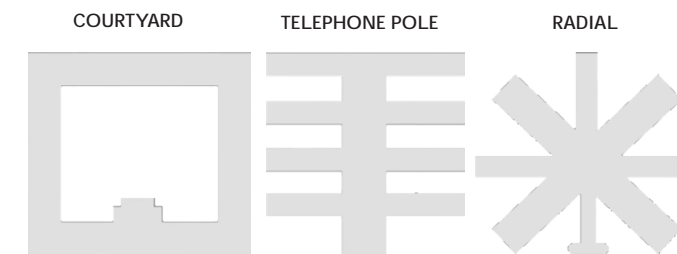


Fig 6

CAMPUS DESIGN

The most effective style of prison design separates its functions into unique and identifiable spaces and volumes. This creates a healthy daily routine that starts with a commute to work and a return to the living spaces, similar to the daily cycle of the general public. Not only does this layout counter feelings of isolation, it creates moments within the daily life of an inmate that imitate the structure of the outside world, assisting the inmates with their adaptation to the outside world.



Fig 7



02

CASE STUDIES AND PRECEDENTS

THE IMAGE OF PRISON

In order to improve on the current prison designs, it is important to understand what generates the negative image of prison as a governmental institution. The hypothesis here builds on an idea that any change in prison design should consider the current culture and the specific elements that tend to generate not only a negative or hostile image but also are obstacles toward a gradual reintegration into society,



Fig 8



Fig 9



Fig 10



VALUABLE PRINCIPLES

The design of Halden Prison offers some insight as to the influence of architecture on an inmate. Firstly, the site is laid out as a **campus**. Facilities are categorized and separated in order to create a need for **commuting** as an abstraction of daily routines outside of the prison. Inmates are offered an experience of time and space, through large windows inside the cells and throughout the prison. **Access to daylight** helps to establish a healthy circadian rhythm which has been proven to help with digestion, sleep, depression and overall wellbeing of the individual.

Inmates are encouraged to interact with the carefully constructed landscape with courtyards and park benches. The living spaces are subdivided into **small communities**, which share common spaces. The guard rooms are placed within these common spaces, promoting closer, face-to-face interactions between the inmates and the prison staff and improving **mutual respect**.



Fig 12



Fig 13



Fig 14

HALDEN PRISON, NORWAY

Fig 11

Completed in 2010, Halden Prison radically changed the approach to maximum security prison design. It features contemporary art, carefully designed landscaping, separation between living and visitation facilities, meandering pathways through nature and rich views from the cells to the surrounding environment. The theory of the architect, Gudrun Molden, proposes that everyday life should not be a sentence, and that inmates should never feel intimidated by the building itself. Instead, a prison should lend an anti-authoritarian feel.



JUSTICE CENTER LOBEN, AUSTRIA

Fig 15

Designed by Josef Hohensinn, this prison complex was completed in 2004 and hosts 205 inmates. Most are afforded their own bedroom with kitchenette and large amounts of daylighting. The common spaces are clad with warm, natural materials and some rooms offer balconies to be used by the inmates. It also features three courtyards that offer exposure to nature and recreational facilities.

VALUABLE PRINCIPLES

Unlike Halden Prison, the design of Justice Center Leoben does not strictly follow an existing prison typology or layout. Instead, this more closely resembles that of a hotel, making **atrium spaces, light and common spaces** a priority. The amenities also resemble that of a hotel, allowing inmates to improve their physical and mental well-being.

The **facade** becomes a playful shading structure that doubles as an extra layer of security while allowing ample amounts of natural light to enter the building, **opposing the "heavy" typology** of most prisons. The massing of JCL is a precedent of what the approach to an **urban prison** might entail.



Fig 16



Fig 17

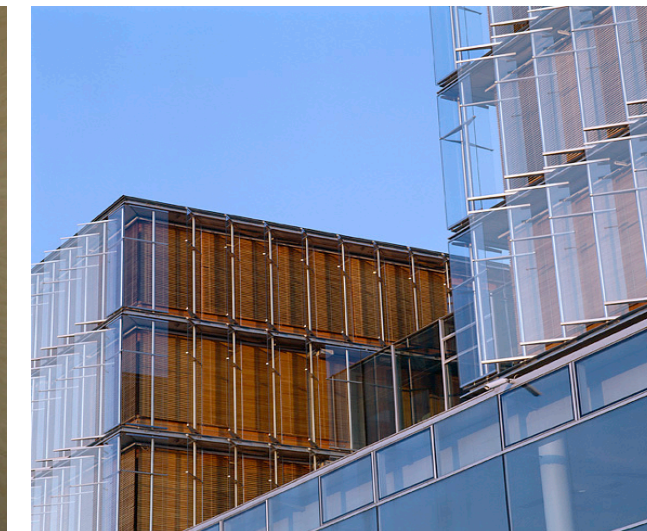
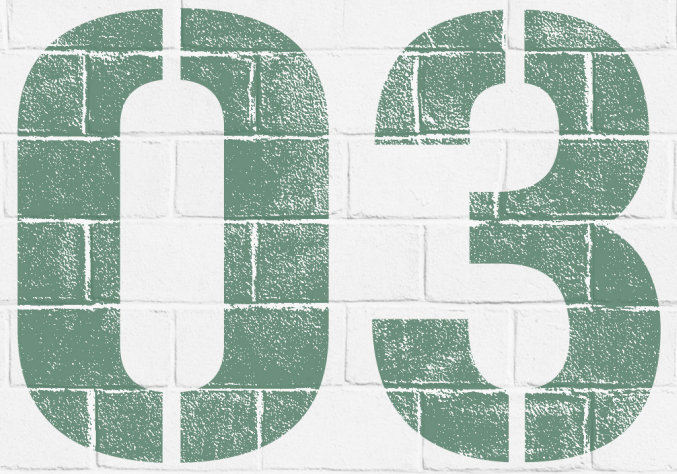


Fig 18



SITE STUDY



ROANOKE CITY JAIL

The City of Roanoke, Virginia, currently has a jail hosting 465 inmates in an urban environment. The cells line the perimeter of the building with a tinted window slot that divides the facade. Adjacent to the jail is a public park at the intersection of 3rd Street and Campbell Avenue.

The jail is connected to both the Sheriffs Office and the General District Court. The jail is essentially introverted and offers very little exposure to the outside.





SITE OPPORTUNITIES

Developing a new prison typology in an urban setting faces many challenges as well as opportunities. It is important to architecturally manage the interaction between the inmates and the public to create a fair presence for both. The design aims to control the views into and out of the prison by means of facade detailing, with calculated moments of framed views with intermittent translucency.

ROANOKE CITY COURTHOUSE

PRISON COURTYARD

PRISON BLOCK (NEIGHBORHOOD)

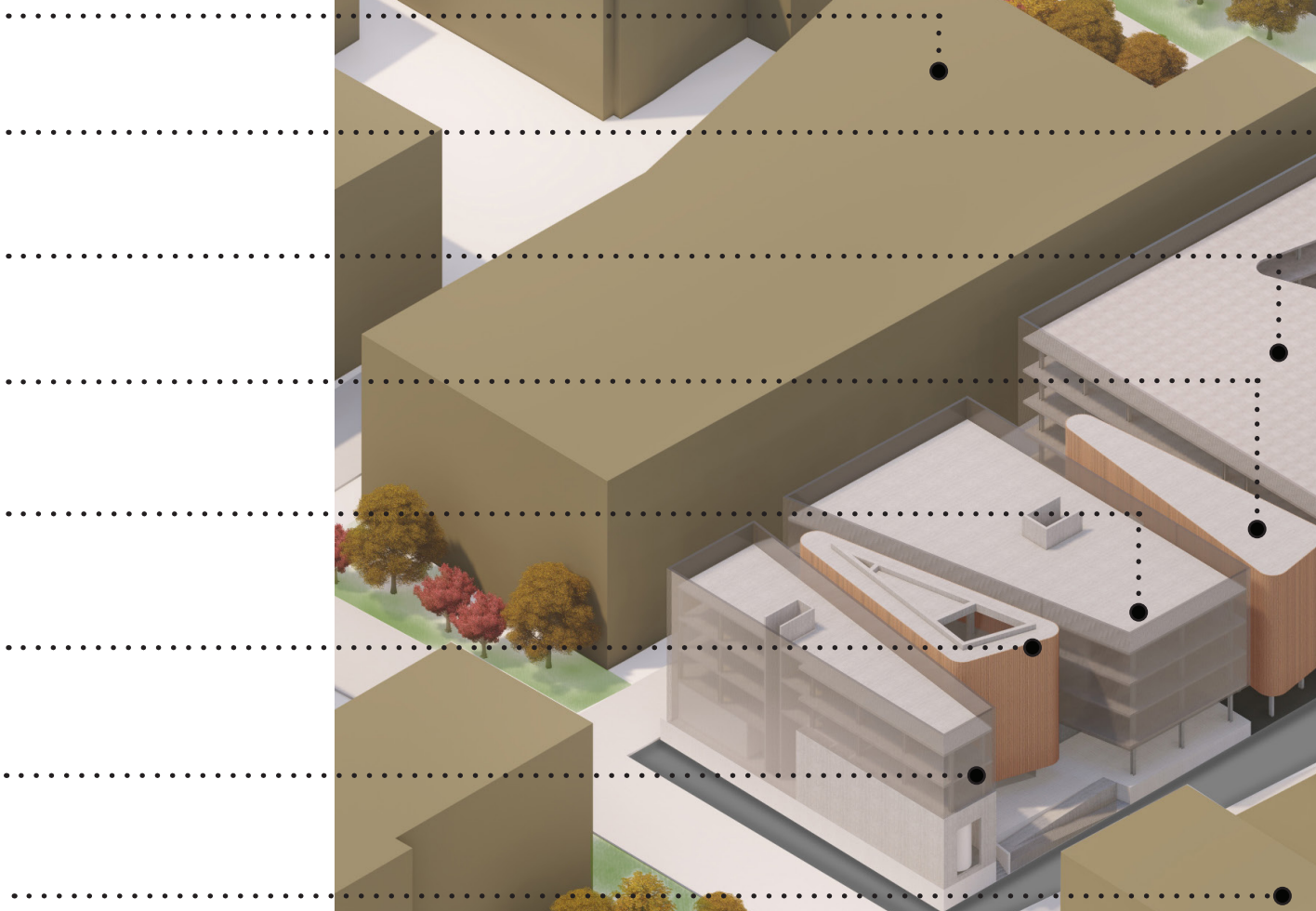
CIRCULATION POD (RAMP)

PRISON ANNEX BUILDING A

CIRCULATION POD (STAIRS)

PRISON ANNEX BUILDING 2

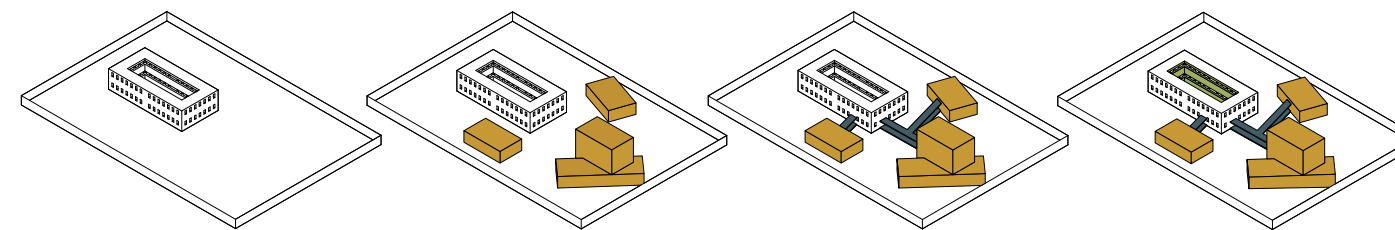
APARTMENT BLOCKS



04

MICRO-URBANIZATION

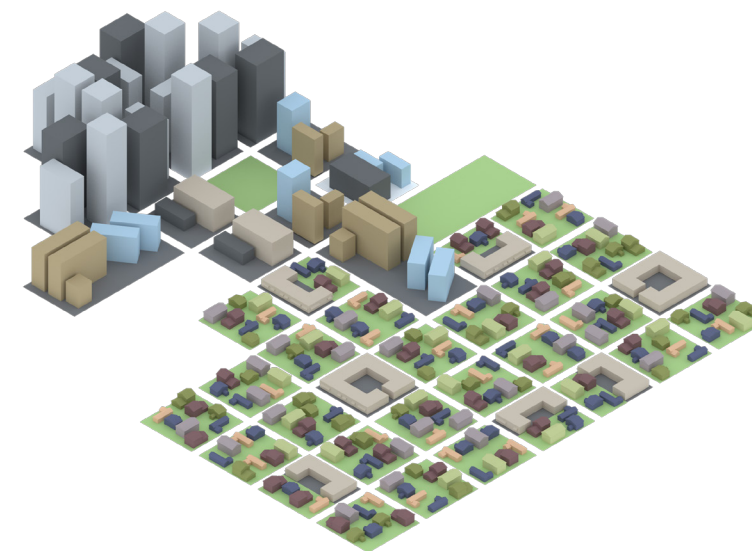
THE CAMPUS MODEL



CAMPUS LAYOUT ON AN URBAN SITE

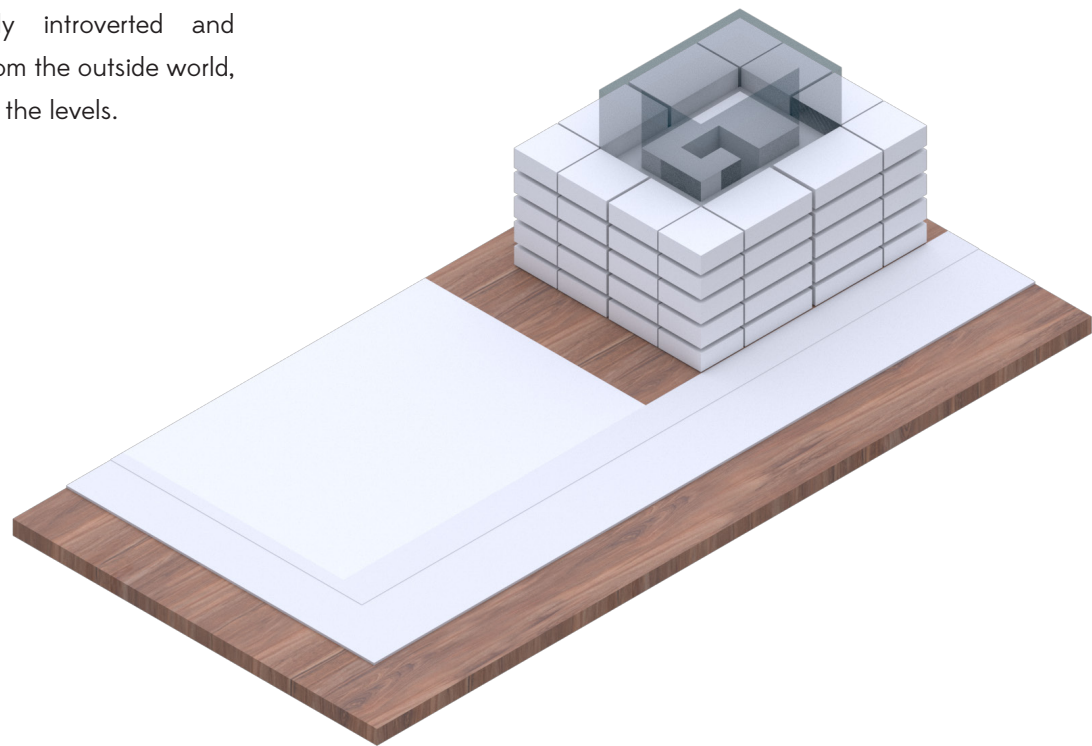
In order to successfully implement a campus layout, a large site that can accommodate dispersed facilities is generally required. As mentioned before, the benefit of the campus that also functions as a prison presumes a clear separation of work life and home life, and the purposive construct of a daily commute.

The commute implies a sense of departure and arrival, with events along the way, counter-acting isolation and a monotony. Architecturally, the extended travel time can be supported by material selection, volumetric expressions, and differences in light and shadow.



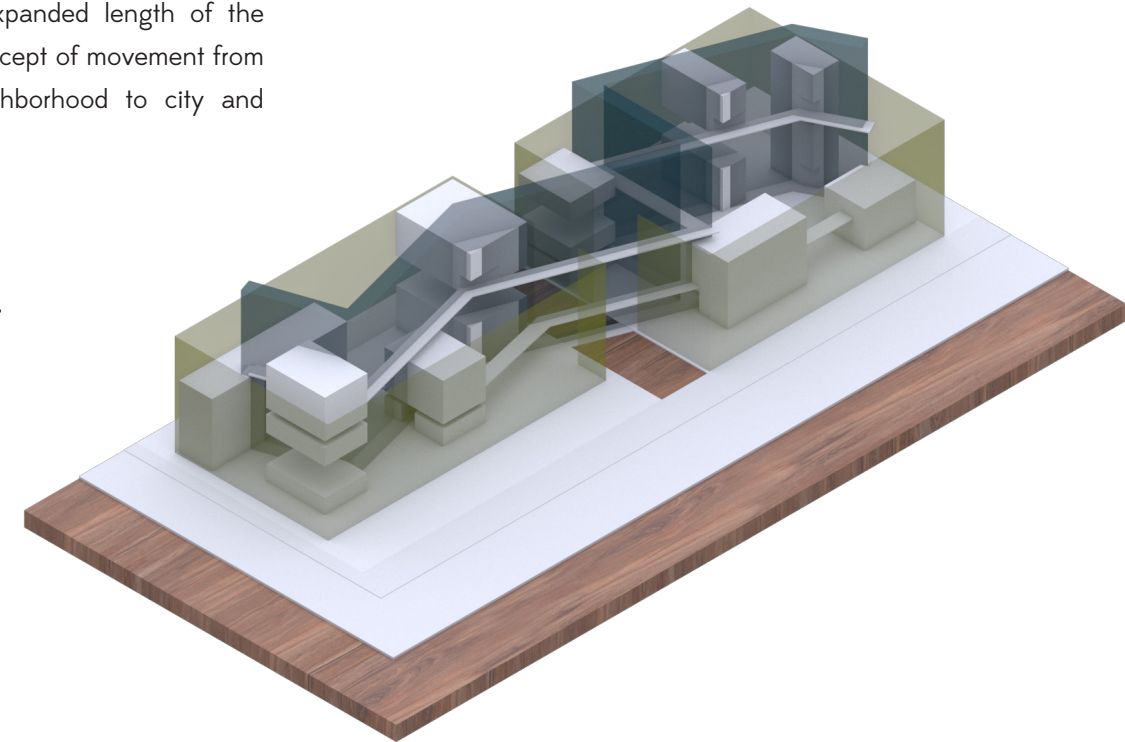
CURRENT PRISON

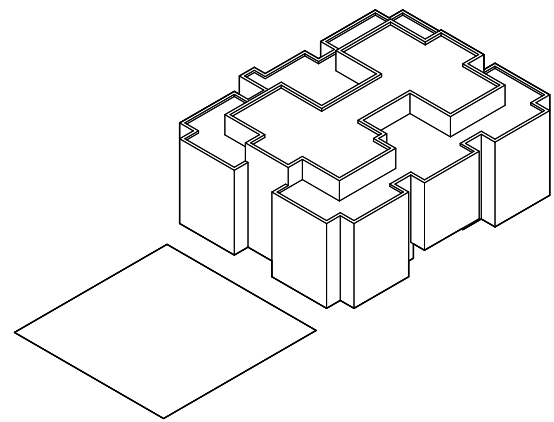
The Roanoke City Jail currently hosts a total of 588 prisoners. The cells are found on the perimeter of the building and all the functional spaces are centralized. The architecture is completely introverted and completely isolates the inmates from the outside world, with little to no variation between the levels.



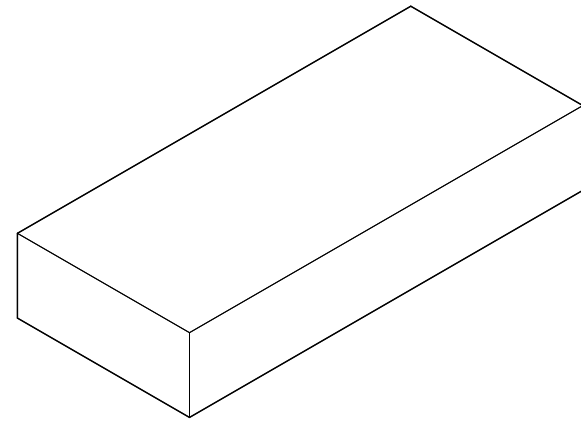
MICRO-URBAN MODEL FOR PRISONS

Based on the assumptions of that architecture can be a contributor to rehab, the proposal seeks to articulate identifiable volumes, a kind of urban fabric, with streets between the facilities. The expanded length of the inside commute employs a concept of movement from house to neighborhood, neighborhood to city and house to city.

