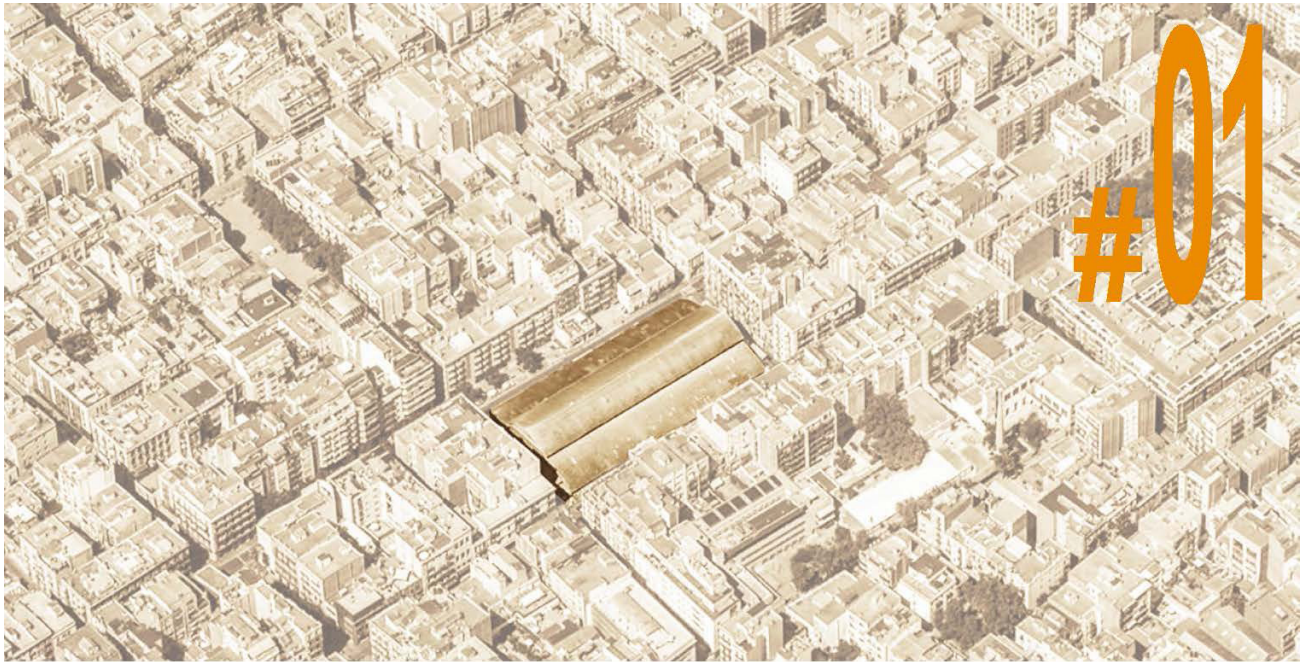




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BARCELONA ARCHITECTURE CENTER is an educational organization founded in 1998 and chaired by Miguel Rodán. The BAC was created with the aim of developing academic and research collaborations with other universities and higher education institutions across the globe.

Barcelona Design Studio Abaceria Market

Edited by Barcelona Architecture Center
In collaboration with Clemson University, Texas A&M University and Roger Williams University

New Gracia Cultural Center: water + kitchen + public
BAC Barcelona Architecture Center Fall 22 **01**

Barcelona Design Studio Fall 22 Abaceria Market

Site description

The project site this Fall 2022 Design Studio will be the former Abaceria Market, located in the Gràcia neighborhood, between Travessera de Gràcia, Torrijos, Pujimartí, and the Mare de Deu dels Desemparats streets.

The site is an opportunity to generate a building that mediates between city and nature; it is a meeting point between the biological infrastructure of the city and the characteristic dense urban fabric of Gràcia neighborhood. Re-thinking the remaining market structure as a new urban catalyst will give the neighbors the opportunity to reclaim this space while also becoming a central element for Barcelona.

This new urban building will be part of a city strategy that emphasizes re-naturalization. Barcelona Green System Network is facing a problem with connectivity. There is no relation between different green spaces, and biological continuity has been broken. Abaceria Market represents a challenge for the reinterpretation of the re-naturalization of the city in relation to the dense urban fabric of Gràcia's neighborhood.

