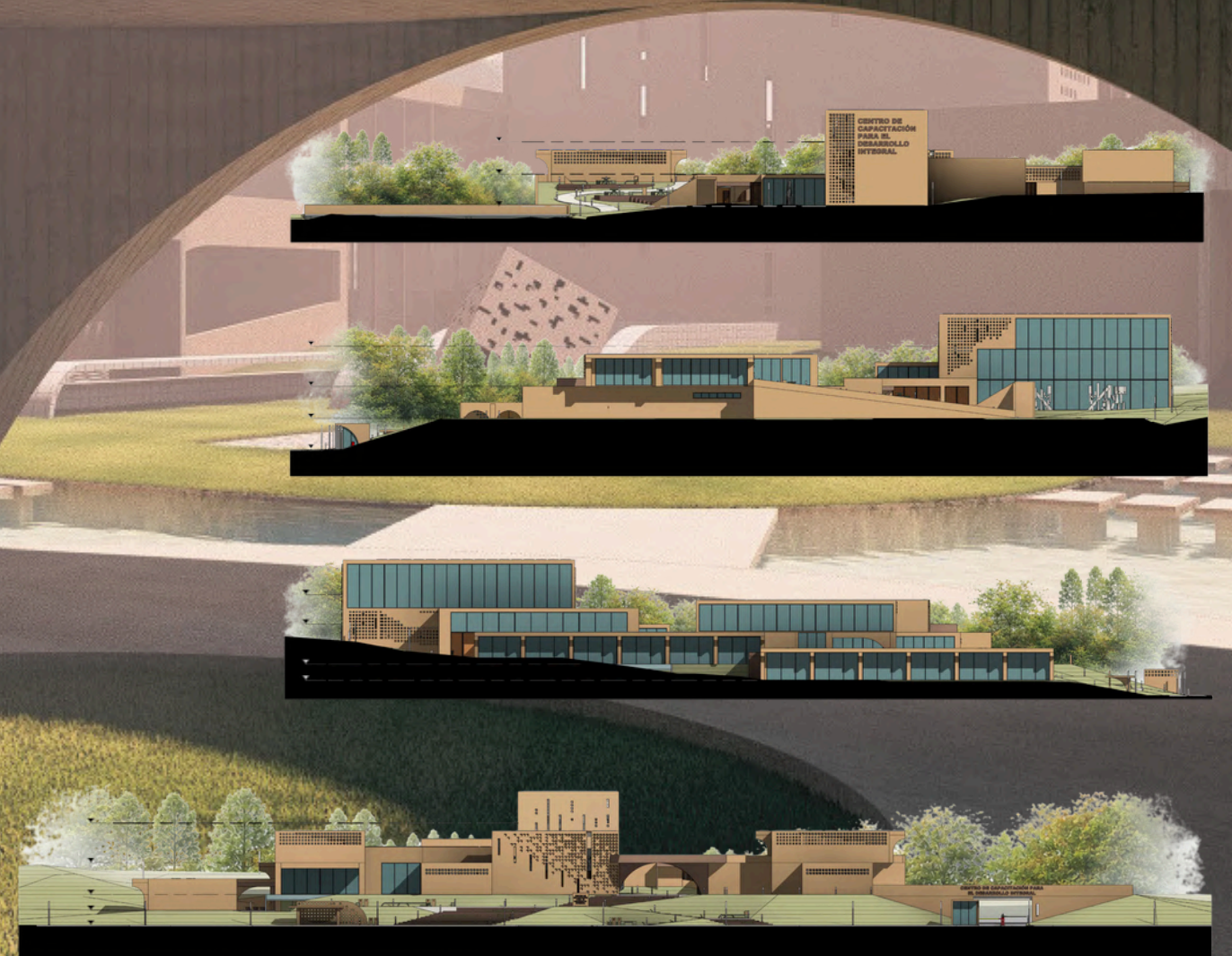




CENTRO DE CAPACITACIÓN PARA
EL DESARROLLO
INTEGRAL EN VILLA NUEVA GUATEMALA

VILLA NUEVA INTEGRAL DEVELOPMENT CENTER

The project integrates harmoniously with its natural surroundings, distinguished by a clean architectural language of rectilinear forms and simple volumes. Earth-toned materials establish a respectful dialogue with the landscape, reinforcing the project's connection to its context. This design approach reflects a strong commitment to sustainability and bioclimatic principles, where every element has been carefully considered to minimize environmental impact while promoting the well-being of its users.



FACULTAD DE
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LICENCIATURA EN ARQUITECTURA

DA9
P GRAD

Asesor
Arq. Carlos Valladares

VILLA NUEVA INTEGRAL
DEVELOPMENT CENTER



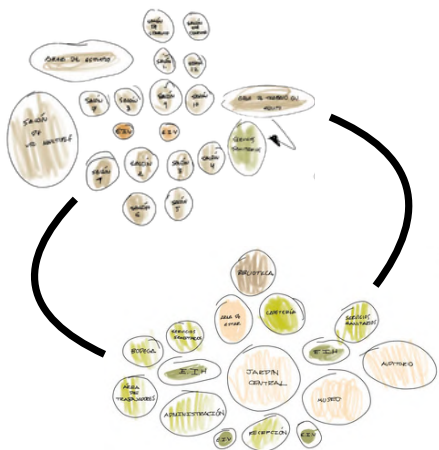
202005211
María de los Angeles
Bonilla Herrera



CONCEPTUAL FOUNDATION

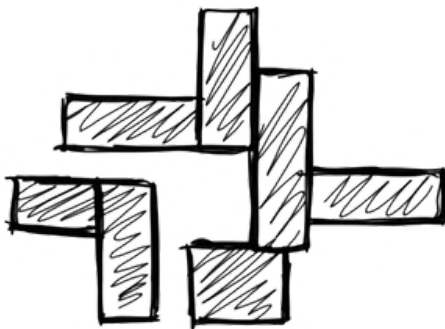
1 / BUBBLE DIAGRAM

The bubble diagram defines the initial spatial organization and the functional relationships between the different spaces.



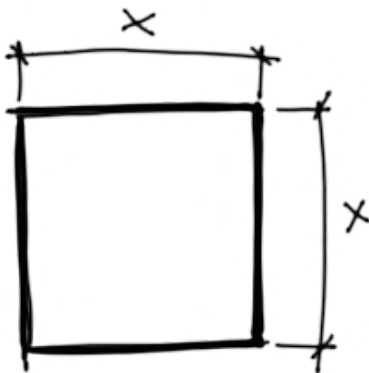
2 / RELATIONSHIP TYPE

The spatial relationship is defined as an open configuration, considering the presence of a central void within the overall composition.



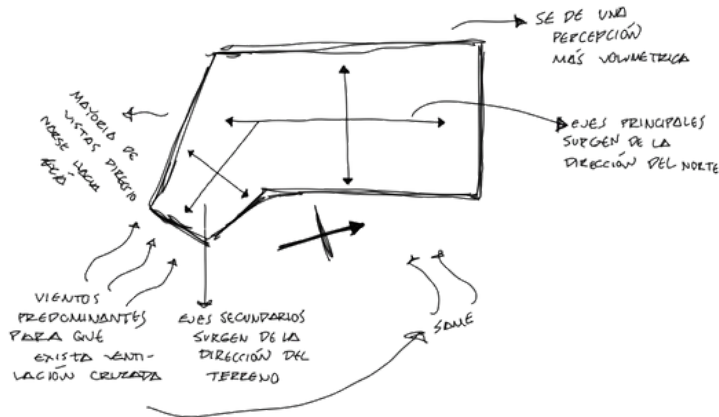
3 / GEOMETRIC FIGURE

The project is based on a repeating 8 x 8 m square module, creating a rational geometric framework that organizes spaces and facilitates the architectural composition.



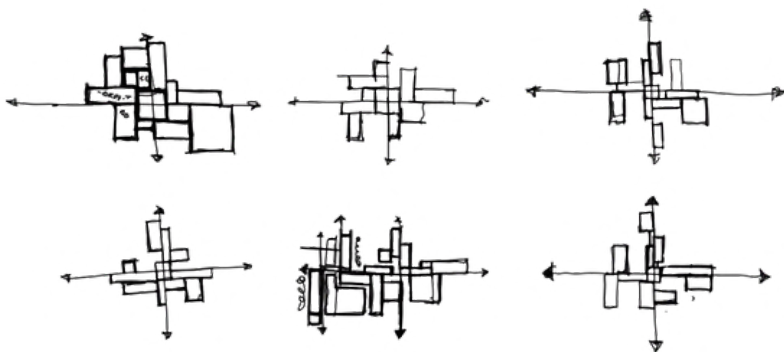
4 / AXIS DEFINITION

Based on the site analysis, a system of organizing axes is established to provide order and define the geometric framework of the project.



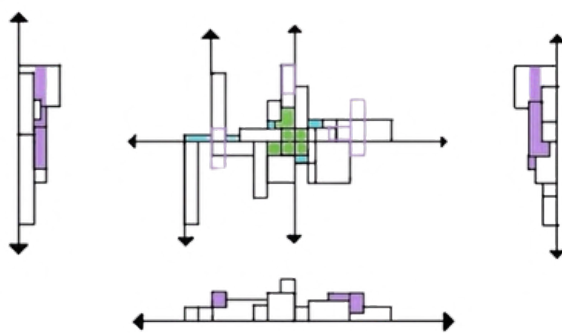
5 / ARCHITECTURAL COMPOSITION

Through axis definition, an iterative design process is carried out, allowing the development of an efficient and coherent two-dimensional spatial organization.



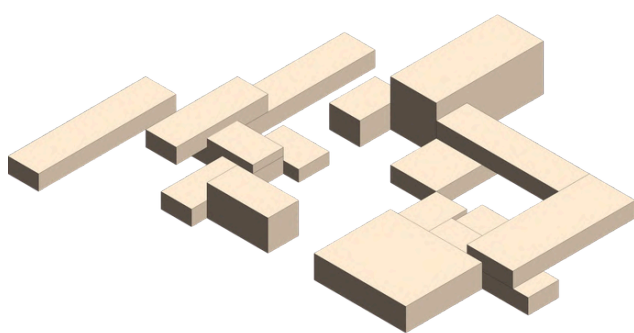
6 / FLOOR PLAN DEVELOPMENT

By exploring the organizing axes, the final floor plan is developed, from which the elevations are generated, establishing different spatial hierarchies through changes in height.

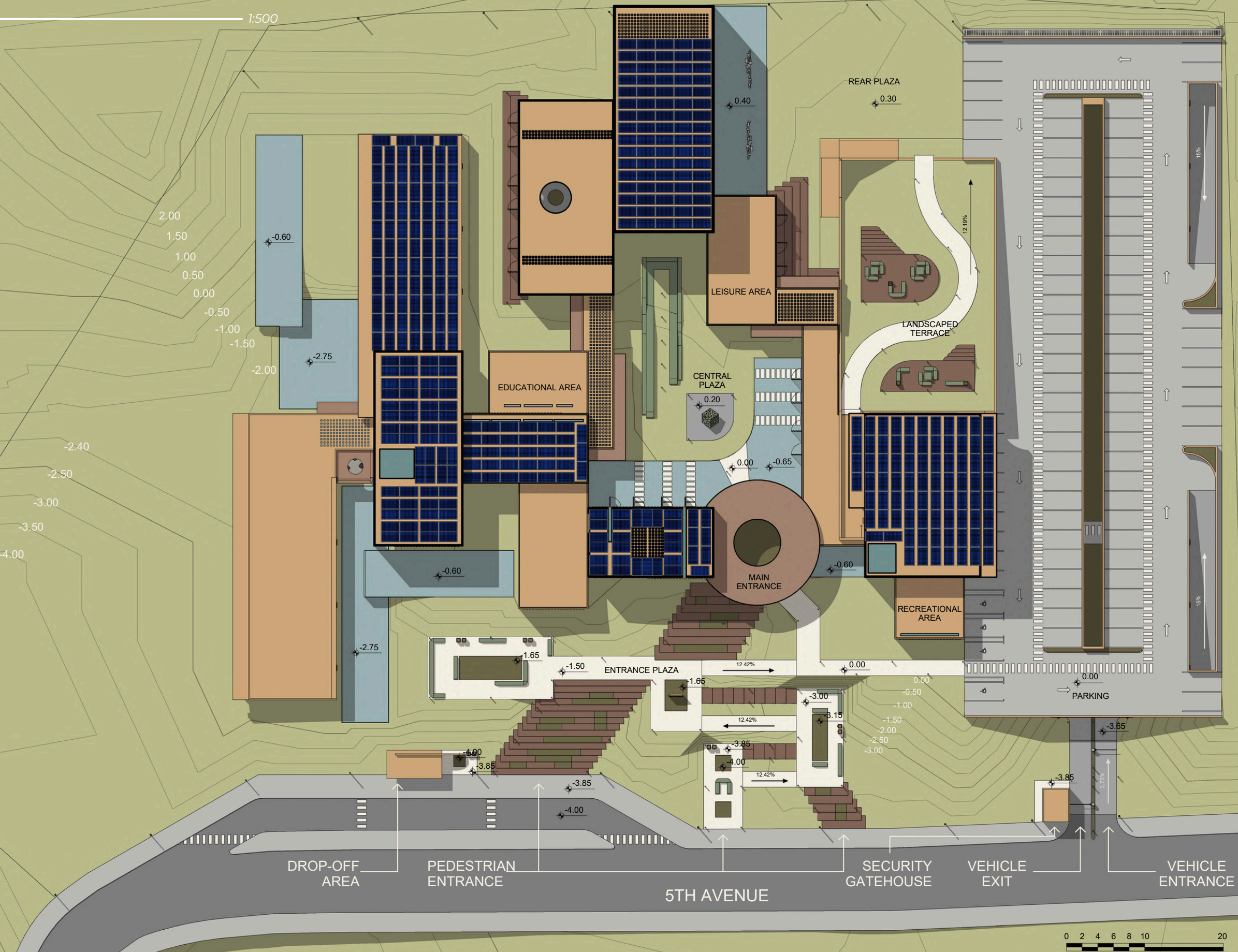


7 / VOLUMETRIC DEVELOPMENT

Once the different heights and proportional relationships in plan and elevation have been established, a three-dimensional composition is developed based on these elements.



SITE PLAN

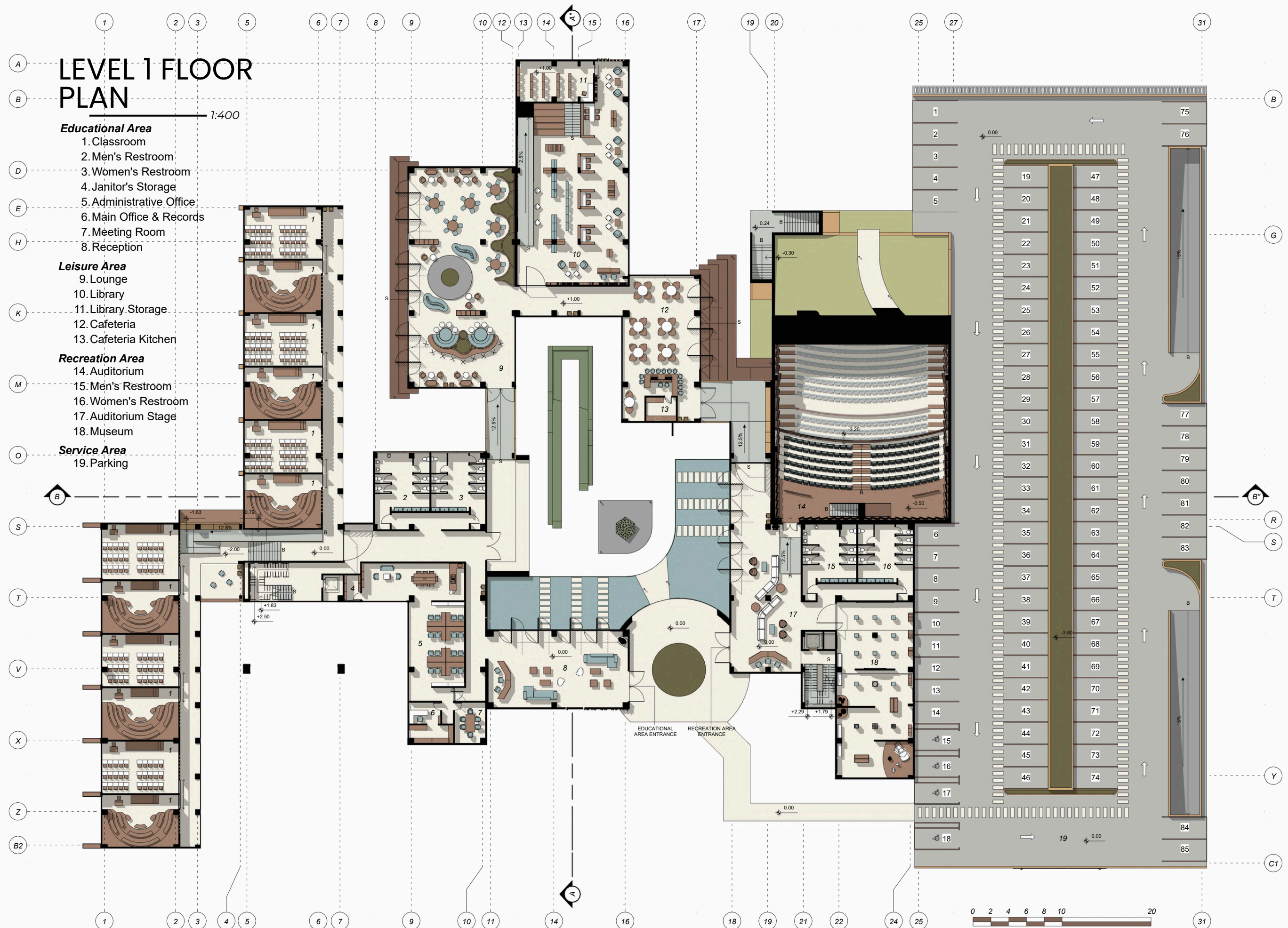
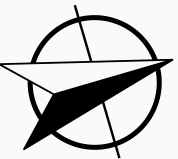