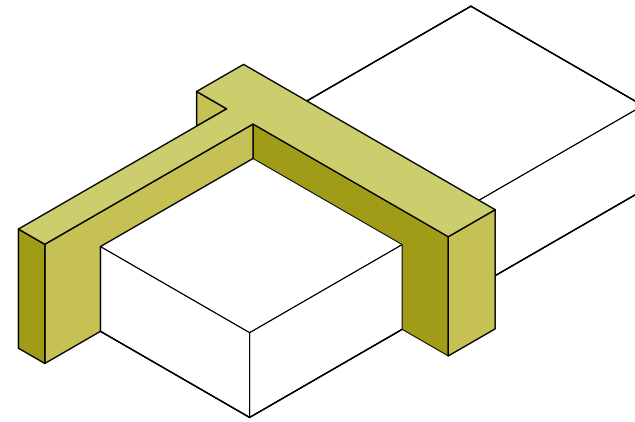




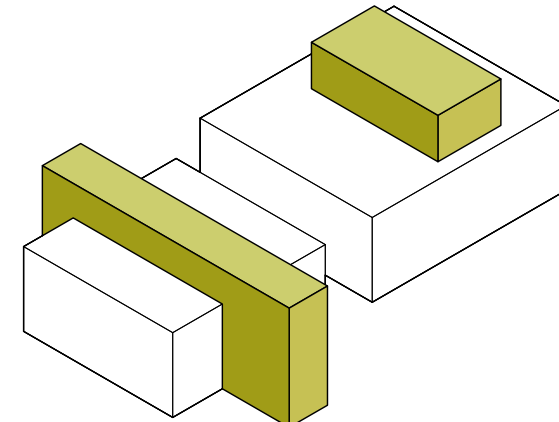
EXISTING BUILDING



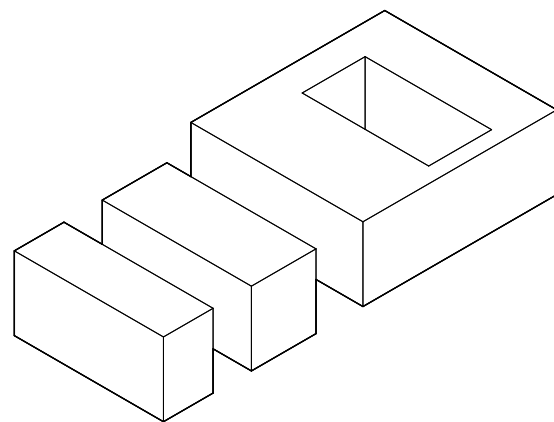
OCCUPY FULL SITE



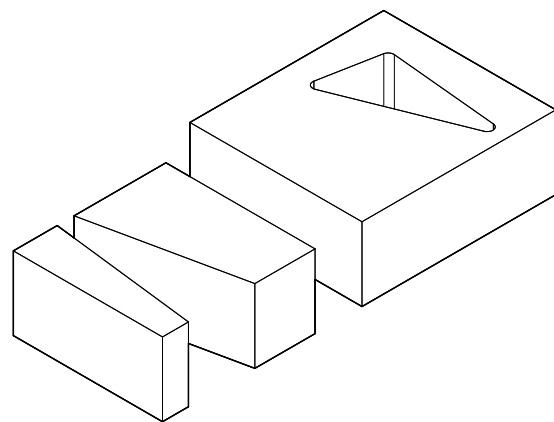
SPLIT MASS



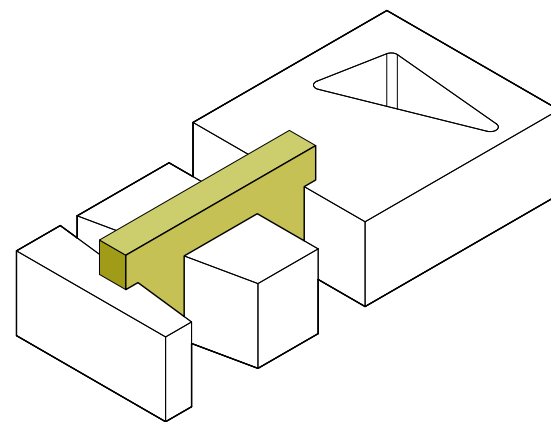
SUBTRACT TRANSITION SPACES



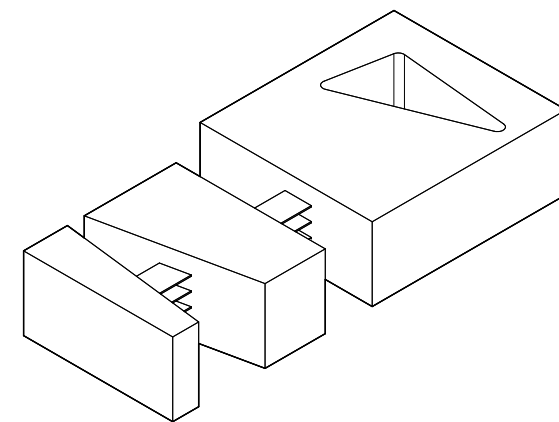
RESULT



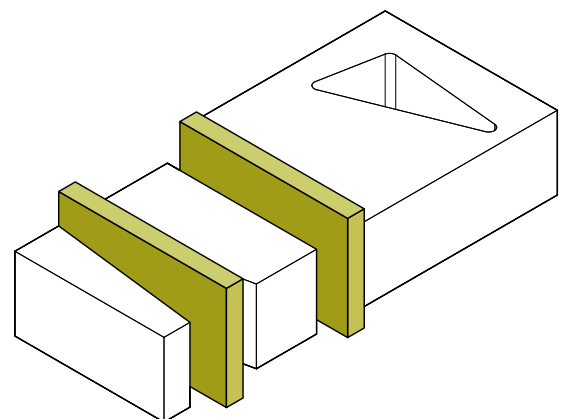
OPEN TO PUBLIC



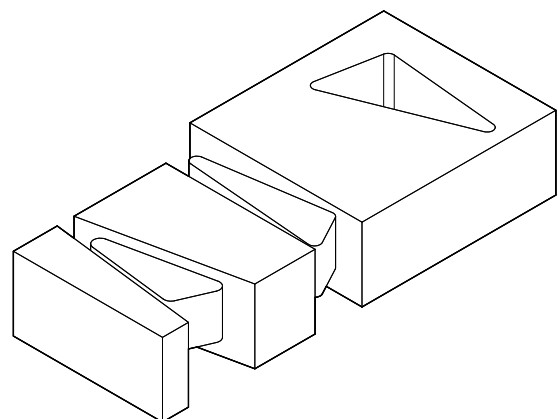
JOIN THREE MASSES



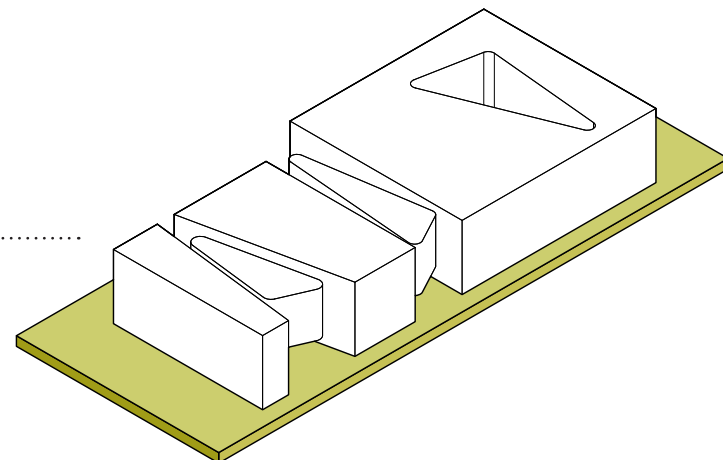
RESULT



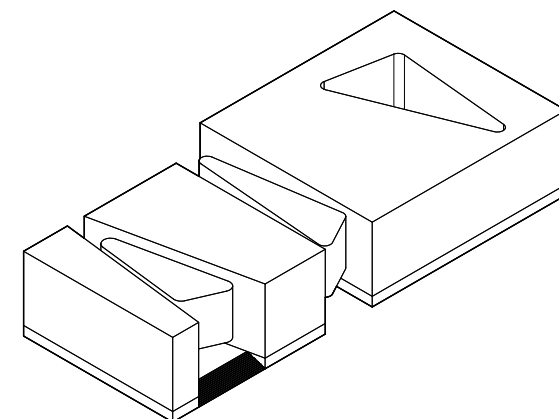
ADD MOVEMENT



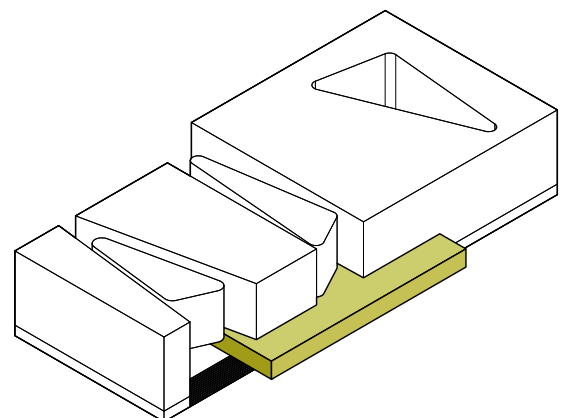
RESULT



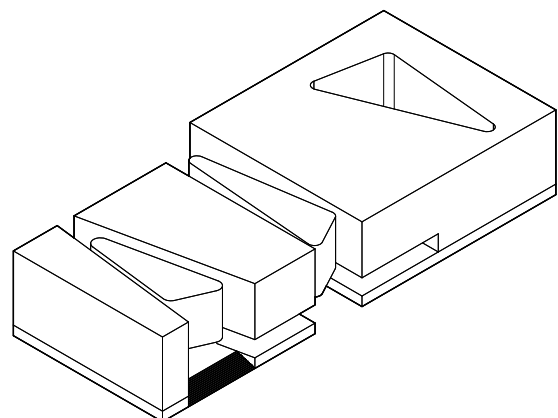
ELEVATE MASSES



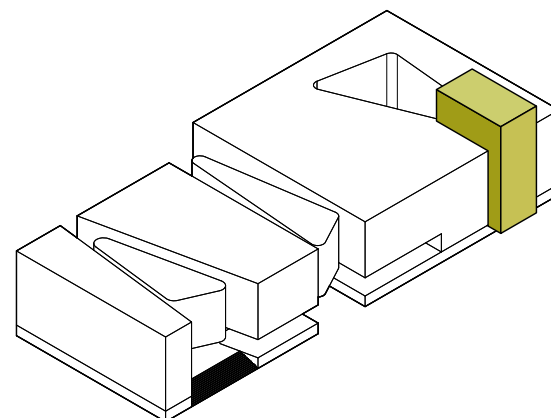
CREATE BASE



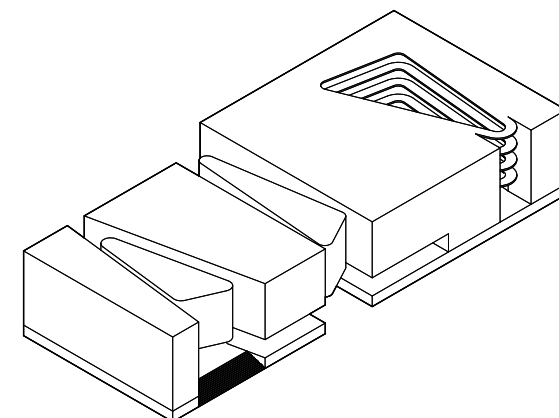
ADD TRANSPARENCY



RESULT

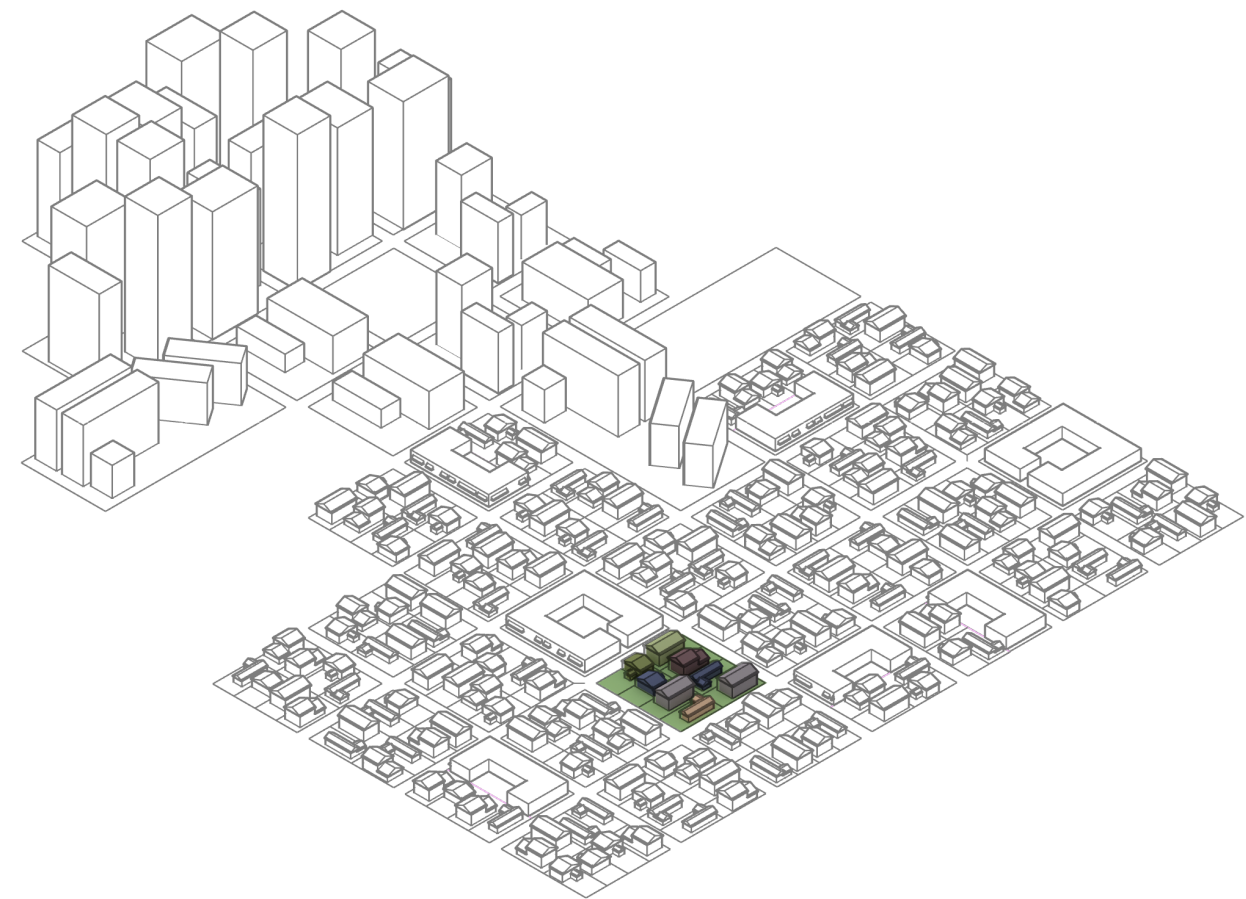


SUBTRACT ATRIUM



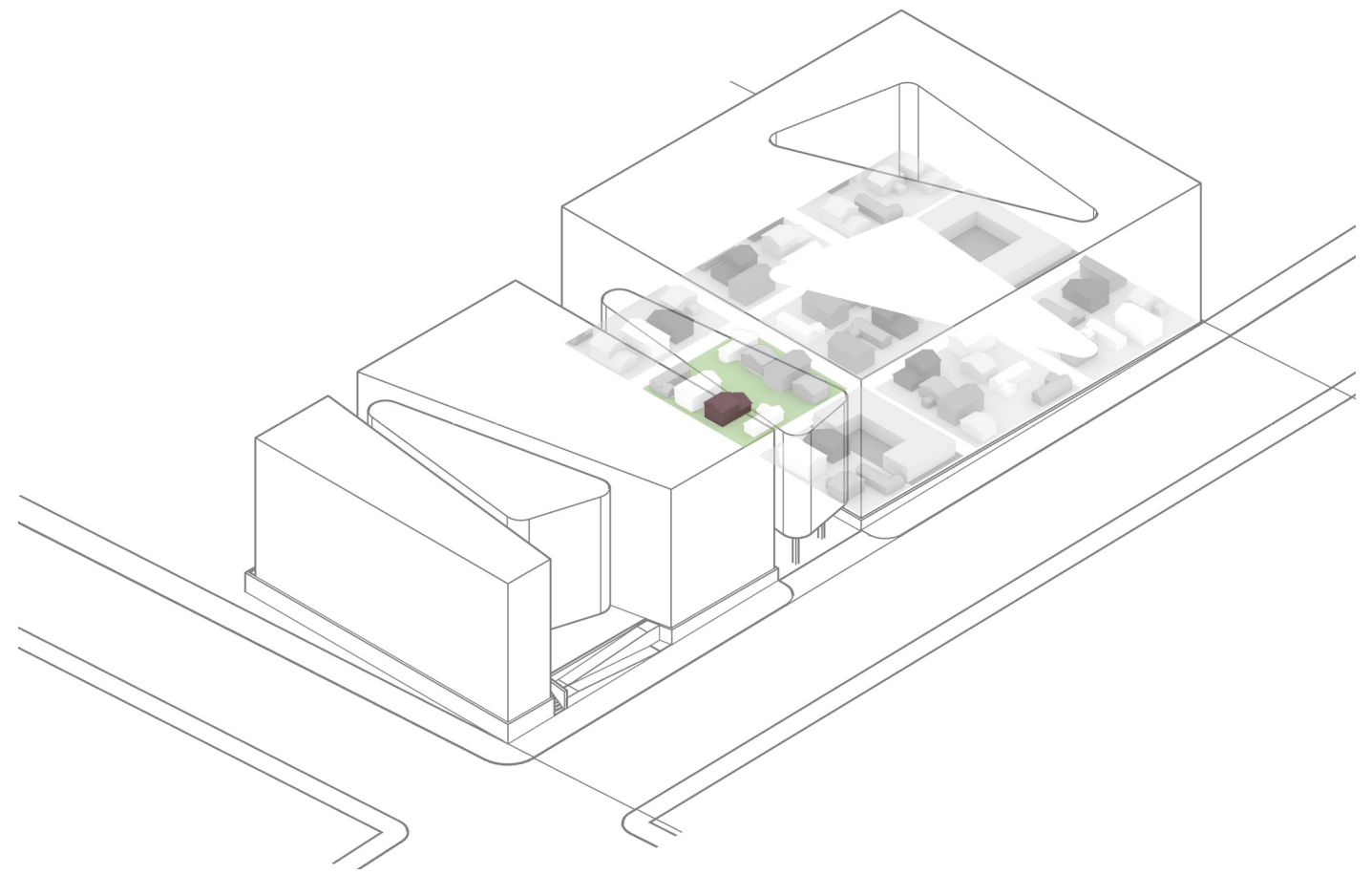
RESULT

1 | APPLYING THE URBAN SECTORS

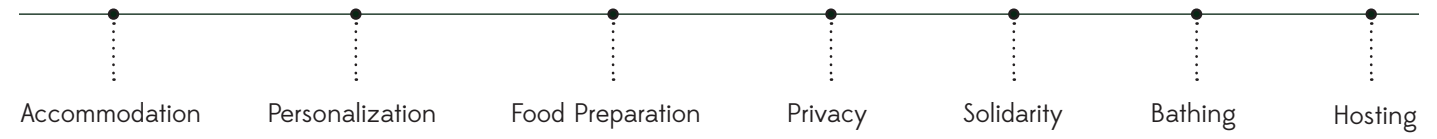


THE HOME

The Home is where a person feels most safe. It creates a sense of ownership and ultimately has the biggest influence on the wellbeing of its occupants. This is a space with the highest level of privacy, with a choice to retreat or invite the company of others. To generate a sense of home inside a correctional facility, the place to spend time outside of work and a place to sleep should also be overlaid with a sense of identity, the idea of a house that belongs.



