

# PORTFOLIO

Faezeh Nikmandan

Junior architect | MSc in Architecture for Sustainability



Hello! I am Faezeh Nikmandan, a passionate architect with a Master's degree in Architecture for Sustainability from Politecnico di Torino. My journey in architecture is driven by a commitment to creating innovative and sustainable solutions that enhance both our built and natural environments.

In my thesis, I focused on integrating digital technologies, such as Dynamo in Revit for LEED compliance, which reflects my dedication to sustainability and advanced design methodologies. I have gained diverse professional experience, from working as a Junior Architect at *Gas Architettura* in Turin to designing interiors at *Scale Carpentry* in Tabriz.

My skills span various architectural software and rendering tools, demonstrating my versatility and technical proficiency.

This portfolio presents a curated selection of my work, showcasing my ability to blend creativity with technical expertise. Thank you for your time, and I hope you find inspiration in my projects.

## Faezeh Nikmandan

Born 31/03/1997, Tabriz, Iran

Based in Turin, Italy

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faezeh-nikmandan

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### Education

**Politecnico di Torino**, Italy

- Master of Sciences in Architecture for sustainability 2021-2024

**Seraj University**, Tabriz, Iran

- Bachelor in Architecture Engineering 2015-2019

### Work

#### Experience

**Gas architettura** : Turin, Italy , On-site ,Part-time

- Junior Architect : Aug 2023 - Mar 2024

Curriculum Internship : Jun 2023 - Aug 2023

**Xforex** : Tabriz, Iran , On-site, Full-time

- Motion Graphic Designer : Jan 2020 - Sep 2021

**Scale Carpentry** : Tabriz, Iran , Hybrid , Full-time

- Interior Designer : 2020 - 2021

**Baharan Institution**: Tabriz, Iran ,On-site ,Part-time

- English Teacher : Apr 2017 - Sep 2017

### Skills

#### Language

- English : Advanced
- Italian : Elementary
- Persian :Native
- Turkish: Advanced
- Azerbaijani : Native

#### Software Proficiency

- Revit : 8/10
- Dynamo: 8/10
- Rhino : 5/10
- Grasshopper: 6/10
- 3D Max : 8/10
- Edificius : 5/10
- AutoCad : 9/10
- QGis : 7/10
- Camtasia : 9/10
- Rendering

Lumion : 5/10  
V-Ray : 7/10  
Enscape : 8/10

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# Ras Al Hadd Improvement Project

Year :2023-2024

Type : Professional Project

Location : South Al Sharqiyah Governorate, Oman

Website : [www.gasarchitettura.com](http://www.gasarchitettura.com)

This project aimed to enhance tourism facilities in Ras Al Hadd to boost both domestic and international tourism through sustainable development. It focused on preserving the natural environment, including turtle nesting beaches, lagoon, and wetlands, while integrating cultural and historical assets like the fort, tower, and old runway. The project also sought to create opportunities for public and private investments and support local businesses through innovative improvements. By emphasizing ecological and cultural preservation, the project aimed to increase visitor numbers and create lasting positive impacts for the local community and the region's tourism sector.



As an architectural assistant at Gas Architettura Studio, I collaborated with the team on both the conceptual and detailed design stages, focusing on sustainable tourism infrastructure. Together, we conducted extensive research on the area's natural and cultural heritage, which informed our design decisions to balance development and conservation. Visual representations and presentations were created by me along with the team to effectively communicate design ideas to clients and stakeholders, making it easier for them to understand and approve the project plans. Additionally, detailed architectural drawings and documentation were prepared to ensure the project's execution and compliance with local regulations.



# Club Med Sansicario Alto and Borgo

Year :2023-2024

Type : Professional Project

Location : Sansicario Torinese, Italy

Website: [www.sunsicario.com](http://www.sunsicario.com) , [www.gasarchitettura.com](http://www.gasarchitettura.com)

The project for the new Village Ski Hotel Resort CLUB MED in Sansicario is located in the municipality of Cesana Torinese, in the San Sicario Alto area, within the Via Lattea ski area. It includes a new hotel structure with 1,000 beds, a wellness center, a spa, swimming pools, and restaurants serving local specialties.



As an architectural assistant at Gas Architettura Studio, my responsibilities included:

- Creating 2D drawings, such as executive detailed plans, elevations and sections, using AutoCAD.
- Developing a detailed 3D model in Revit, including elevations, plans, and sections, as well as producing interior and exterior renders using Enscape.
- Producing isometric plans and incorporating proposed materials using Photoshop.



# BIM and LEED Integration for Water Conservation

Year : 2024

Type : Master Thesis

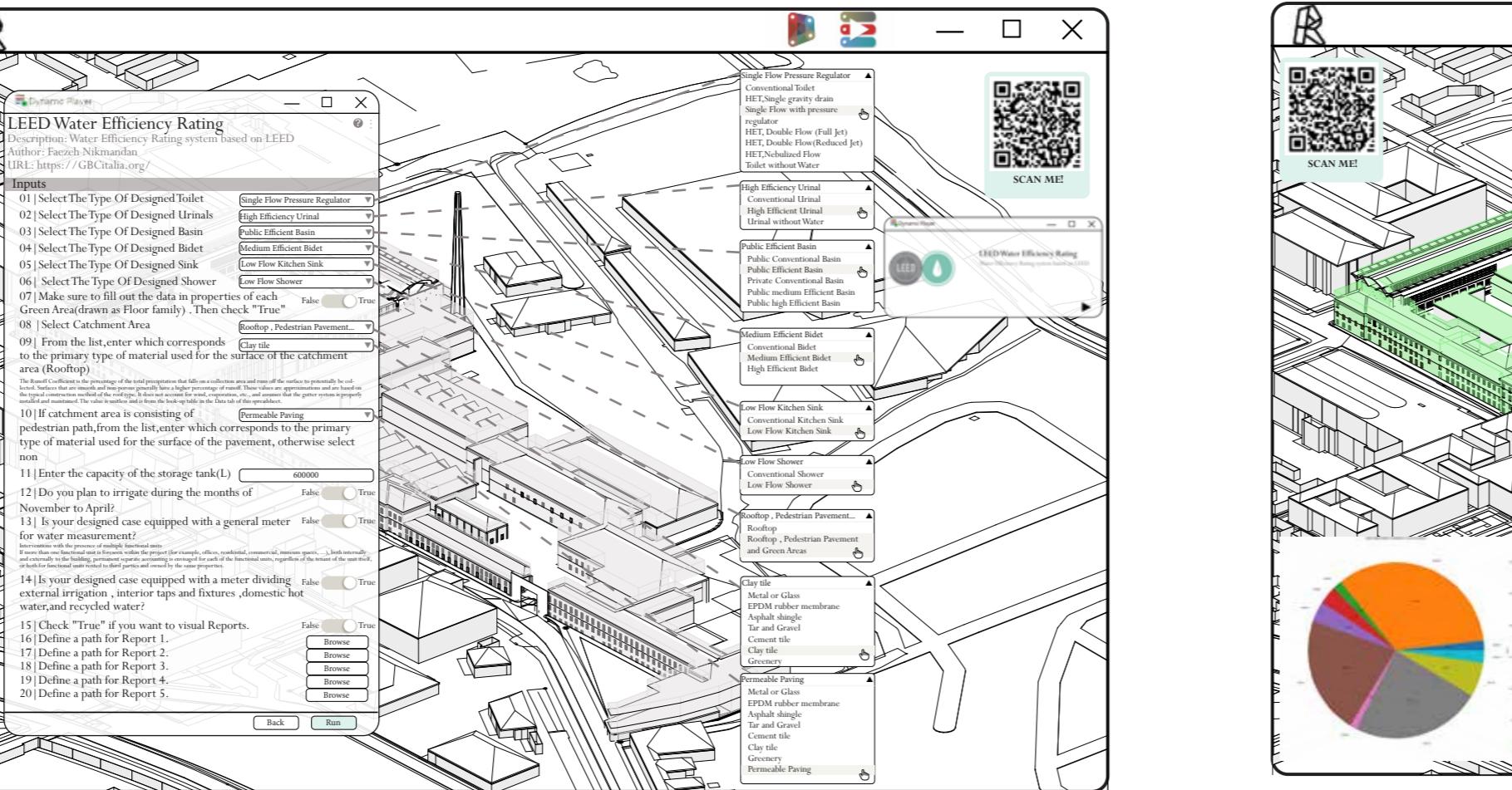
Location : Turin ,Italy

Link : [Thesis](#)

Professors :  
Anna Osello  
Matteo Del Giudice

The thesis examines the green building concept with a focus on water conservation, utilizing Building Information Modeling (BIM) to analyze this concept within the framework of sustainability by following the LEED certification system. The methodology, created in Dynamo, using python in some codes, for BIM modeling software, aims to simplify assessment parameters and calculations, assisting users in selecting appropriate strategies and parameters to acquire credits. This methodology was successfully implemented for Manifattura Tabacchi, facilitating the integration of potable water conservation within the LEED framework during the early stages of design.

A conceptual model of a case study building was developed to be analyzed using various indoor water-consuming fixtures and outdoor landscaping choices.

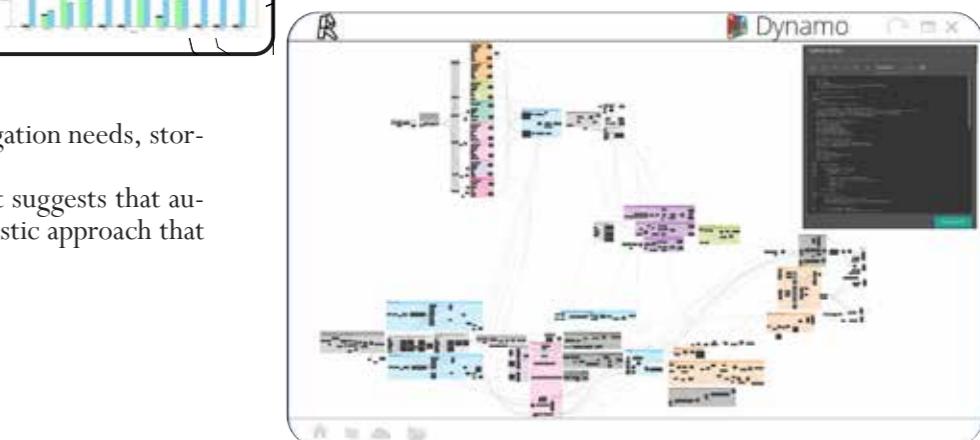


The study calculated and analyzed both indoor and outdoor potable water usage, demonstrating that strategic design decisions can significantly conserve water. For validation, a comparative study was conducted across three scenarios, providing informative charts, monthly water consumption statistics, and reduction percentages. These scenarios confirmed the methodology's effectiveness using a low Level of Detail (LOD) model requirement, requiring minimal effort and easily obtainable inputs. It provides invaluable guidance to architects, landscape designers, owners, and other stakeholders, enabling them to make informed decisions during the preliminary and design phases of water-efficient projects and to determine the LEED score. A key aspect of the study is its emphasis on balancing water efficiency strategies with the fulfillment of LEED prerequisites.



It provides five informative charts and texts addressing critical questions about water usage, irrigation needs, storage adequacy, and LEED credit scores.

Although this study focuses solely on the prerequisites and credits related to water efficiency, it suggests that automating the remaining LEED categories is viable. Achieving LEED certification requires a holistic approach that balances the water efficiency category with other LEED categories.