SITE PLAN









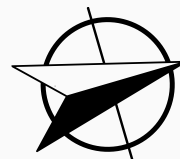
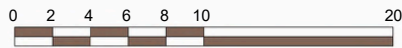
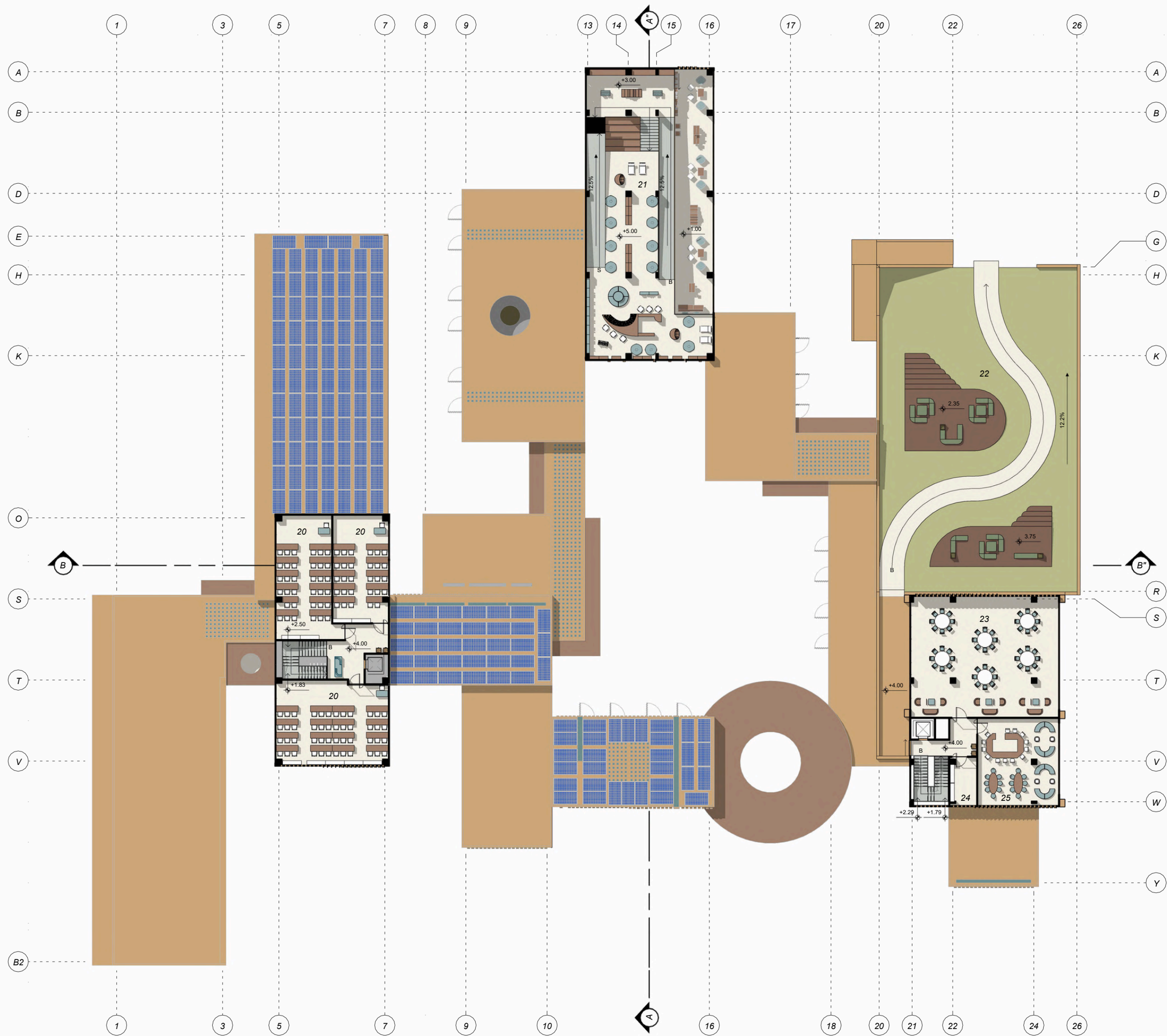
LEVEL 2 FLOOR PLAN

1:400

Educational Area
20. Computer Lab

Leisure Area
21. Reading area

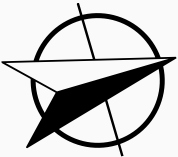
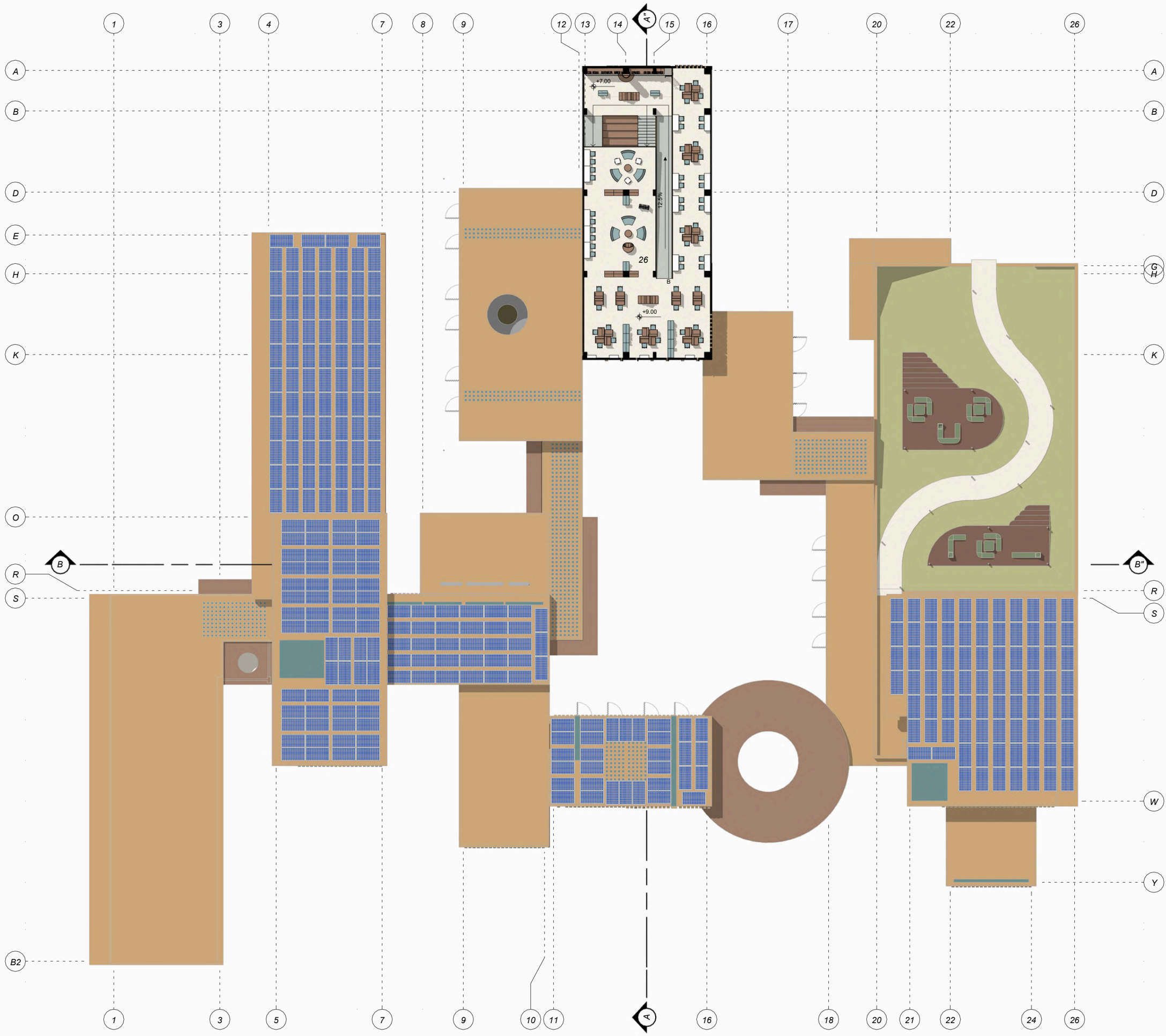
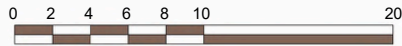
Recreation Area
22. Landscaped Terrace
23. Multipurpose Hall
24. Storage Room
25. Creative Lab



LEVEL 3 FLOOR PLAN

Leisure Area
26. Study Area

1:400



BASEMENT LEVEL 1 FLOOR PLAN

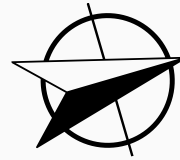
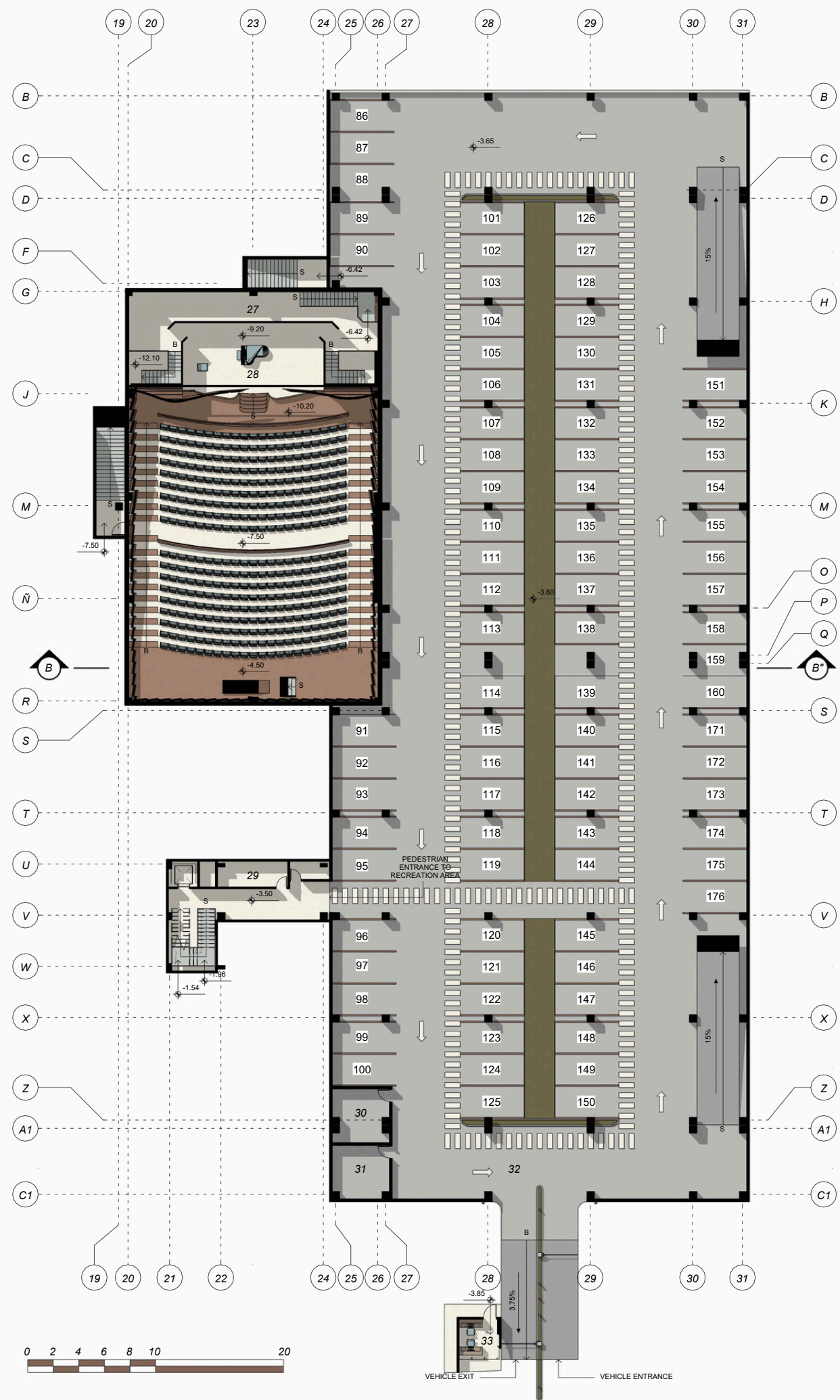
1:400

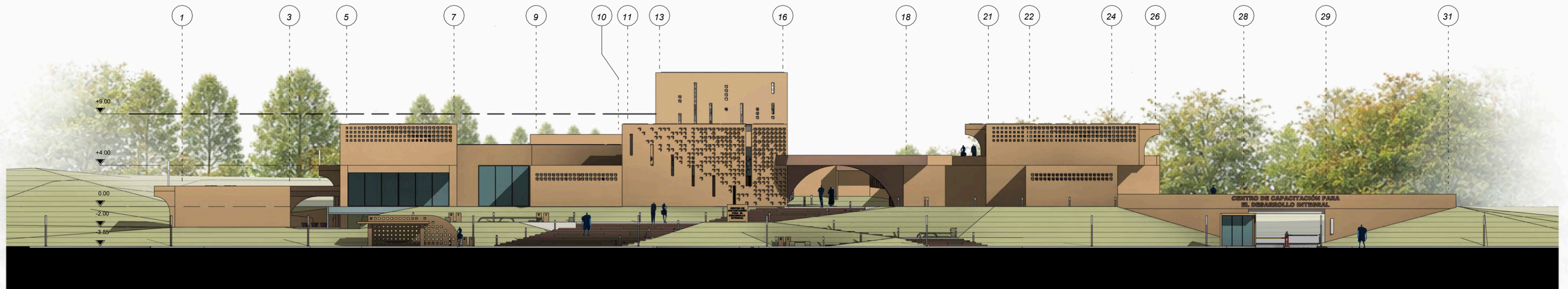
Recreation Area

- 27. Backstage
- 28. Stage
- 29. Storage Rooms

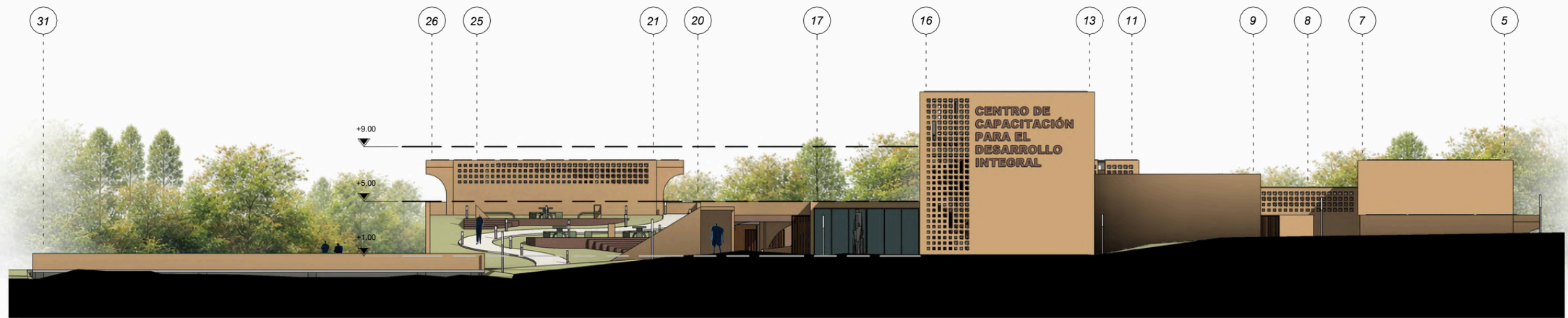
Service Area

- 30. Electrical Room
- 31. Pump Room
- 32. Basement Level 1 Parking
- 33. Security Gatehouse