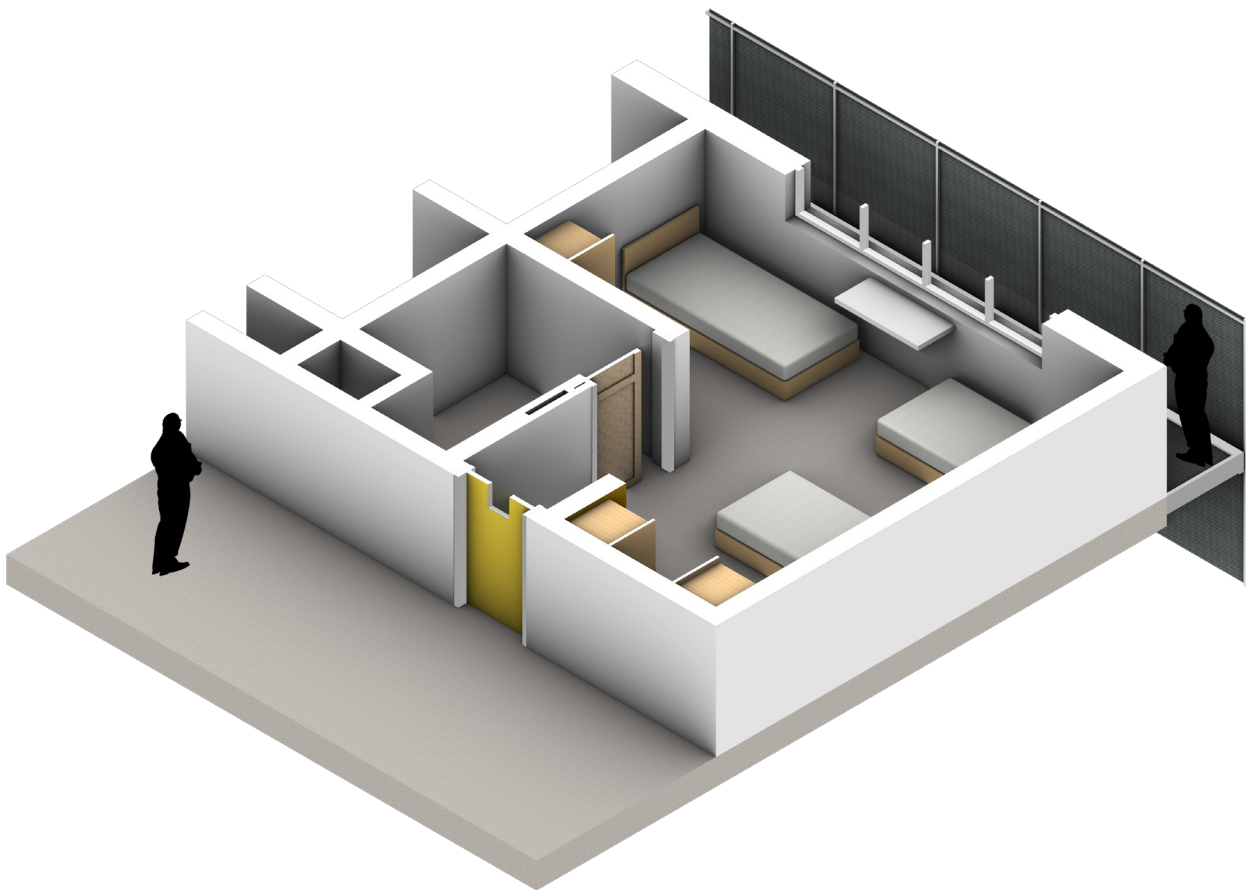
ESSENTIAL ATTRIBUTES OF A HOME

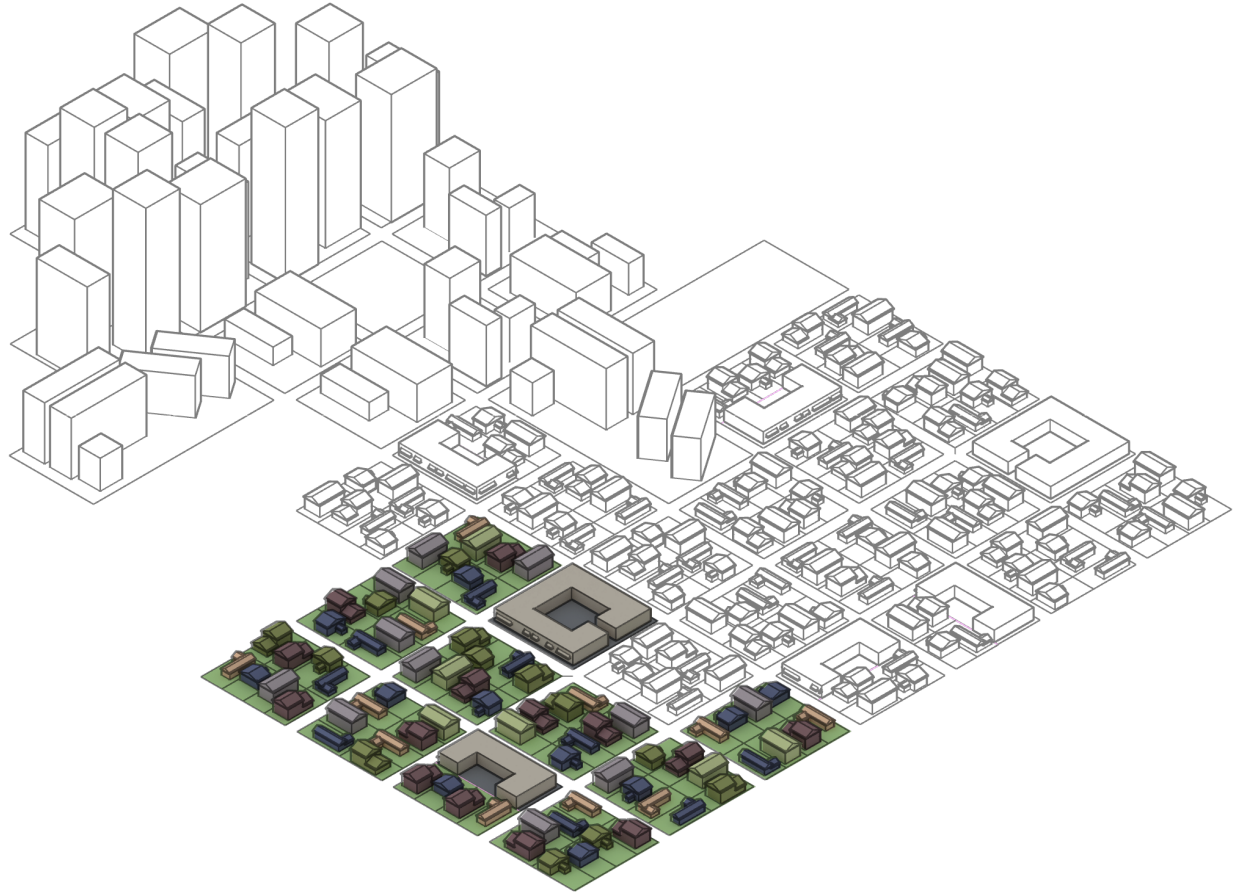


PRISON BUILDING



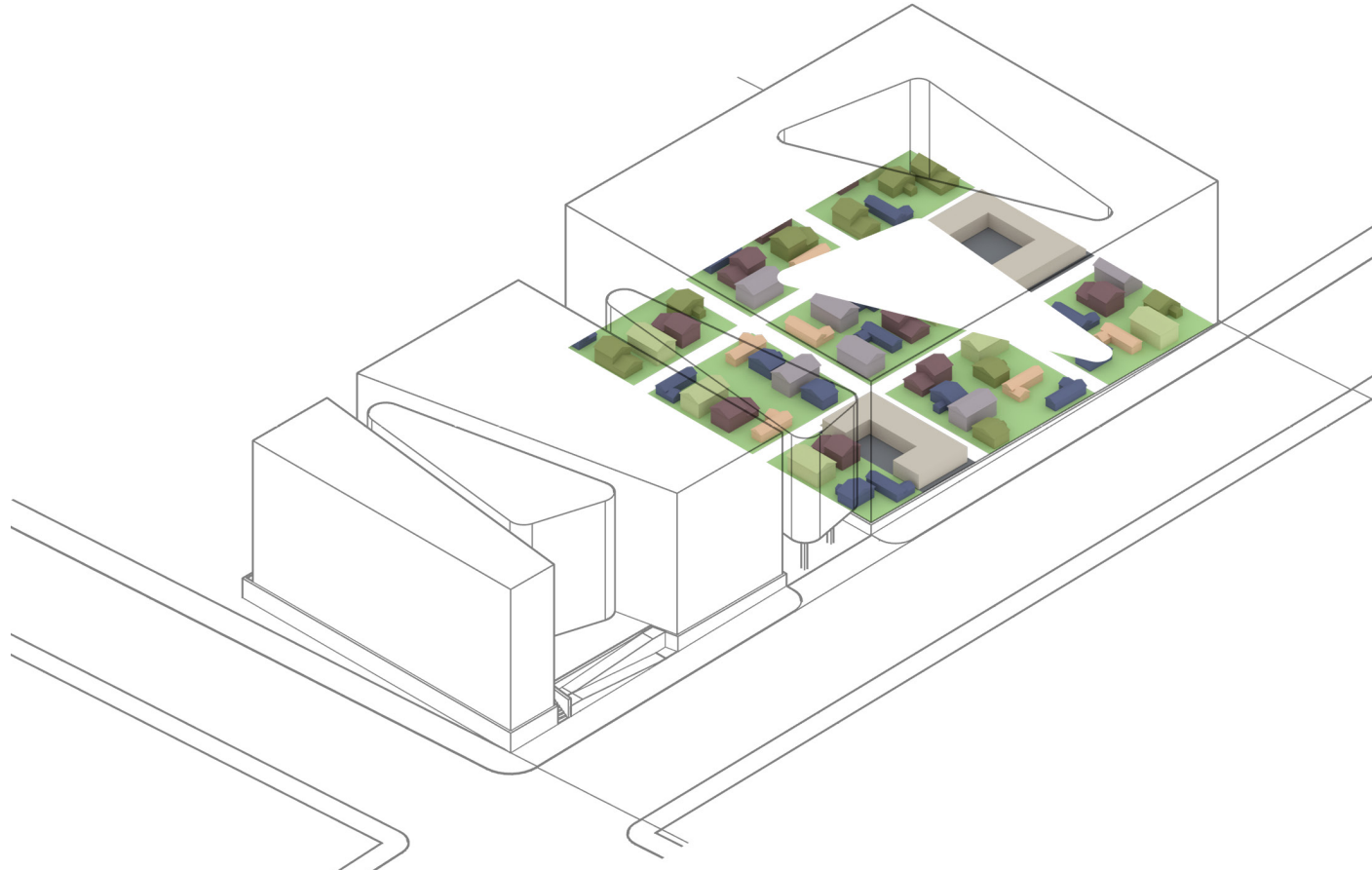
THE "APARTMENT"





THE NEIGHBORHOOD

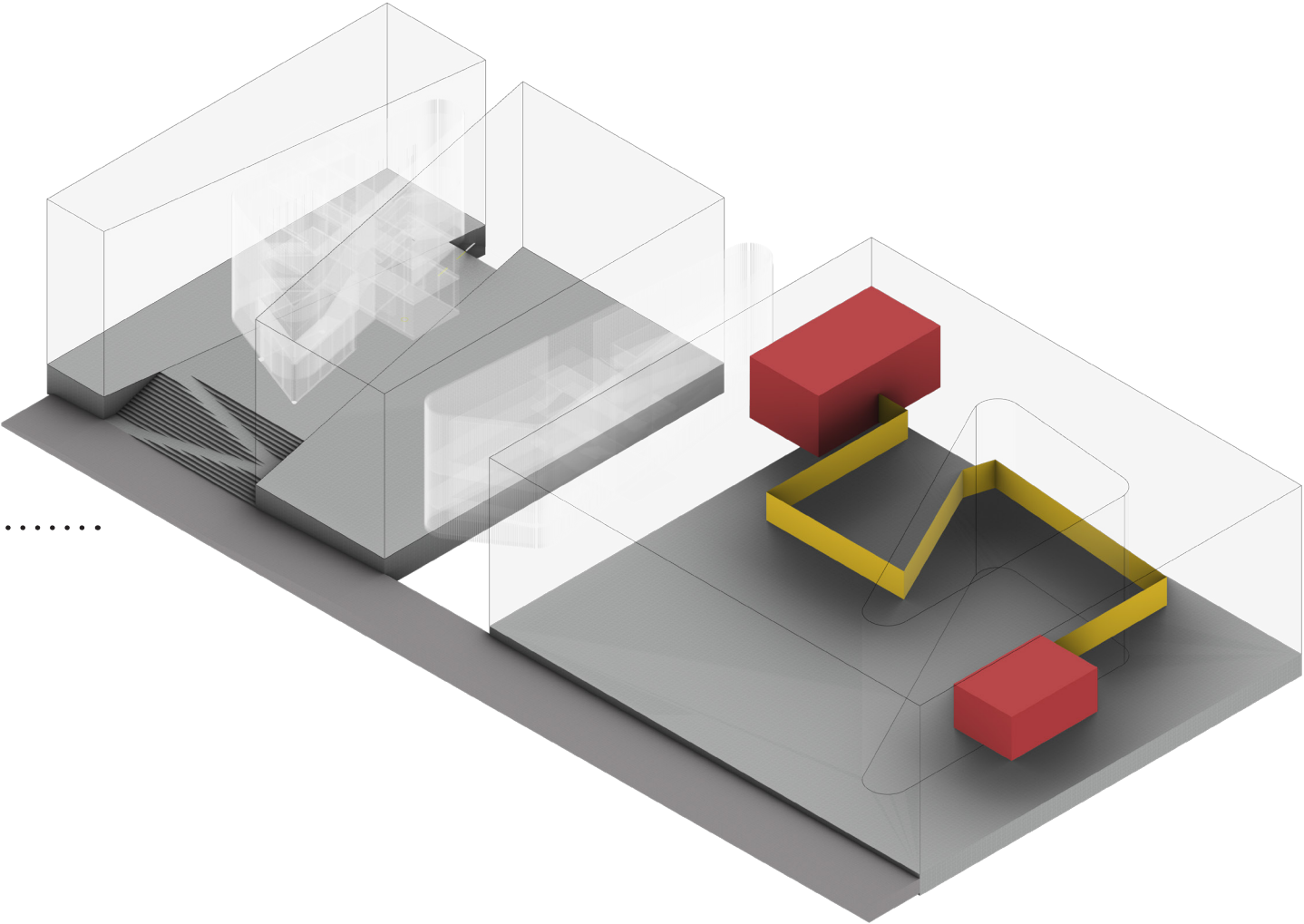
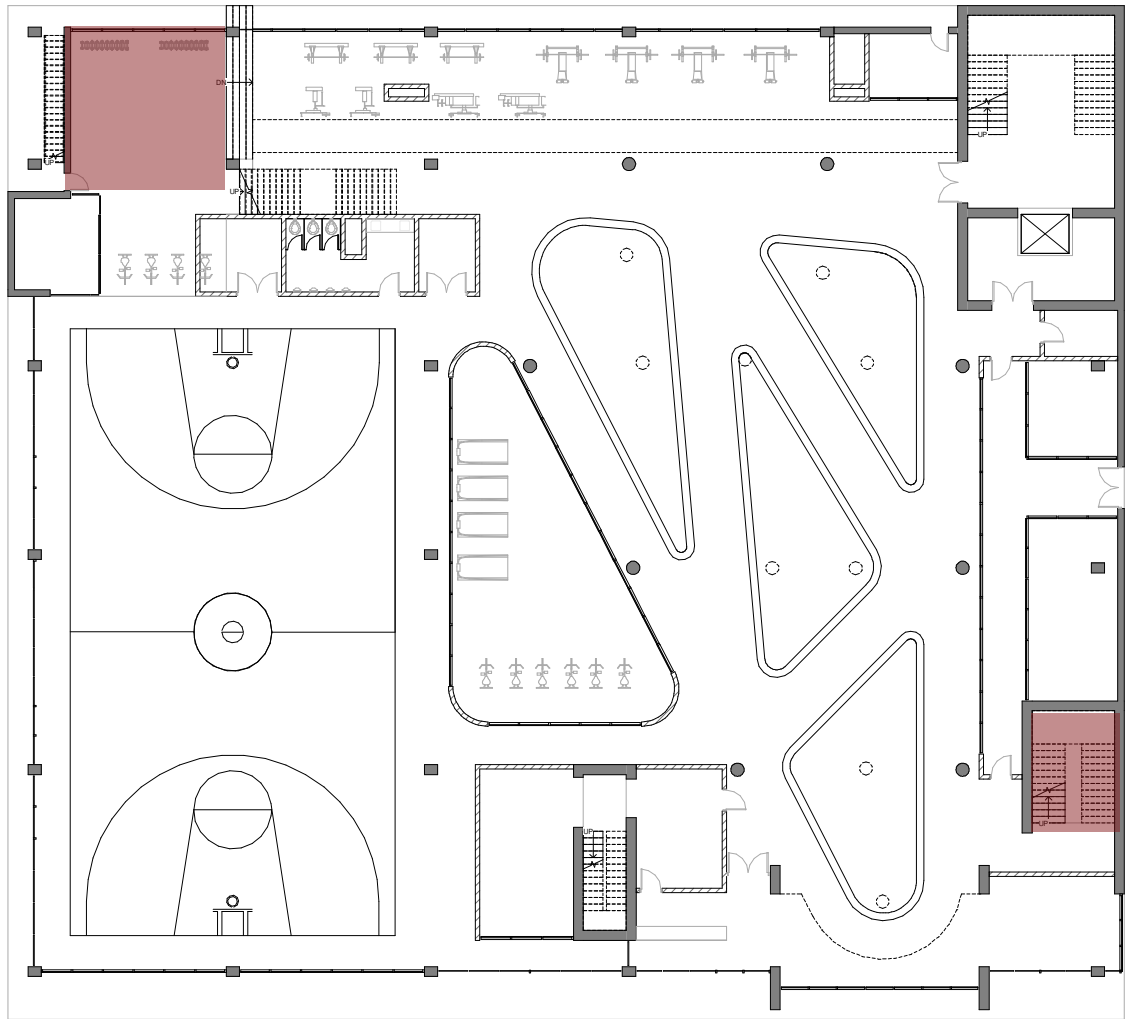
A neighborhood is the prerequisite for a sense of community. In the context of a correctional facility, a better sense of community might be achieved by strategically placing services one would usually find in an urban street in medium proximity to the living units to encourage the leaving of the house and meet with others. These community related functions could be placed on the same floor as the living units or in the same sector of the building.