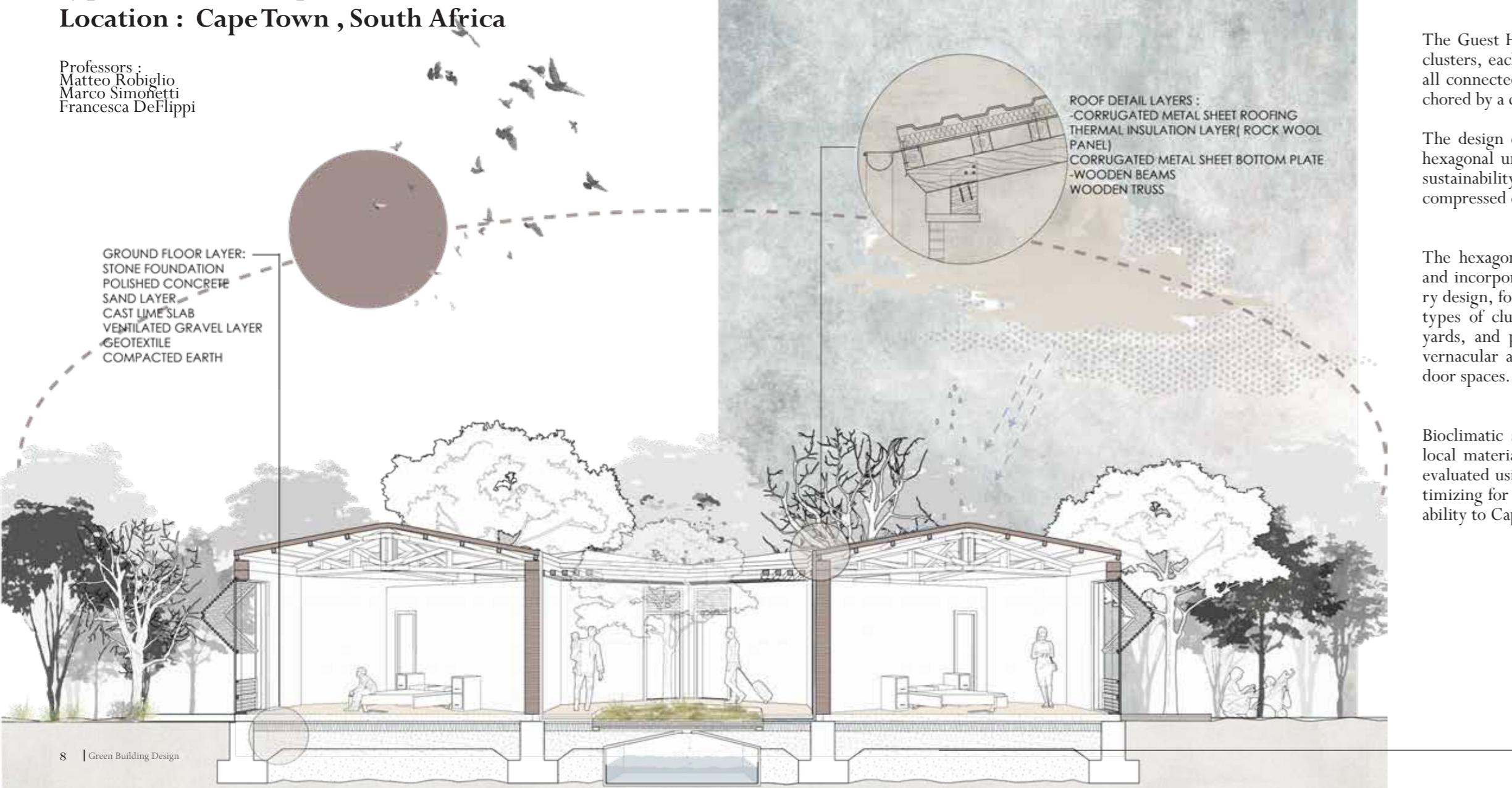
# Green Building Design

Year : 2022

Type : Master Group Project

Location : Cape Town , South Africa

Professors :  
Matteo Robiglio  
Marco Simonetti  
Francesca DeFlippi

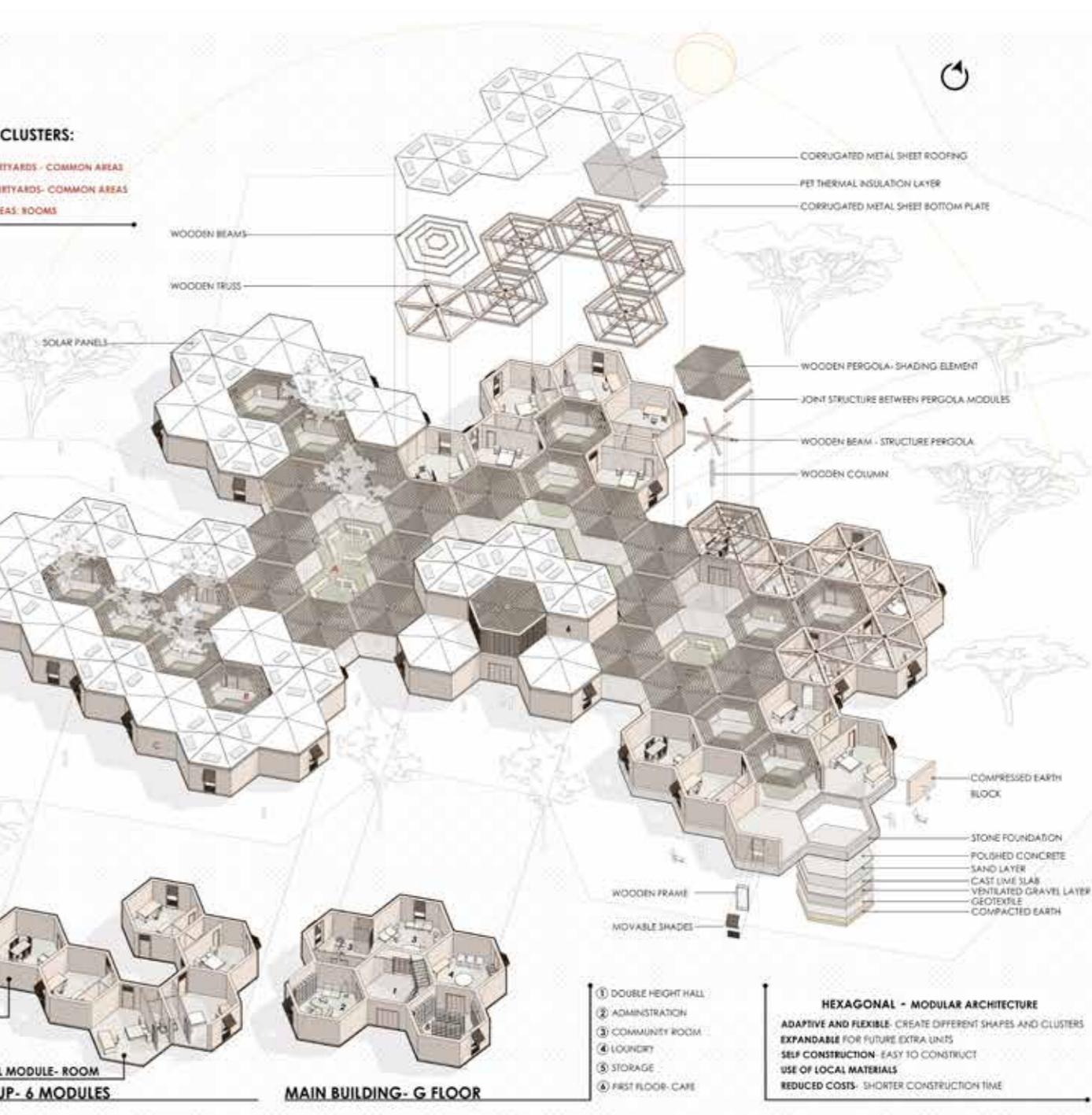


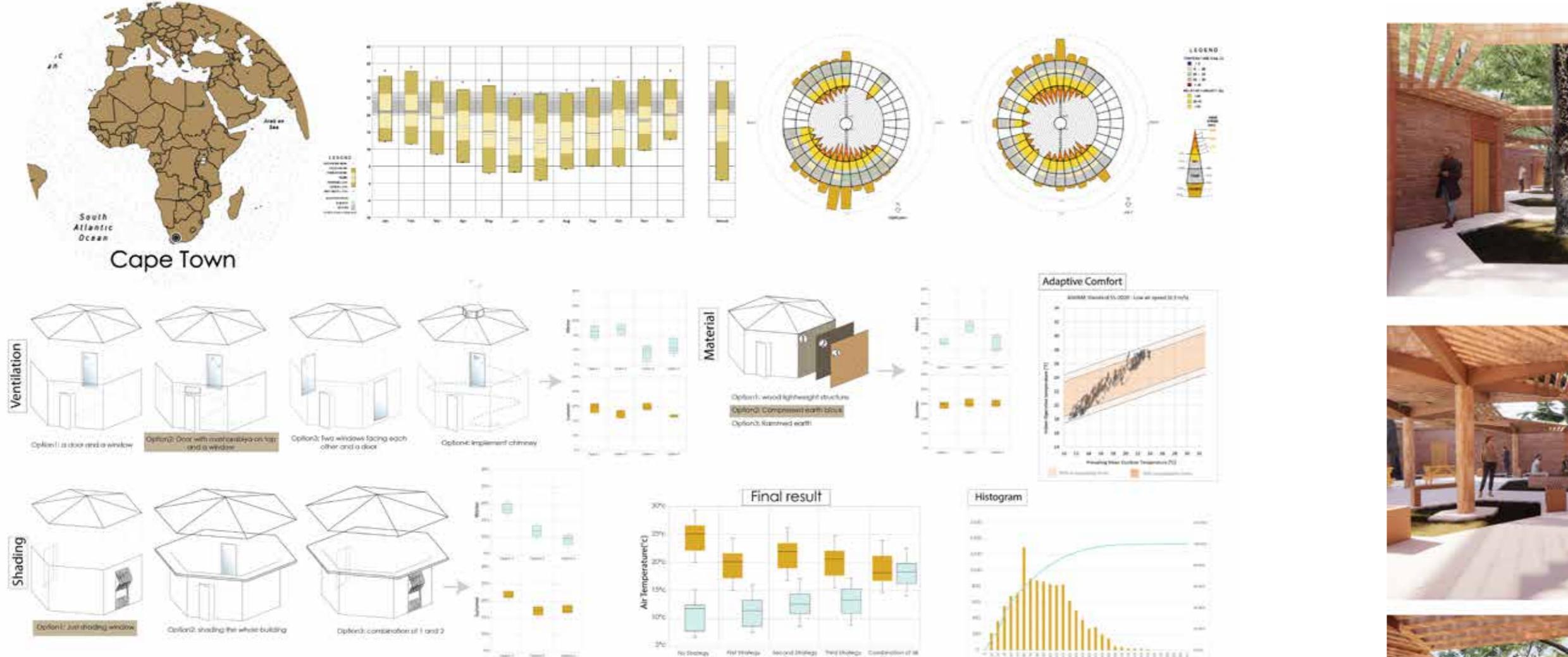
The Guest House project consists of six hexagonal clusters, each containing five rooms and a kitchen, all connected by a shaded wooden pergola and anchored by a central communal building.

The design emphasizes modular architecture with hexagonal units for flexibility, cost efficiency, and sustainability, using locally sourced materials like compressed earth blocks.

The hexagonal design supports future expansions and incorporates self-construction and participatory design, fostering community involvement. Three types of clusters—main courtyards, small courtyards, and private room groups—reflect African vernacular architecture's focus on communal outdoor spaces.