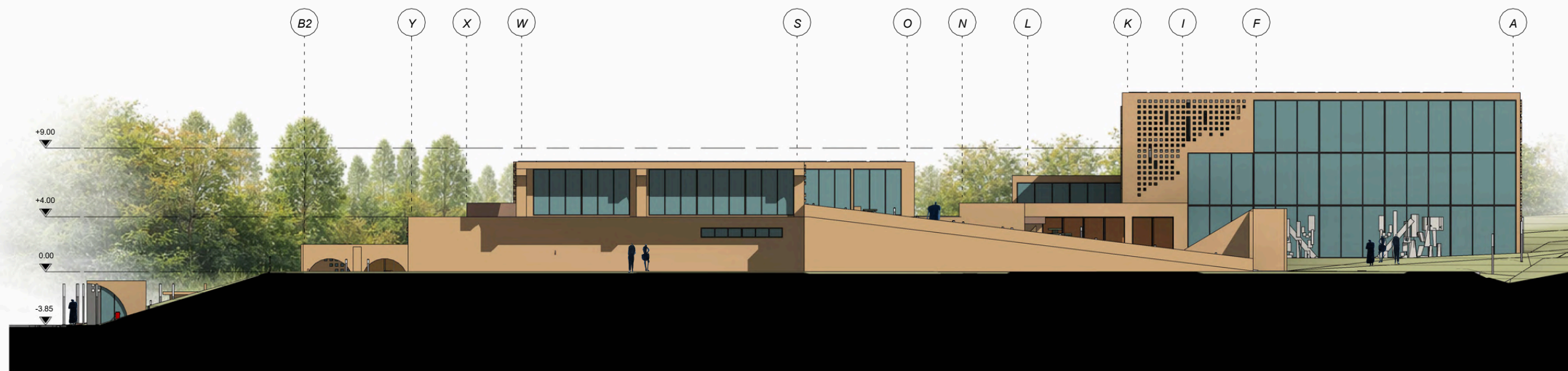




WEST FRONT ELEVATION 1:400



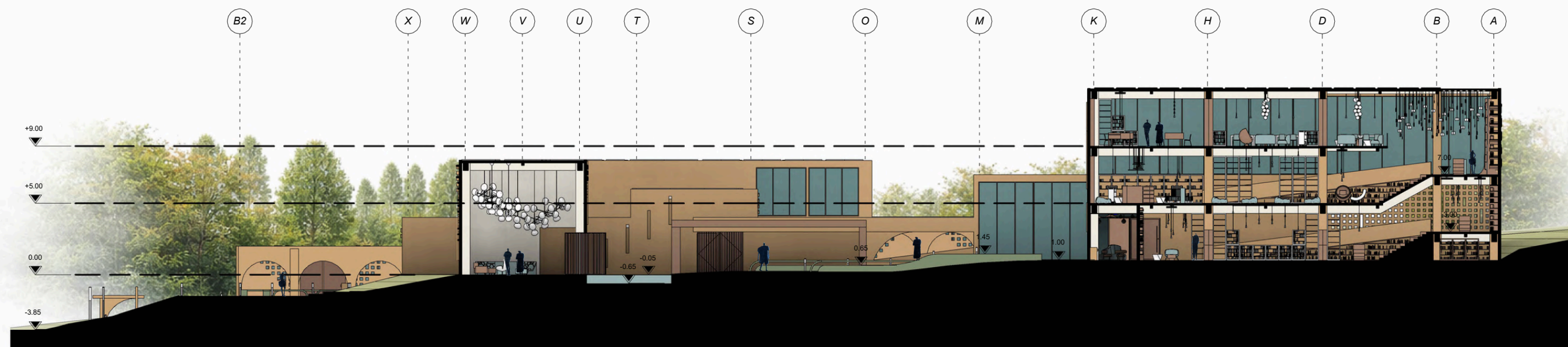
EAST REAR ELEVATION 1:400



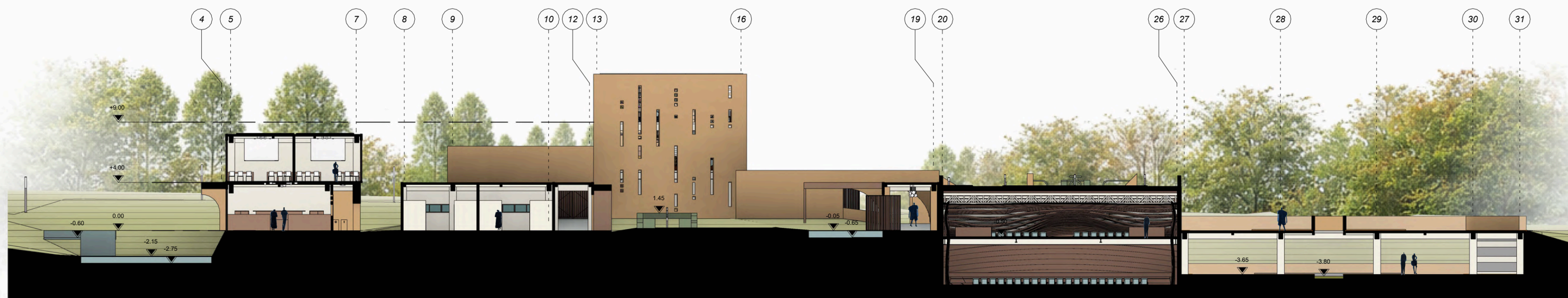
NORTH RIGHT ELEVATION _____ 1:400



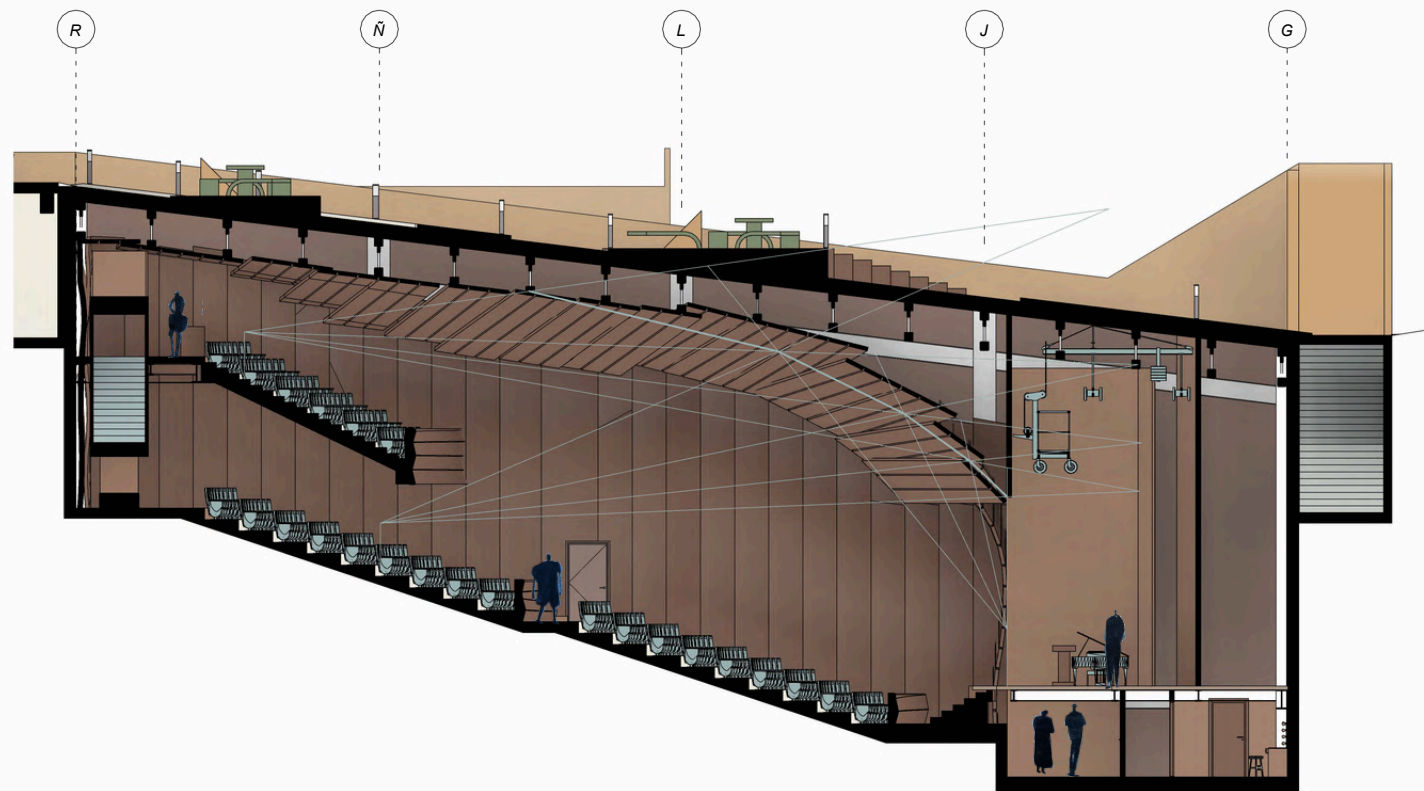
SOUTH LEFT ELEVATION _____ 1:400



CROSS SECTION A-A' 1:350

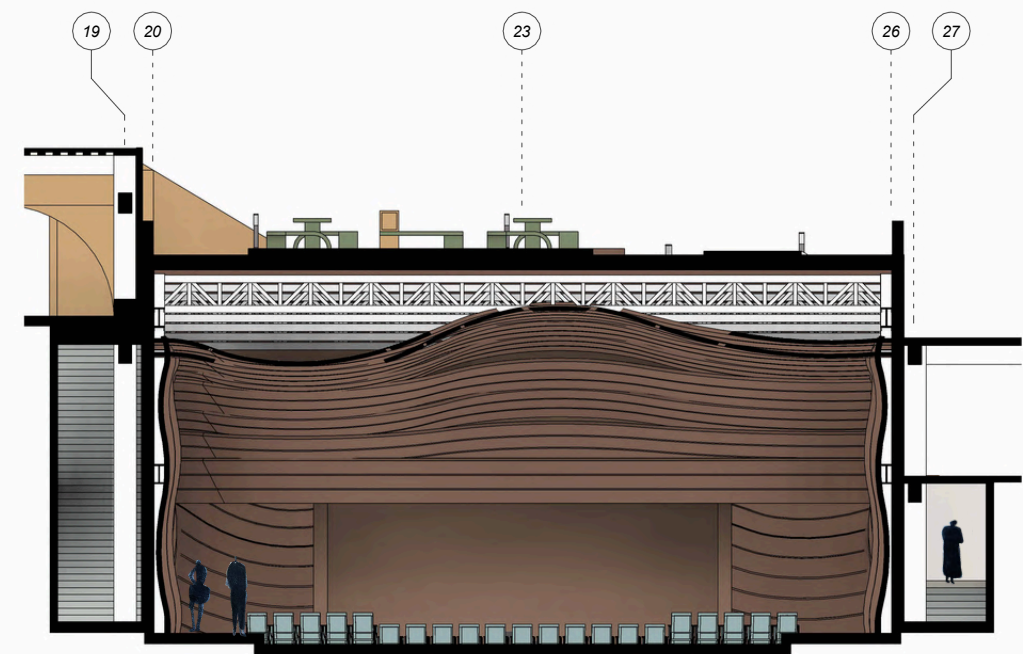


LONGITUDINAL SECTION B-B' 1:350



AUDITORIUM LONGITUDINAL SECTION

1:200



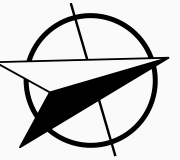
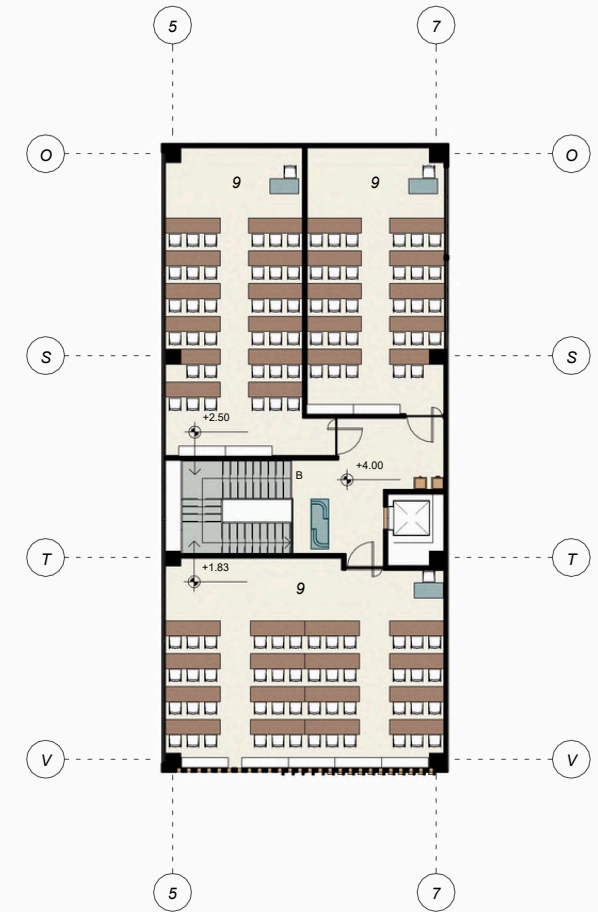
AUDITORIUM CROSS SECTION

1:200

EDUCATIONAL AREA FLOOR PLANS LEVELS 1 & 2

- 1. Classroom
- 2. Men's Restroom
- 3. Women's Restroom
- 4. Janitor's Storage
- 5. Administrative Office
- 6. Main Office & Records
- 7. Meeting Room
- 8. Reception
- 9. Computer Lab

1:300





RECEPTION





ADMINISTRATIVE OFFICE







STAFF AREA

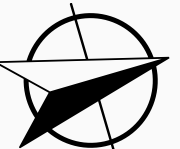
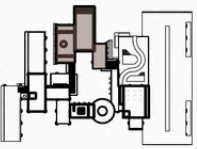






COMPUTER LABS

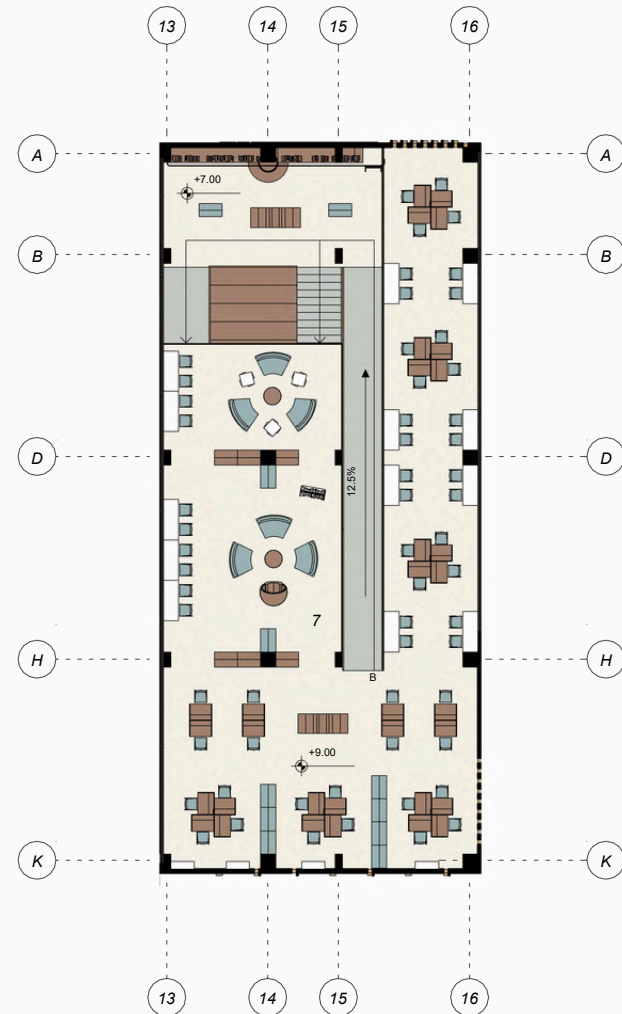
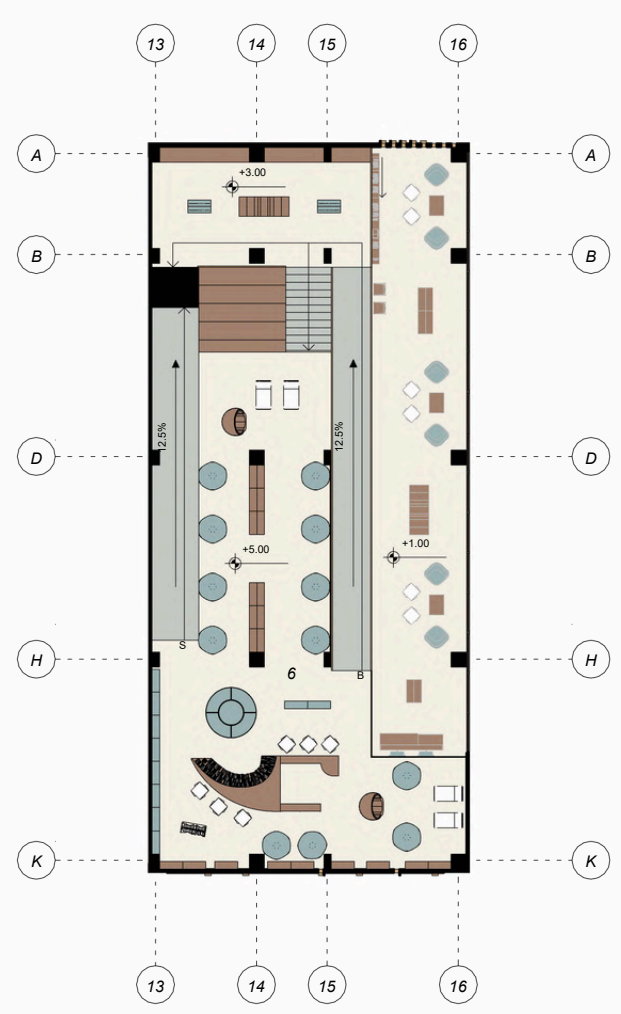
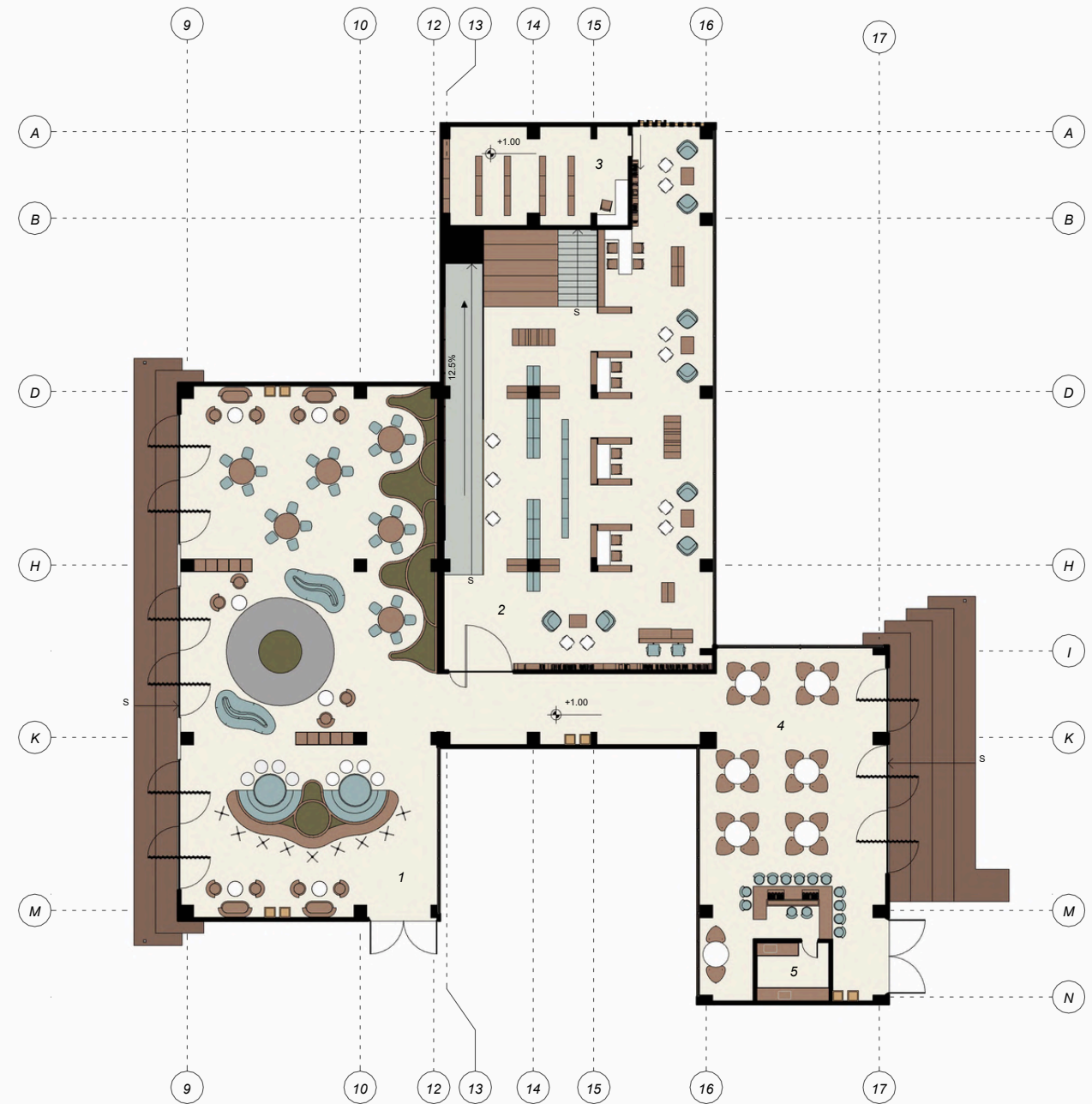