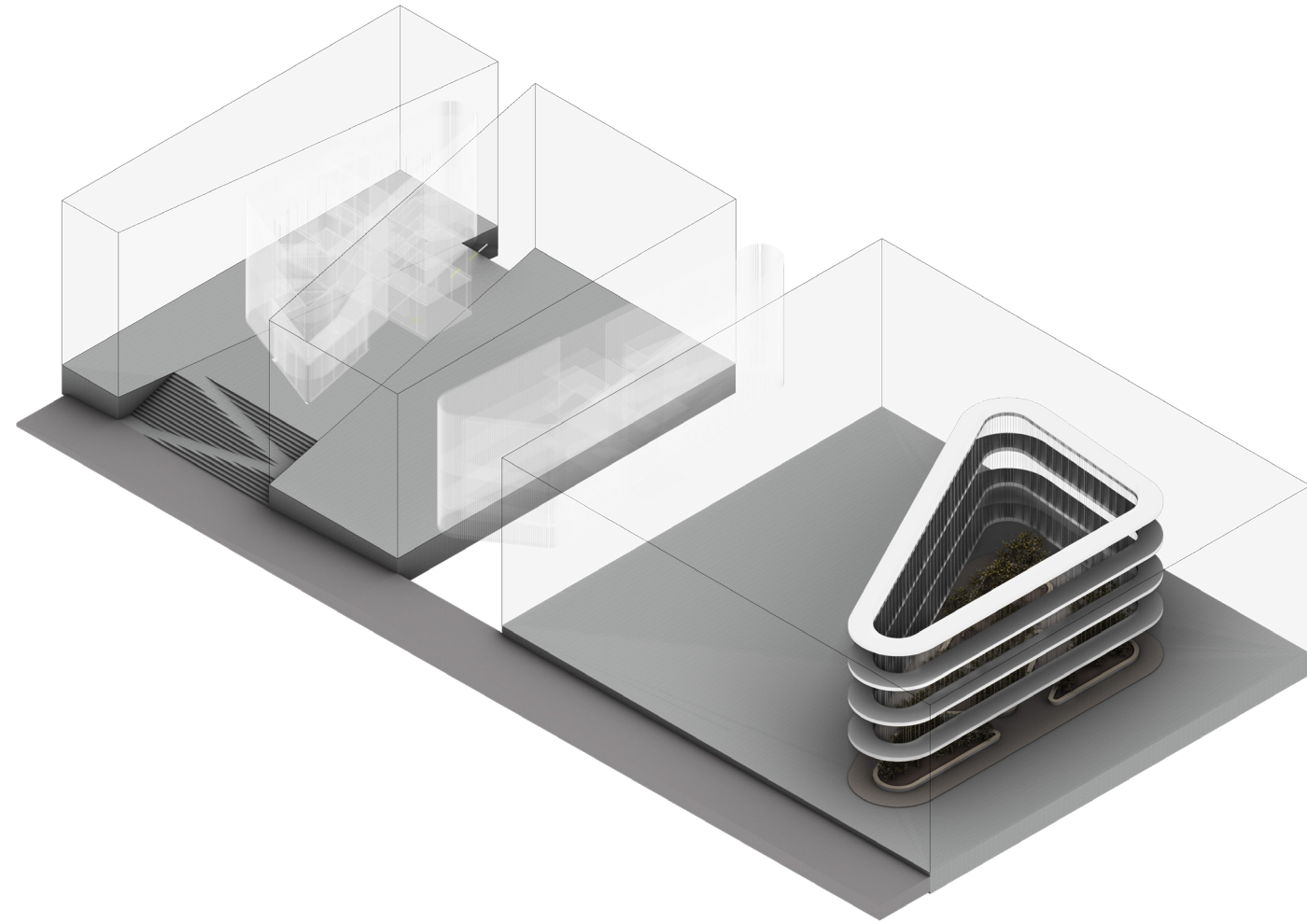
ESSENTIAL ATTRIBUTES OF A NEIGHBORHOOD

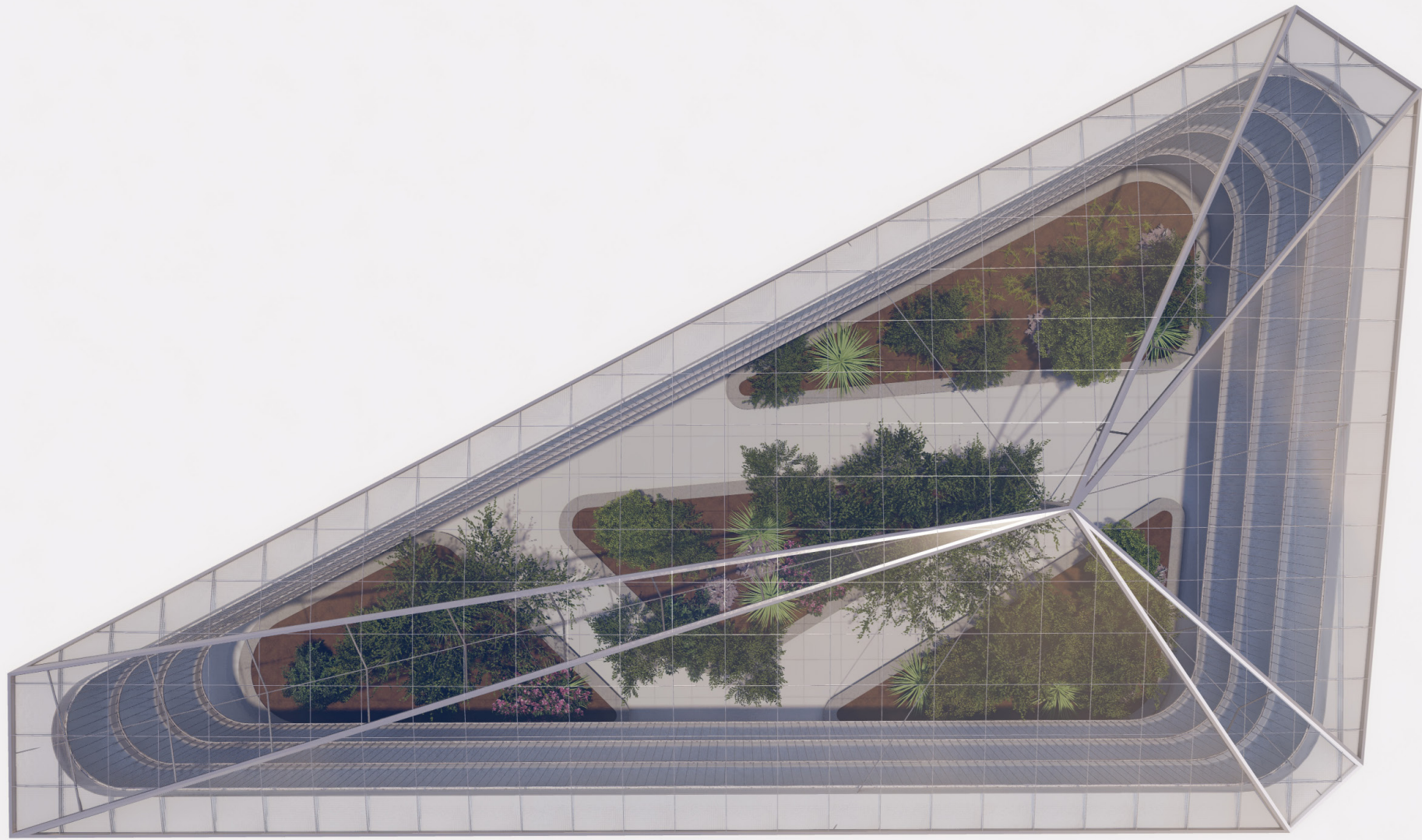


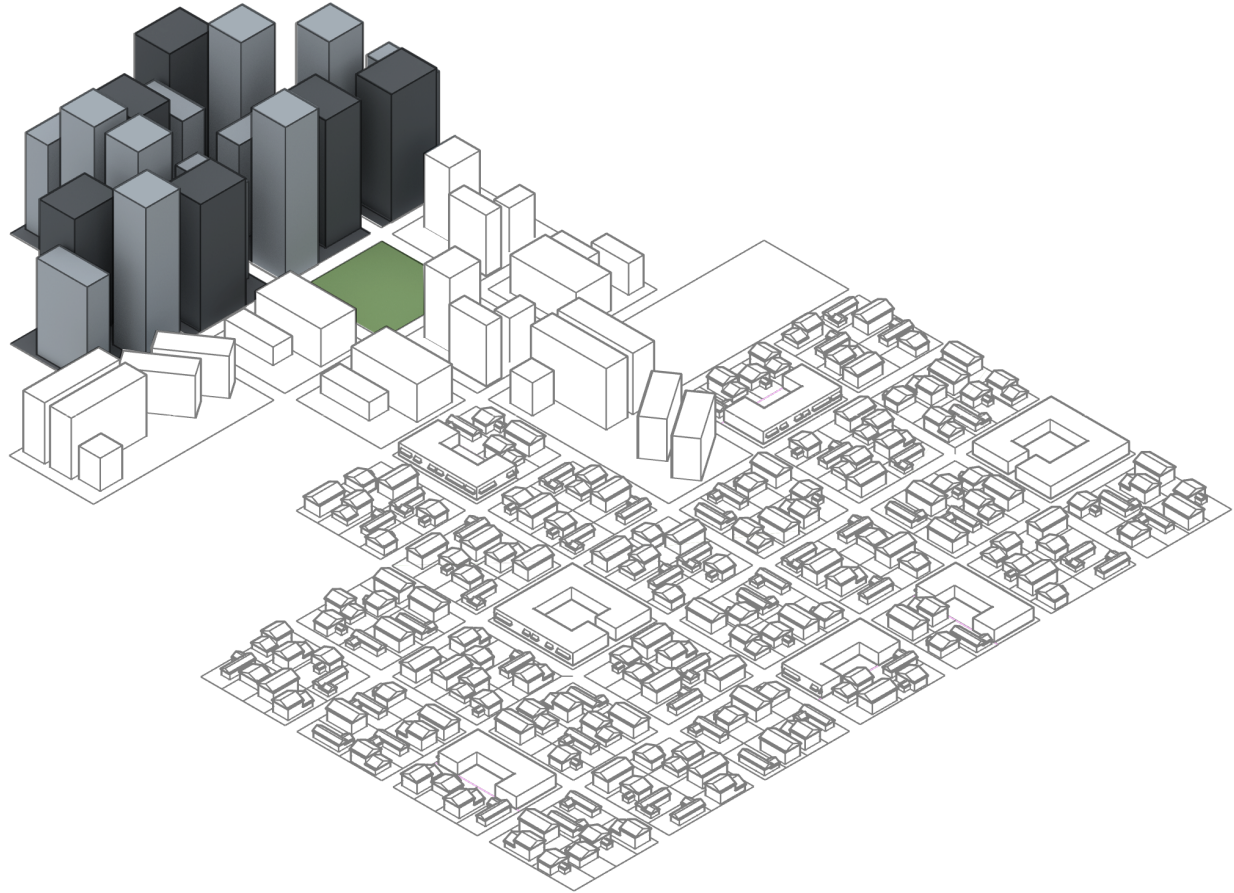
COMMUTING AROUND THE NEIGHBORHOOD



THE "LOCAL PARK"

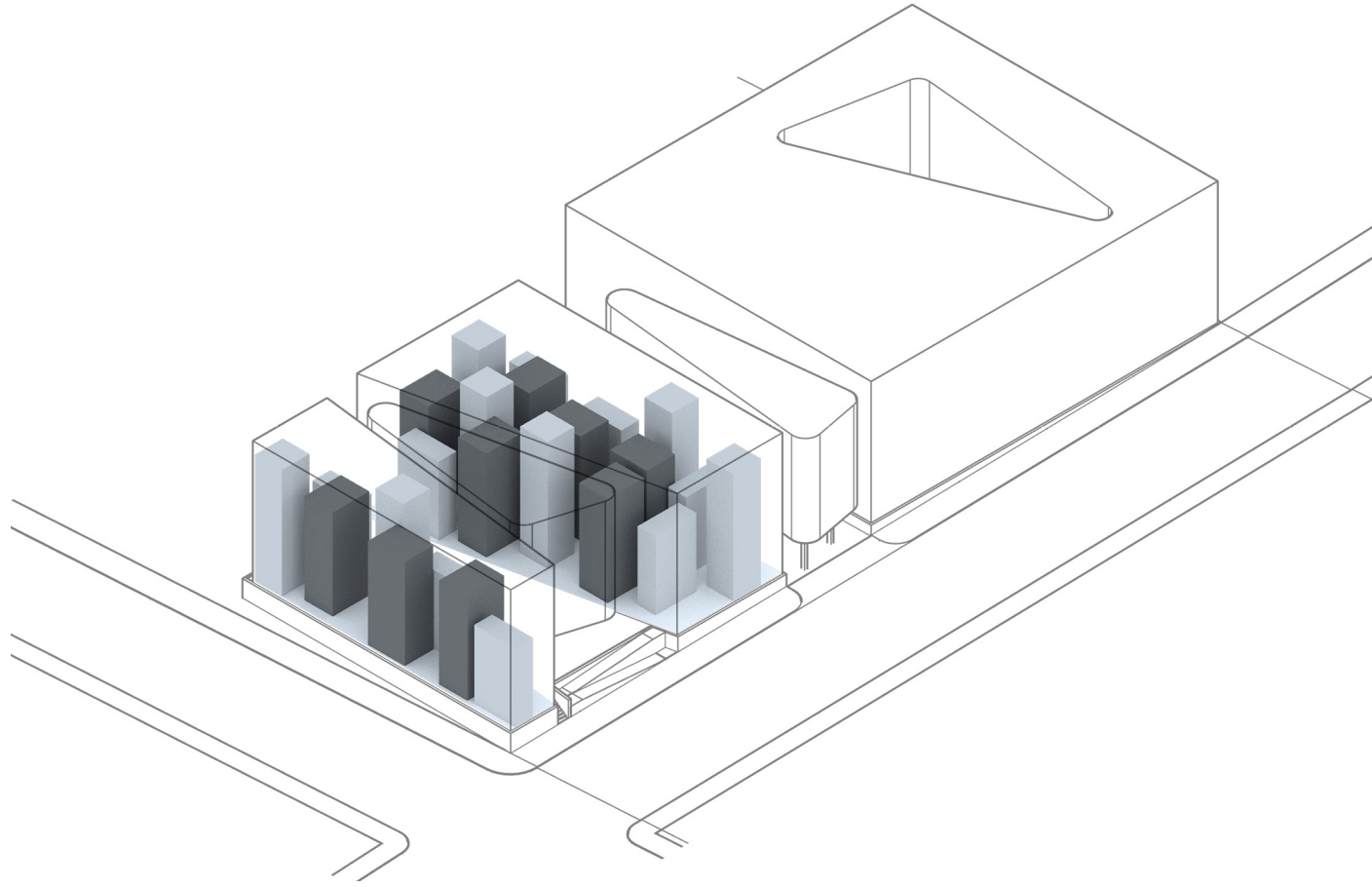




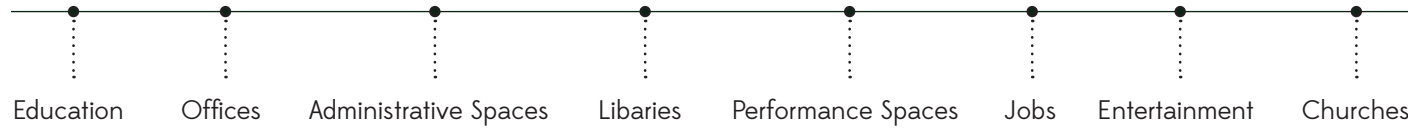


THE CITY

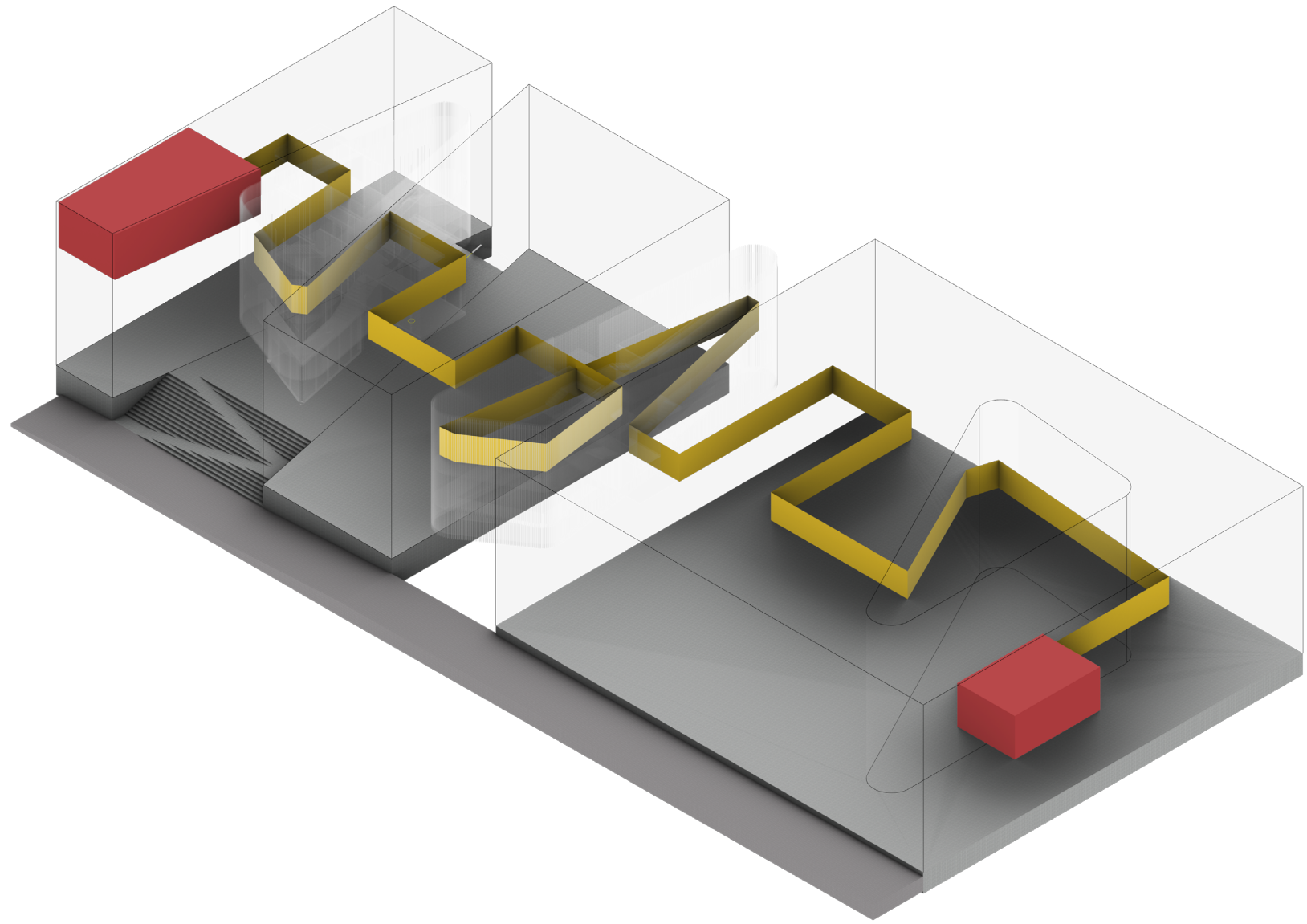
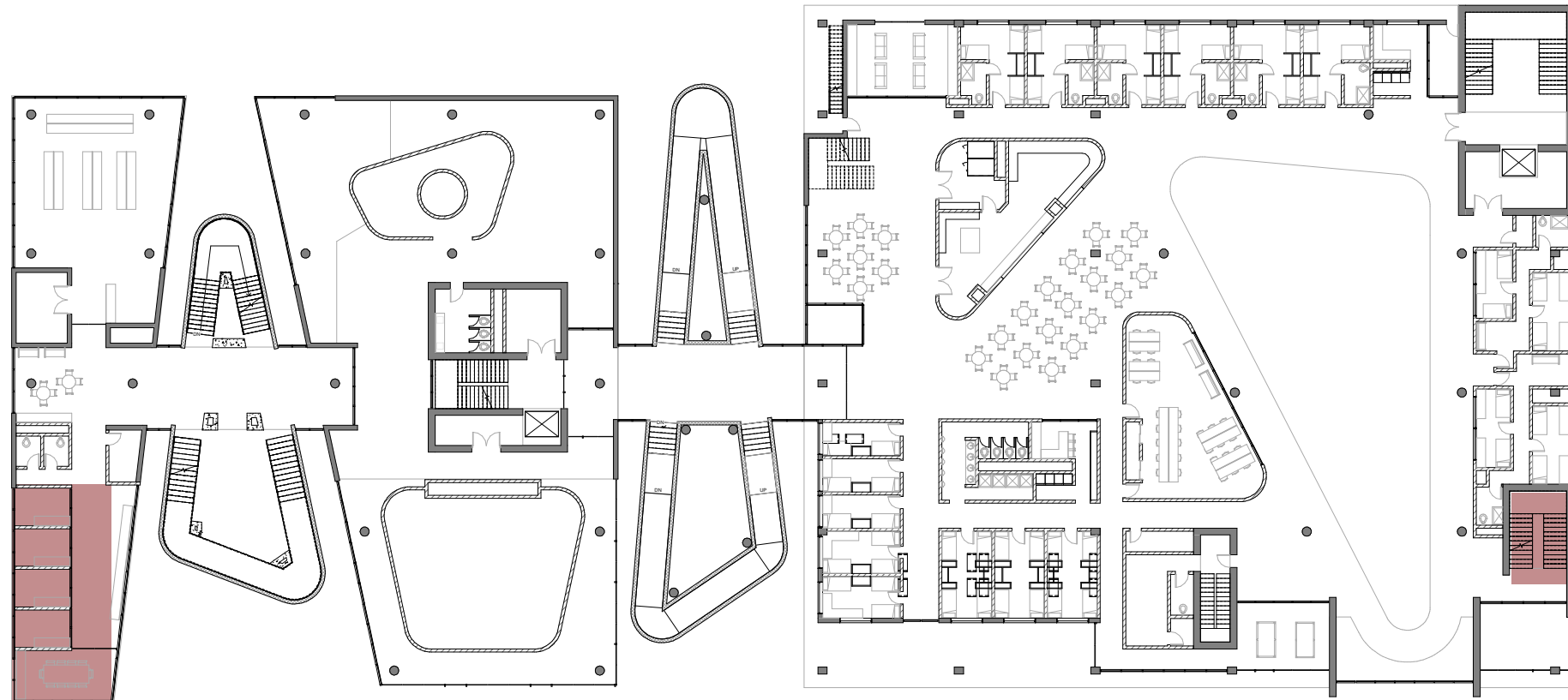
We tend to associate the city with places, events and services, also a realm for commuting to and from work. It infuses the most professional behavior and requires a certain level of planning and preparation. With a prison, the offering of differentiated services is an important aspect toward a city-like environment encouraging also a communal activity. A sense of departure from one building part with a conceptually long commute augments the separation between living and working, as it is typically the case in the outside city.