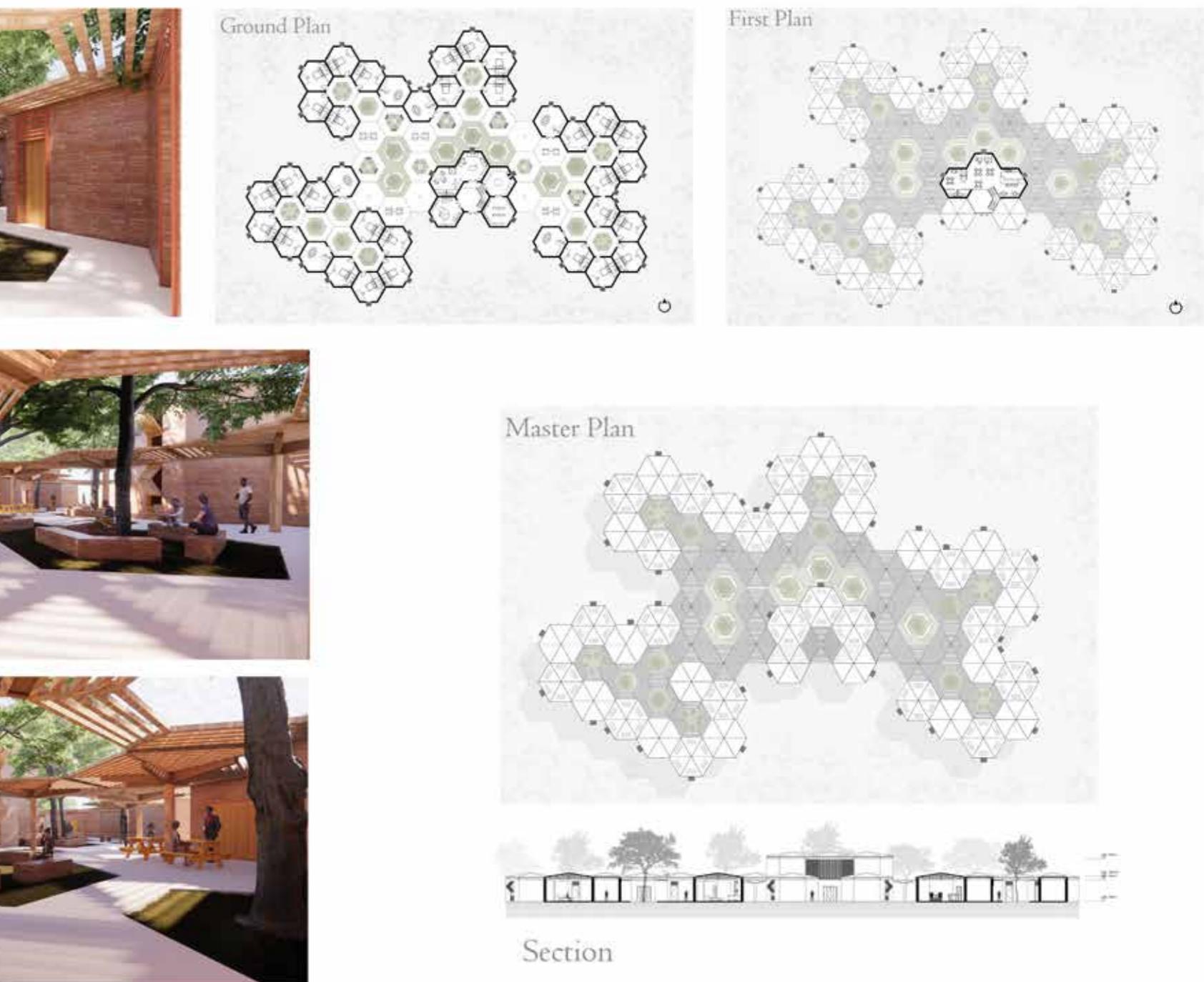
Bioclimatic strategies, including cross ventilation, local materials, central patios, and pergolas, were evaluated using the "Design Builder" program, optimizing for ventilation, shading, and material suitability to Cape Town's climate.





For the design of the project, various bioclimatic strategies were taken into account, such as cross ventilation, the use of local materials, the implementation of central patios and the implementation of pergolas to create shaded common spaces. To evaluate the effectiveness of these strategies and choose the best design option, an analysis was made in the "Design Builder" program where the hexagonal module was taken as a reference. Three main factors were considered; ventilation, shading and material, all this considering the climatic characteristics of Cape Town.

The final results were; for ventilation; option 1: a door with mashrabiya on top and a window (that allows cross ventilation) for shading: option I: shading the window with parasols, and for material: compressed earth block. The benefits of each strategy are shown . As the graph of adaptive comfort represents the indoor and outdoor temperature are in balance. Furthermore, the Histogram shows that %100 of all the values of ventilation are above 601/s per person and %60 of the values for ventilation is 1201/s per two person.



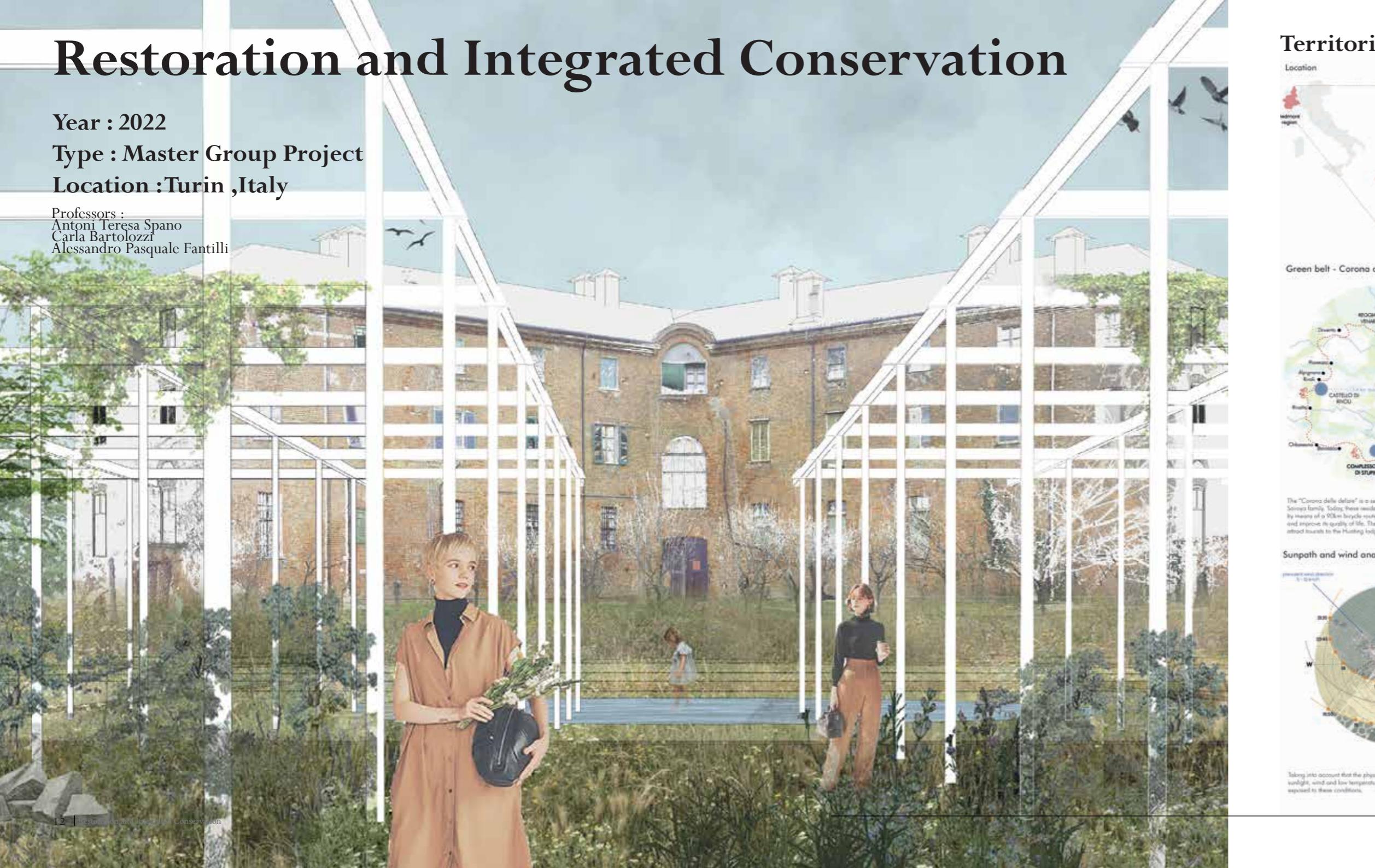
# Restoration and Integrated Conservation

Year : 2022

Type : Master Group Project

Location : Turin ,Italy

Professors :  
Antoni Teresa Spano  
Carla Bartolozzi  
Alessandro Pasquale Fantilli



## Territorial Framework

Location

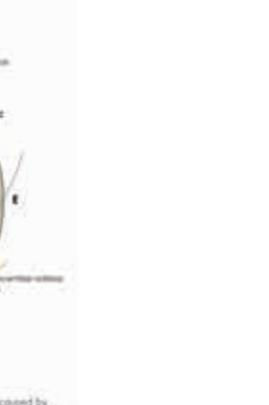


Green belt - Corona delle Delizie



The "Corona delle delizie" is a set of royal residences first historically belonging to the Sforza family. Today, these residences are connected with the city's green structure through a network of 90 km bicycle routes, which aims to rebuild the Turin metropolitan area and improve its quality of life. The "Green belt" made becomes a strategic project to attract tourists to the Hunting Lodge.

Sunpath and wind analysis



Taking into account that the physical degradation of materials can be caused by sunlight, wind and low temperatures, this diagram shows that the facades are more exposed to these conditions.