LEISURE AREA FLOOR PLANS LEVELS 1, 2 & 3

1:300

- 1. Lounge
- 2. Library
- 3. Library Storage
- 4. Cafeteria
- 5. Cafeteria Kitchen
- 6. Reading Area
- 7. Study Area









LEVEL 1 LIBRARY



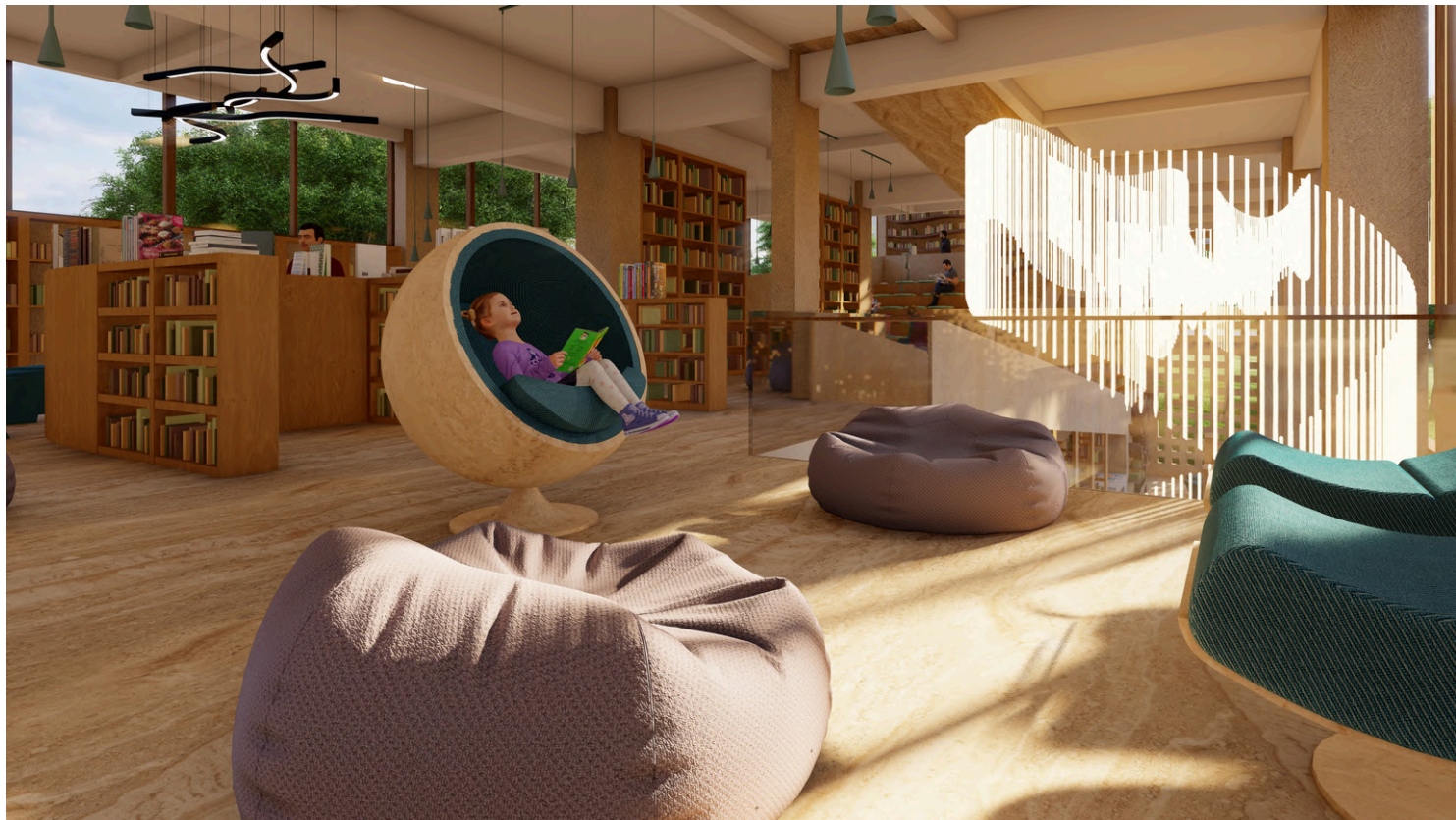


LEVEL 1 MEZZANINE LIBRARY





LEVEL 2 LIBRARY (READING AREA)







LEVEL 3 LIBRARY (STUDY AREA)



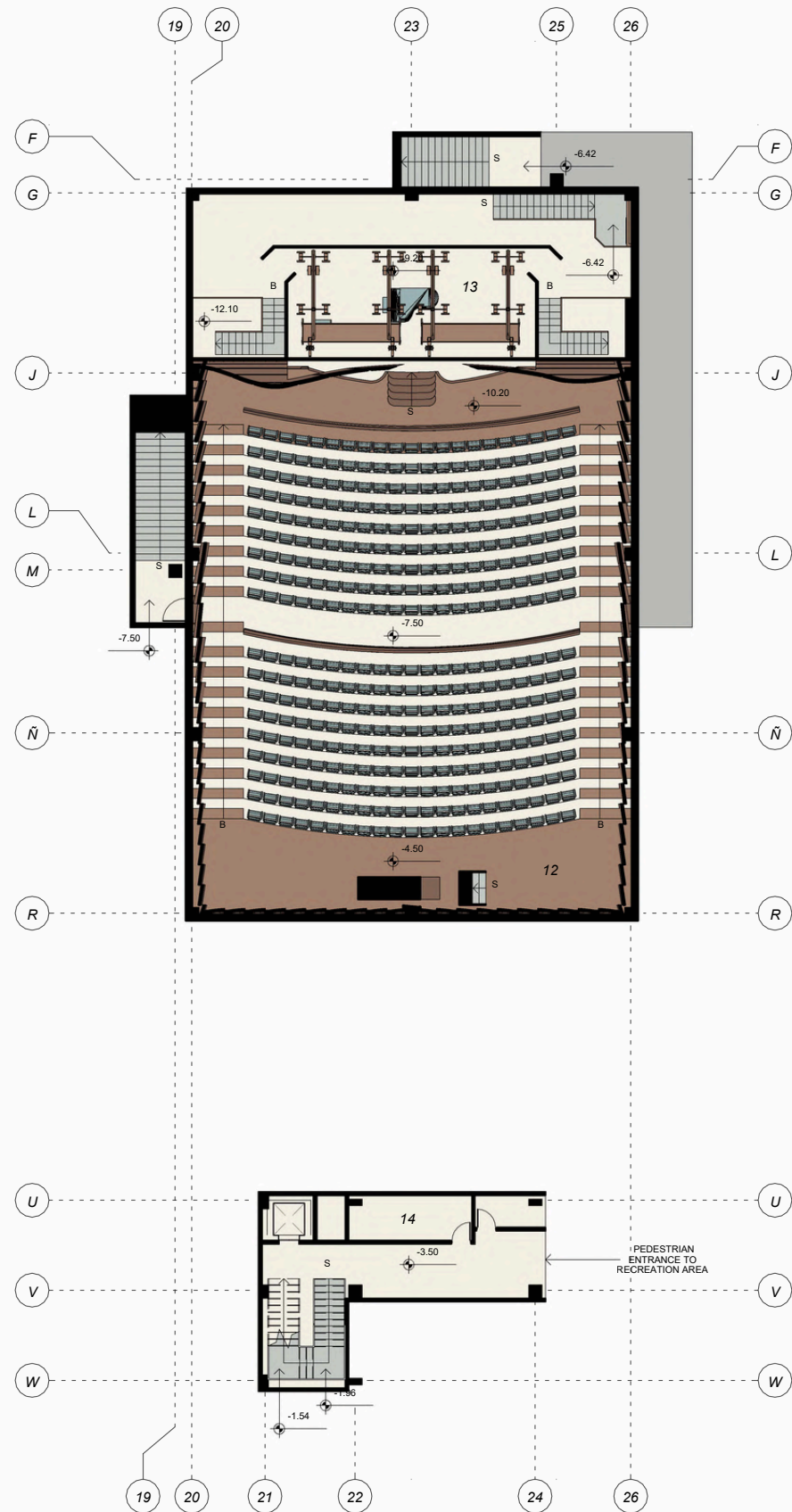
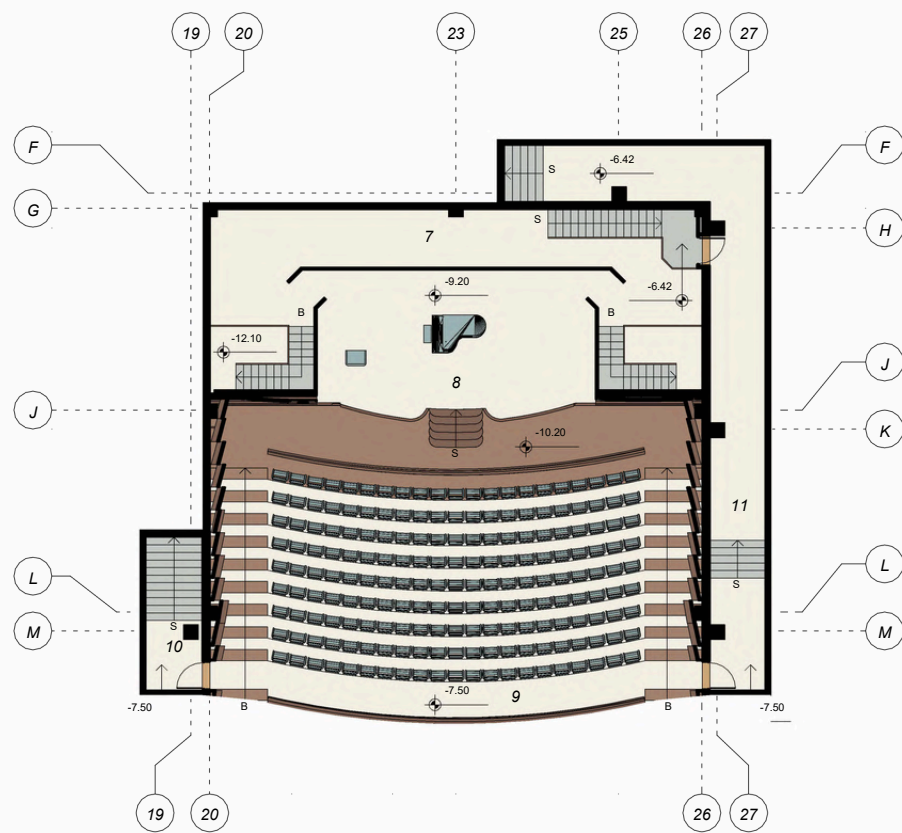
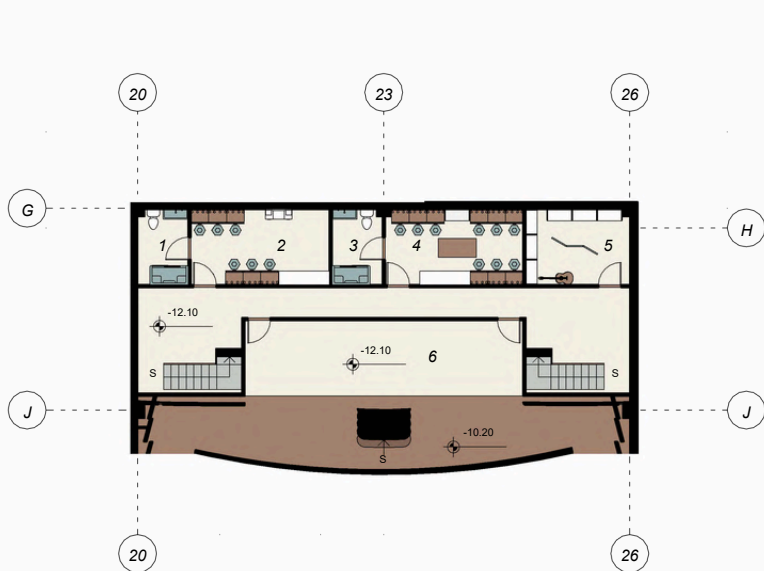
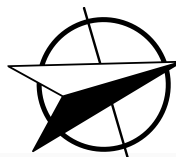
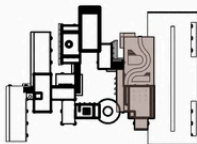
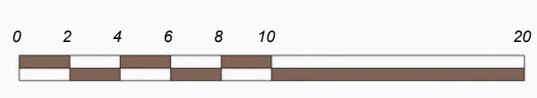




LOUNGE AREA







AUDITORIUM RECREATION AREA FLOOR PLAN

1:300

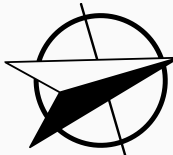
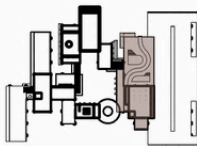
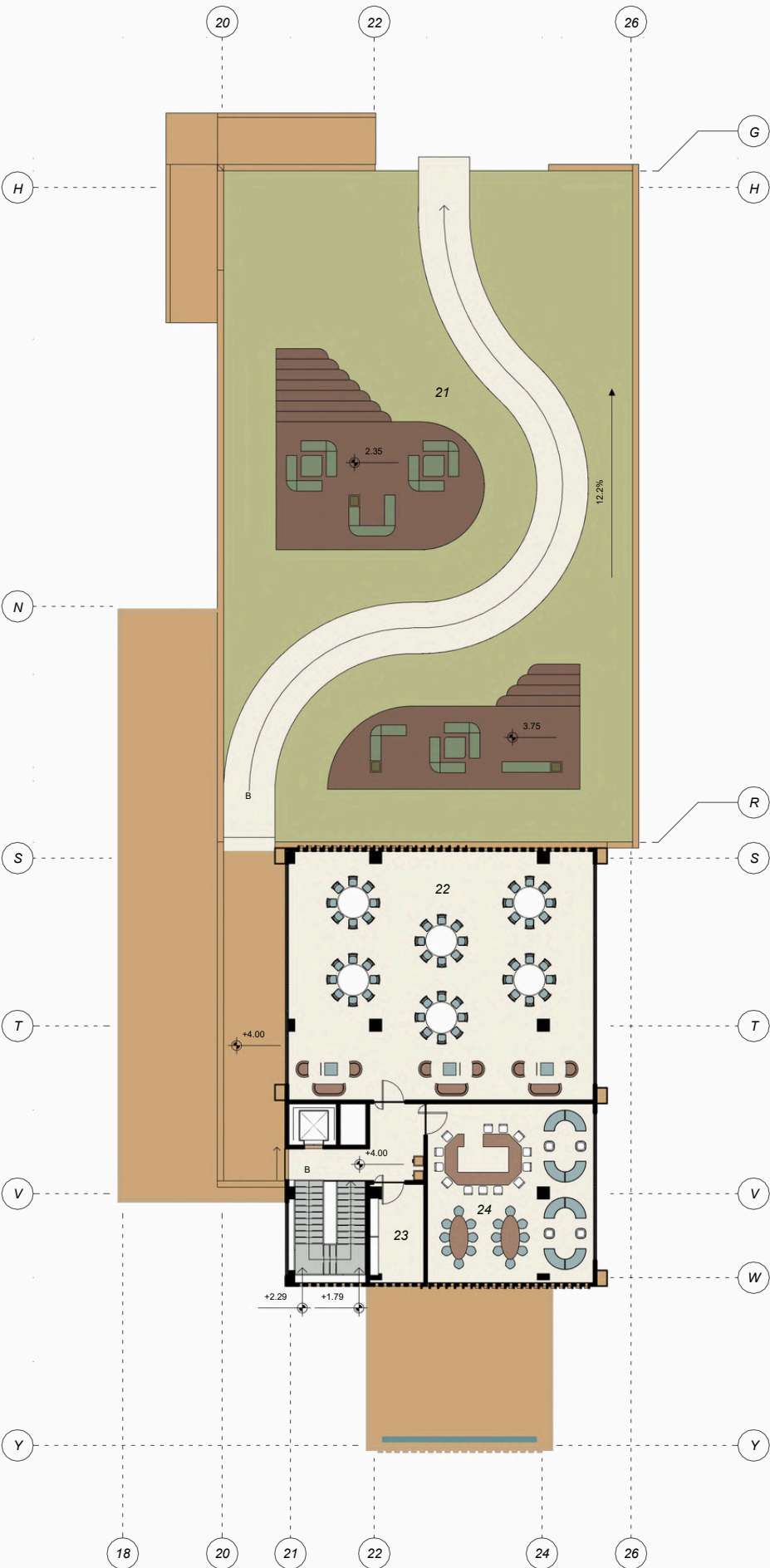
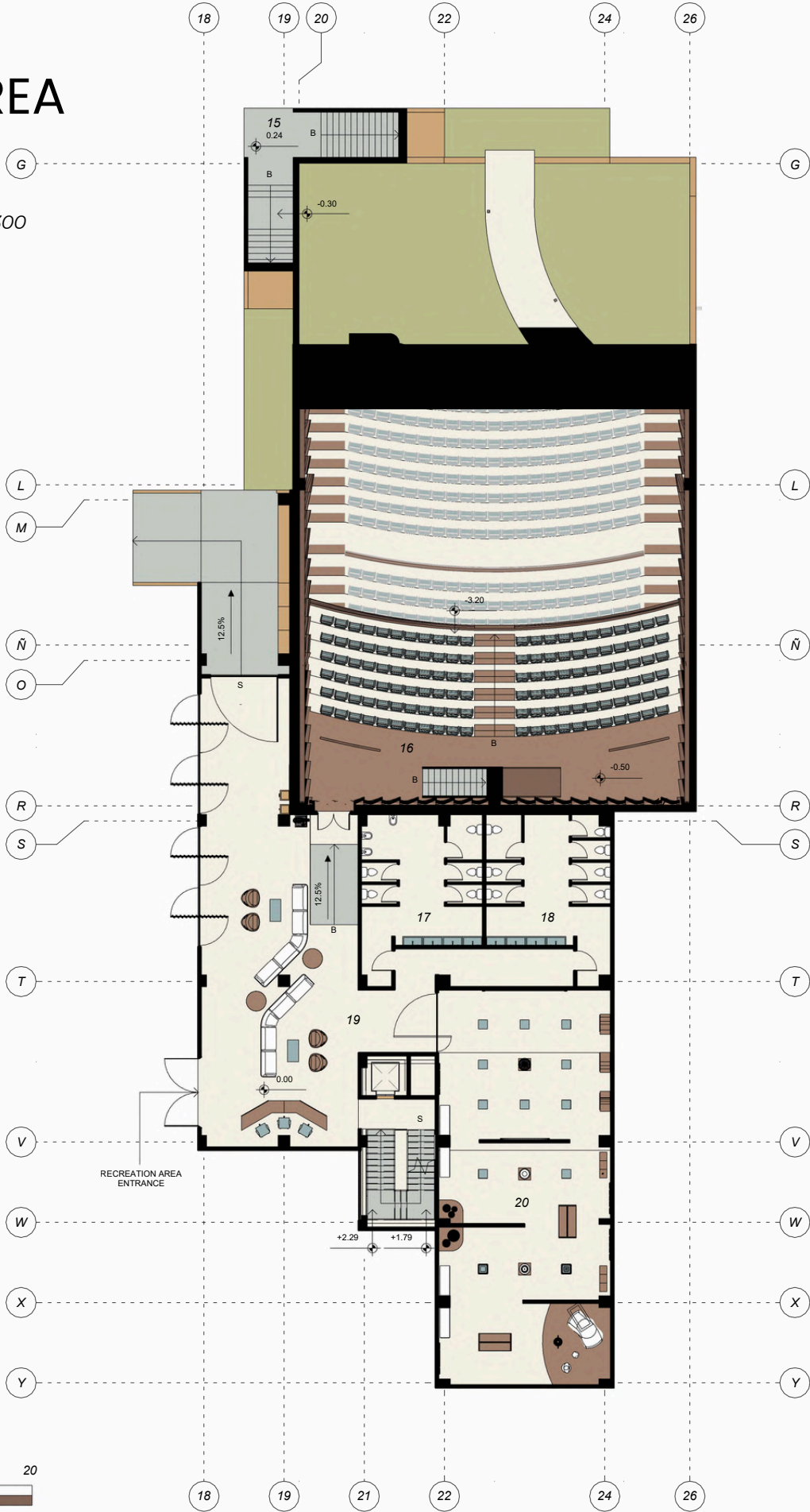
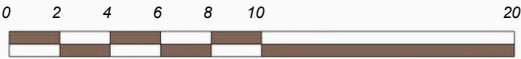
- | | | |
|--------------------------|----------------------------|----------------------|
| 1. Men's Restroom | 6. Orchestra Pit | 11. Emergency Exit 2 |
| 2. Men's Dressing Room | 7. Backstage | 12. Auditorium |
| 3. Women's Restroom | 8. Stage | 13. Fly Tower |
| 4. Women's Dressing Room | 9. Emergency Exit Corridor | 14. Storage Rooms |
| 5. Storage Room | 10. Emergency Exit 1 | |