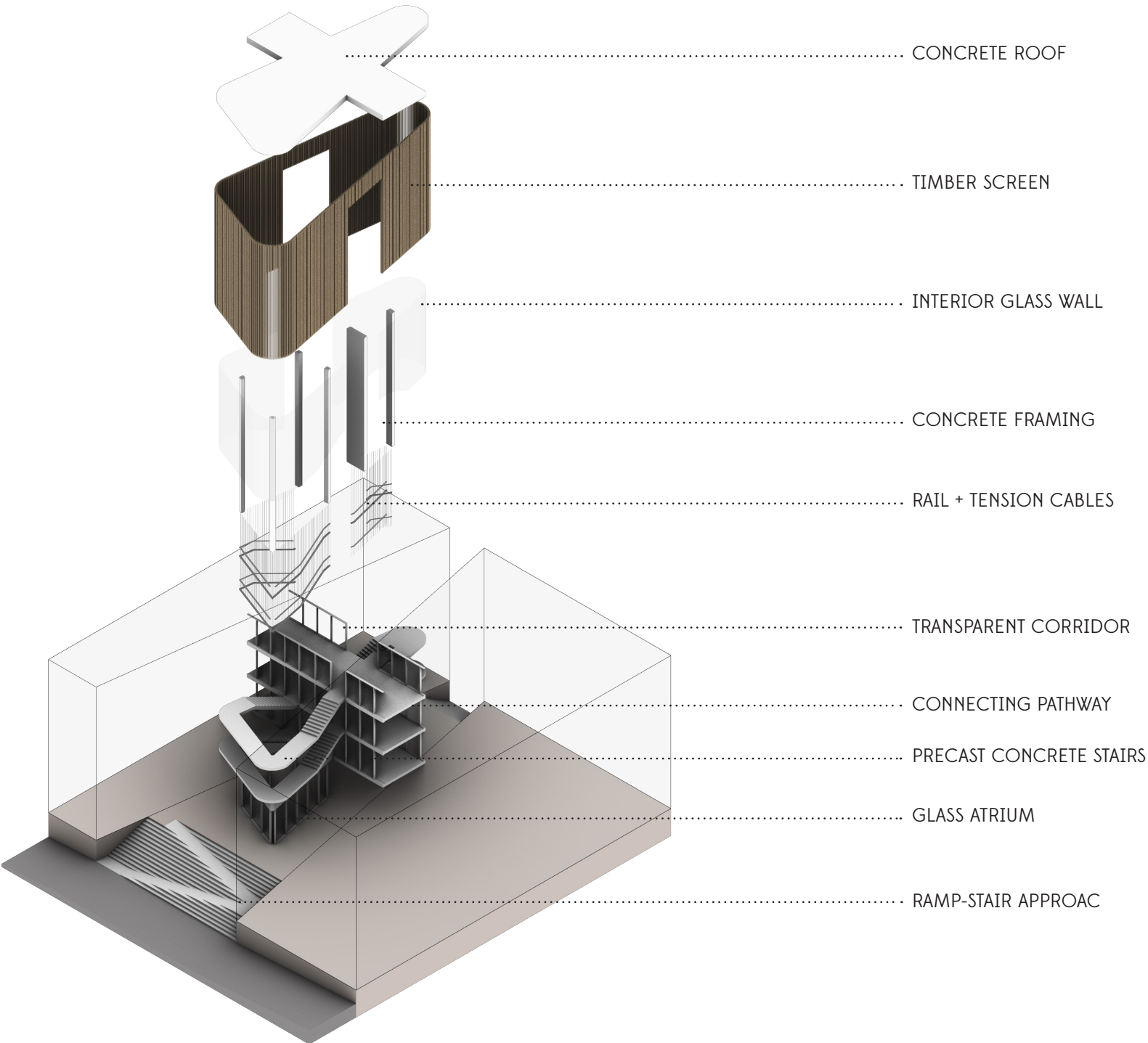
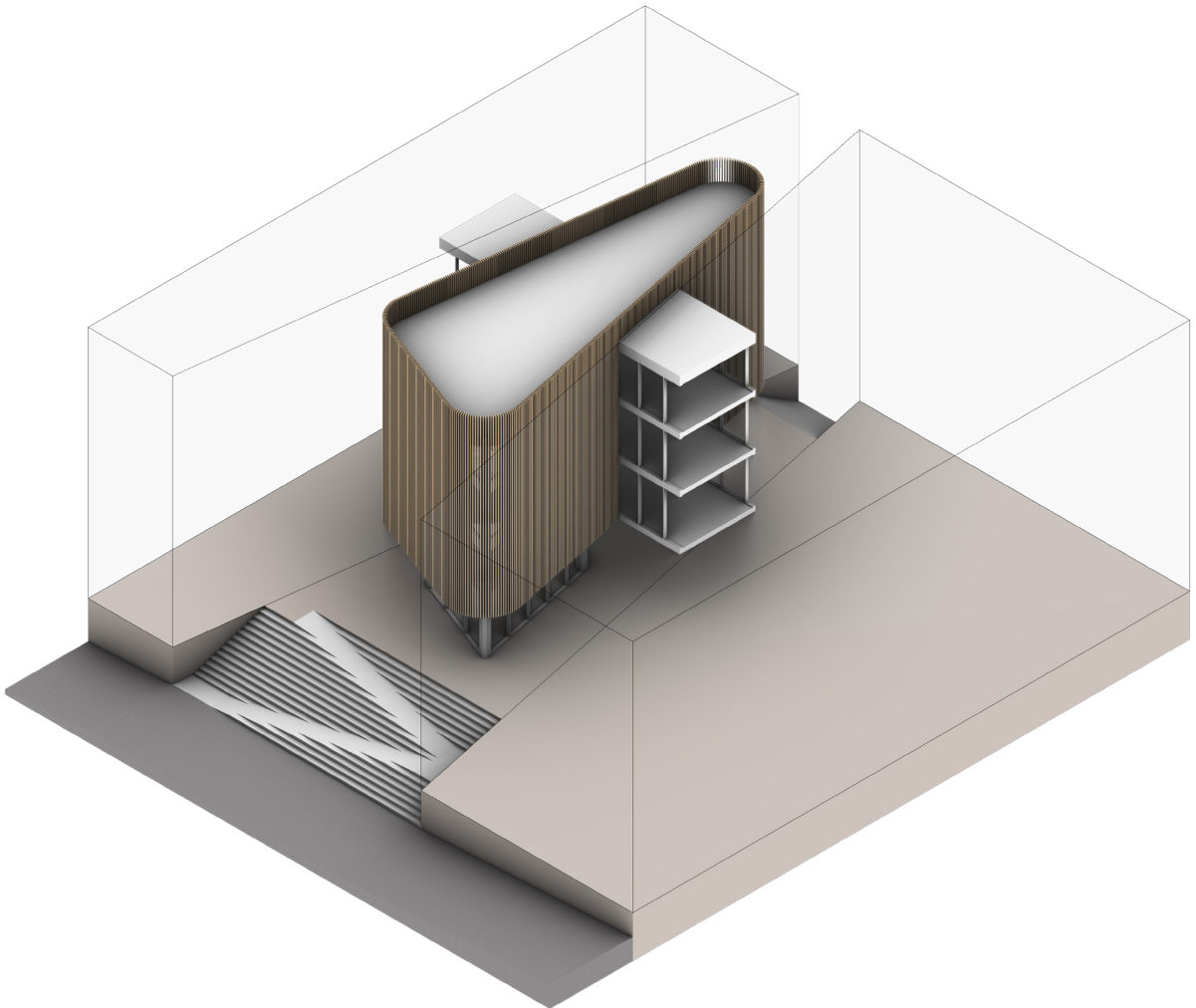
ESSENTIAL ATTRIBUTES OF A CITY



COMMUTING TO THE CITY



STAIR POD BETWEEN ANNEX BUILDING 'A' AND 'B'

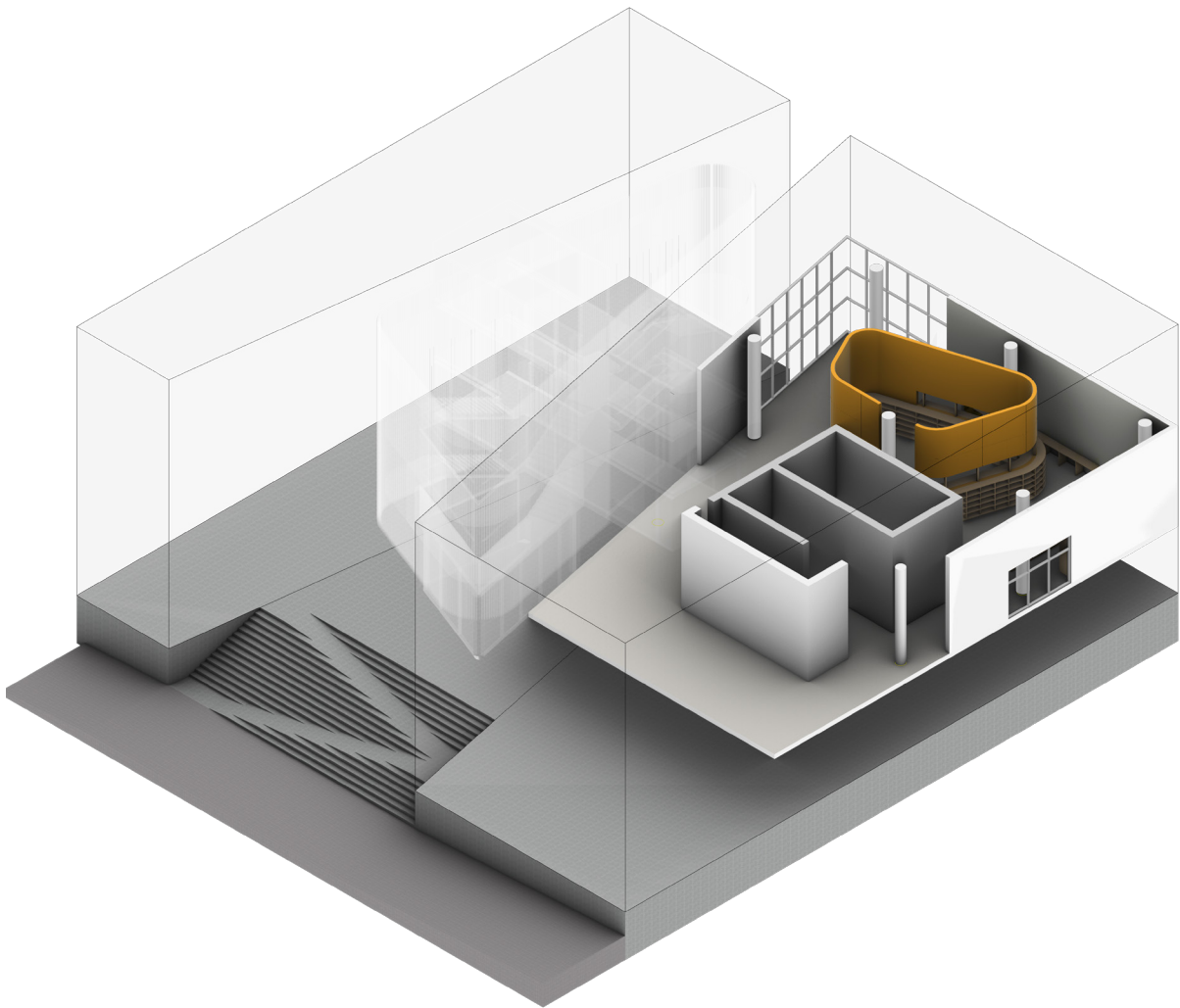




ANNEX BUILDING A+B

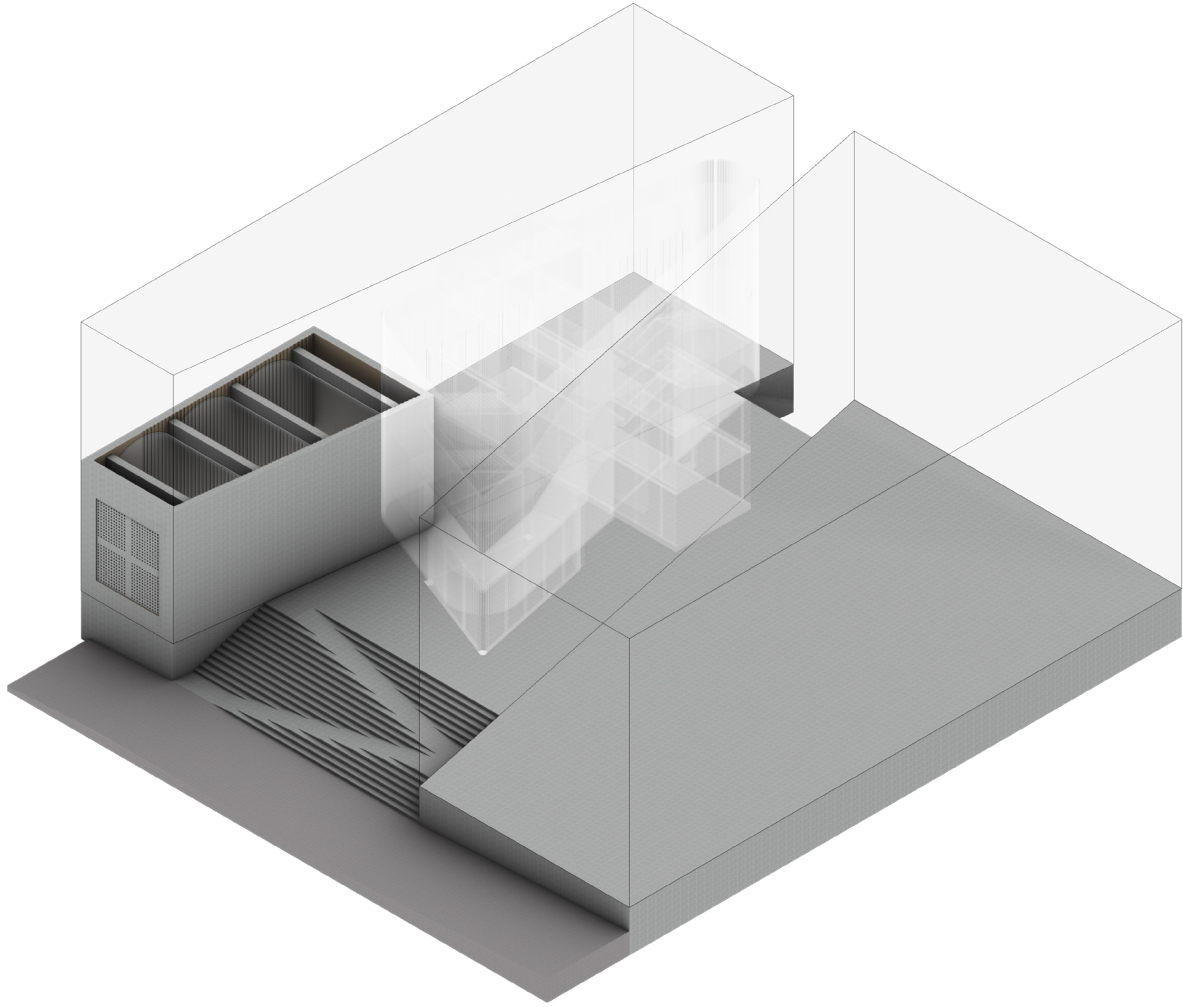


THE "CITY LIBRARY"

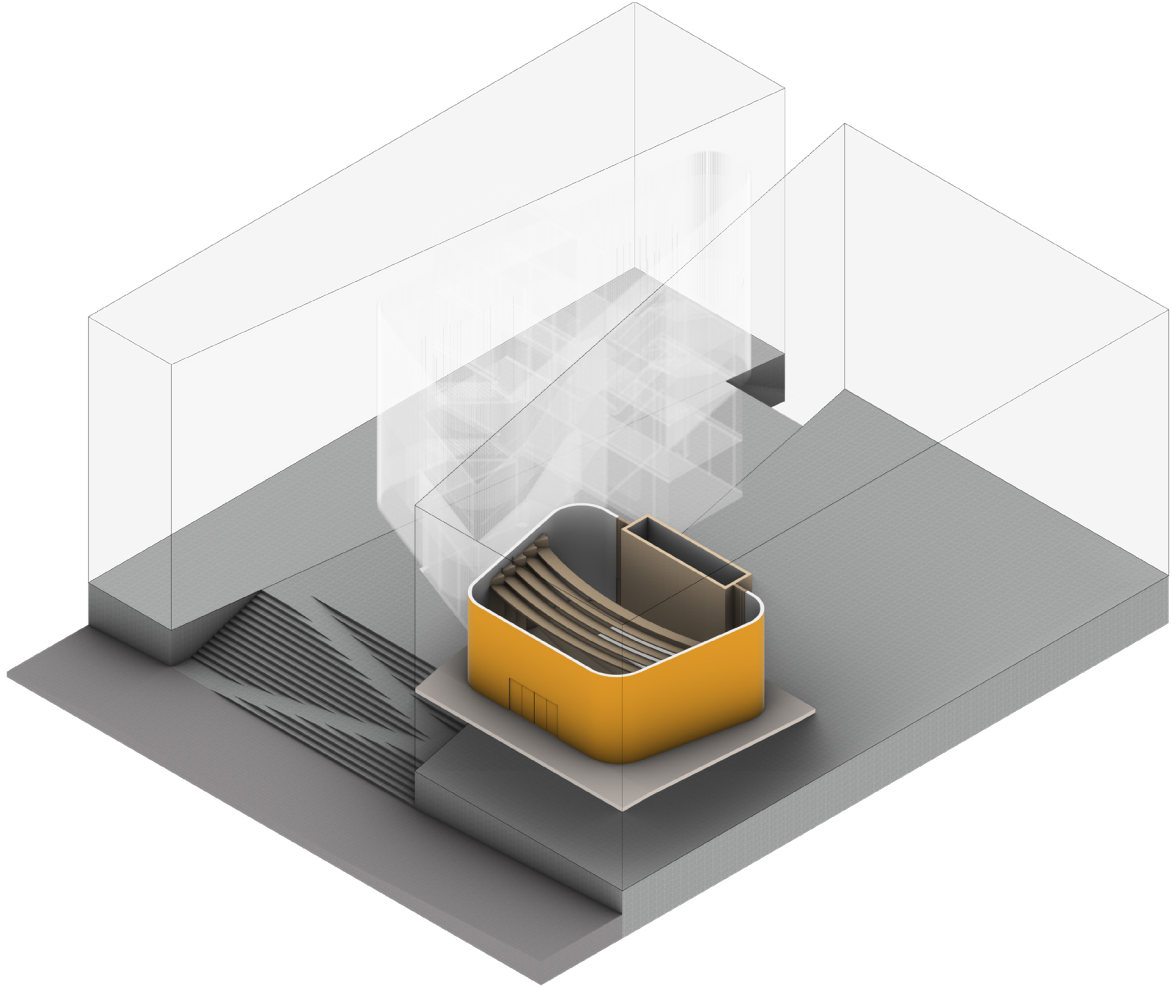




THE "SUNDAY SERVICE"