The site's purpose needs to be re-thought and re-interpreted to transform it into a new mixed-use building that strengthens its relationship with the surrounding context.

This FALL 2022 project invokes researching the site's contextual opportunities. The transformation of this plot should contribute an architectural solution to the challenge of reinterpreting the Gràcia neighborhood by merging city and nature.

Barcelona Design Studio simulates architecture competitions where the main emphasis is placed on building a conceptual frame, project narrative, and high-resolution graphics to communicate a strong visual and verbal proposal.

Gracia in the Barcelona area

The city of Barcelona sits on an area of no more than 100km², where a stable variety of natural phenomena congregate. In this small territory, we can find the Colserola mountain range, the Mediterranean Sea, and two rivers: Llobregat and Besòs and Montjuïc hill. This landscape is a mosaic of natural environments. Nowadays this collage is difficult to read because it has been mostly occupied by urban areas, erasing any memory about the past of this territory.

Located 2 kilometers from Ciutat Vella, the old city of Barcelona (Gràcia is in the middle of this territory), between the Colserola mountain range and the Mediterranean Sea. This geographical characteristic brings the site a subtle topography with a slightly inclined plane (between 3-5%) suitable for human settlement and agriculture.

The territory has a strong relation with water because of the topography and climate conditions. It is an area with plenty of watercourses and water runoffs, named Torrents, and intermittent water fluidity throughout the year.



Communication routes are also an important element for the consolidation of the neighborhood. Camí Real was a vertical road between the Roman city of Barcino and Castrum Octavianum (Sant Cugat). Today it goes by Gran de Gràcia street. Via Transversalis was a horizontal pre-roman road between Barcelona's two rivers. Currently, it's called Travessera de Gràcia.

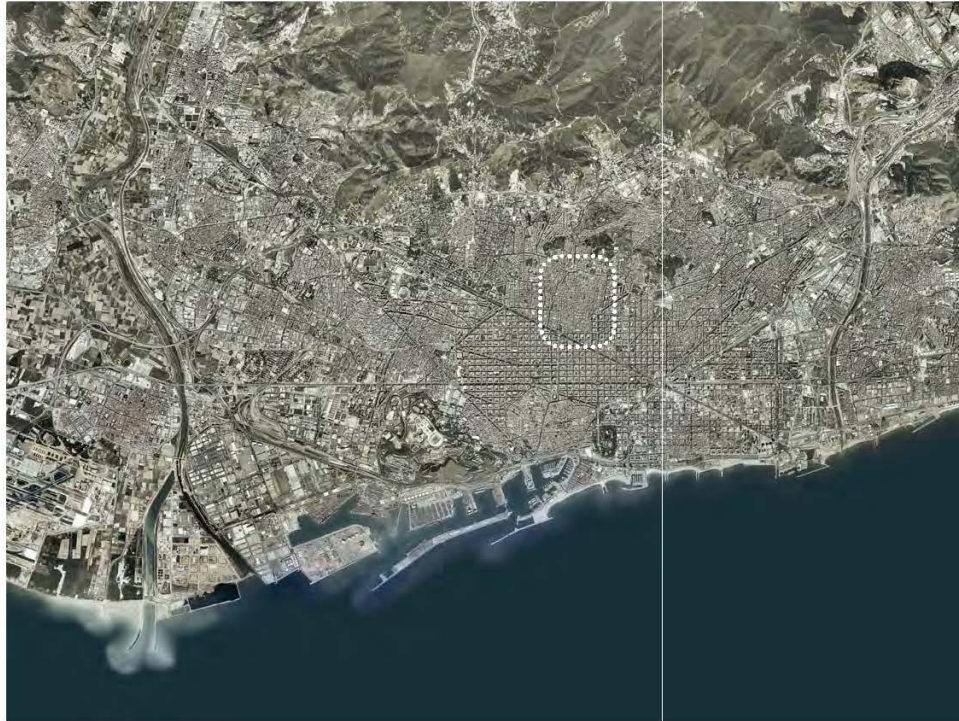
Gràcia area was a mosaic of small estates and ancestral country residences just outside Barcelona with their farmland around them. Old Masias, the typical Catalan Countryside House, are the principal architectural elements that composed the new urban development in this territory.