Mobility



Land use



Green spaces

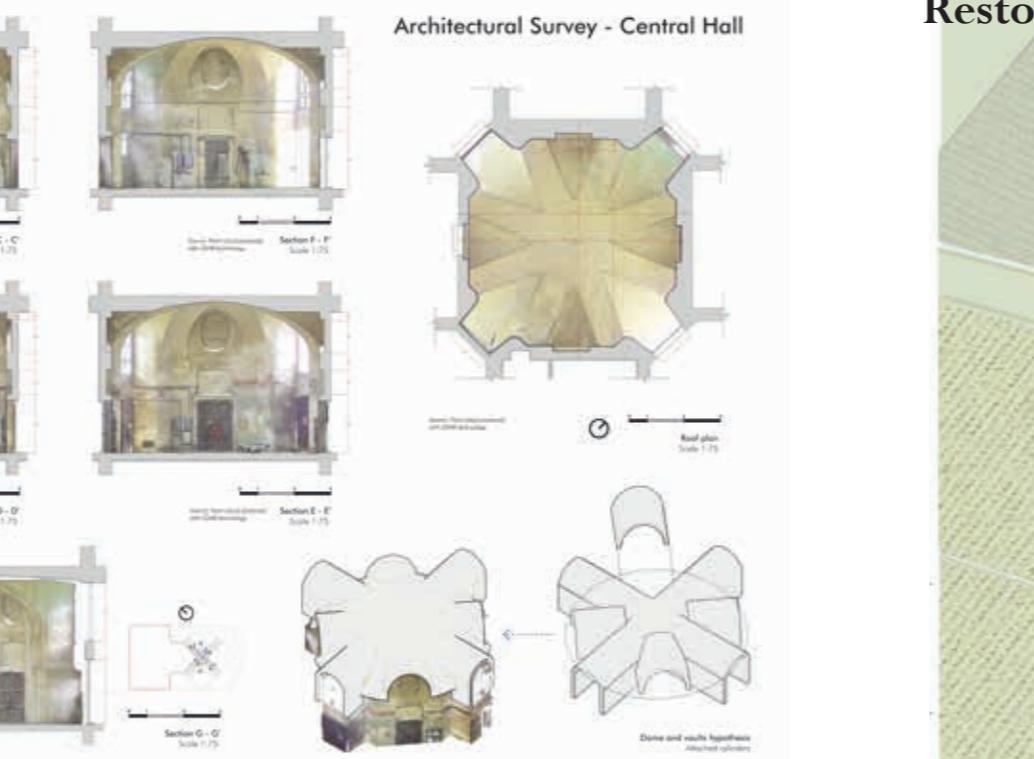


Hunting Lodge of Stupinigi

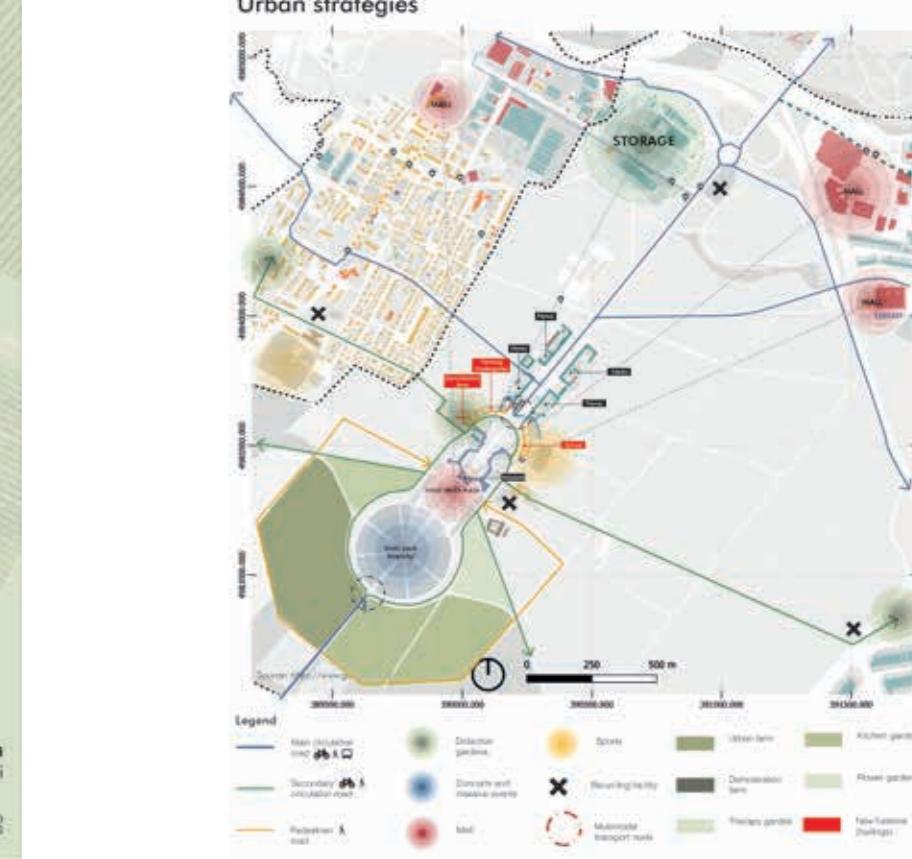
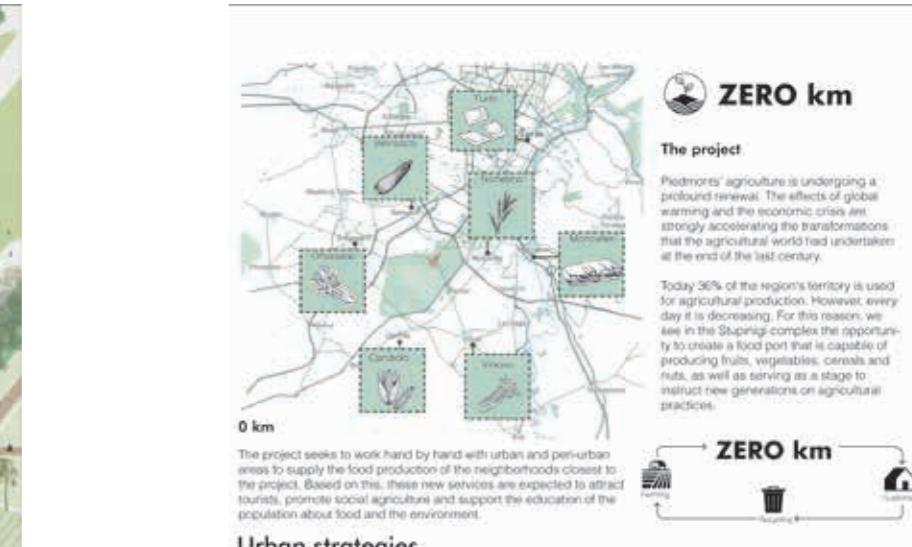


## Architectural Survey

### Architectural Survey Facades



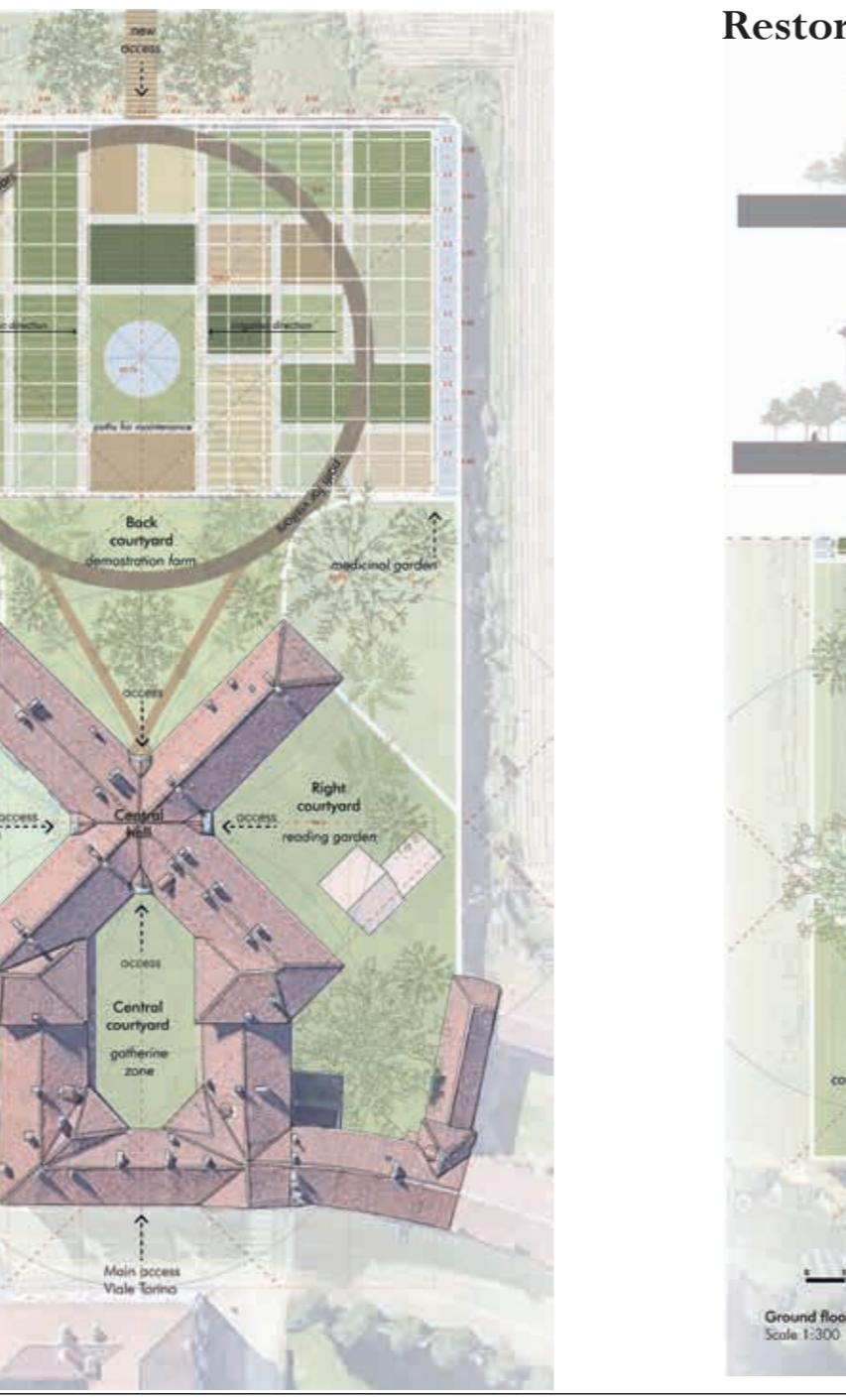
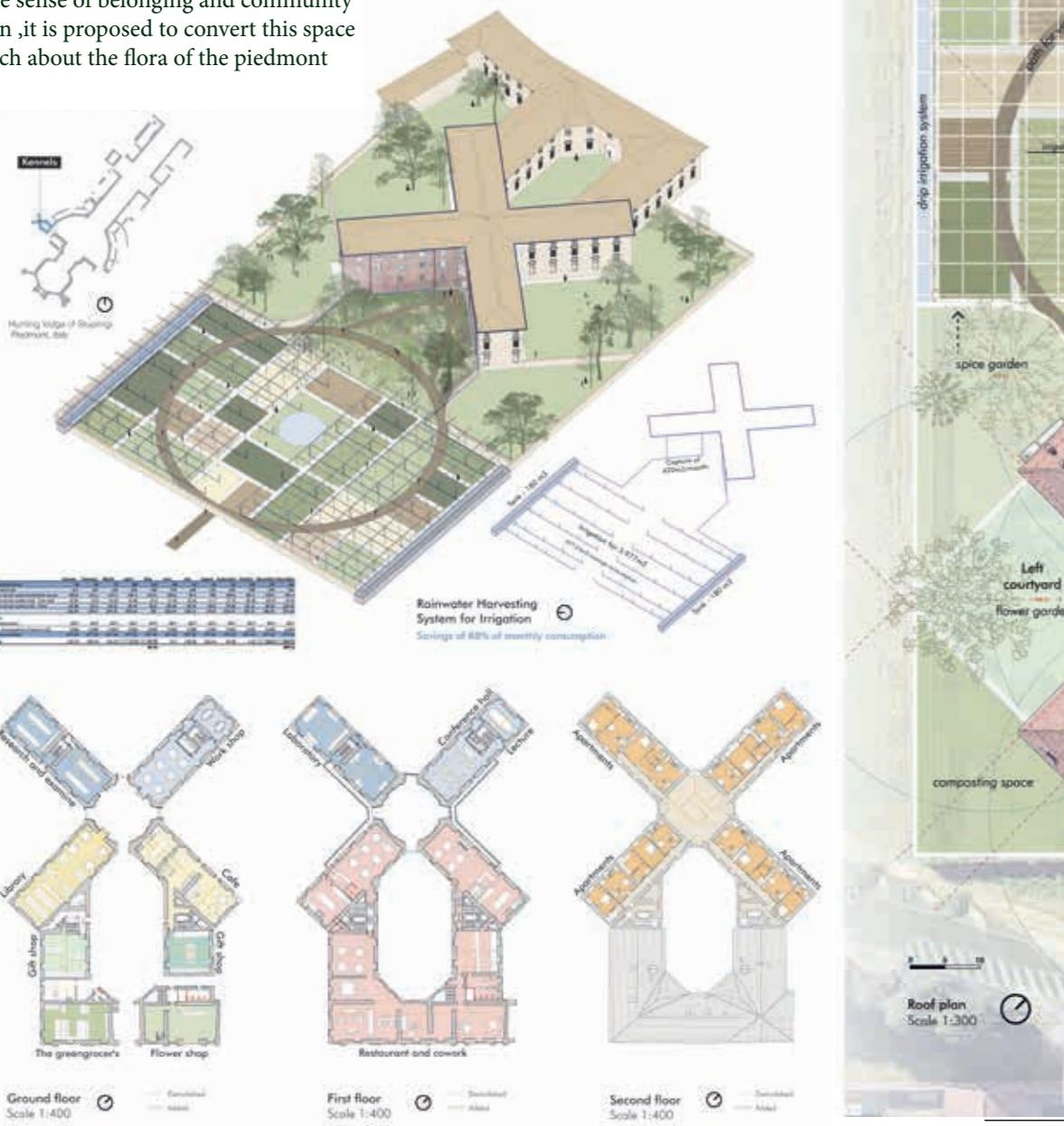
## Restoration Project



## Architectural Design

### Zero km - Kennels

The project seeks to intervene the space minimally, since the gardens found in the backyard reflect the sense of belonging and community of its inhabitants. For this reason, it is proposed to convert this space into an educational space to teach about the flora of the piedmont region.



## Restoration Project



# Advance Parametric Design

Year : 2023

Type : Master Group Project

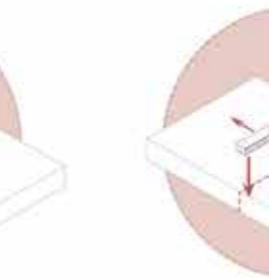
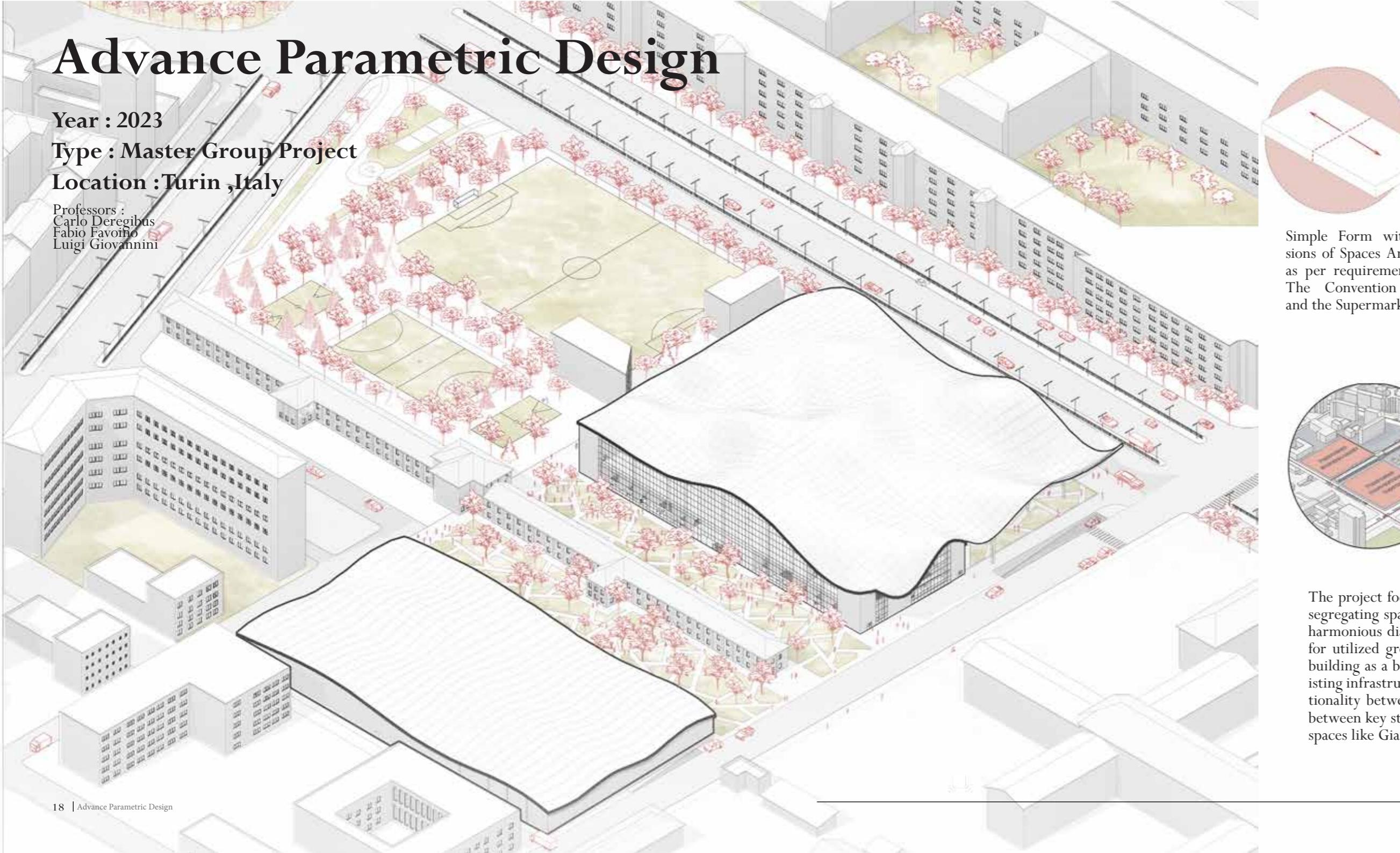
Location : Turin ,Italy