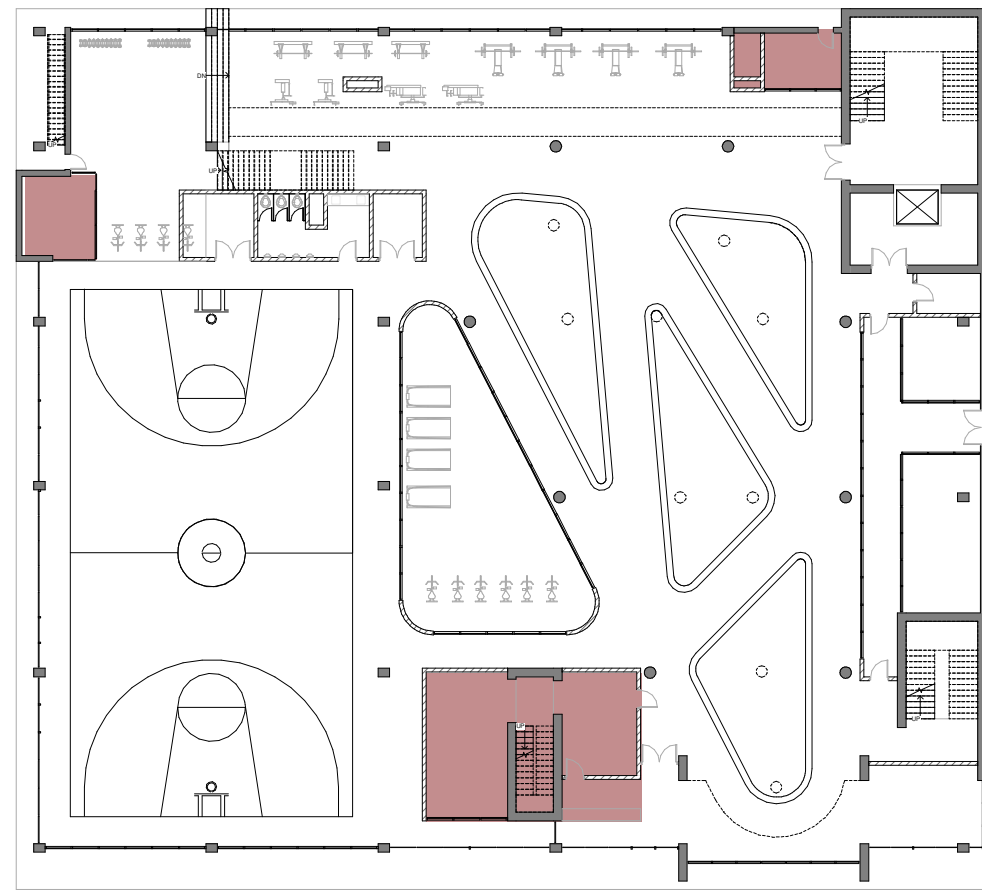
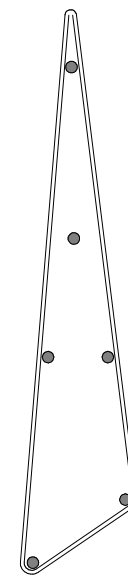
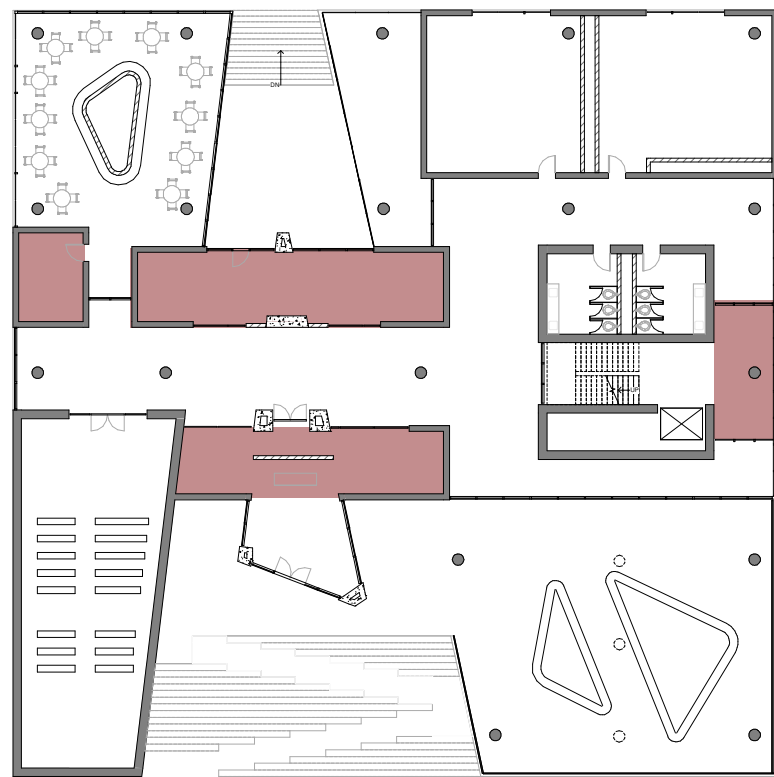


THE "CITY HALL"





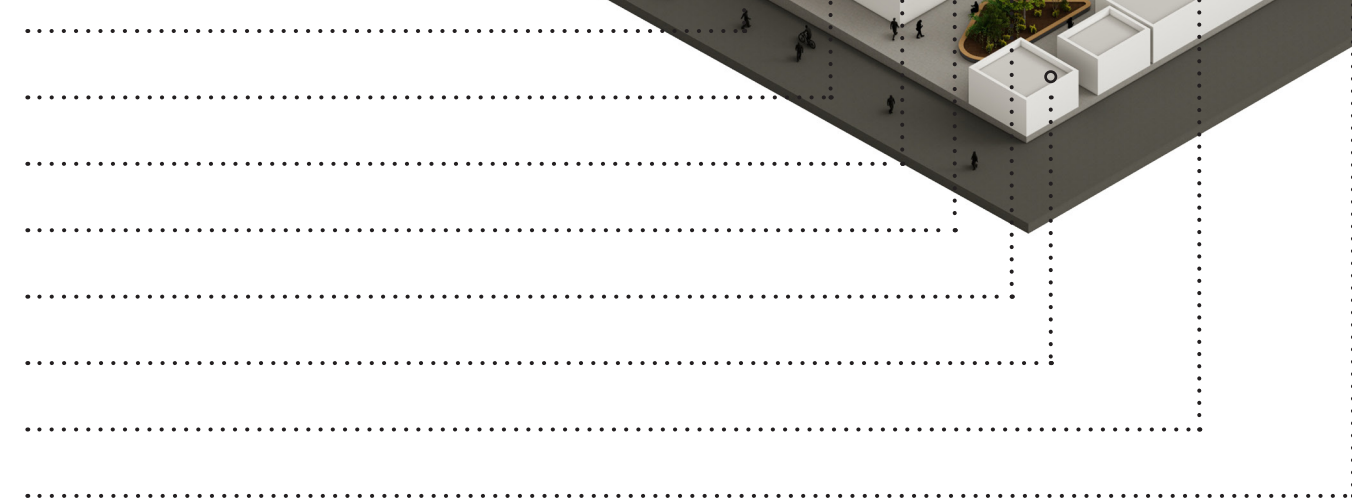
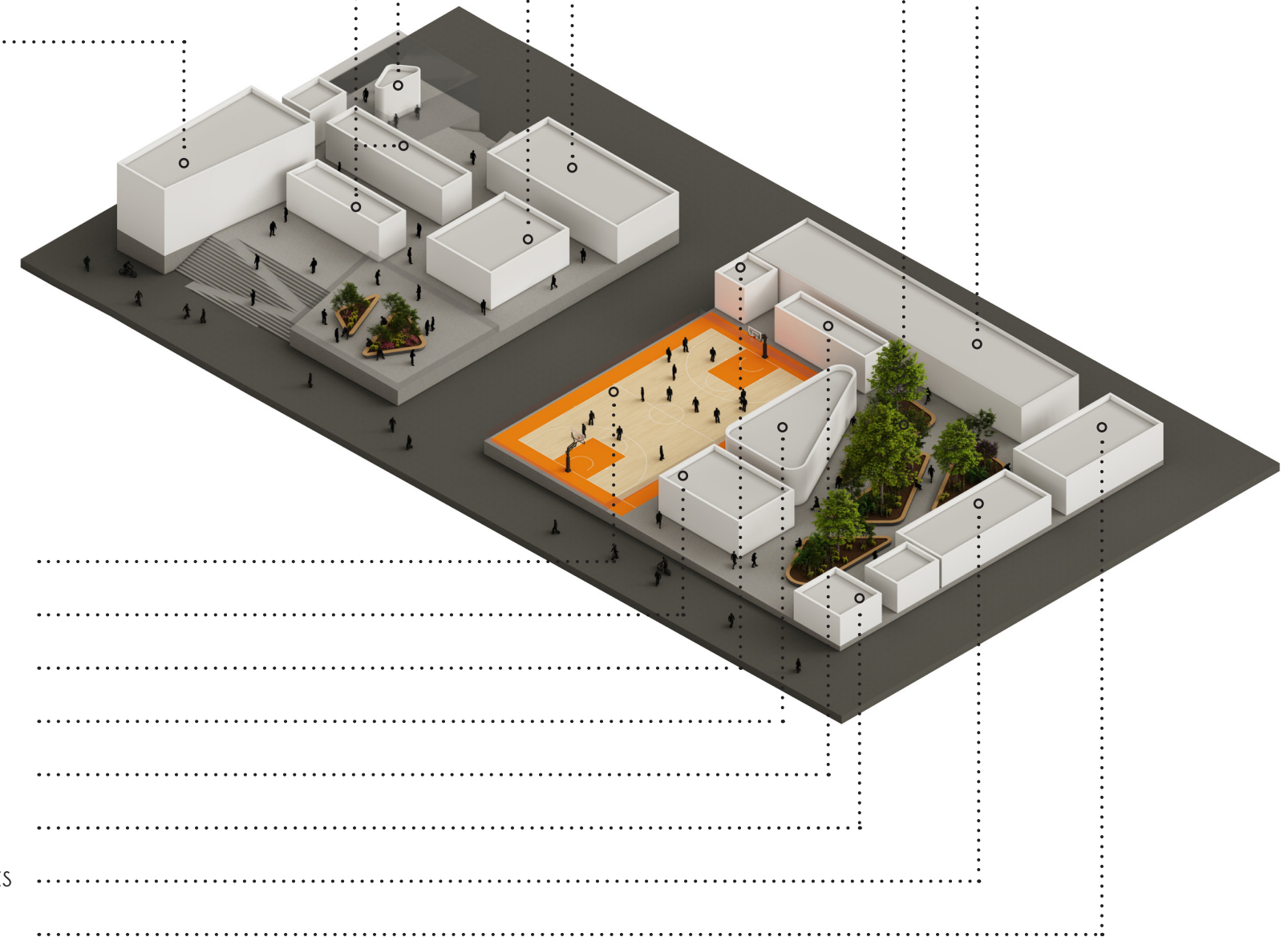
LEVEL 01



- OPEN GYM
- COURTYARD
- CLASSROOMS
- SERVICE CORE
- VISITOR CAFE
- SECURITY SCREENING
- CHAPEL



- BASKETBALL COURT
- ADMIN AND RECEPTION
- SCREENING
- CARDIO ROOM
- BATHROOMS
- WAITING AREA
- ADMINISTRATIVE OFFICES
- SERVICE CORE