Professor



MIGUEL
RODÁN





Gràcia's Urban Planning

The construction of the Gràcia neighborhood at the beginning of the XIX century represents the first establishment of the new Barcelona. Due to military reasons, it could not be built right next to the city. It was the first urbanistic operation beyond the walls located 2 kilometers from the city center.

Before Gràcia's development, Passeig de Gràcia had already been built beyond the city walls as an attractive avenue. The inspiration came from the Boulevard of Champs-Élysées in Paris. A promenade, opened in 1827, became the most important place for gathering in Barcelona. It had many uses such as recreation spots, cafés, restaurants, dance halls, and theaters. At that time the whole plain down to Barcelona, what would become the Eixample in 1860, was still empty of urban settlements.

Gràcia is considered one of the first urban developments since it introduced the principles of urban growth planning. The planning is based on a complex of plots around a central square. The square behaves as a hub of social activity and services. This urban development strategy was promoted by the owners of the old Masies located in the territory. The neighborhood was built by the progressive division of these estates. This articulation established the boundaries of streets and plots.

The complex is thus an array of perfectly geometrical, modular and orthogonal, homogeneous, and continuous units. The elements of this system's composition are the square, the street and the plot.

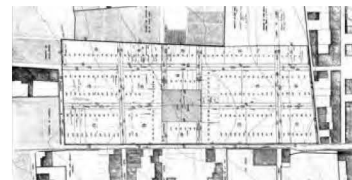
The size of these components is standard: streets and plots are 30 palms wide (6 meters), and 200 palms long (40 meters).

The squares of Gràcia were the first ones planned in Barcelona. These public spaces had previously emerged from the public appropriation of areas that were defined for other uses.

Public space in Gràcia appeared as a void within the grid of streets.

The regularity of the plots as a subdivision of the layout of streets and squares contributed to the general organization of the road network, which gradually took shape as the continuity of different developments.

The formation of Gràcia's neighborhood is a process of growth that happened without consideration of its future importance. Nevertheless, it represents the beginning of city planning based on a system of plots as we understand it nowadays.



Abaceria Market

Abaceria Market is a historical building fully integrated into the dense urban fabric and life in the Gràcia neighborhood. The market was built in 1892 under the name of Santa Isabel Market. The owner of the Puigmartí's factory, or Vapor Nou, located in the plot of the existing market promoted its construction. It is located on Travessera de Gràcia street, one of the busiest streets in the neighborhood. It was built to give proper space to farmers who use to sell in Plaça de la Revolució (a square located close by).

The market is 78,1 meters long, 42,5 meters deep, and 16 meters tall at the highest point occupying an area of 3.320m². The structure consists of 16 modular steel trusses spaced out every 5,4m.

This industrial constructive logic, where the building can be summarized as a repetition of a single transversal section, is transformed once you are inside. The concept of a continuous open space is imposed by the repetitive aspect of the module. The plan is organized in 3 longitudinal spaces: a widened central main nave and two lower lateral naves. This plan typology follows the basilica plan, which originated from Roman public buildings and was later adopted by Christian Churches.

Due to its antiquity (over 100 years old) and its poor conservation status, the Barcelona City Council has started a physical and commercial remodeling of the market. The demolition has only preserved the steel structure. The façade and roof, made of steel, have disappeared. The oval roof shape made with x-shape steel trusses, also known as St. Andrew's cross structure, has become the main characteristic of the building.

Theme description

The site represents an opportunity to enhance the different levels of identity that can be found in Gràcia. This identity is built with territorial and social components, that for more than 150 years has built a place that looks different than anywhere else.

The geographical identity, the one existing before any Urban development, refers to the relation of being an intermediate point between the mountains and the sea.

The geological identity refers to the relation with the streams, Torrents (nowadays canalized under the streets), that were the water courses that formed the basis of the Gràcia's urban growth.

The urban identity also has a strong footprint in the consolidation of Gràcia's urban life with the squares serving as the focus of social activity, and the central point of a complex of plots.



The cultural identity, with a strong presence of local traditional events, associations, gathering activities, and a cultural mixture of different communities.