Professors :

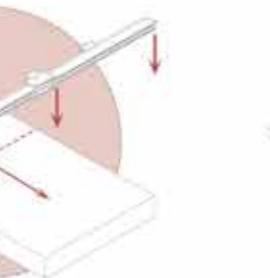
Carlo Deregibus

Fabio Favino

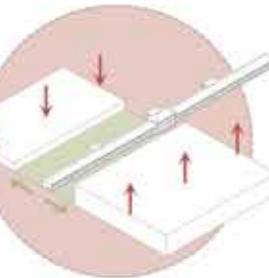
Luigi Giovannini



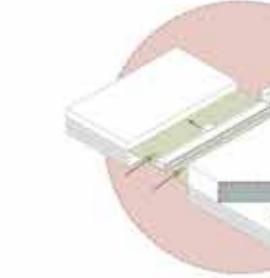
Simple Form with Divisions of Spaces And Areas as per requirements, i.e., The Convention Center and the Supermarket.



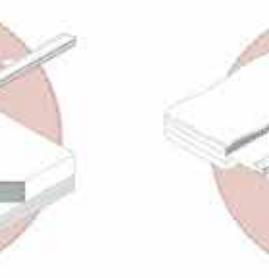
The Existing Historical Building (Barracks) to serve as a Transition space between the Convention Center and the Supermarket.



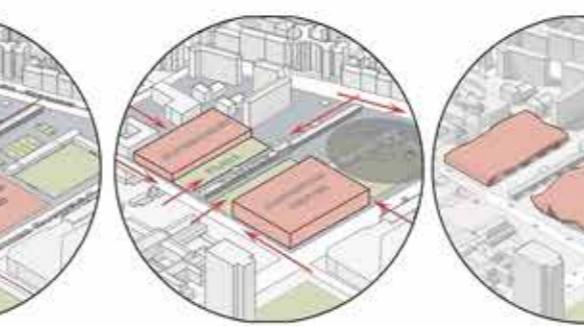
Alternating heights for the buildings and the Division by the Barracks make way for a Plaza on either sides of the buildings.



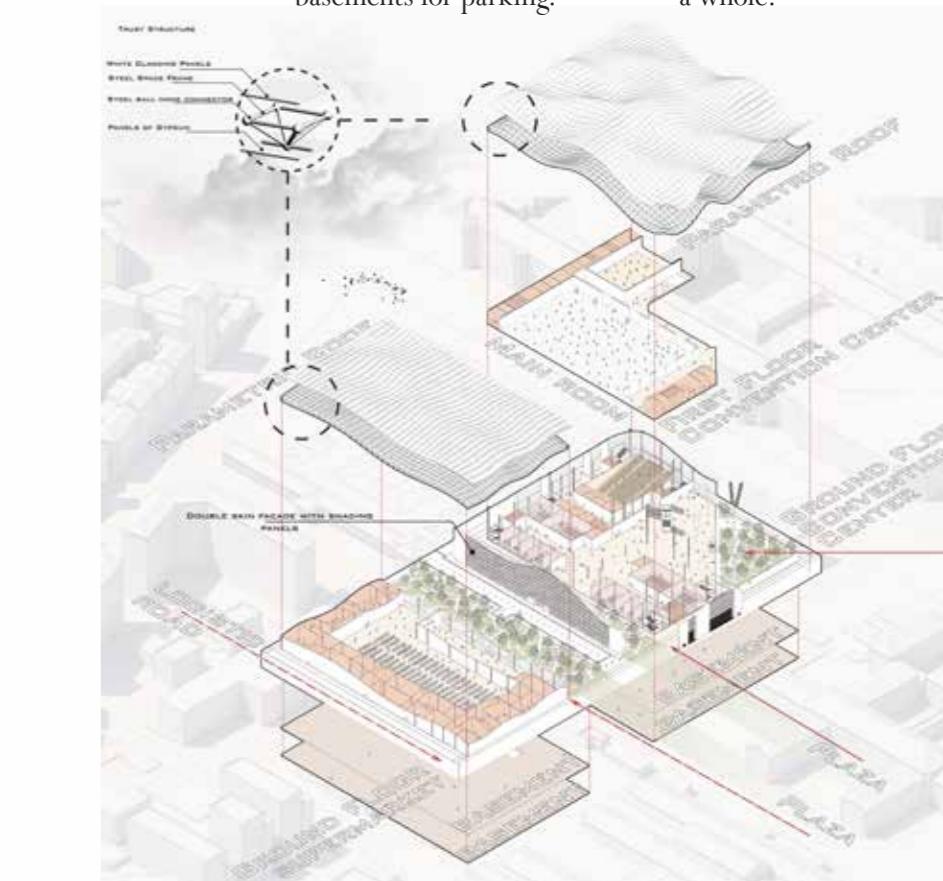
Angular access to the Convention Center and given entry-ways for easy access to the plaza and the buildings with the addition of basements for parking.

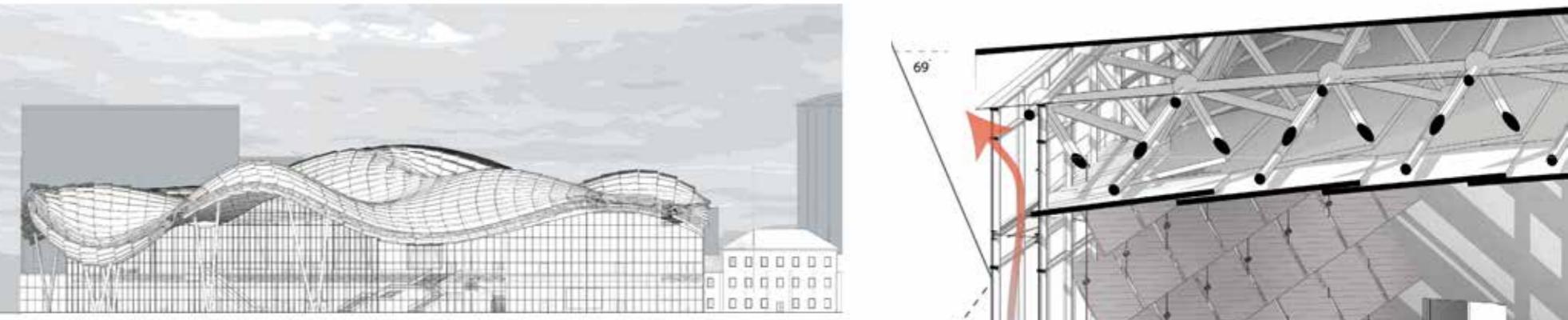
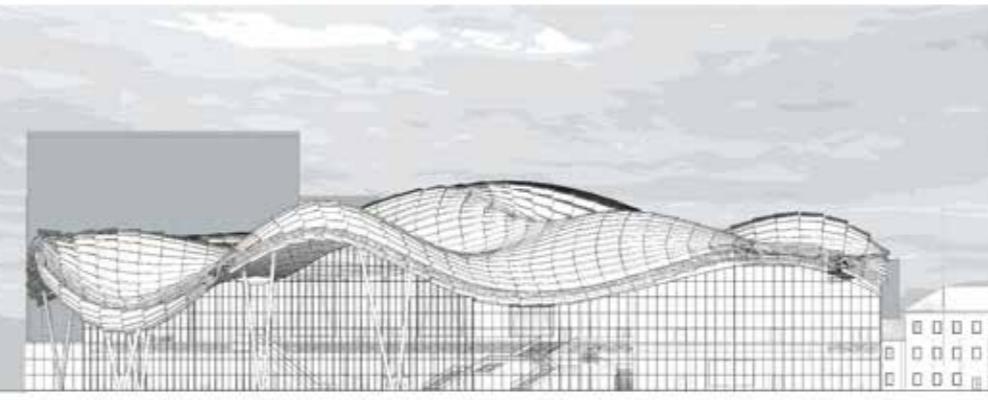
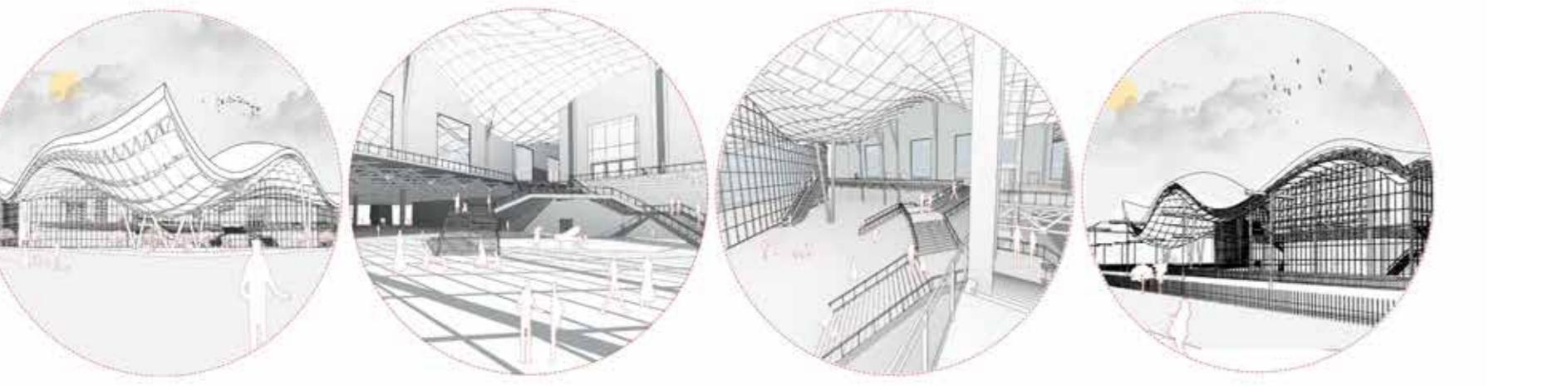


Curved Roof adding uniqueness and Uniformity between the two buildings And conveying a sense of simplicity for the project as a whole.



The project focuses on optimizing space allocation and access around the site, segregating spaces by function to enhance contextual presence, and ensuring a harmonious dialogue between built and green spaces. The design compensates for utilized green areas with minimal intervention and highlights a historical building as a buffer and plaza centerpiece to foster human interaction. The existing infrastructure is largely retained, and the design promotes unity and functionality between buildings. The plaza, serving as a car-free transitional zone between key structures, incorporates landscaping to connect with nearby green spaces like Giardino Nicola Giosa and the Square at C.So. Ferrucci.