RECREATION AREA FLOOR PLANS LEVELS 1 & 2

- 15. Auditorium Emergency Exit
- 16. Balcony
- 17. Men's Restroom
- 18. Women's Restroom
- 19. Auditorium Lobby
- 20. Museum
- 21. Landscaped Terrace
- 22. Multipurpose Hall
- 23. Storage Room
- 24. Creative Lab

1:300





AUDITORIUM LOBBY





AUDITORIUM









MUSEUM





MULTIPURPOSE HALL







LANDSCAPED TERRACE

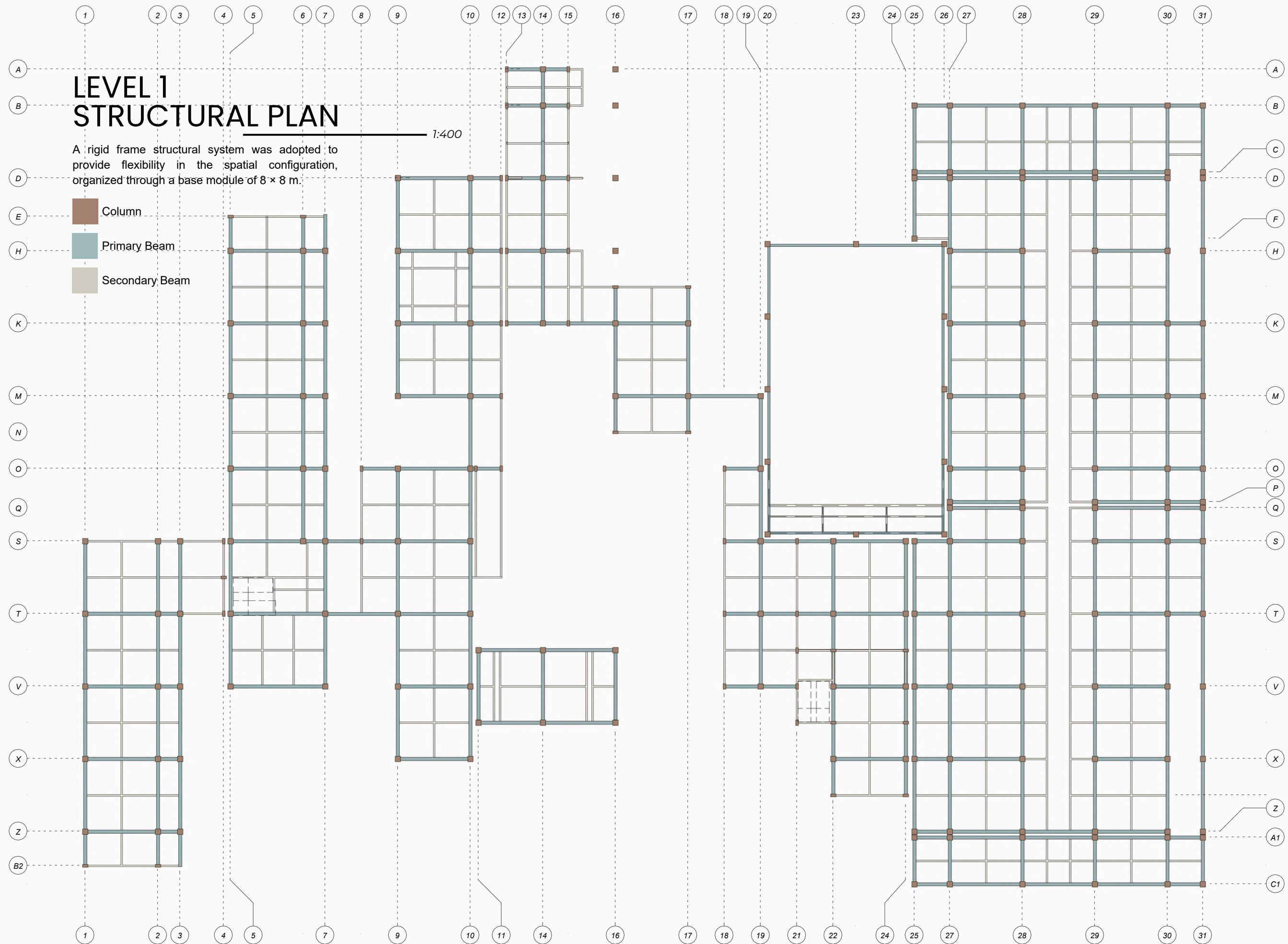
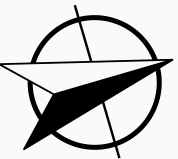






PARKING





LEVELS 2 & 3 STRUCTURAL PLAN

1:400

Primary Beam

$h = 0.67 \sim 0.70 \text{ m}$
 $b = 0.33 \sim 0.35 \text{ m}$

Secondary Beam

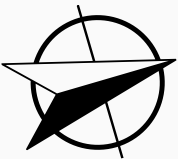
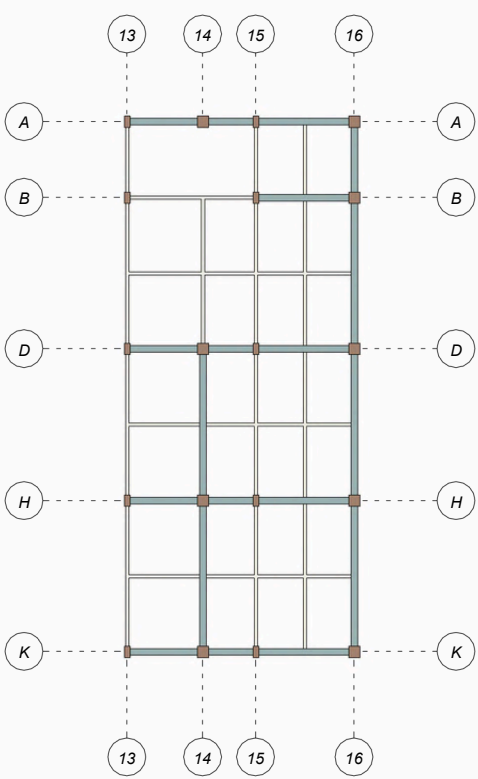
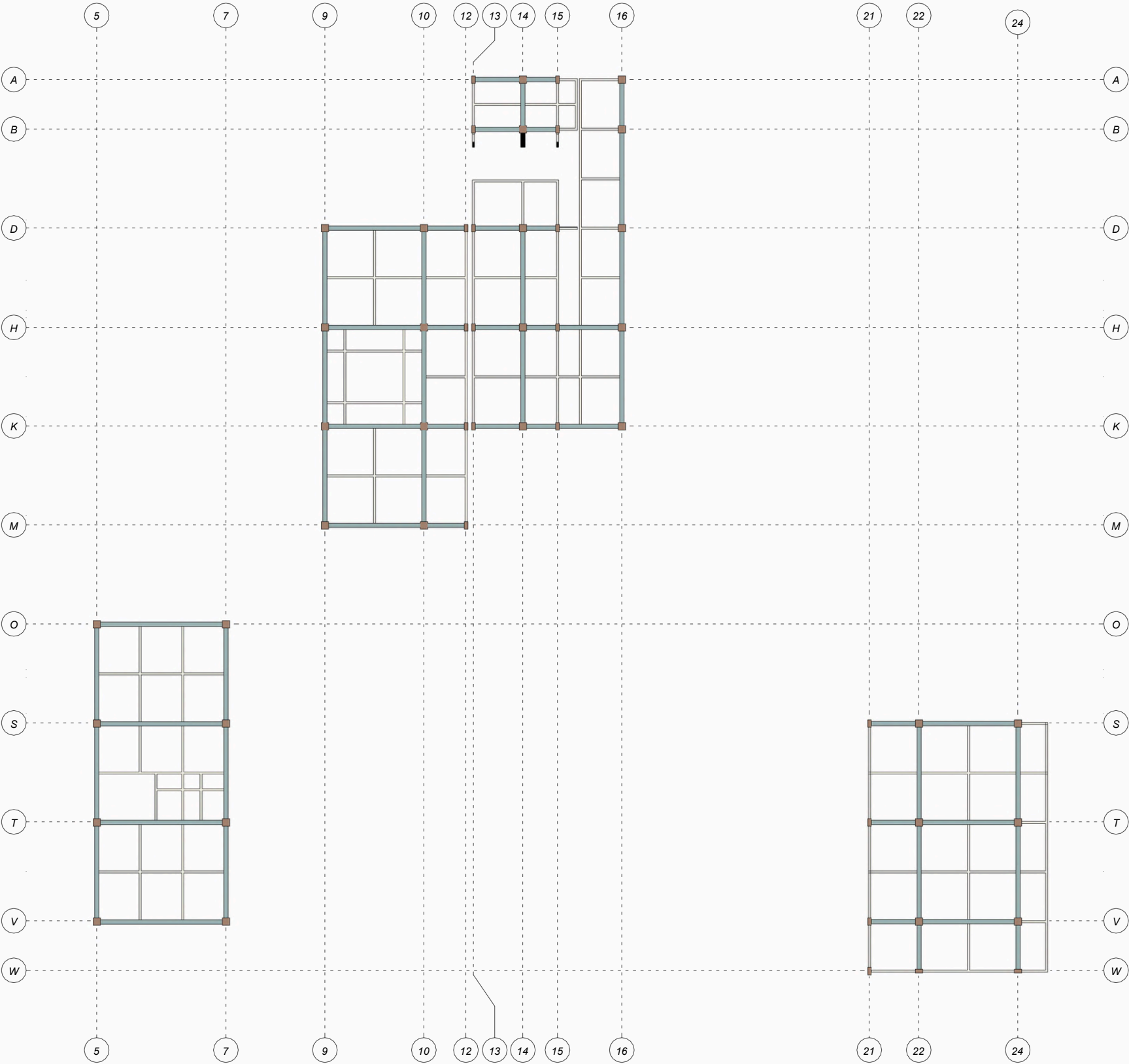
$h = 0.33 \sim 0.35 \text{ m}$
 $b = 0.16 \sim 0.17 \text{ m}$

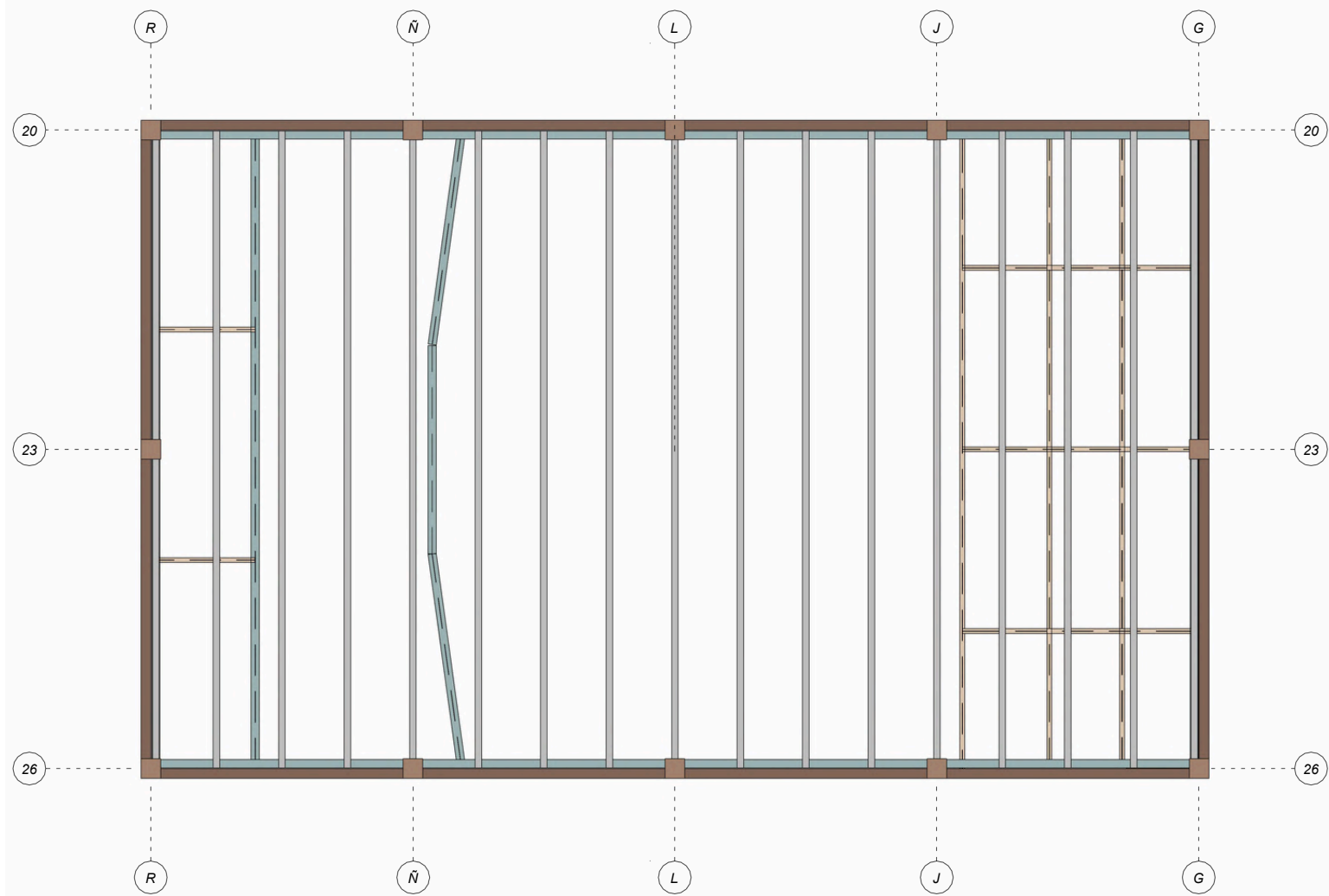
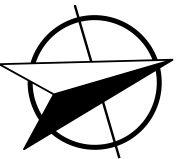
Column