Following a municipality requirement, the BAC proposes FALL 2022 students design the new Gràcia Social Center as a space that embodies these levels of identity to give to the community a confluence between them and the layers of the city. The structure occupied by the former Abaceria Market needs to be re-interpreted, re-thought, and re-used to transform it into a new public building, which belongs to the demands of the neighborhood associations of Gràcia.

The new Gràcia Social Center will have 3 program branches that synthesize the identity of the site:

1. The water component, as a pool space with a strong presence of water rite culture.
2. The cultural component, as a community building relating to gastronomy, working as a central kitchen.
3. The public space component, as an addition to the dense urban fabric with an active role on site.

Building a new social center with water and cultural spaces grants the opportunity to relate different programs that have a strong relation of uses, interactions, and superposition on the site.

A mixed-use building will offer a strong interaction between the existing structure, the new program, and the city. Integrating a water element with a cultural program will generate intermediate spaces of contact and conflict where opportunities will arise. This combination of different size spaces will create the possibility of interacting with the existing structure and merging the programs. The way the spacial elements are integrated will add value to the user experience and the monumentality of the Center.

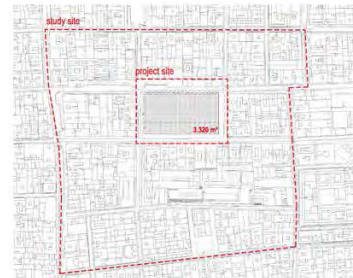
The transformation is extremely important in a neighborhood where there is a lack of public space. The high population density of the surroundings justifies the construction of a new public building designated for people in the neighborhood to gather and interchange. The building has a remarkable urban condition to become a central element for the reconversion of the public space in Gràcia.

In addition, with the program, the site needs a new type of public space and landscape, with a new vocabulary relating to the strong footprint of the Urban Development of Gràcia and the memory of what it was in the past, before urban development.

The city has the need to achieve a green infrastructure that becomes a resource that proves a variety of new urban landscapes and uses to citizens. The reconversion of the Abaceria Market represents an opportunity for the Re-naturalization of a highly transformed urban fabric. The plot has erased from its memory any relationship with a natural landscape and therefore needs to recover its intention to become part of the Barcelona Green Network.

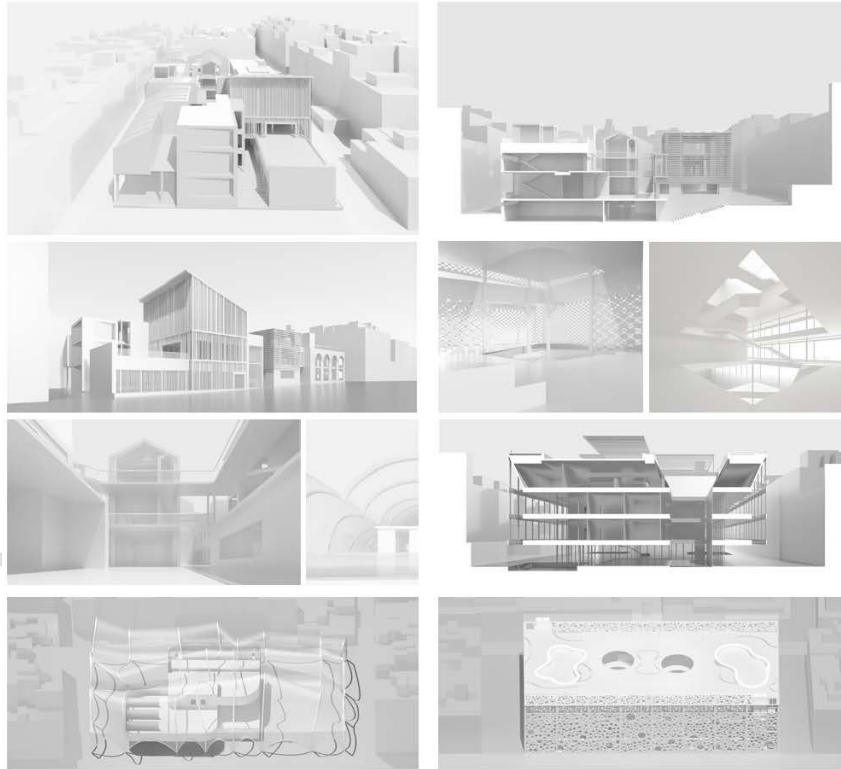
This FALL 2022 project wants to research the site condition and opportunities. Hence the transformation of this space can contribute to a challenge for the reinterpretation of Barcelona's Gràcia neighborhood and also the confluence between city and nature.