### Specific Targets of My Daylighting Design:

- Ensure adequate daylight levels in a significant fraction of rooms for occupants to perform visual tasks.
- Utilize daylight to reduce energy use from electric lighting systems.
- Provide a comfortable and stimulating luminance distribution pattern, even in worst-case scenarios.
- Prevent glare in rooms.
- Avoid thermal discomfort from direct solar radiation on occupants.
- Prevent summer overheating to reduce energy use for cooling systems.
- Achieve high performance glass that reflects 47% of solar energy while allowing over 61% visible light transmittance

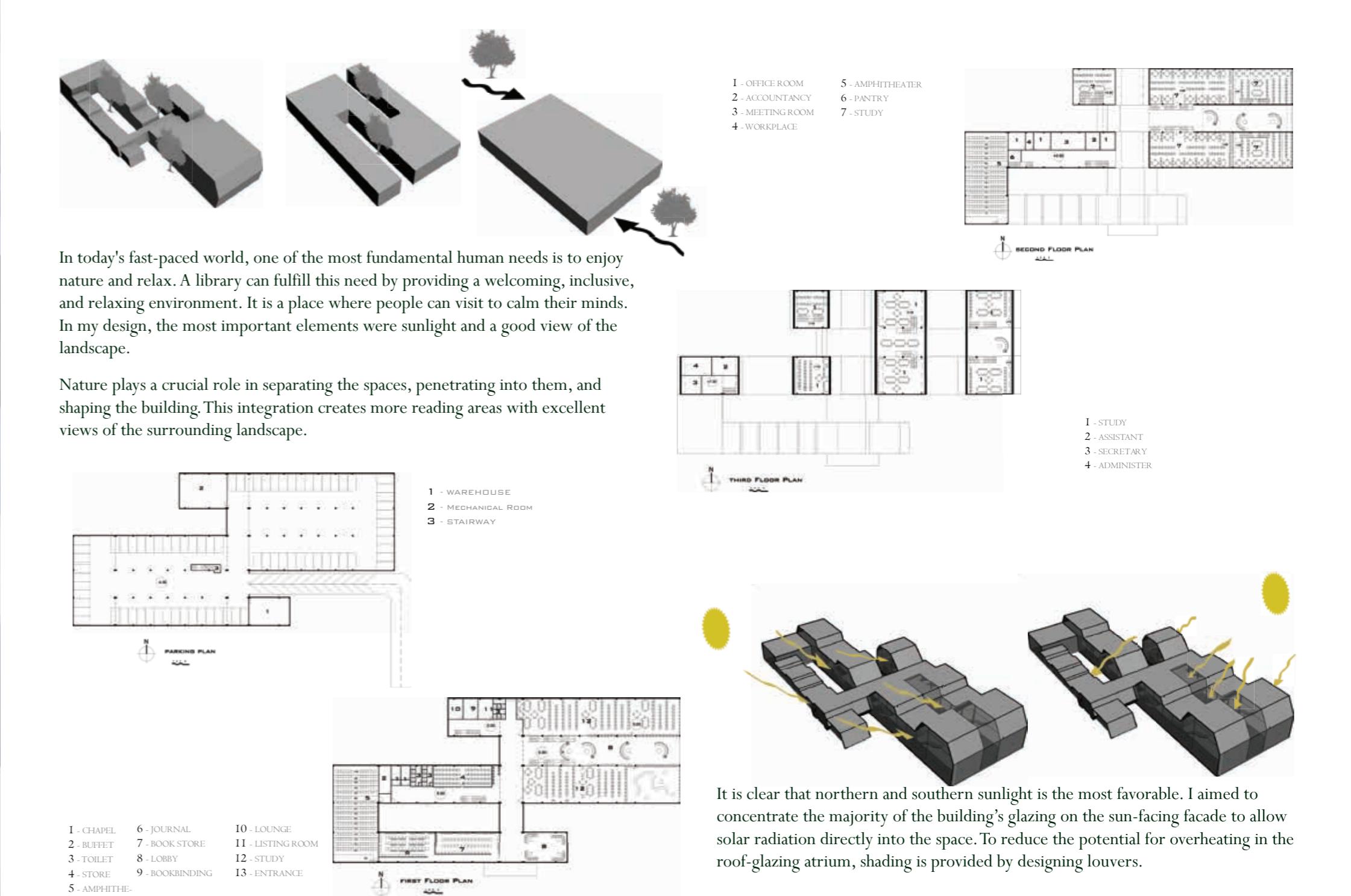
# Library Design

Year : 2016

Type : Bachelor Individual Project

Location : Tabriz ,Iran

Professors :  
Ali Farhadi



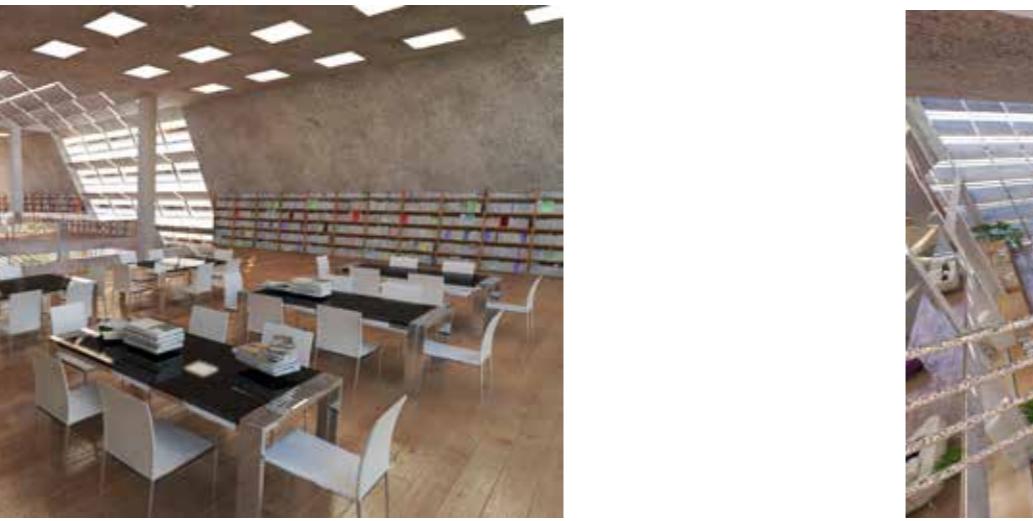
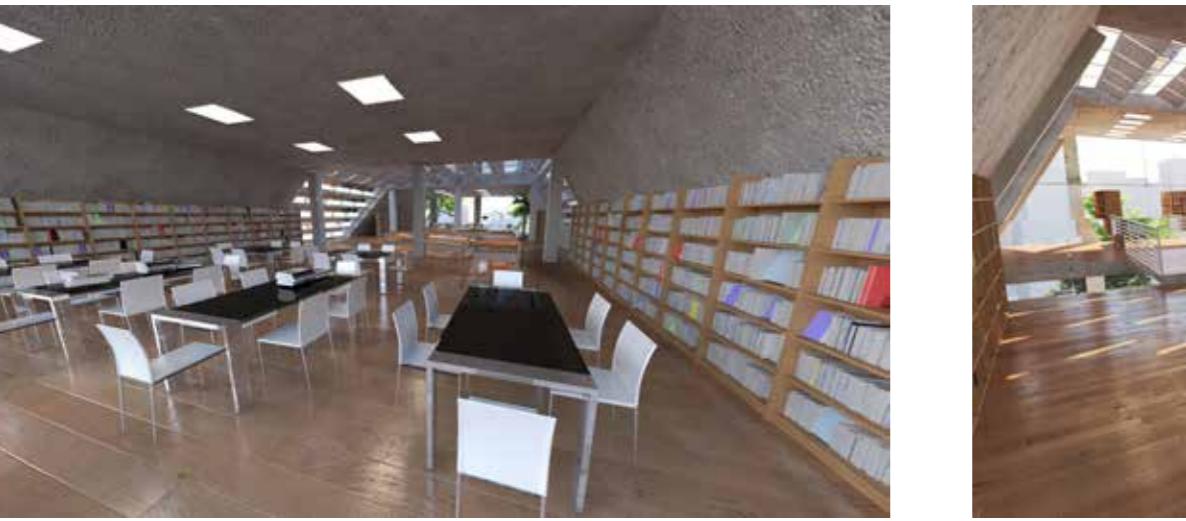