$a = 0.60 \text{ m}$

Slab

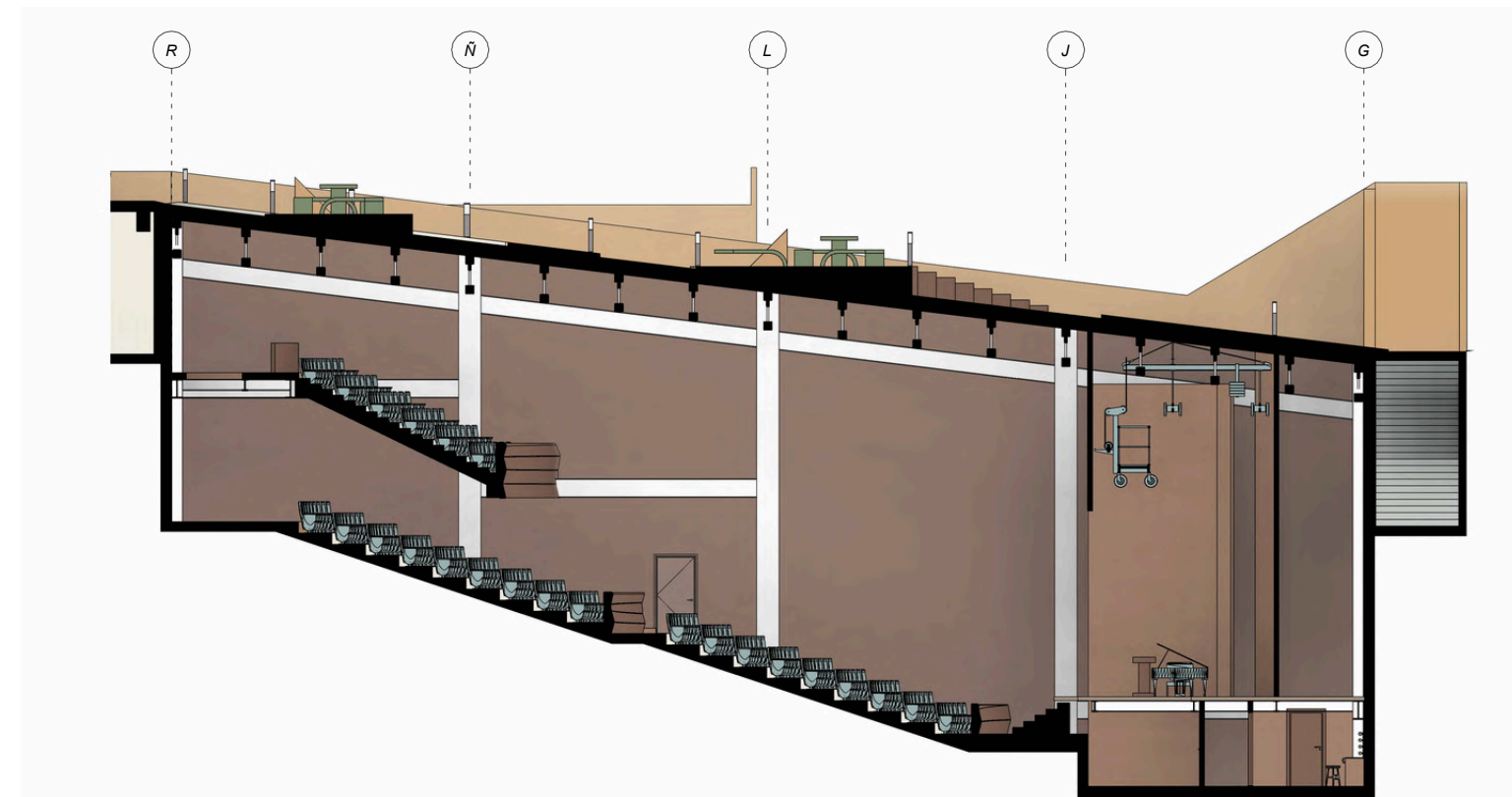
$t = 0.17 \text{ cm}$





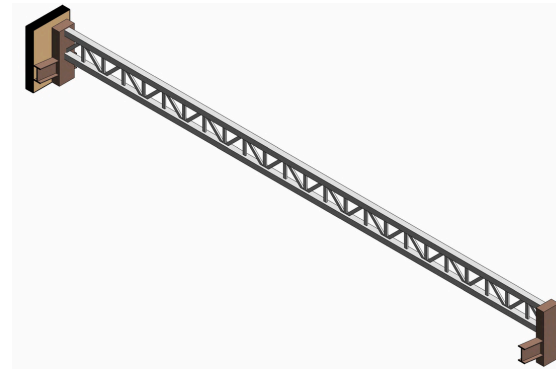
AUDITORIUM STRUCTURAL PLAN

1:200



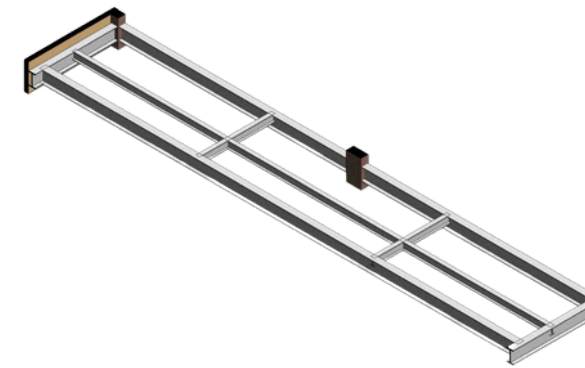
STRUCTURAL SECTION

1:200



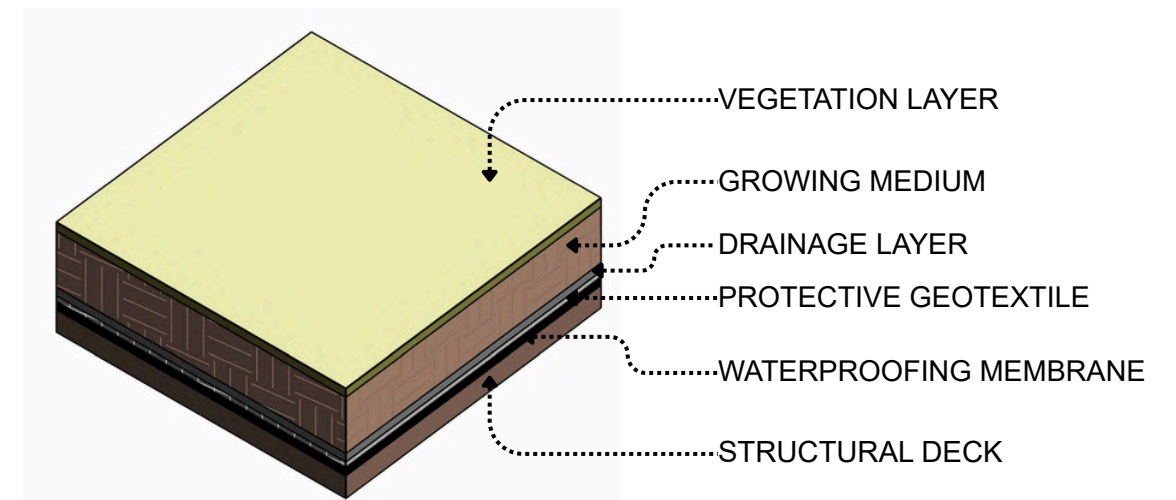
STEEL JOIST 20 m × 1 m

Top Chord	RHS 20 cm × 20 cm × 1 cm
Bottom Chord	RHS 20 cm × 20 cm × 1 cm
Vertical Members	RHS 10 cm × 5 cm × 0.6 cm
Connection Plate	1 cm thick
Column Cap Plate	60 cm × 60 cm × 4 cm

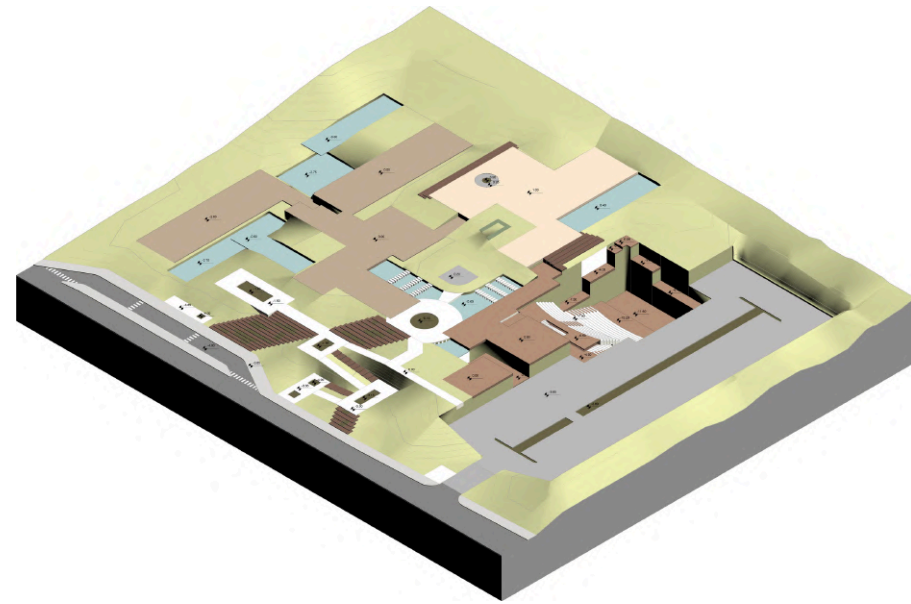


PRIMARY BEAM

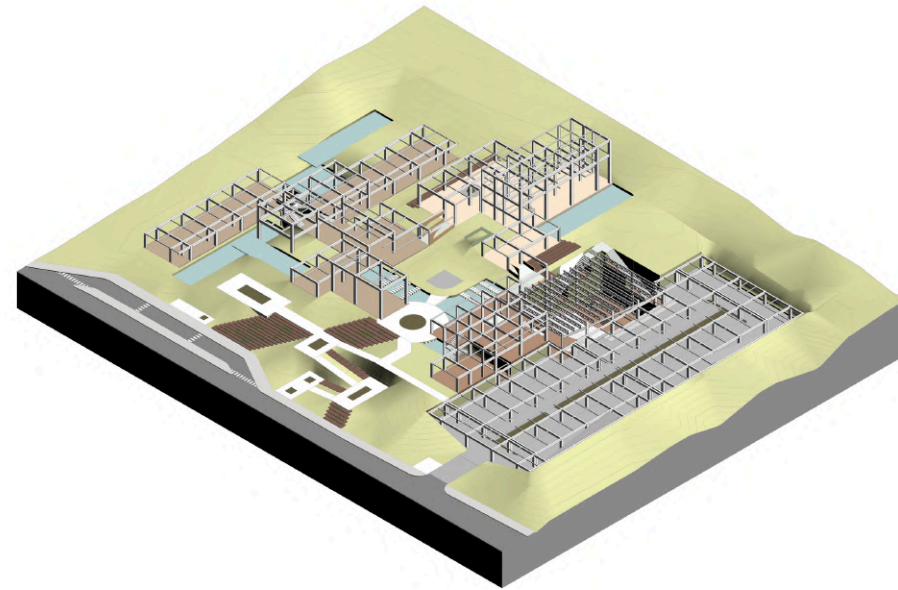
Span Length	8 m (column spacing)
Depth (h)	0.50 m
Flange Width	0.25 m
Web Thickness	10 mm
Flange Thickness	15 mm
Column Bearing Plate	60 × 60 cm × 4 m
Column Anchor Bolts	4 × M24



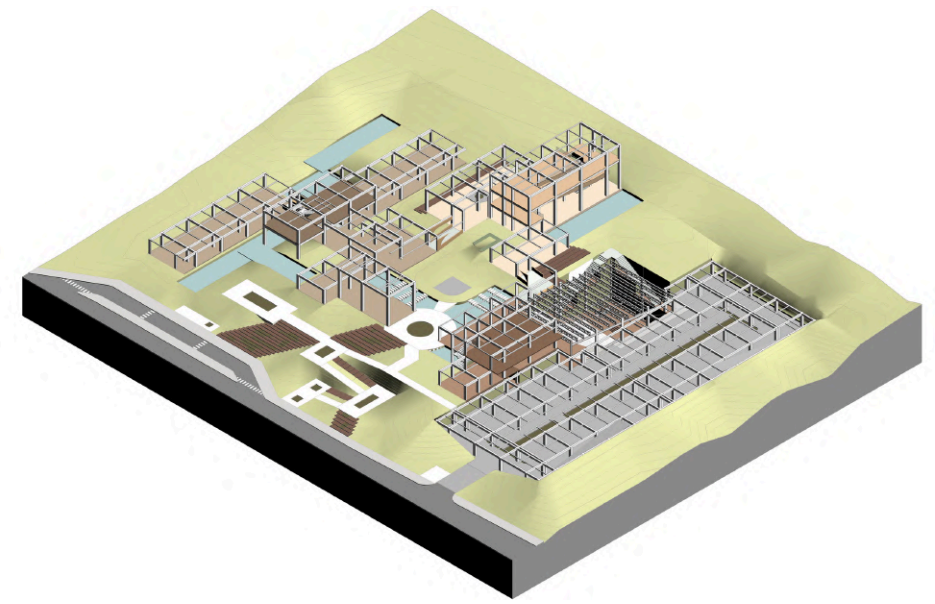
GREEN ROOF SYSTEM



STRUCTURAL
PLATFORMS

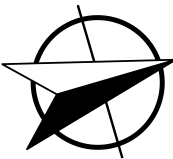
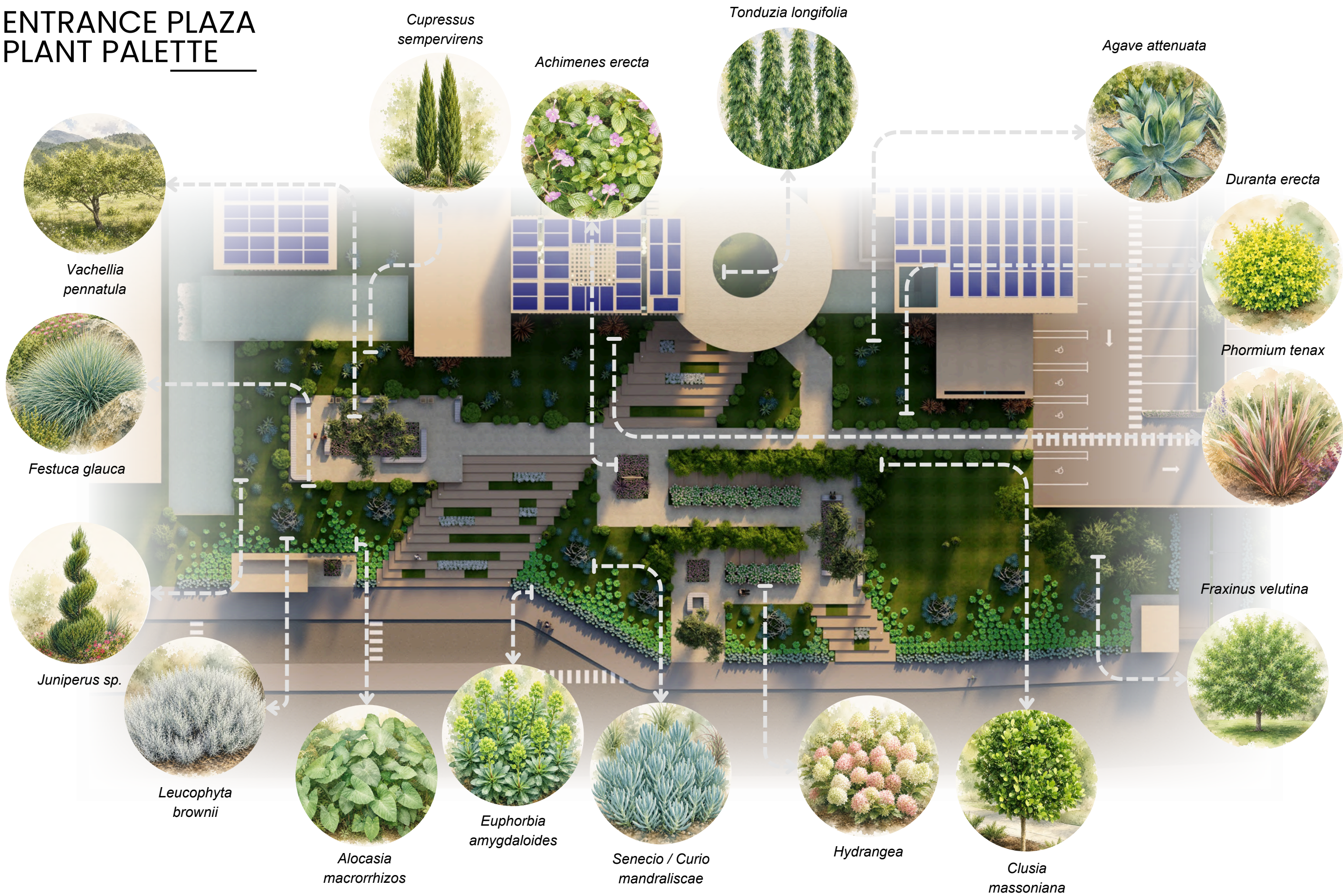