The project theme will be strongly based on the discourse of the site's functional, historical, and social components. We ask the architects and landscape architects to participate in the debate. The course, which is a simulation of an architectural competition, is an opportunity to test the role of our professional practice in this regard.



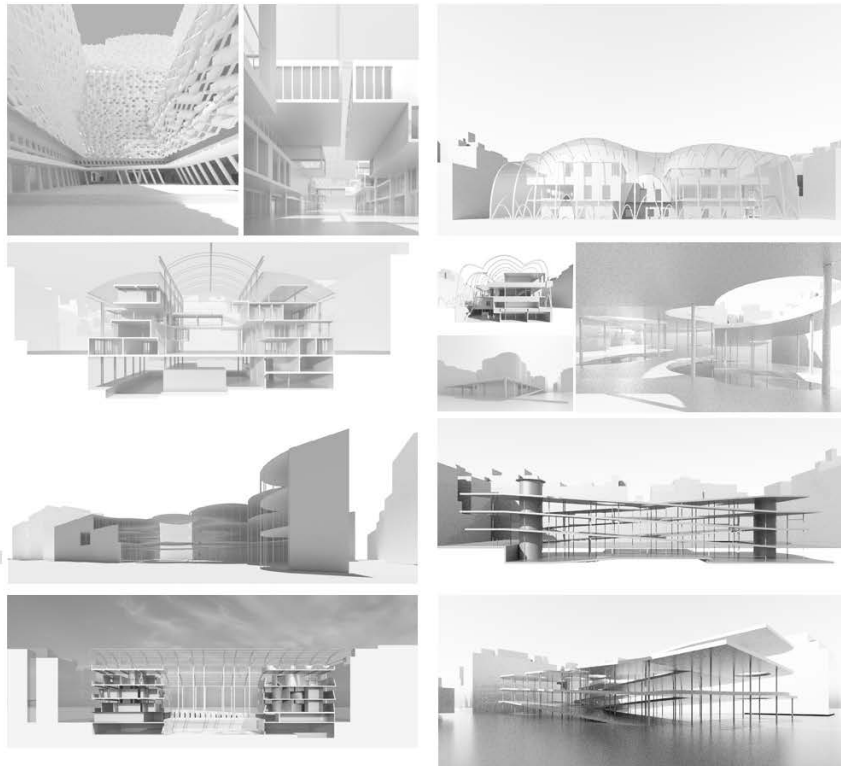
WATER SPACE_1		4.175m ²	CULTURAL SPACE_2		3.290m ²
Lobby	625		Lobby	395	
Reception / Hall	300		Reception / Hall	200	
Café	250		Café	150	
Spa Retail	75		Retail	45	
User services	380		Polyvalent rooms	1050	
Changing rooms	200		Room 1	100	
Locker Room	60		Room 2	100	
Bathrooms	120		Room 3	100	
Water (flexible uses and surfaces)	2.075		Room 4	250	
Pool Reception	150		Room 5	250	
Waterfall Pool	225		Room 6	250	
Hydrotherapy Pool	625		Central Kitchen	600	
Cold Pool	225		Community Kitchen 1	150	
Children's Pools	225		Community Kitchen 2	150	
Exterior Pool	625		Community Kitchen 3	150	
			Community Kitchen 4	150	
Specific treatments	440		Dining rooms	480	
Individual treatment rooms	100		Dining room 1	120	
Steam Room	20		Dining room 2	120	
Exfoliation rooms	40		Dining room 3	120	
Hammam	80		Dining room 4	120	
Finch Sauna	20				
Caldarium	80		Services	95	
Showers	80		Offices	50	
Hydrotherapy lounge	20		Staff Room	25	
Services	115		Staff Locker Rooms	20	
Offices	70		Mechanical	140	
Staff Room	25		Storage	250	
Staff Locker Rooms	20		Circulation	280	
Mechanical	200				
Thermal Cistern	60				
Pump Room	80				
Mechanical Room	60				
Circulation	340				
			PUBLIC SPACE_3	3.100m ²	
			Flexible program		
			TOTAL	10.565m ²	