Top Views



Connecting path Between Buildings





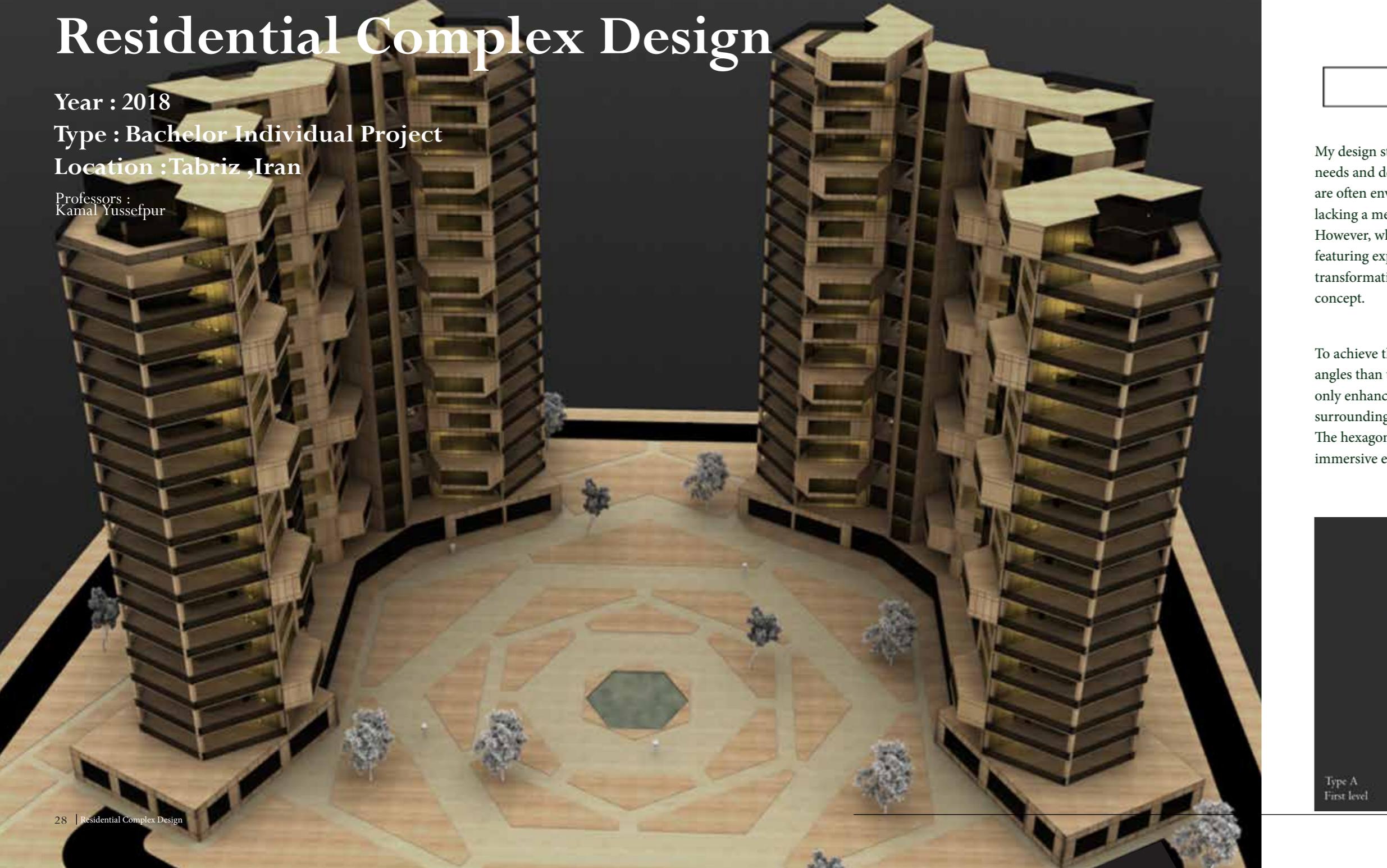
# Residential Complex Design

Year : 2018

Type : Bachelor Individual Project

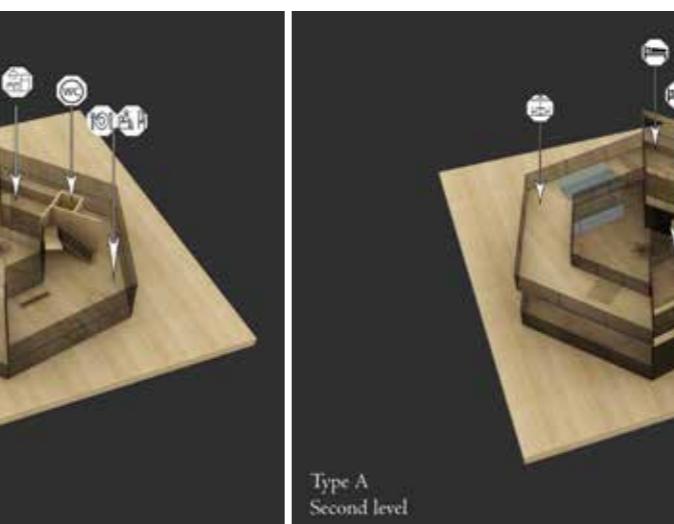
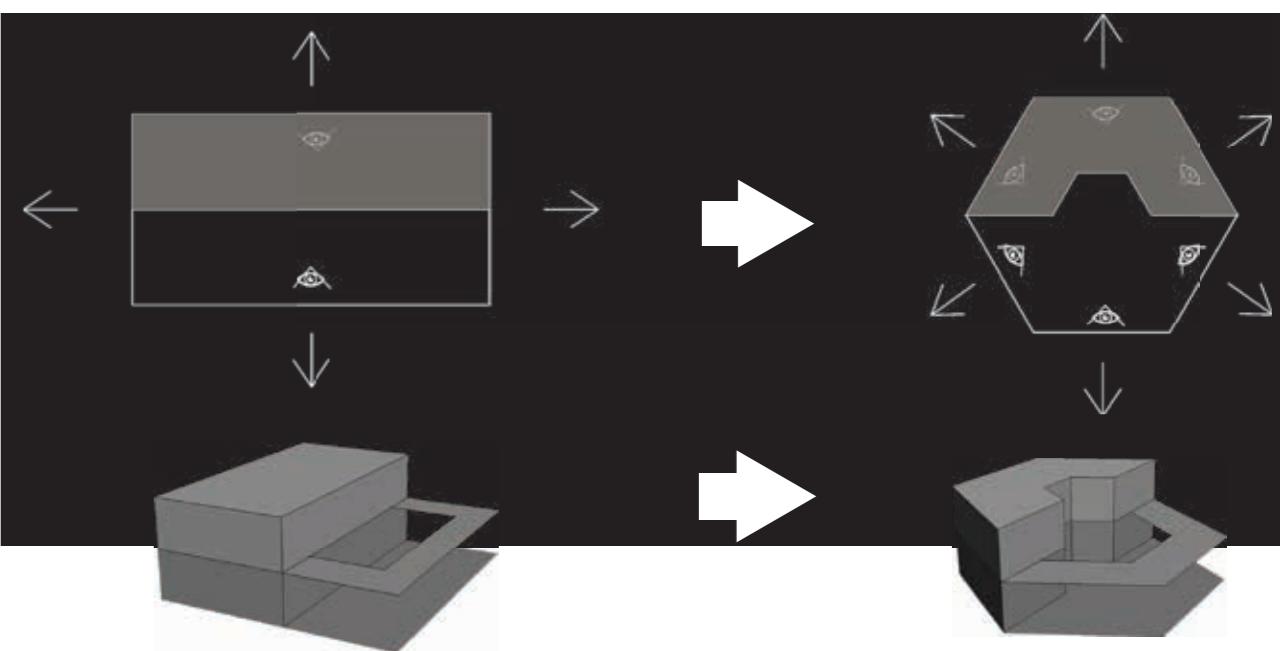
Location : Tabriz ,Iran

Professors :  
Kamal Yussefpur

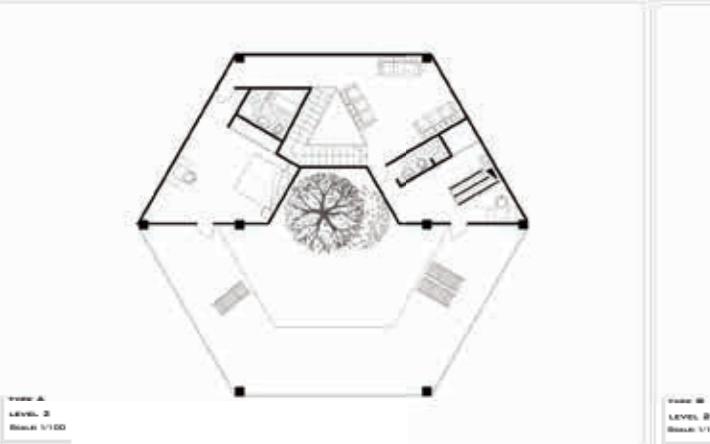
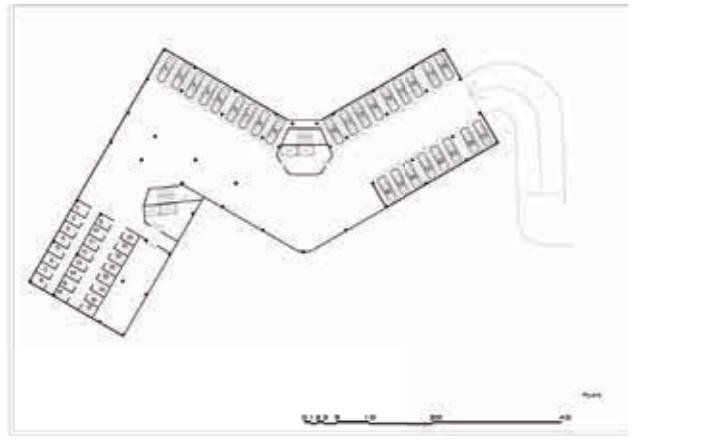
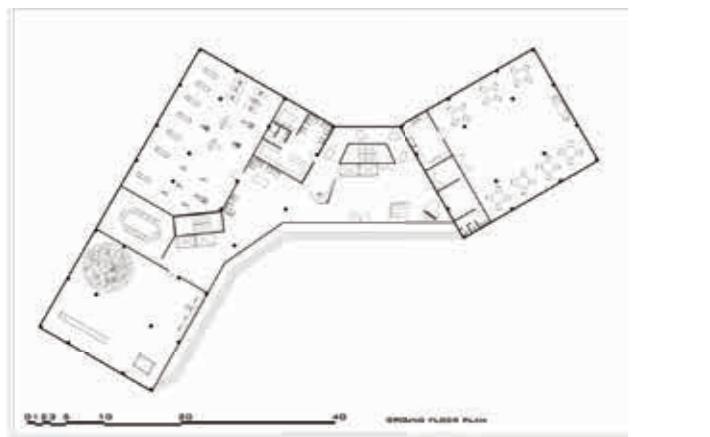


My design strategy centered on understanding and addressing the needs and desires of the residents and users. Residential complexes are often envisioned as monolithic structures with limited terraces, lacking a meaningful connection to nature and open skies. However, what if we reimagined this concept with a two-level block featuring expansive terraces? The diagram above demonstrates the transformation from a conventional residential unit to my innovative concept.