RIGID FRAME
STRUCTURE



STRUCTURE &
FLOOR SYSTEMS

ENTRANCE PLAZA
PLANT PALETTE





LOWER ENTRANCE PLAZA





CENTRAL ENTRANCE PLAZA





UPPER ENTRANCE PLAZA





ENTRANCE PLAZA

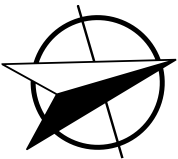
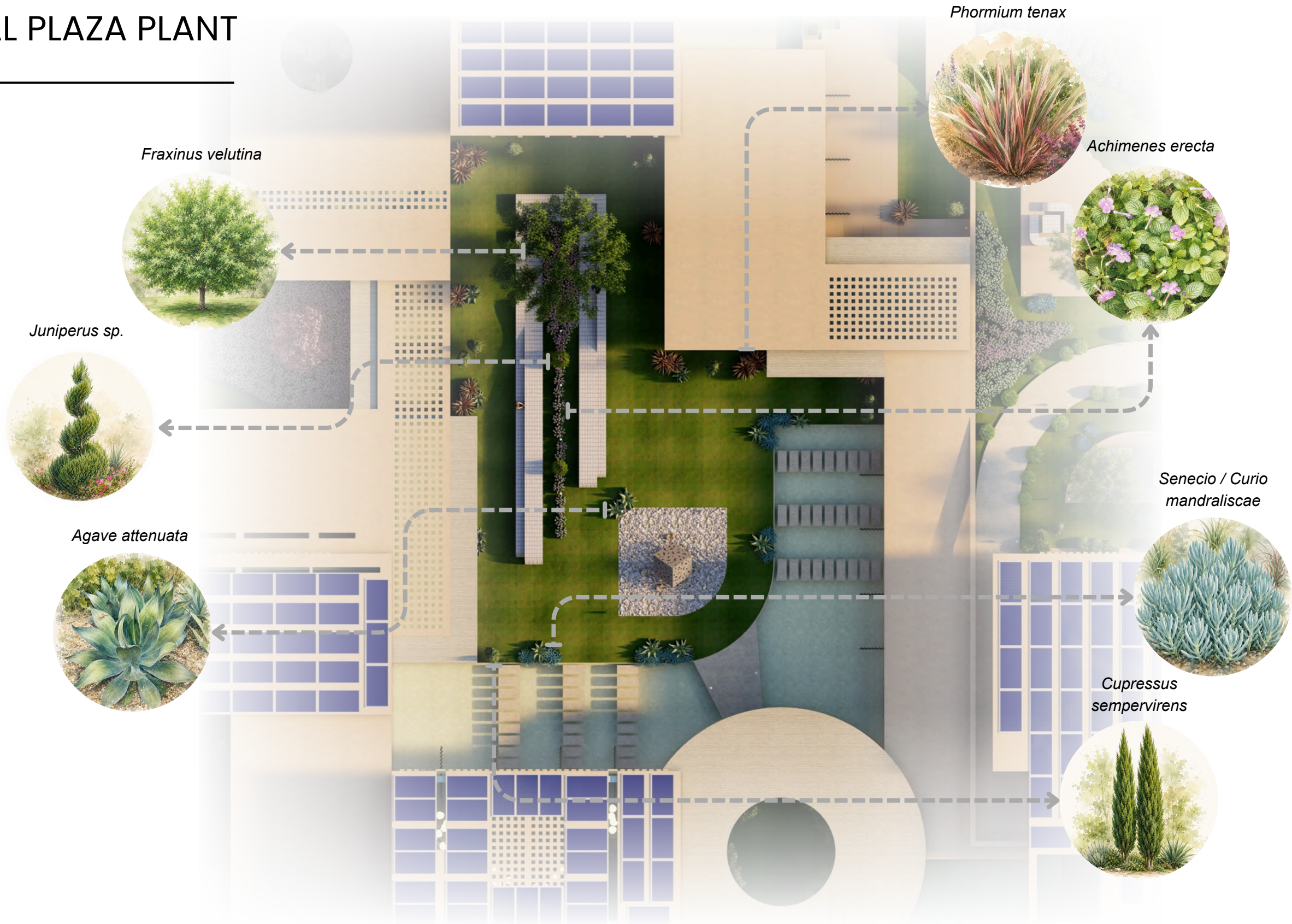




PEDESTRIAN ENTRANCE



CENTRAL PLAZA PLANT PALETTE

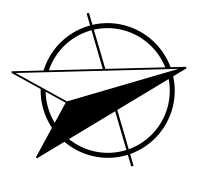
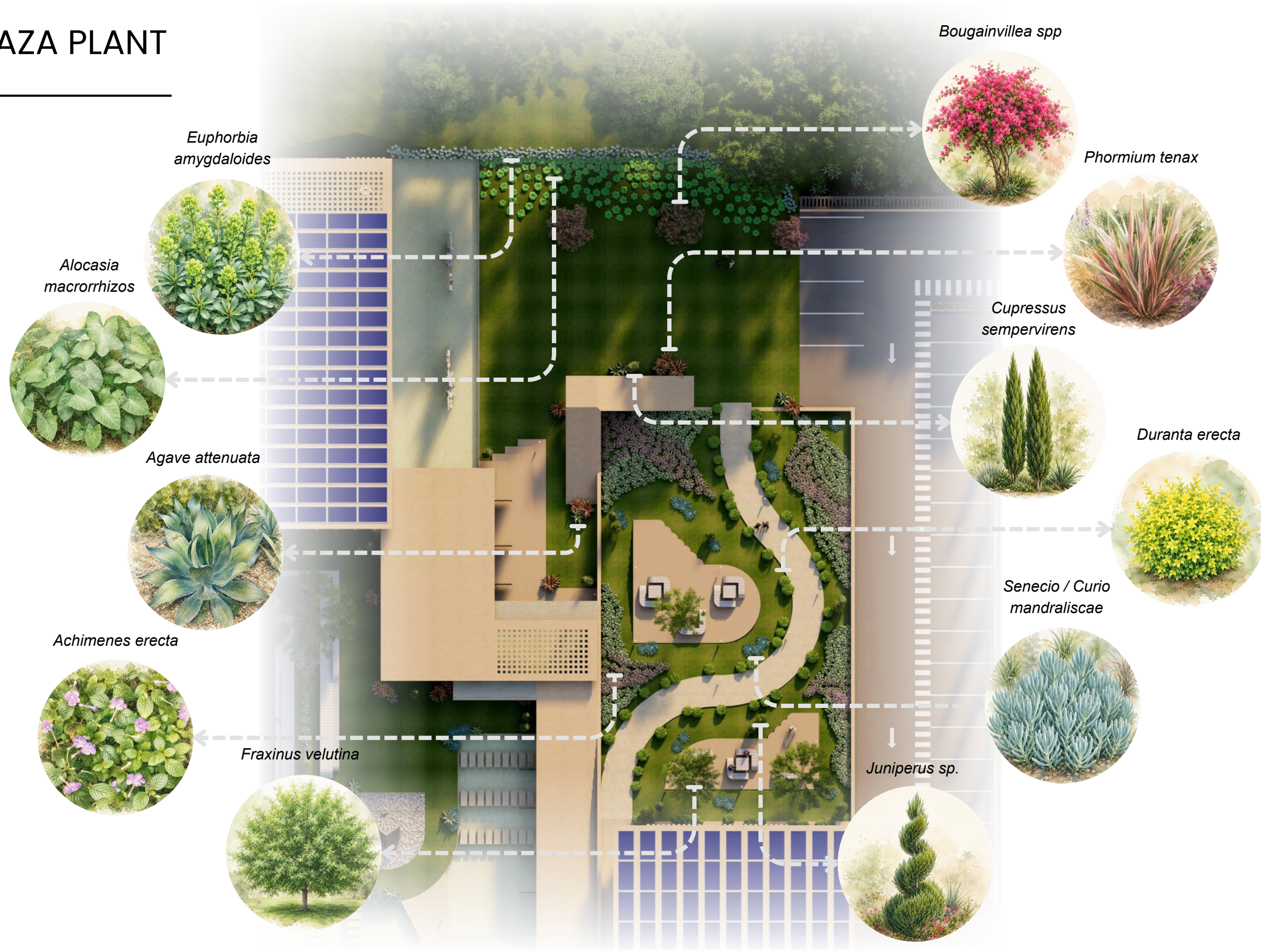




CENTRAL PLAZA



REAR PLAZA PLANT
PALETTE

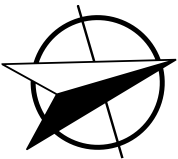
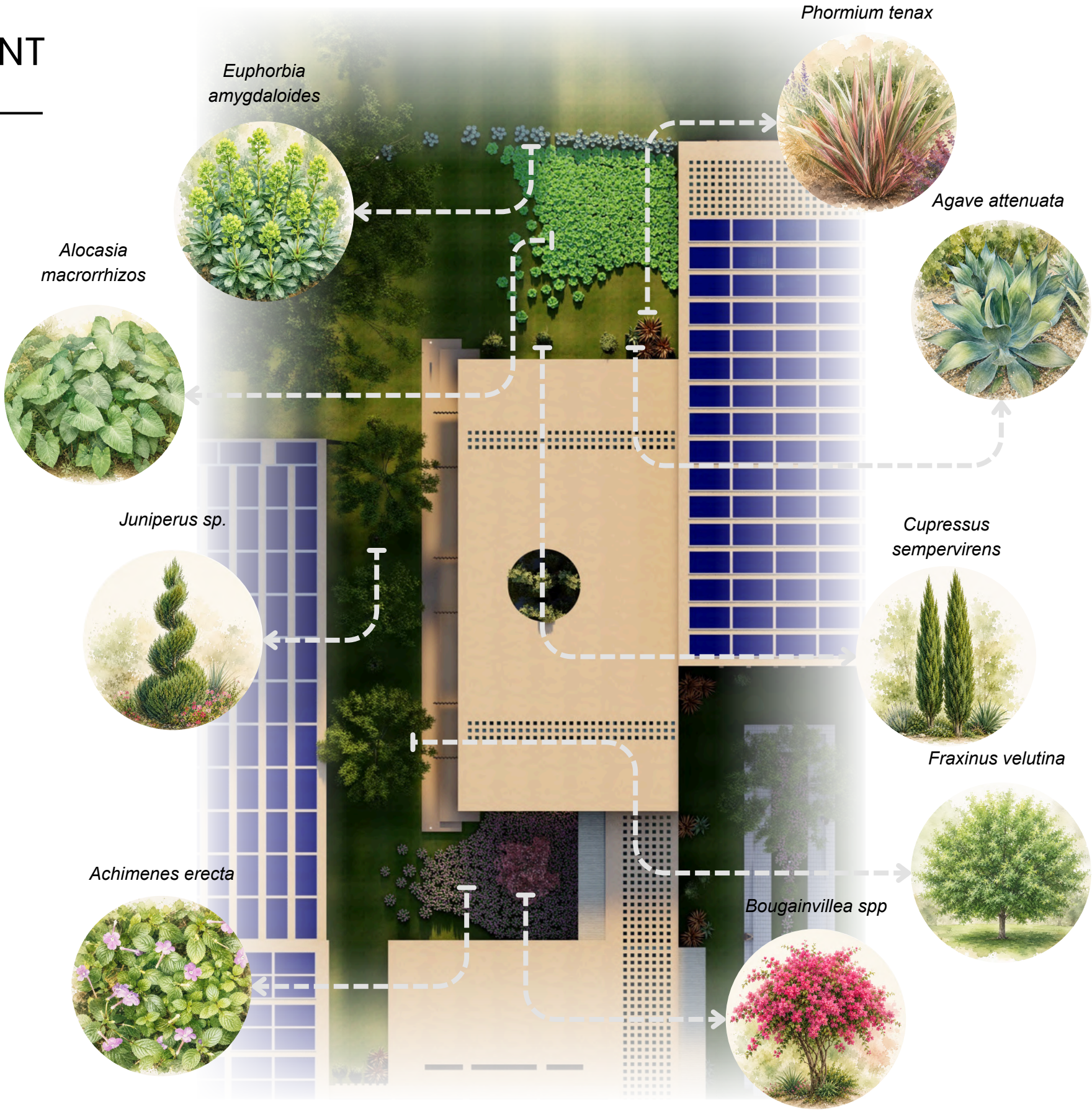




REAR PLAZA



LANDSCAPING PLANT
PALETTE





LANDSCAPING

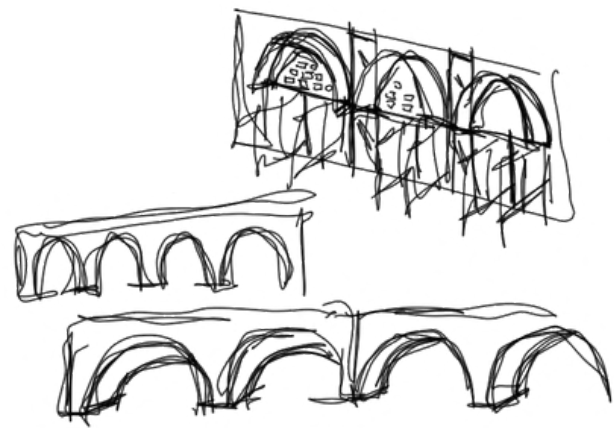


ARCHITECTURAL GESTURES



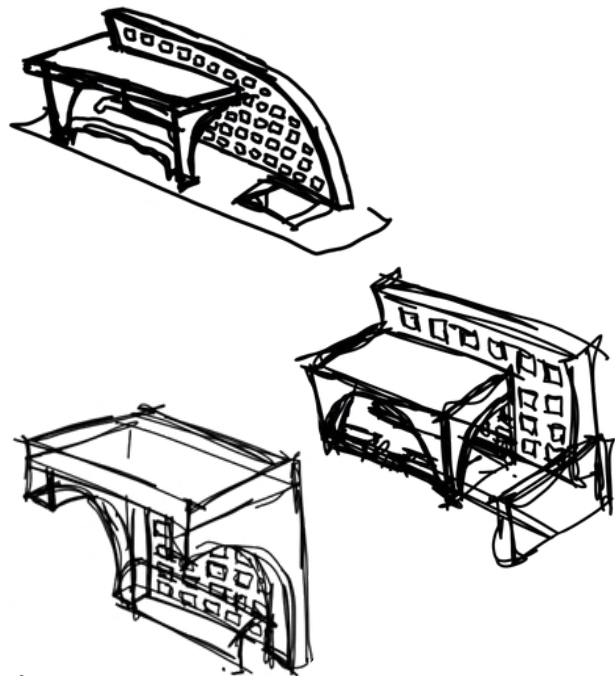
The circular form emerges as an intentional anomaly within the project, disrupting the predominance of rectilinear spaces. This architectural gesture breaks the rigidity of the composition and introduces a focal element that gives the entrance identity and character. Within this interior, the visitor discovers an open, welcoming space that invites contemplation, while the surrounding natural environment gently influences the experience, creating a seamless transition between architecture and landscape.





As an educational project, the classrooms form the core and primary focus of the design. To emphasize their importance within the overall composition, the circular form is once again introduced as a distinctive architectural element. The circulation corridors connecting these spaces incorporate generous open arches facing the surrounding gardens and reflecting pools, allowing views to extend into the landscape and integrating nature into the learning experience. These openings also enhance natural ventilation and daylight penetration, creating visual and environmental comfort while reinforcing an architecture that breathes, embraces natural light, and engages in dialogue with its surroundings.





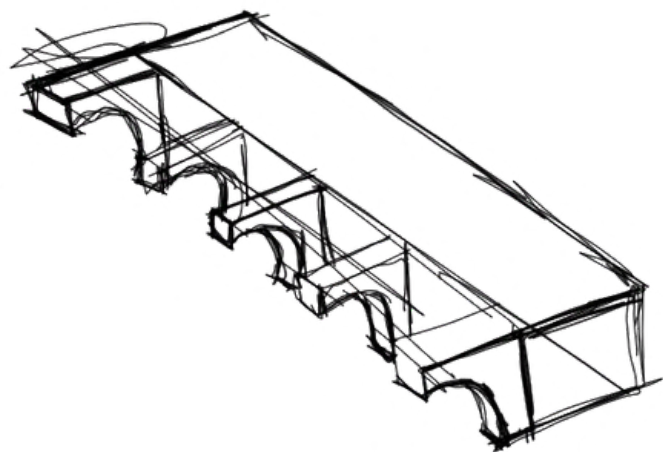
The bus stop is conceived as an integral element of the project, recognizing the importance of public transportation accessibility for its users. Its design follows the overall architectural language of the complex, ensuring formal coherence with the project's composition. At the same time, it is envisioned as a more open structure, allowing natural light to filter through while framing views toward the rear garden. This landscaped space extends seamlessly into the rest of the complex, blurring the boundary between infrastructure and landscape.





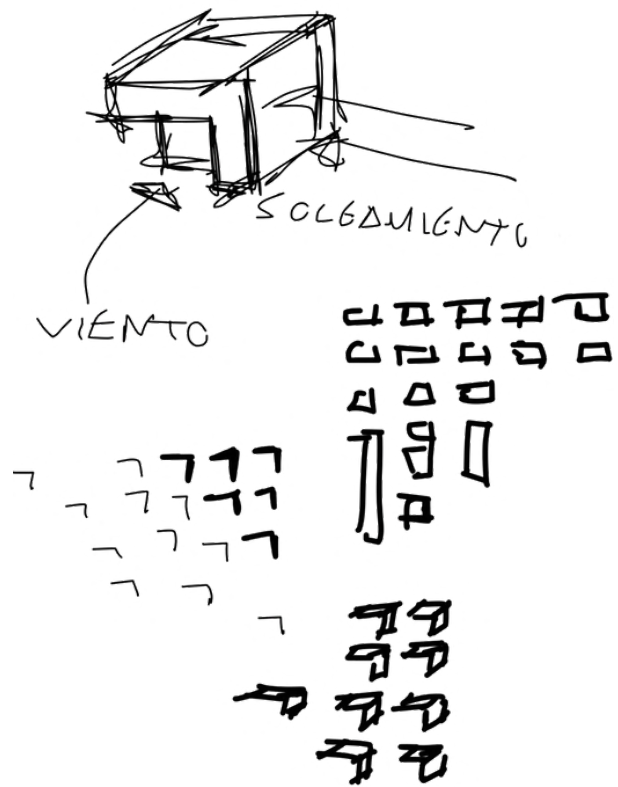
Several elements of the composition are defined through geometric forms that frame gardens and interior voids, perceptible only from specific points along the circulation path. These openings subtly reveal enclosed spaces that may not be immediately accessible, yet remain visually and acoustically connected. In this way, the architecture creates a sequential spatial experience, where users gradually discover fragments of the landscape and the project's outdoor life, almost like hidden moments, as they move through the complex.