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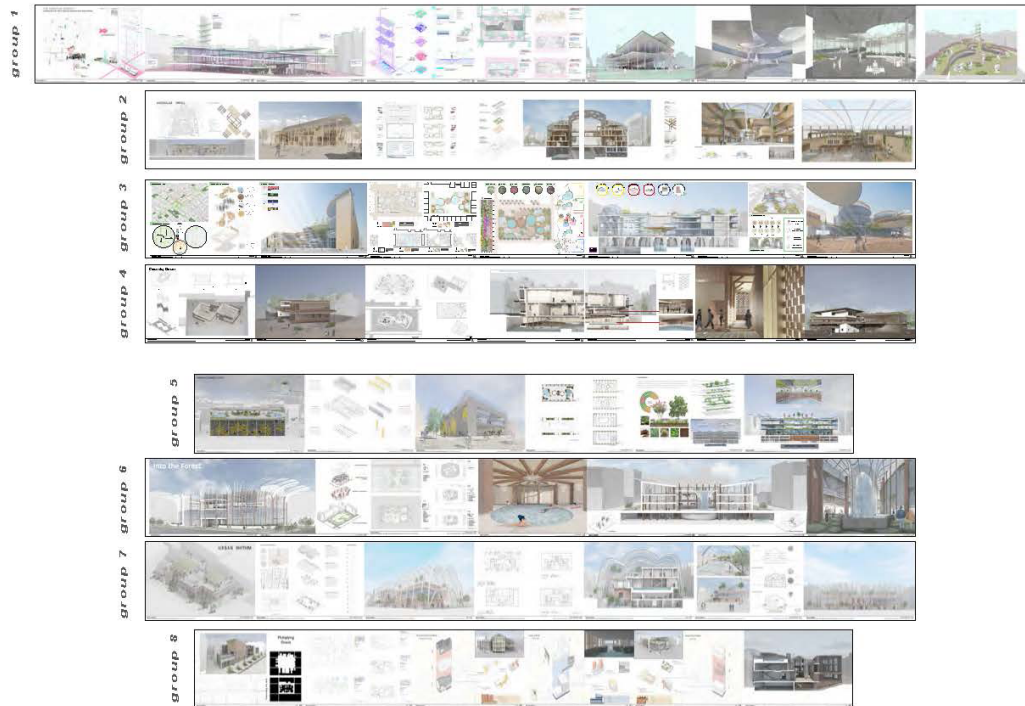


BAC BARCELONA PROGRAM | FALL 2022

in process



Norman Foster Foundation, Madrid
November 2nd, 2022



BAC SPRING 2022 FINAL DESIGN STUDIO PRESENTATIONS
CLEMSON UNIVERSITY / TEXAS A&M UNIVERSITY / ROGER WILLIAMS UNIVERSITY

ABACERIA MARKET
PROF. MIGUEL ROLDAN



THE VERTICAL STREET:

This project aims to be a utopian yet pragmatic approach to the upcoming Abaceria market. Gracia is a very densely packed neighborhood. The streets leading to the site, much like the other plazas in Barcelona, are narrow with a deficit of green spaces. What does Gracia really need? The answer is not in another building but more open space. This brings us to the creation of a new infrastructure combining a market, streets and green spaces. The Vertical street is an extension of the streets of Gracia with a slight slope of a little over 5% which means it is walkable and accessible. Following the natural slope of the site, it takes you on a journey vertically but through a horizontal axis. The ramp is programmed with a gradient of uses that start on the level beneath grade with public park space with water features and lead to a mixture of green spaces, food stalls, seating areas, dining spaces and that culminate in an urban farm. There are two vertical

circulation cores one of which (in tribute to the tower in Gracia) has the ability to develop to form a lookout point over the city. This project is not constrained to the site parcel but instead aims to transform its surroundings as well by the pedestrianization of the entire block. In addition to this, this project aims to create an elevated green corridor through a network of green roofs on its neighboring buildings to connect to the urban farm. The green spaces on the ramp are irrigated by rainwater harvesting which is then propagated through mist and stormwater collection. In terms of materiality, the street uses precast concrete that mimics the fluid movement of the vertical street and incorporates seating and booths in it. Overall, the creation of the vertical street will transform Gracia into a lively, sustainable hub of activity integrated with green spaces.