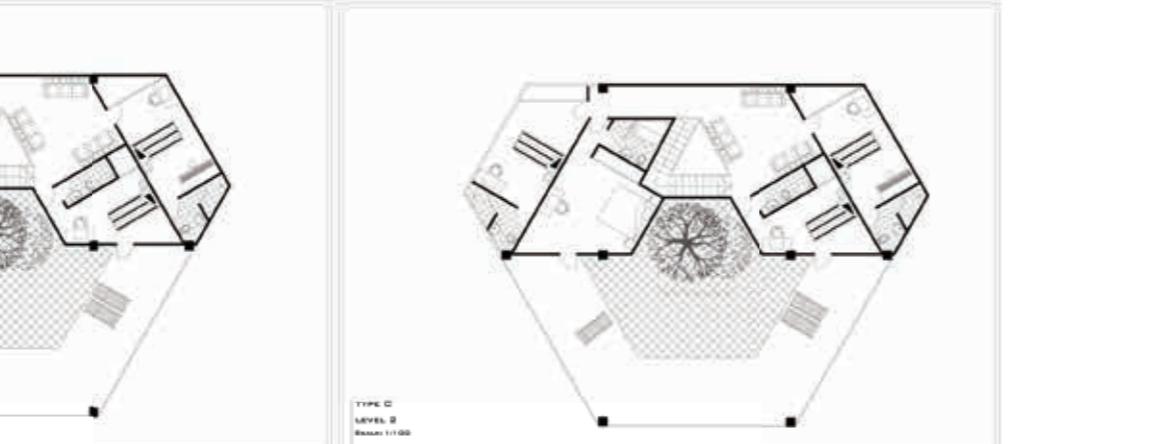
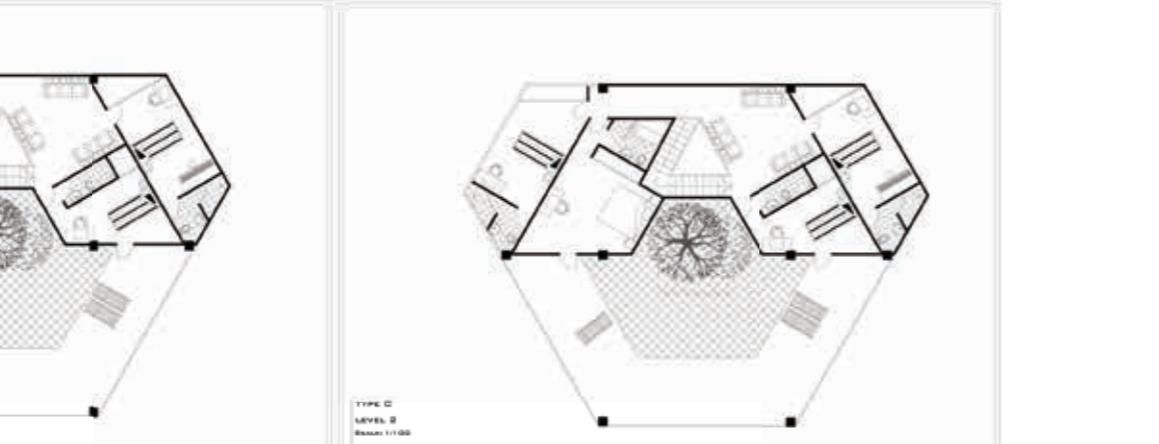
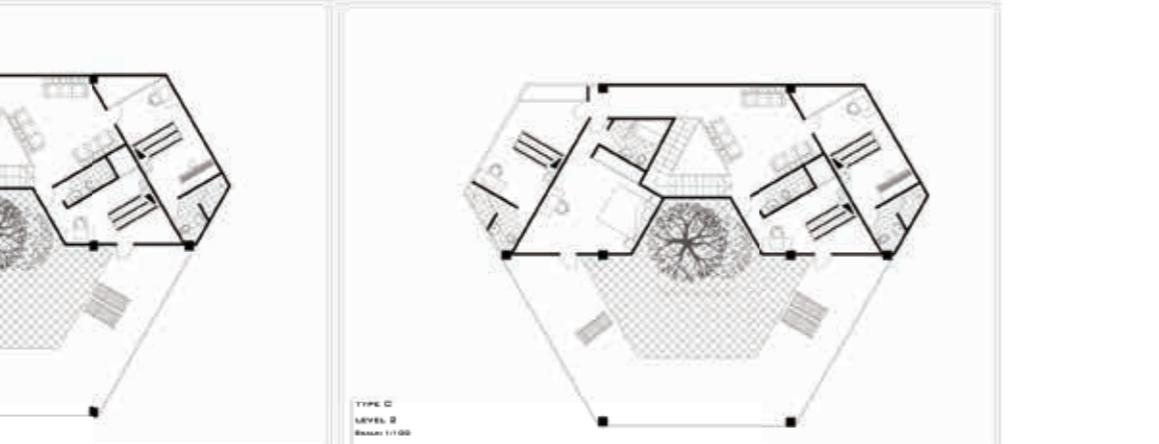
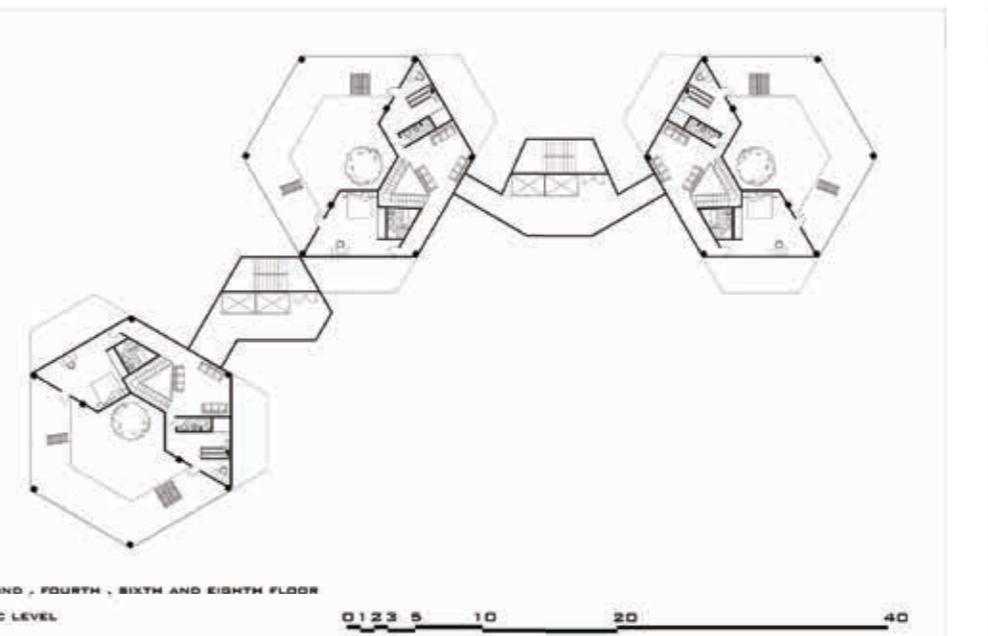
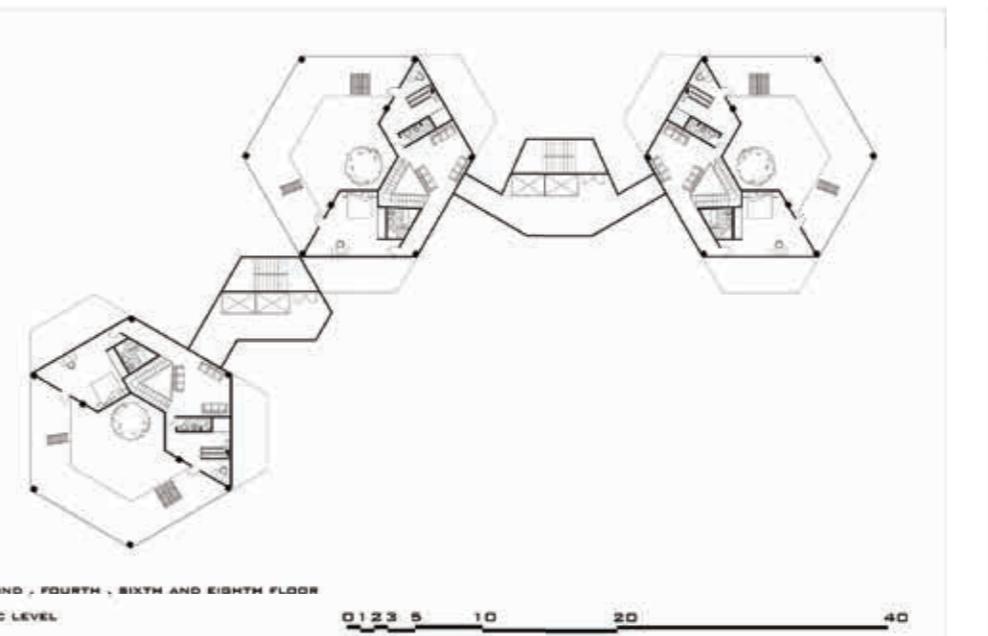
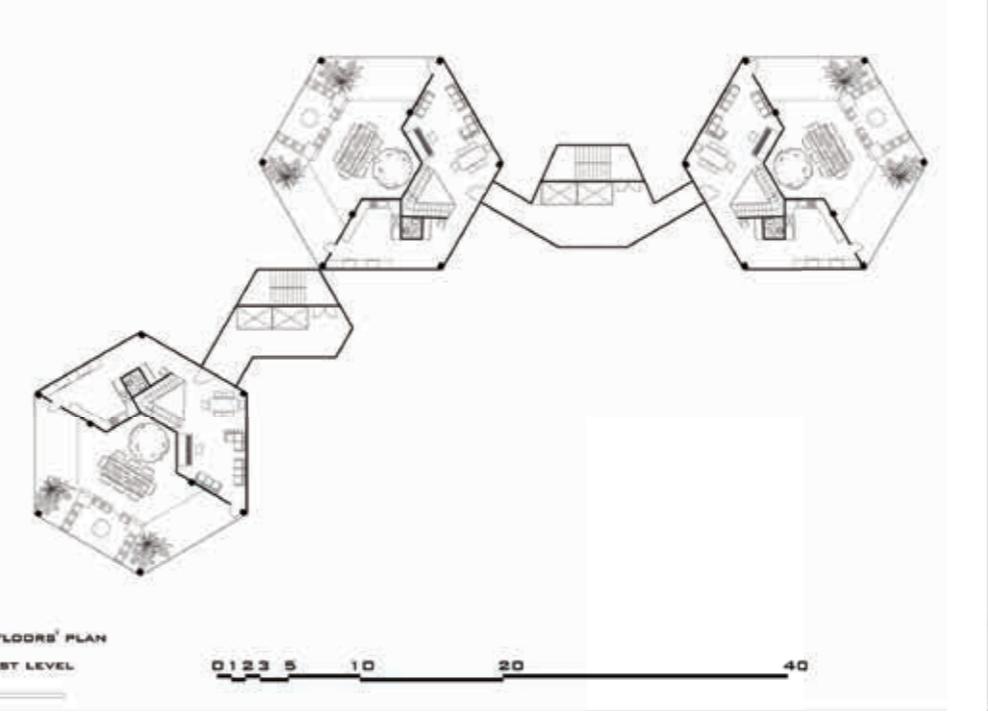
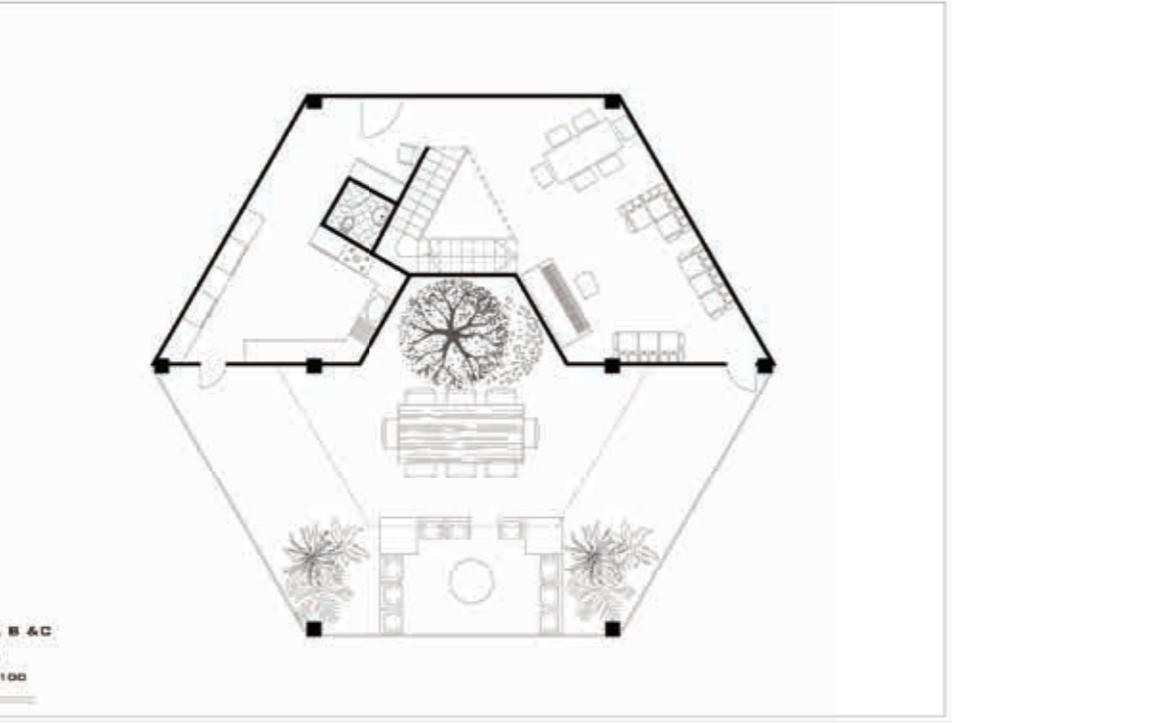
To achieve this, I opted for a hexagonal form, which offers more angles than traditional rectangular blocks. This geometry not only enhances the visual appeal but also maximizes views of the surrounding landscape, fostering a stronger connection with nature. The hexagonal design allows for panoramic vistas, creating an immersive experience for residents.



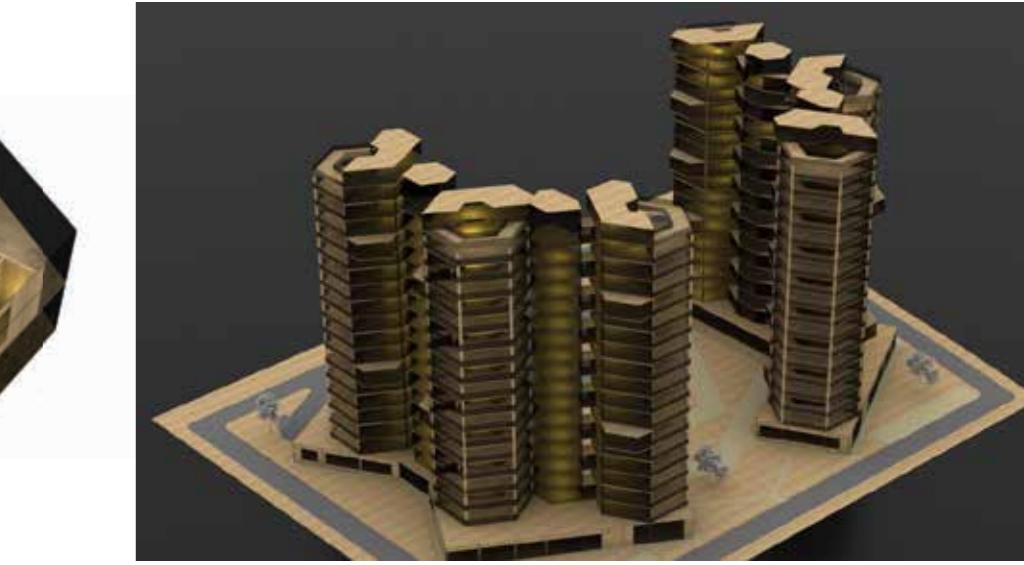
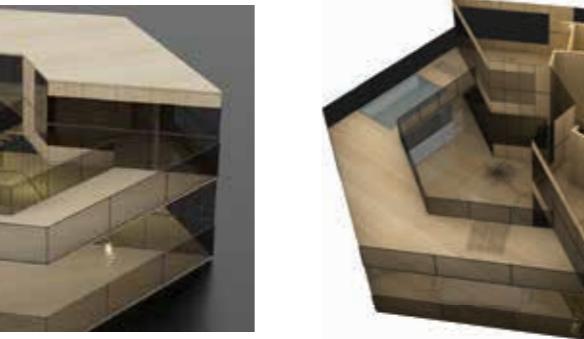
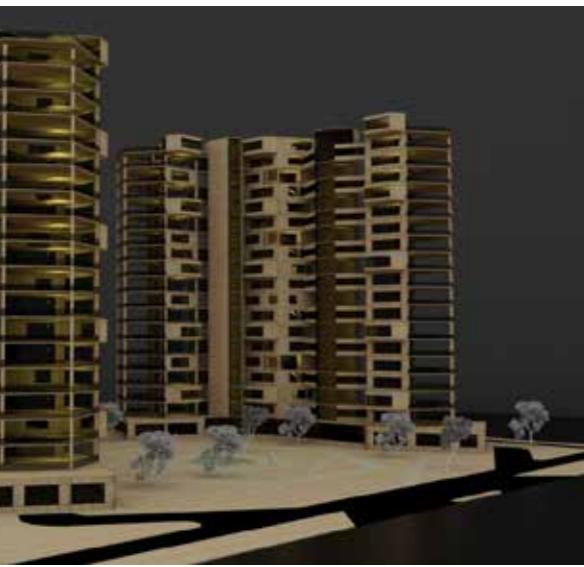
The residential complex, aptly named Hexagonal, is composed of blocks strategically positioned to provide unobstructed views of the lush landscape. This arrangement ensures that each unit benefits from natural light and scenic beauty, promoting a sense of well-being and harmony with the environment.



30 | Residential Complex Design



Residential Complex Design | 31



Thank You

"I don't believe architecture has to speak too much. It should remain silent and let nature in the guise of sunlight and wind."

TADAO ANDO