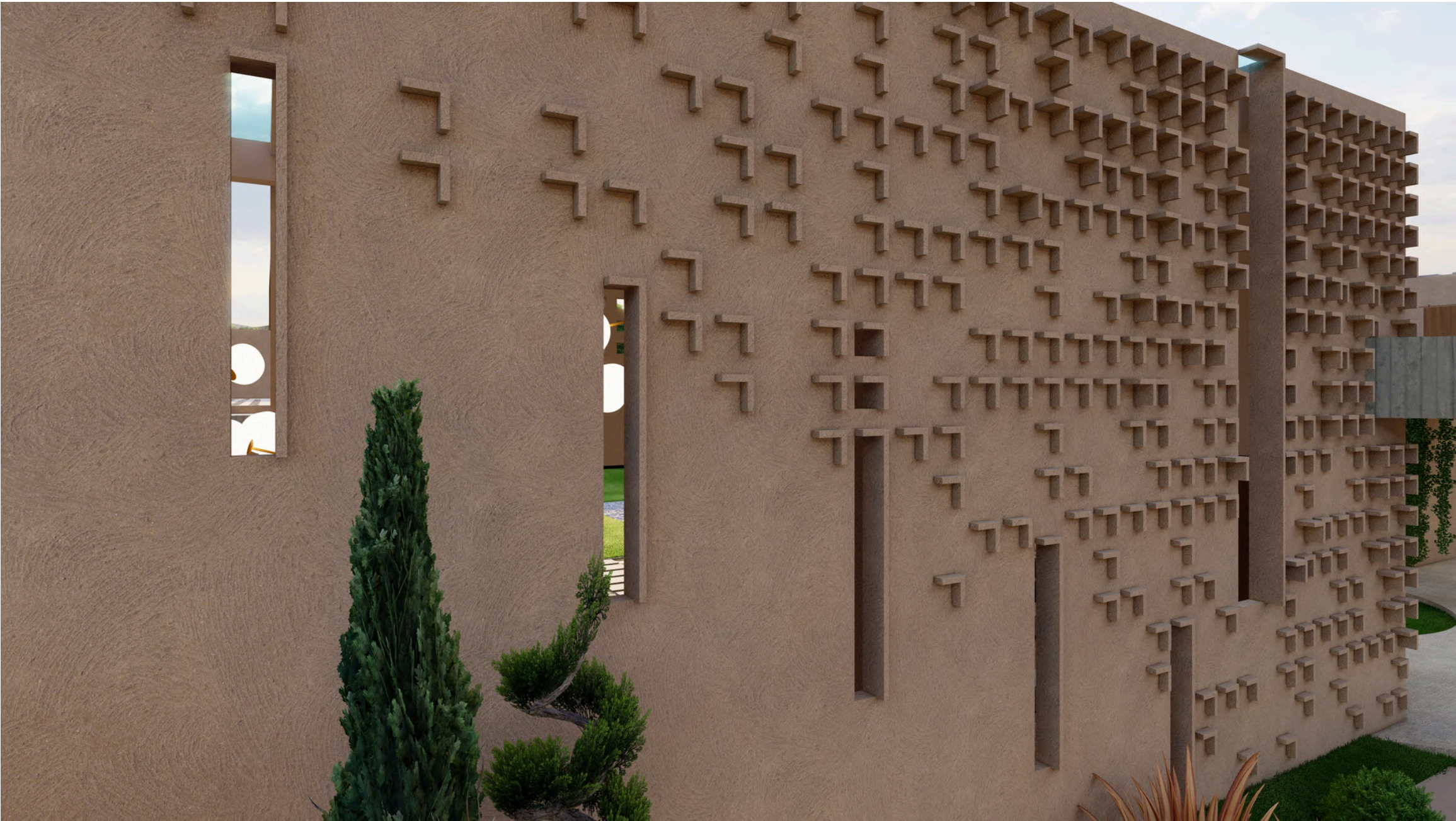


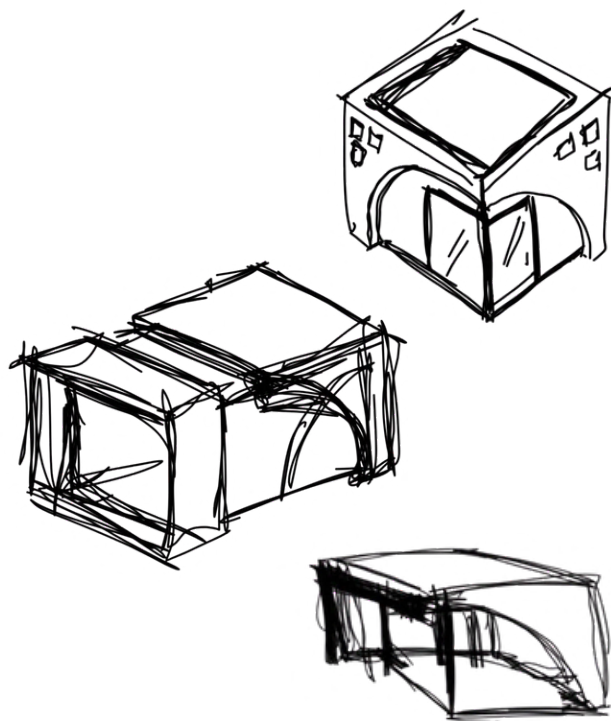
Semi-arched cantilevered overhangs are incorporated into the north- and south-facing façades, keeping them open while establishing a direct connection with the outdoor environment. These elements serve not only a compositional purpose but also respond to climatic design criteria by providing strategic protection against solar exposure from the southwest. In this way, the design achieves a balance between openness and environmental control within the project's overall architectural language.





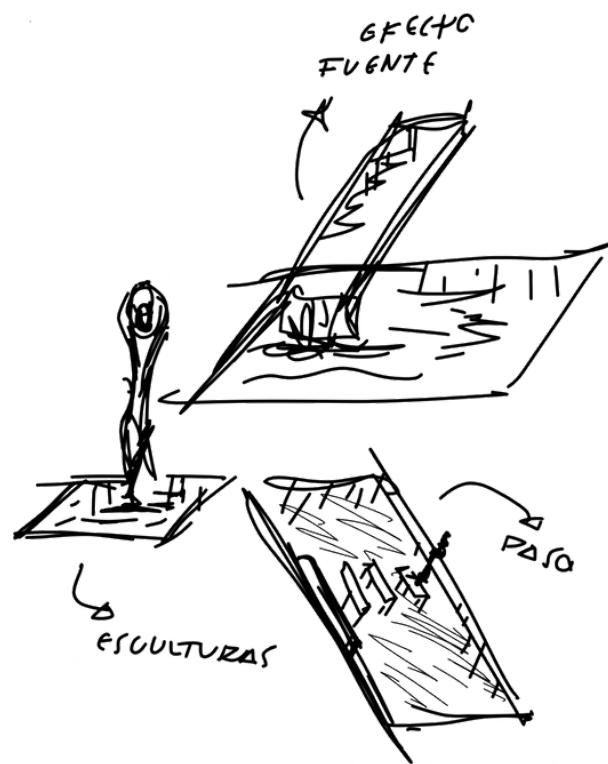
On the north and south façades, a system of small cantilevered overhangs is incorporated at the corners of the openings exposed to direct solar radiation. These elements function as passive protection, preventing the direct penetration of sunlight without obstructing cross ventilation or the entry of indirect daylight. Likewise, by using a single material across most of the façades—which are predominantly enclosed due to their orientation and feature controlled openings—the overhangs also fulfill a compositional function, adding relief and texture to the overall composition. In this way, in addition to improving the building's climatic performance, they contribute to giving the proposal a distinctive character by creating depth and variations of shadow across a continuous surface.





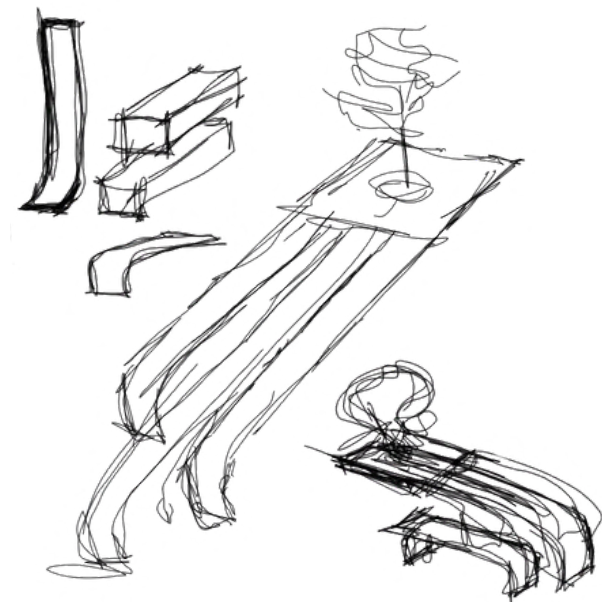
The design of the security gatehouse opens through large windows oriented toward the vehicular entrance, allowing efficient visual control over the access and exit of the complex. The module is conceived under the same formal principles as the overall project, respecting its materiality and general architectural language. In this case, the openings are reduced in proportion, as it is a private and secure area; however, they are strategically arranged to allow the entry of natural light and the circulation of air, ensuring adequate indoor comfort conditions.





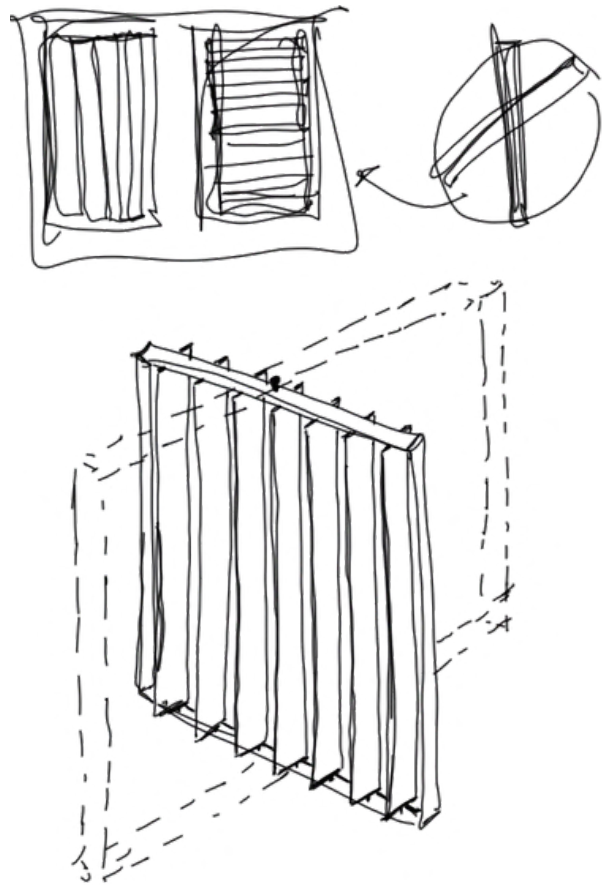
Based on the principles of neuroarchitecture and with the purpose of integrating natural elements into the circulation experience, reflecting pools are incorporated throughout the project, allowing users to interact with them on a sensory level. Classrooms and reading areas, such as the library, are arranged around these elements, recognizing that the sound and presence of water contribute to acoustic comfort and stress reduction. On a physical level, the water interacts with the architecture through fountains and sculptural elements that emerge from the reflecting pools themselves, creating both an auditory and visual experience that accompanies the transition between the interior and exterior spaces.





At the center of the composition, within the main plaza, a single piece of outdoor furniture is conceived as the organizing element of the space. It is designed as a versatile feature that adapts to the stepped topography, integrating naturally with the terrain. At its highest level, it functions as a seating system, complemented by a central tree that provides shade and character to the space. As the element extends, it gradually transforms into a continuous table, becoming a single integrated piece that, in addition to fulfilling its functional purpose, seeks to promote social interaction, bringing users together and fostering educational and community relationships.





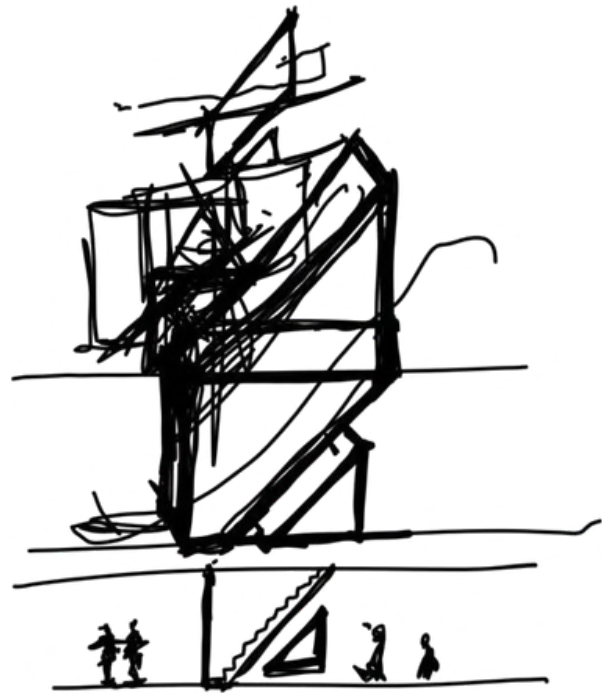
The southeast-facing façades receive a special treatment through the design of pivoting doors that rotate on their own axis. These consist of vertical panels that can rotate independently, allowing precise control over the amount of solar radiation entering the interior. In this way, users can adjust the openings according to the desired level of light and shade, ensuring thermal and visual comfort while maintaining a direct connection with the exterior.





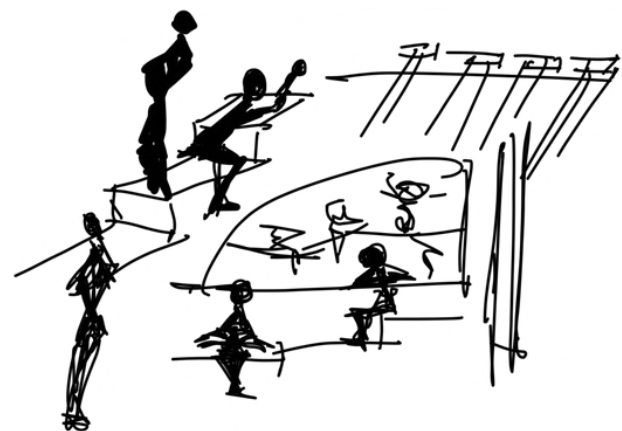
The furniture is designed in harmony with the architectural composition, with straight lines predominating in both its form and materiality. These are combined with curved elements that respond to the landscape and soften the overall geometry, creating continuity between the architecture and its surroundings. Likewise, trees are integrated into benches and planters, reinforcing the presence of vegetation within the built environment and fostering a direct relationship between users and nature.





The auditorium stairs are conceived as a distinctive element within the overall architectural composition. Defined by straight lines and a clear geometry, they contrast with the undulating roof of the space, creating a dialogue between rigidity and fluidity. The element acquires an almost sculptural character through a central subtraction that lightens its volume and creates a sense of suspension, adding dynamism and visual lightness to the interior composition.





Throughout the circulation areas, including corridors and lobbies, in-situ molded benches are integrated into the design, adapting to the geometry of the space and complementing the architectural sequence. These elements provide opportunities for short breaks, moments of contemplation toward the exterior, or simple waiting areas, making strategic use of the spaces between columns while reinforcing the material continuity of the overall composition.





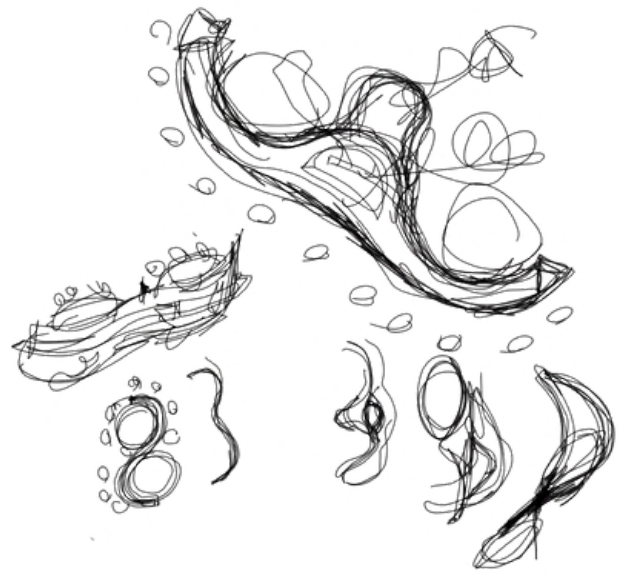
The auditorium roof is designed using curved timber panels that respond to both functional and sensory criteria. Their geometry enhances the acoustic performance of the space, contributing to sound control and distribution, while their enveloping form creates a sense of fluidity and continuity. The predominant use of timber adds material warmth and creates a welcoming atmosphere, ensuring that a large-scale space retains a sense of familiarity and intimacy.





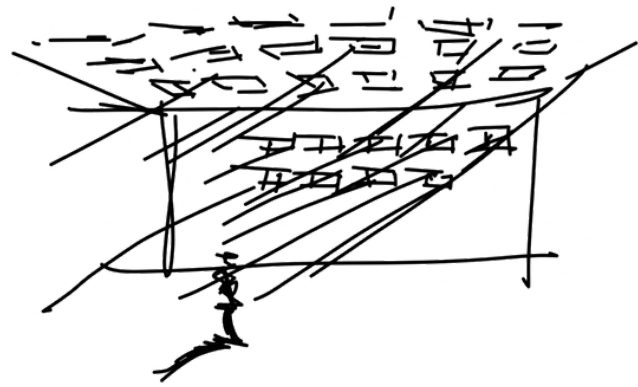
Throughout the project, volumetric subtractions are introduced and oriented directly toward the sky with the intention of integrating the landscape into the architecture. In some cases, these voids allow vegetation to grow upward from the lower level; in others, they provide space for climbing or hanging plants that soften the built boundaries. Likewise, certain openings allow natural light to enter either directly or in a filtered manner, creating patterns of light and shadow that accompany the architectural sequence. These spaces become small areas of pause, inviting users to observe the details and experience the relationship between void, light, and nature.





The interior furniture is designed according to the functional requirements of each space and its versatility of use, allowing for different geometric configurations that integrate materials and functions. The elements can be adapted to both individual work and group interaction, responding flexibly to the needs of their users. In this setting, organic forms predominate, incorporating vegetation as an integral part of the design so that the natural and the built environments engage in a subtle dialogue, providing continuity throughout the space.





The interconnecting corridors between the different buildings are conceived as transitional spaces that seek to establish a direct relationship with the exterior. Openings are incorporated into the roof to allow natural light to enter without affecting the functionality of the circulation, recognizing that these are not spaces intended for prolonged occupancy. Along the sides, the architectural elements open partially or completely, framing gardens, reflecting pools, and other landscape features that are gradually revealed throughout the journey. In this way, circulation becomes an experience that connects users with the surrounding environment as they move between the different building volumes.





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"The architect transcends time and space through architecture, which becomes a kind of tangible miracle."

—María Bonilla