LEVEL 02

3-BED UNITS

INFIRMARY

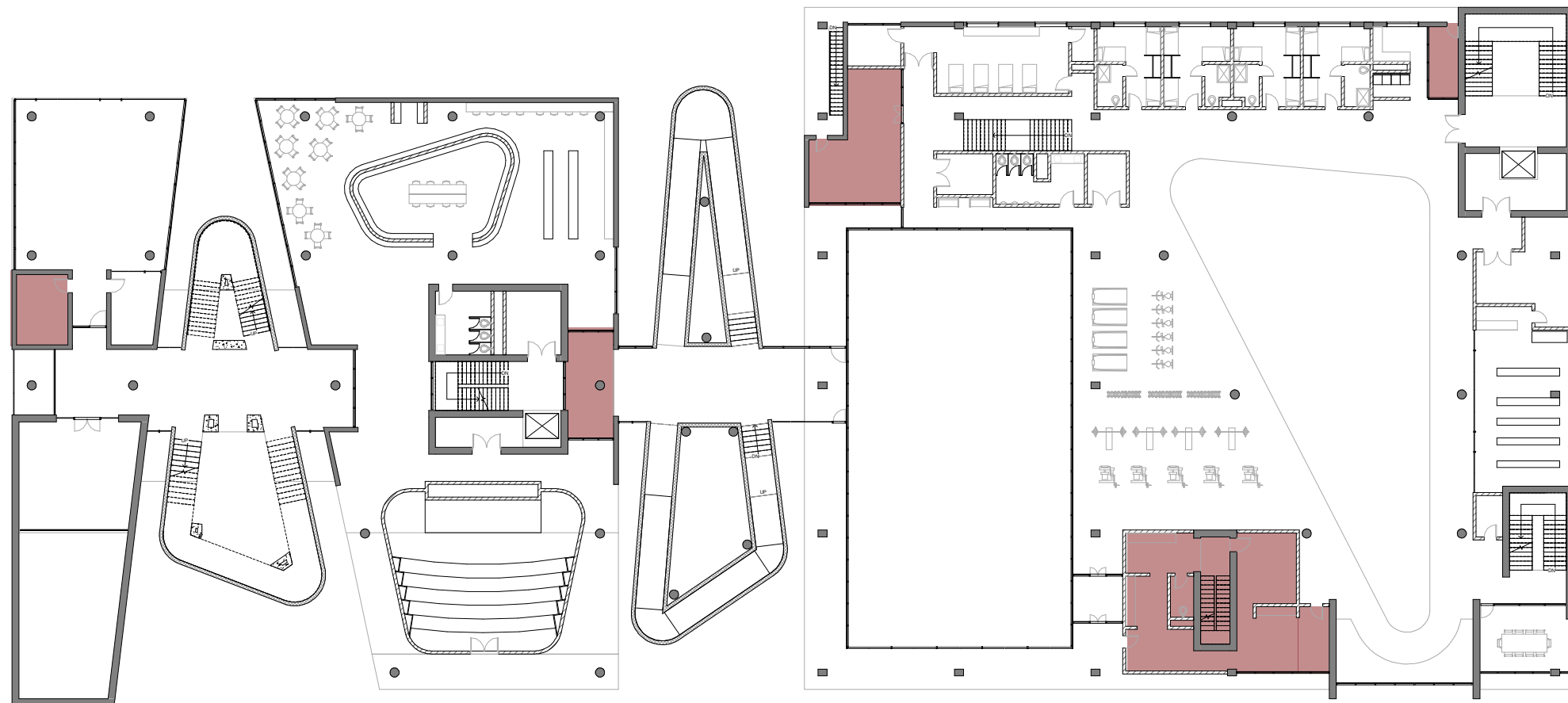
LIBRARY

SERVICE CORE

MULTIFUNCTIONAL HALL

AUDITORIUM

CHAPEL



CONCOURSE

SCREENING

SCREENING

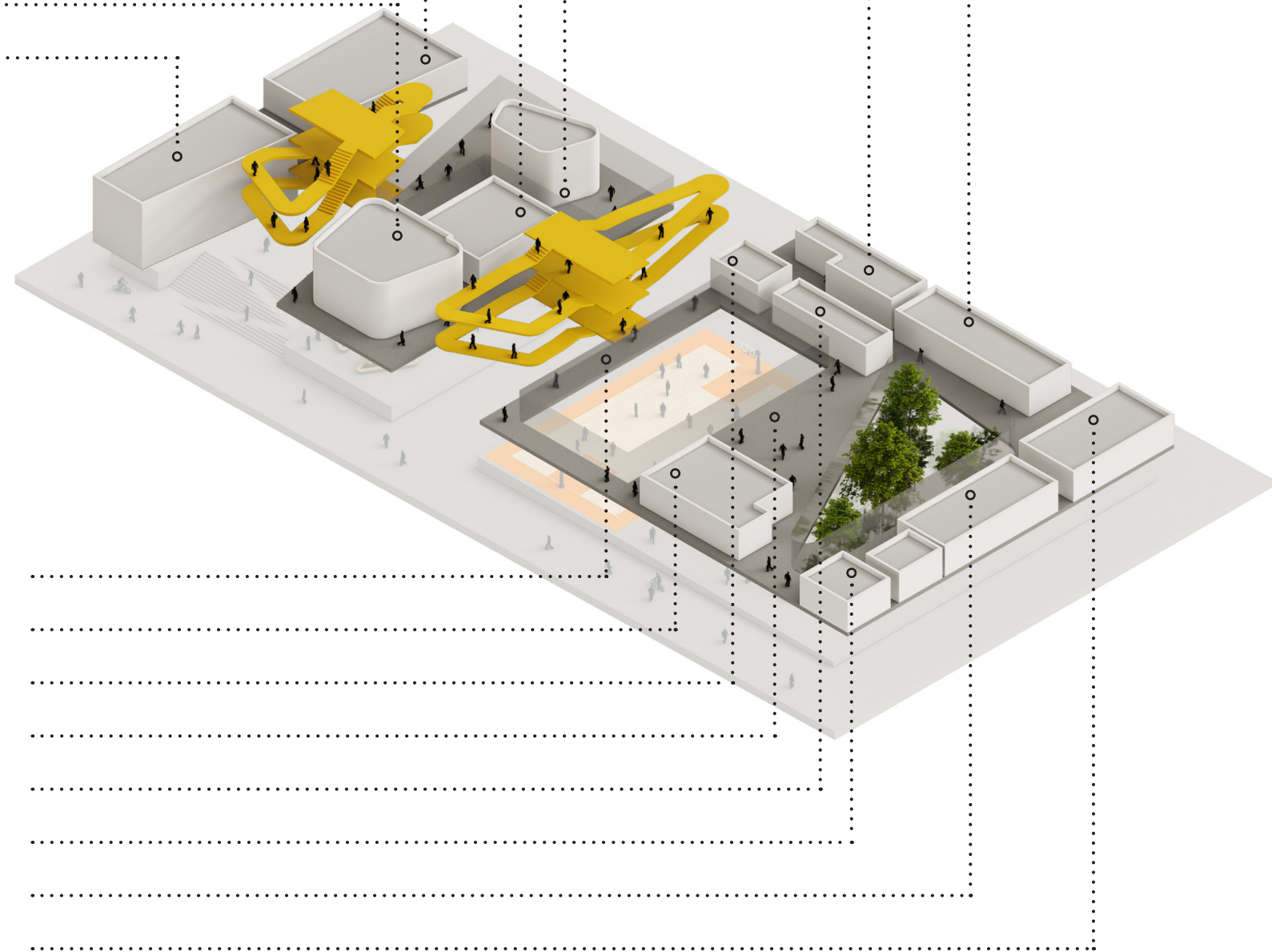
OPEN GYM FLOOR

BATHROOMS

CONFERENCE ROOM

GROCERY STORE

SERVICE CORE



LEVEL 03

3-BED UNITS

COMMUNAL KITCHEN

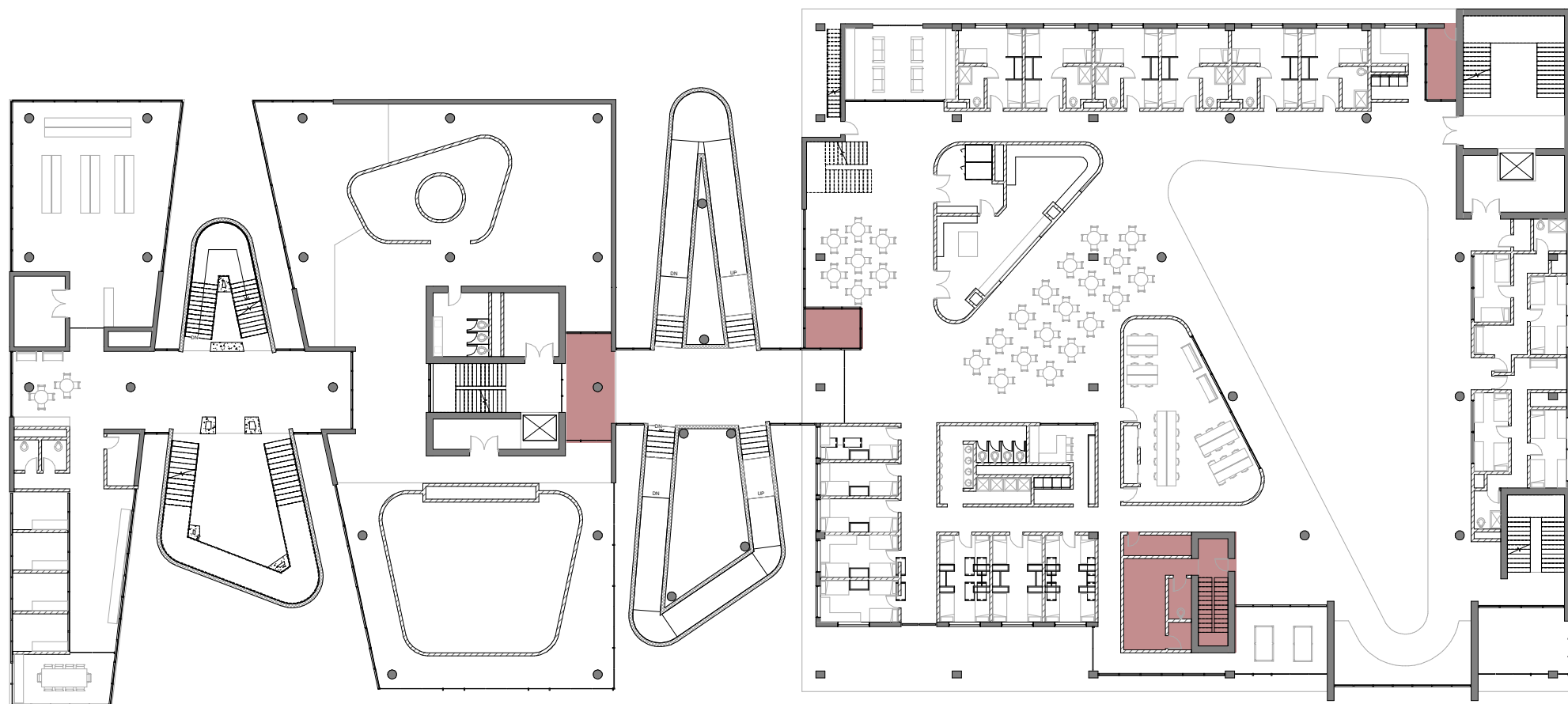
RECORDING STUDIO

SERVICE CORE

OPEN OFFICE SPACE

AUDITORIUM

OFFICE CUBICALS



SHARED LIVING UNITS

SCREENING

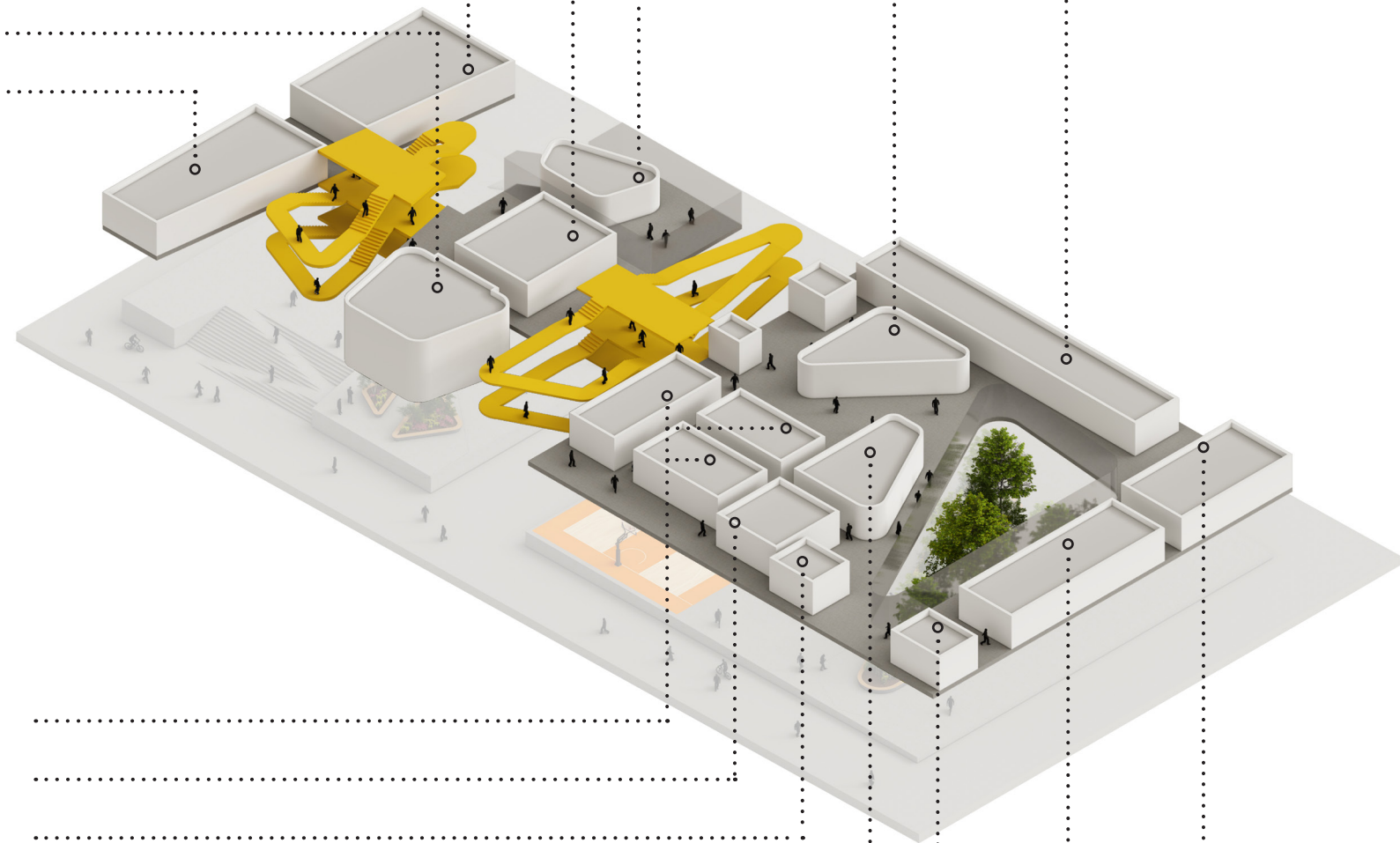
GAMES ROOM

COMPUTER LAB

LOUNGE

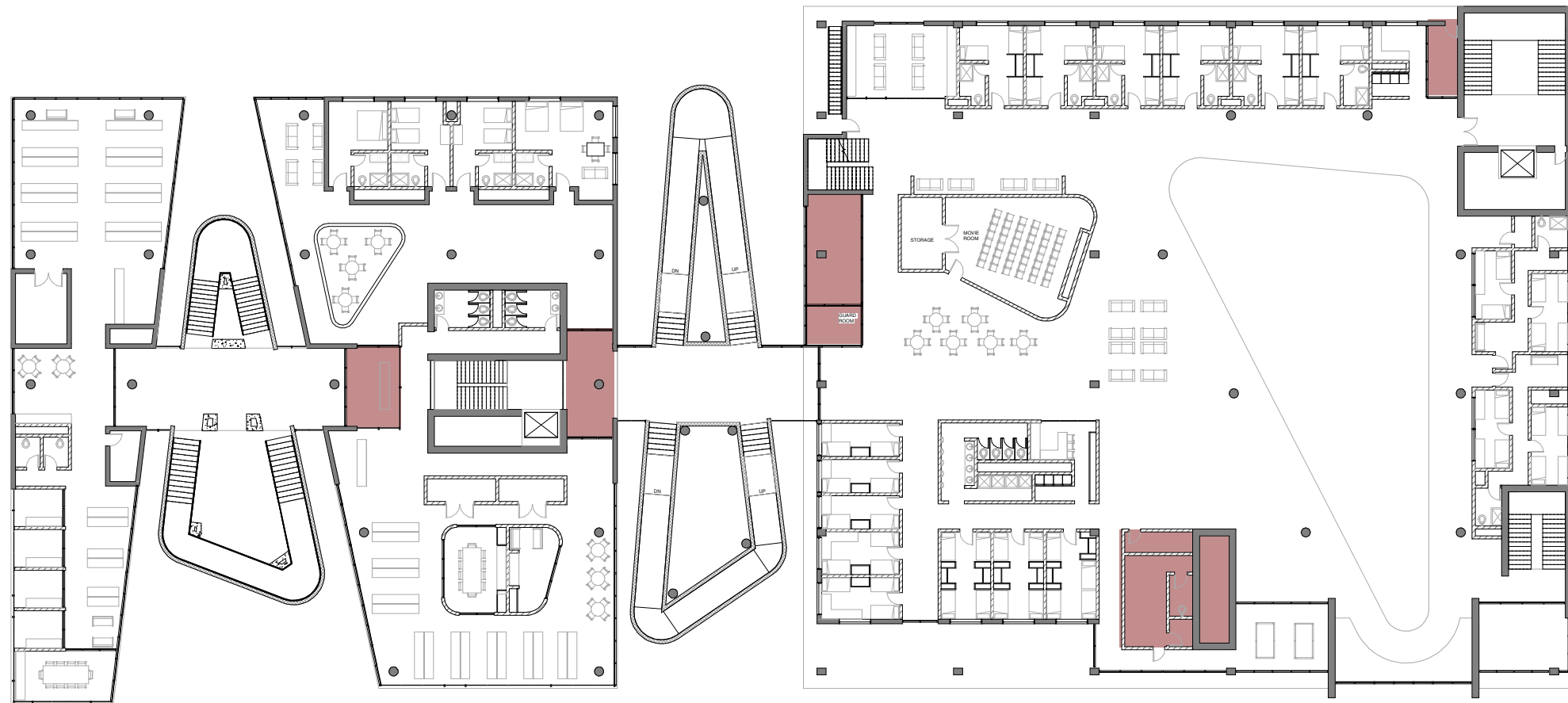
2-BEDROOM UNITS

SERVICE CORE

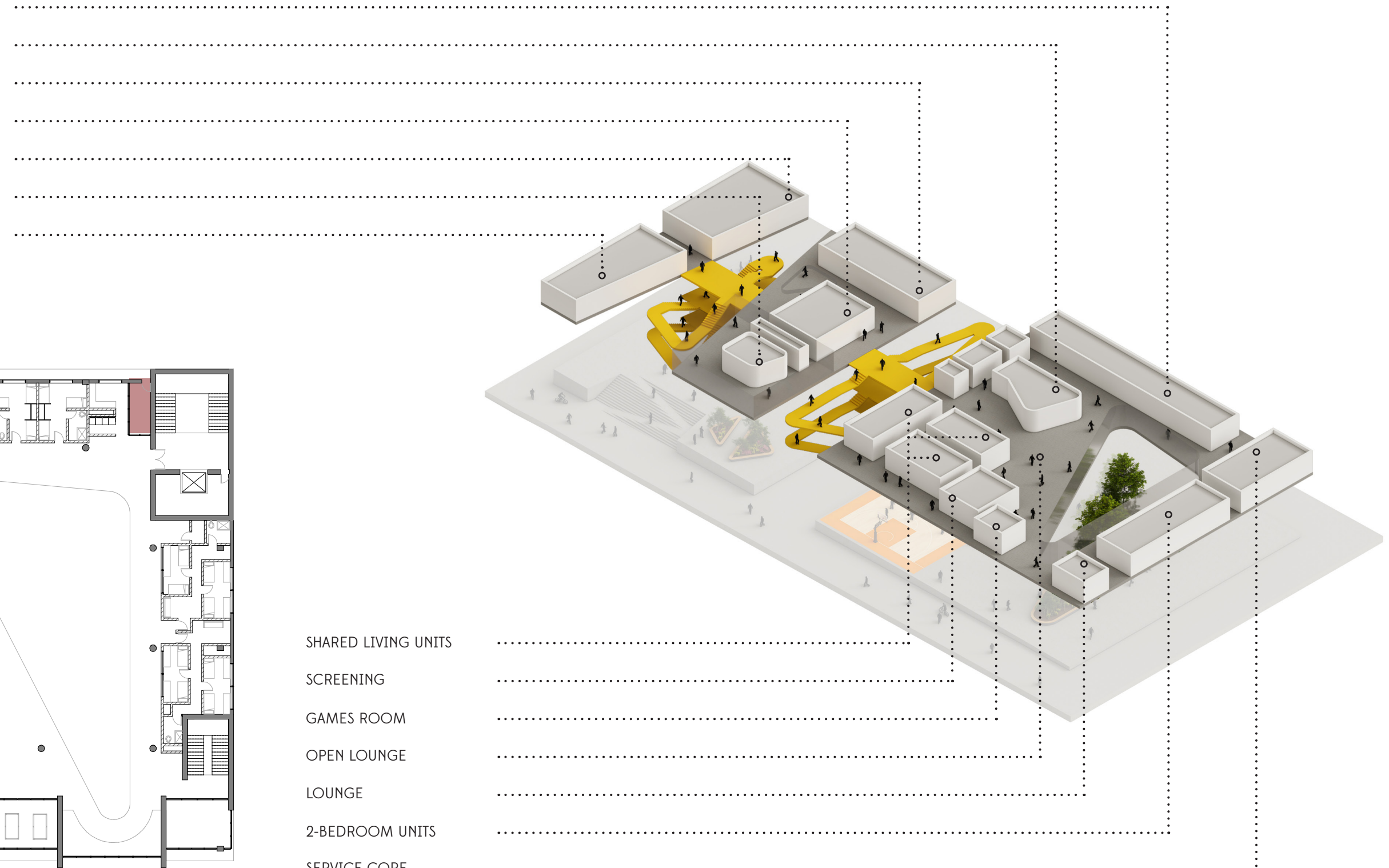
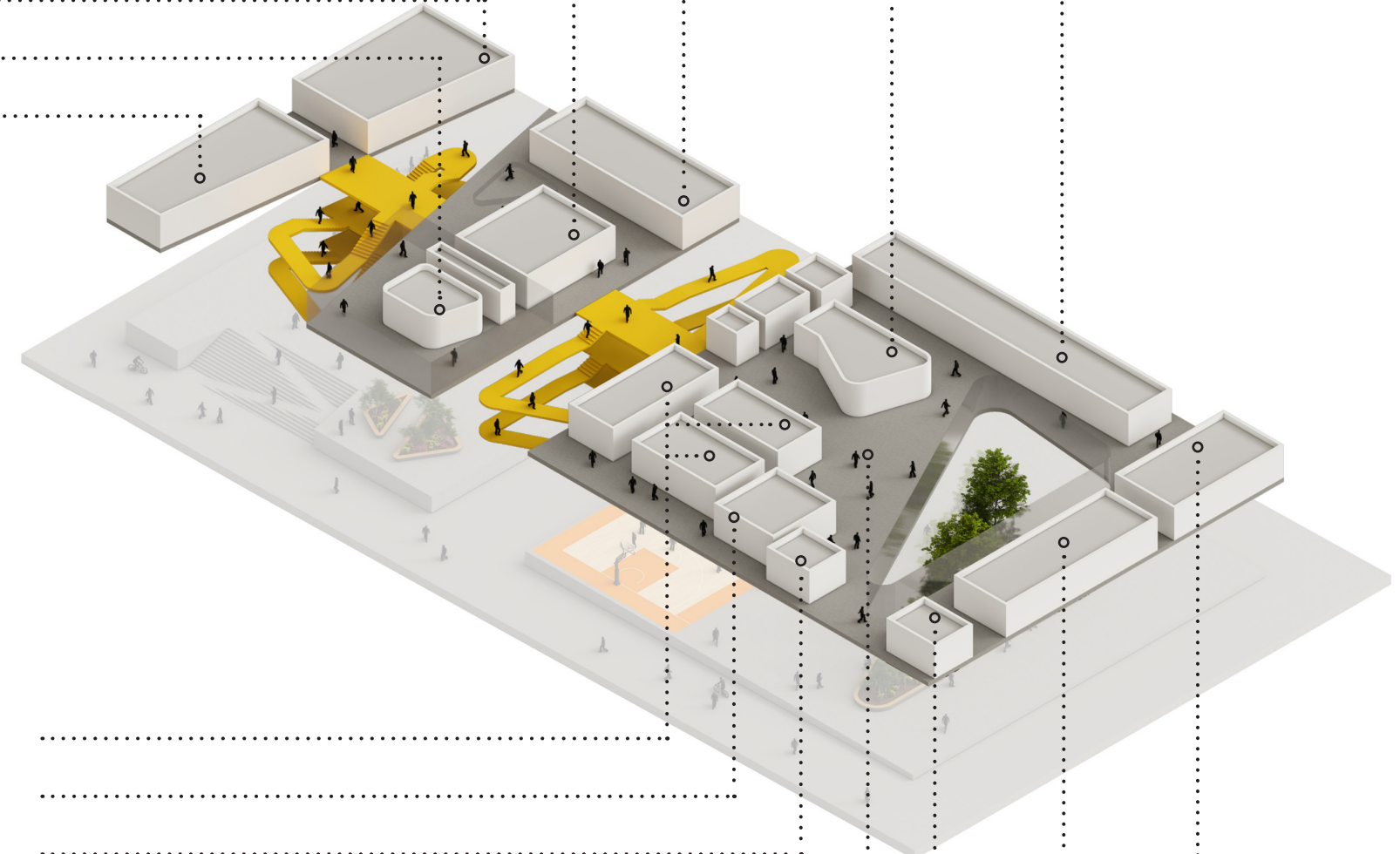


LEVEL 04

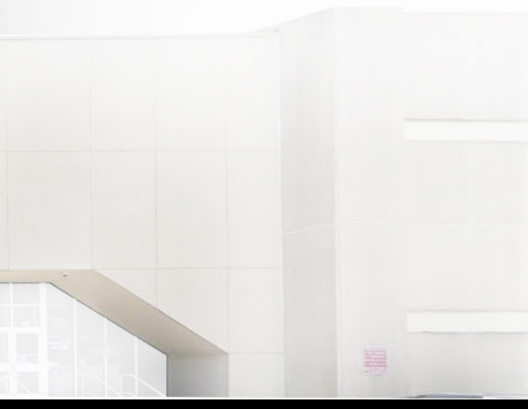
- 3-BED UNITS
- MOVIE ROOM
- GUEST ROOMS
- SERVICE CORE
- OPEN OFFICE SPACE
- OPEN OFFICE + MEETING
- OFFICE CUBICALS



- SHARED LIVING UNITS
- SCREENING
- GAMES ROOM
- OPEN LOUNGE
- LOUNGE
- 2-BEDROOM UNITS
- SERVICE CORE



BUILDING SECTION



05

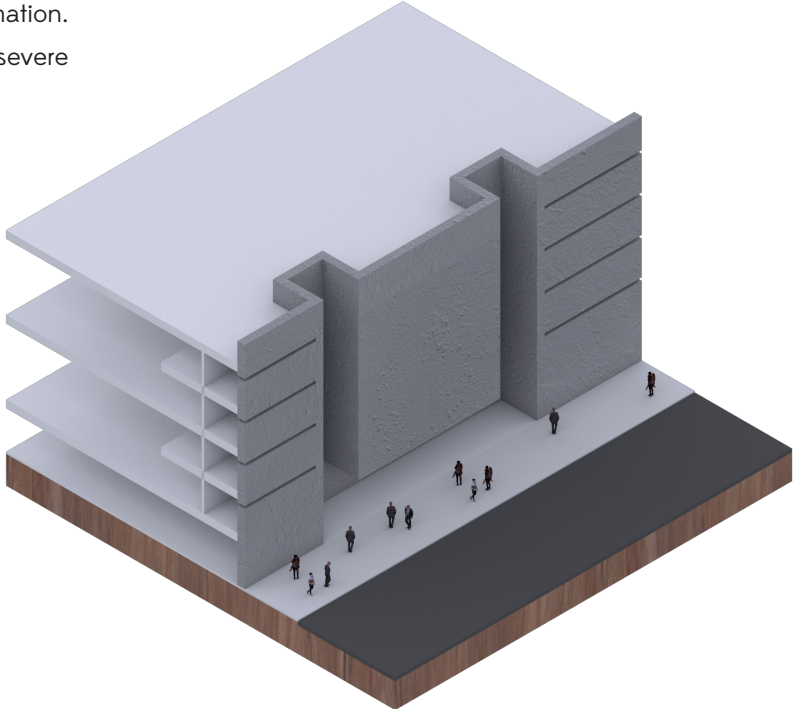
LIVING IN CONTEXT



2 | FOSTERING A RELATIONSHIP BETWEEN INMATES AND THE PUBLIC

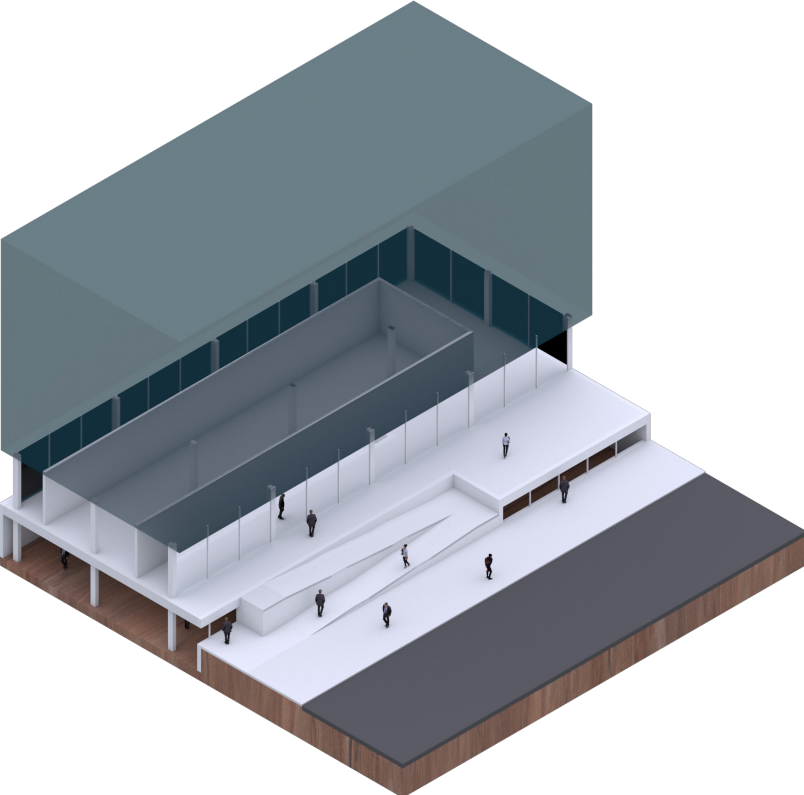
CURRENT PRISON

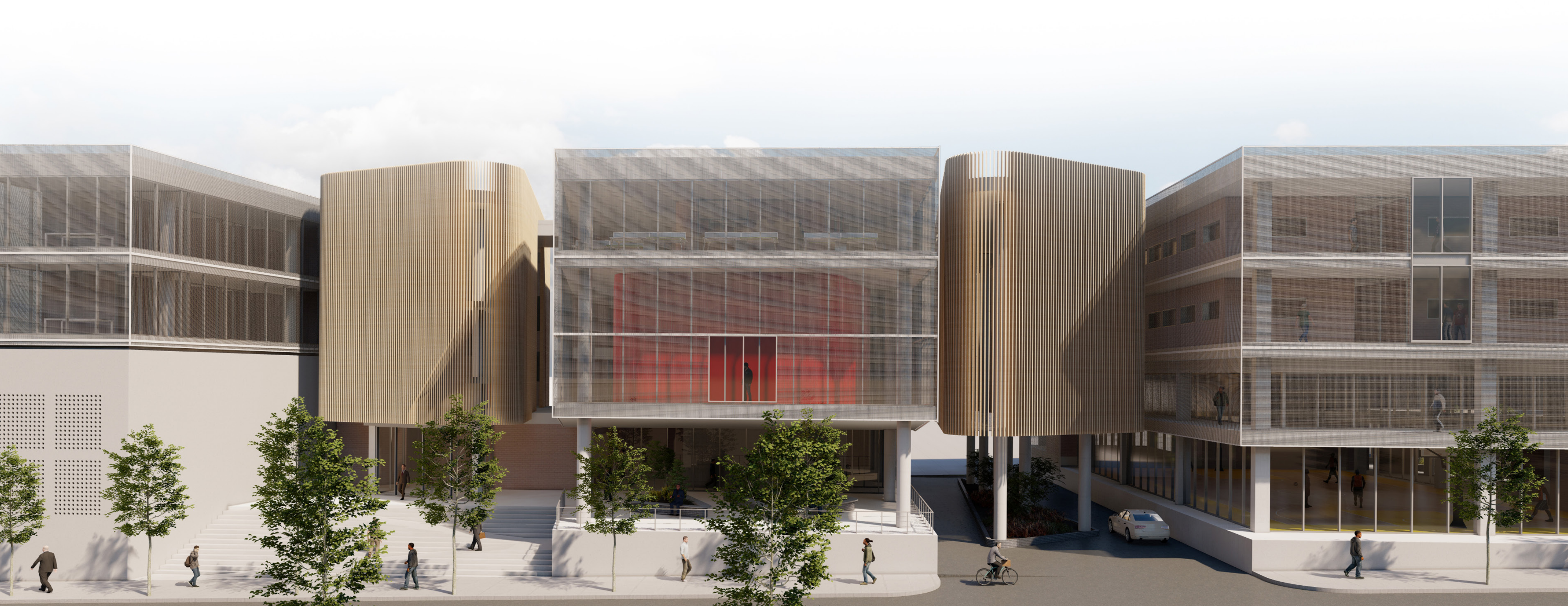
Interaction between inmates and the public is a rare occurrence in the current prison typology. Visitation is limited and any knowledge of the outside world is obtained only through secondary information. This detached form of living amounts to a severe disassociation from society.



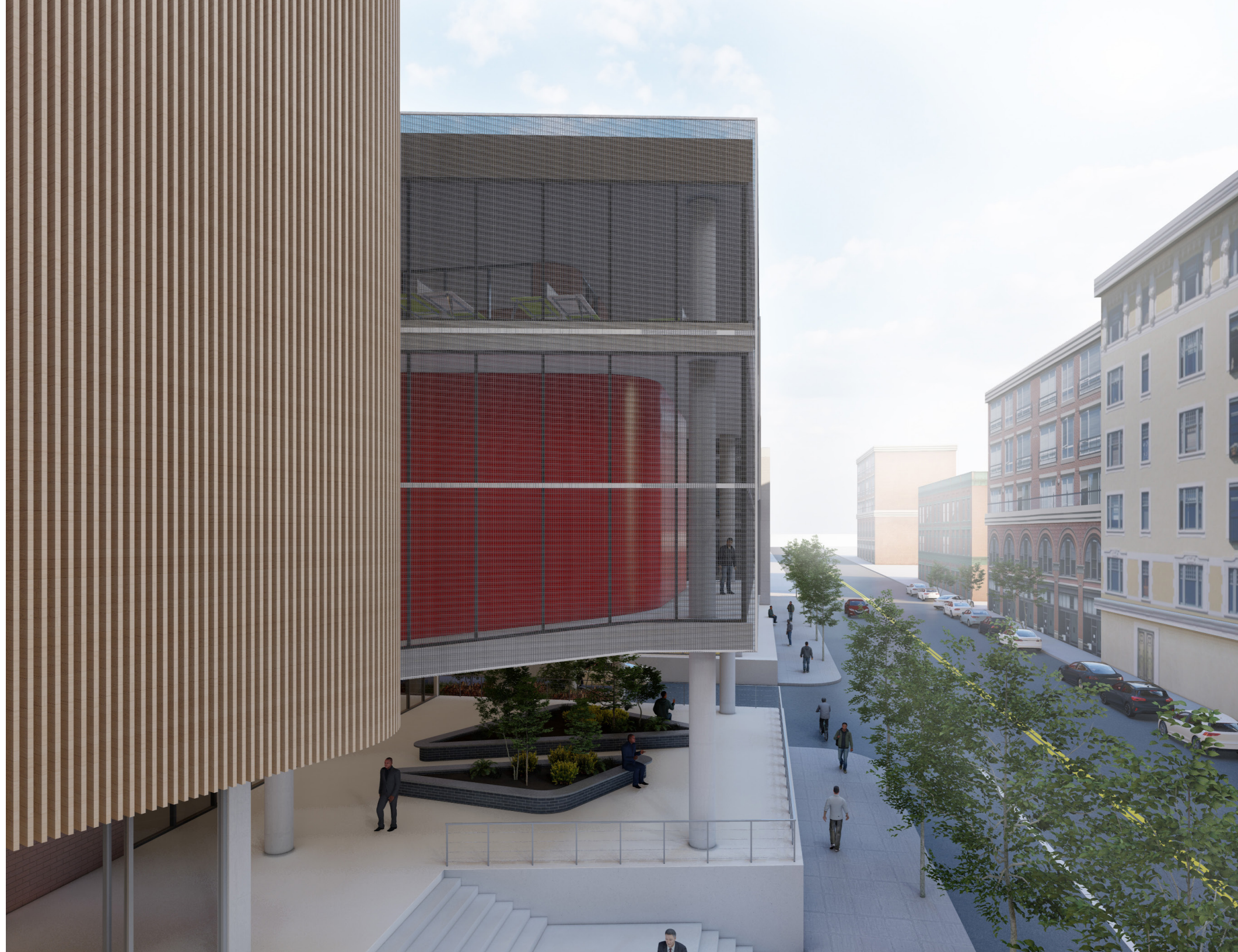
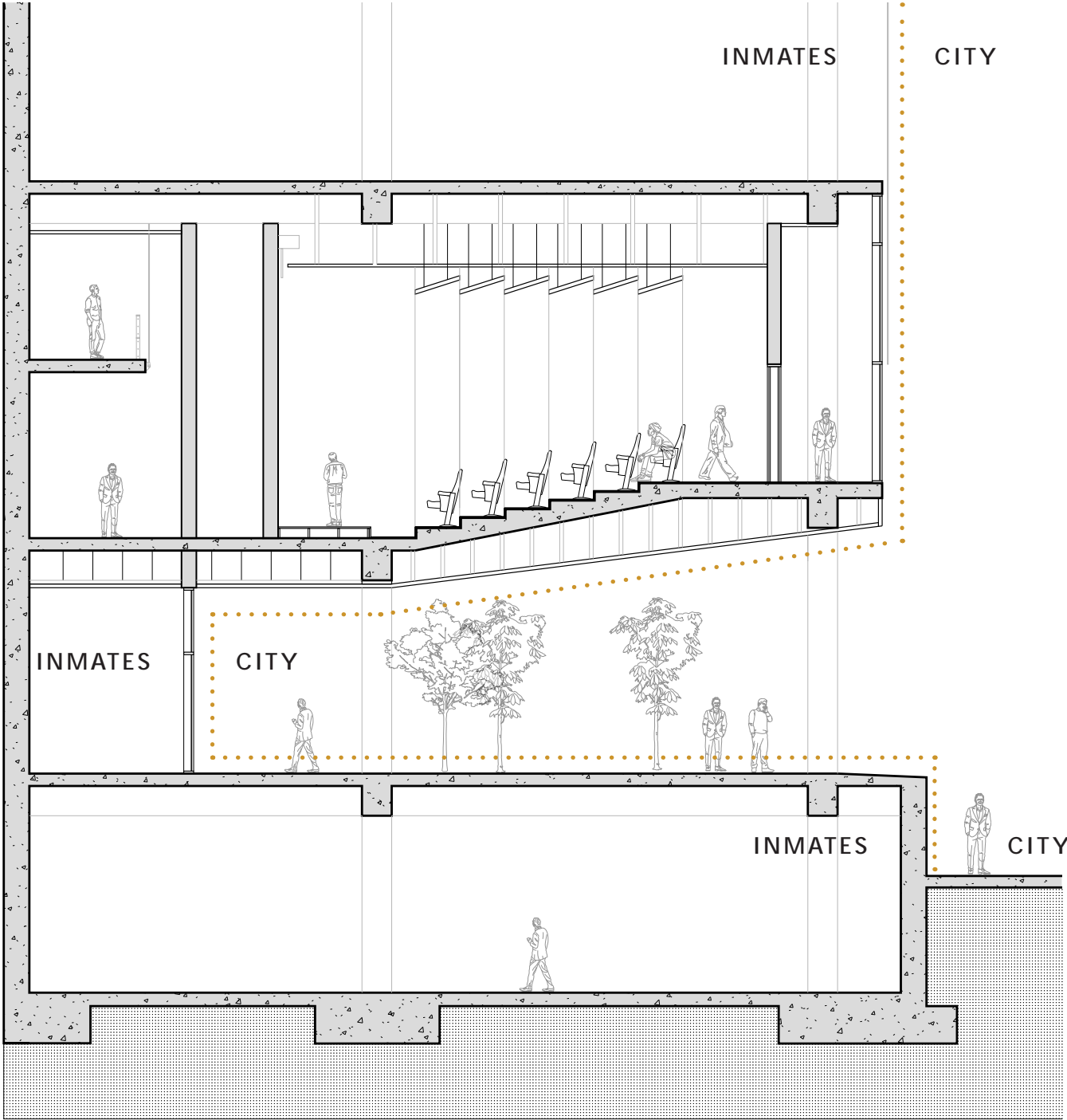
LIMIT CONTACT, NOT INTERACTION

While physical contact with outsiders invites security issues, interaction through observation can potentially add mutual understanding between inmates and the public. This allows inmates to better grasp what is important in surviving in the society outside shrinking alienation and seclusion after release.





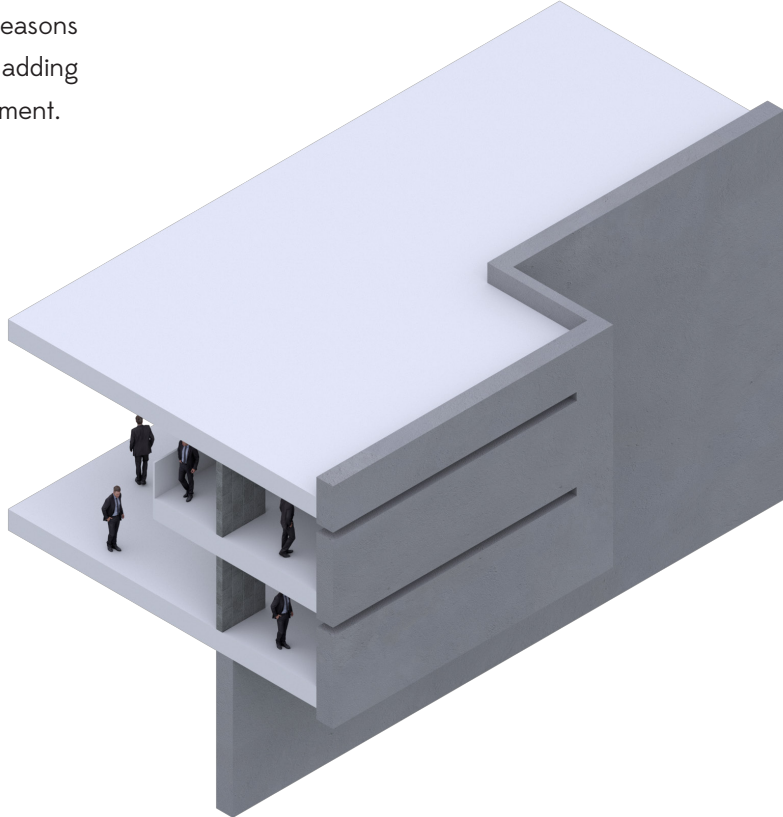
SECTION OF AUDITORIUM



3 | FORMING A SECURE CONNECTION TO THE OUTSIDE

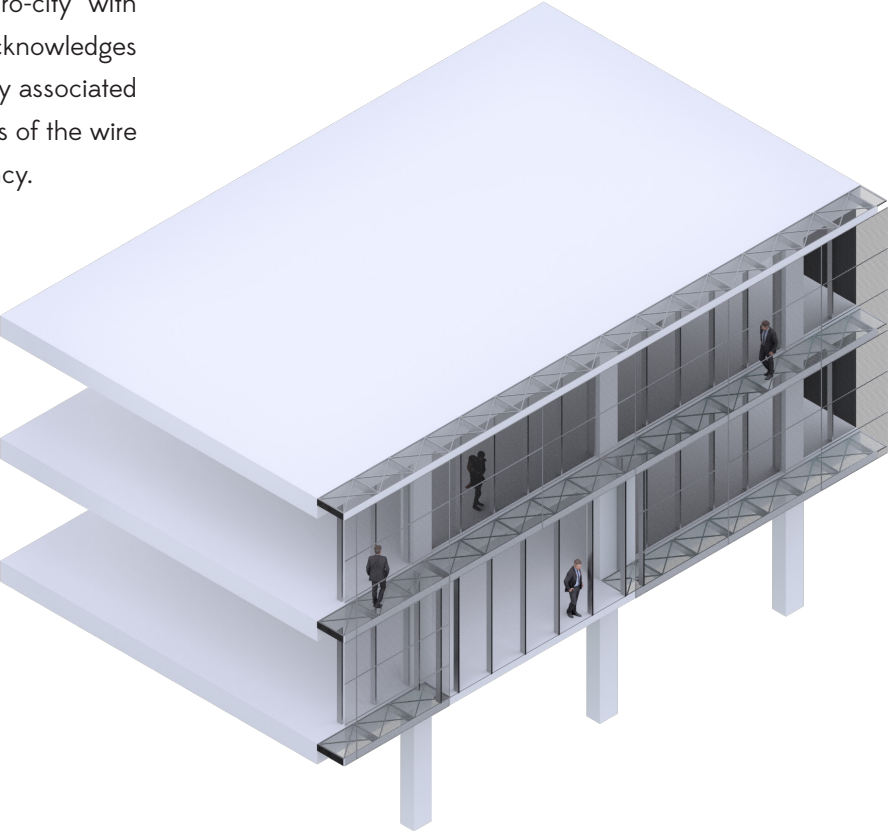
CURRENT PRISON

Concrete Walls with thin, tinted windows currently make up the facade of Roanoke City Jail. Limited exposure to the passage of time, environment and seasons disjoins the inmates from any sense of place, adding to depression, isolation and ultimately, abandonment.

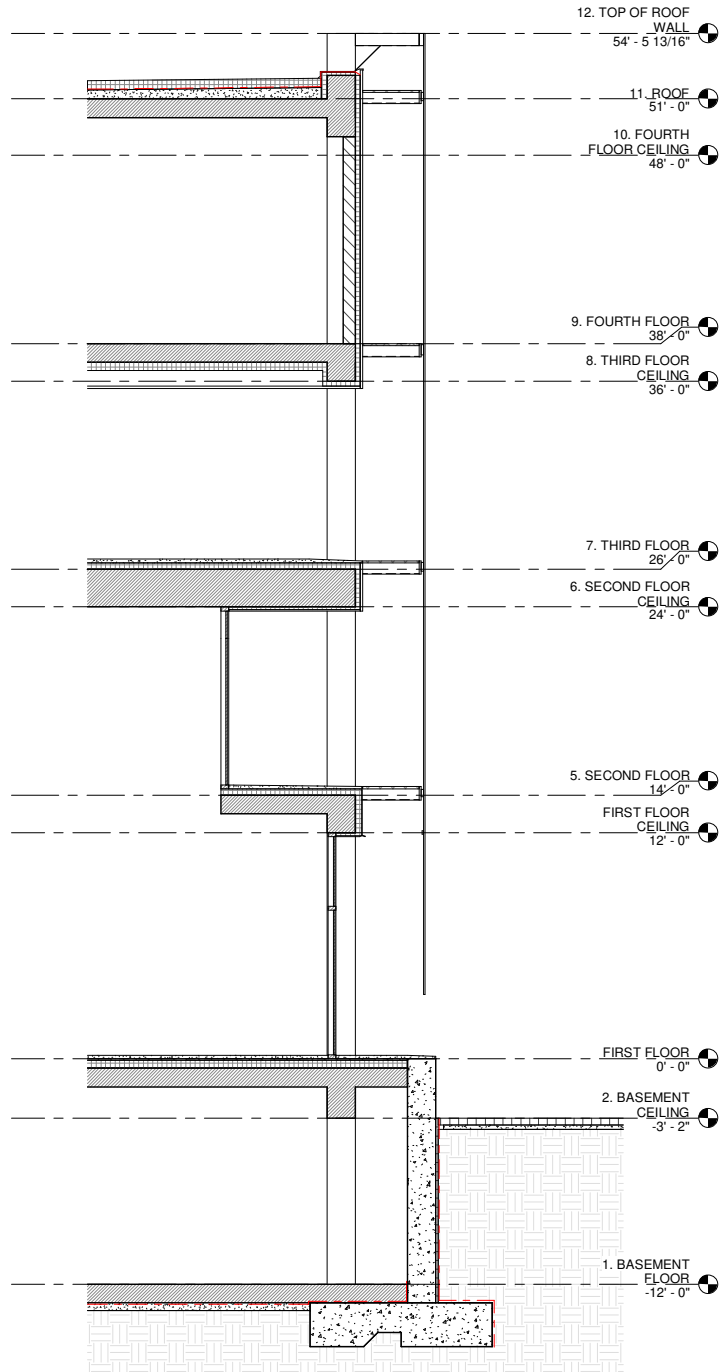


SECURE TRANSPARENCY

The proposal here employs a livable double facade system that encloses a transparent micro-city with transparent wire mesh panels. This design acknowledges the security aspects of the present typology associated with suburban prisons but uses the benefits of the wire mesh to offer both security and transparency.



WALL SECTION





CONCLUSION

While architecture cannot be the sole driver towards a better prison system in the US, it does offer some valuable opportunities to spatially prepare inmates for a comfortable return to society. Many different factors contribute to the mental wellbeing and habitual changes of inmates, but an abstraction of the urban fabric remains a key role of the architecture in the quasi-urban prison model and can be emphasized through a need for commuting and forming a relationship with the surrounding context.

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Figure 18	Facade of Justice Center Leoben, Austria. Photograph by Hohensinn Architektur

All unreferenced figures are of the author’s own creation

REFERENCES

Fowler, M. (2015). *The Human Factor in Prison Design: Contrasting Prison Architecture in the United States and Scandinavia*. In *The Expanding Periphery and the Migrating Center: Papers from the 2015 Association of Collegiate Schools of Architecture Annual Meeting* (pp. 373–380). Washington, DC; ACSA Press.