CLEMSON UNIVERSITY/ RUTH KOILPILLAI arch graduate

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BARCELONA MUSEUMS COLLECTION CENTER
PROF. MIGUEL ROLDAN



MODULAR INFILL

Our project investigates the densely packed district of Gracia. We begin by conducting a study on the usage of available hardscape rooftops. Leading us to find a gap in the urban fabric. Then micronizing from building scale into individual units we are able to group these modules in a way that maximizes and creates terraces by the manipulation of orientation and placement of the unit itself. The kit consists of 8 standardized parts allowing for the customization based on the needs of the program. The parts are made from the same materials which are CLT, Steel, and Polycarbonate panels. This allows for less waste and a faster construction time.

In plan and section, we must experiment within the rules of modularity. The dimensions of modules both enclose the program and become the circulation around the collection of houses. By encapsulating the

program into groups of houses we create a narrative from basement to roof as we inhabit around the collection of terraces above and the pools below. The shifting of modules creates a relationship between indoor and outdoor space creating new moments within our structure. By restricting the module unit, we can actually provide more flexibility in the assembly process, allowing us to both fulfill program requirements and create circulation.

Our proposal infiltrates the existing structure by not coming in contact with one another. The design works around the structure and places itself in the spaces between. Independent yet coexisting together, we have a duality between the new and the old. The remaining space between the modules and the structure becomes an open public space.

CLEMSON UNIVERSITY/ TEXAS A&M UNIVERSITY EMILY ACOSTA + LANEY LANTER arch undergraduate

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ABACERIA MARKET - GRACIA SOCIAL CENTER
PROF. MIGUEL ROLDAN



CONNECTING CORNERS

Barcelona is an urban fabric made of corners. Analyzing the urban structure, the integration of expanding green, public spaces within the city blocks has increasingly developed throughout history. Cerdà's Plan was an urban design reformation in 1860 to extend the public and green spaces through a new layout for the Eixample expansion. A unique characteristic was the integration of the chamfered corner which opened the area of street intersections and created a sense of connection between different directions. With only few plazas in the neighborhood of Gracia, the problem of the original orthogonal orientation was identified to eliminate public space and create rigid entrances restrictive to four facades. Our project is orientated 35° from the initial orientation with entrances now facing the north and south direction. The new orientation developed six corners that began to weave with the preexisting public space. The result of the rotation generated new perspectives in relation to the surrounding balconies. Instead of designing with the original structure, the project site now behaves as a block to reestablish the connection and interaction amongst the people of Gracia with relation to the public space extension.

Connecting Corners exhibits a series of ramps that navigate you through an exchange of interior and semi-exterior spaces with perforated flexi-brick facades that emit natural light and let the viewer not feel enclosed. The materials used are recycled terracotta and wood for the structure and finishing ceramic of the building. This sustainable solution for the exterior facade uses a steel frame and thin wire to suspend the flexi brick, not needing any mortar. These facades also control and allow natural ventilation to flow into the interior. Since the structure is made entirely of wood, there is a lower process of energy and carbon emission than other materials. The ramps are supported by wooden cantilevers that connect to wooden columns throughout the course of the ramp.

A sense of community and gathering is portrayed through this cultural and social center with open spaces throughout each floor. With the ground floor being the most public space, this connects with the openness of the spatial layout of the interior. Outdoor dining terraces wrap the first floor facade and translate the relation from inside the kitchen to the outside which also establishes a connection with the surrounding facades. The program includes a roof garden, concert space, pool area, and a surplus of kitchens and polyvalent rooms that highlight the features of this project and intend to promote the interaction of the neighborhood of Gracia.

TEXAS A&M UNIVERSITY

GABRIELLE GONZALEZ + SAMANTHA GUZMAN ARCH UNDERGRADUATE

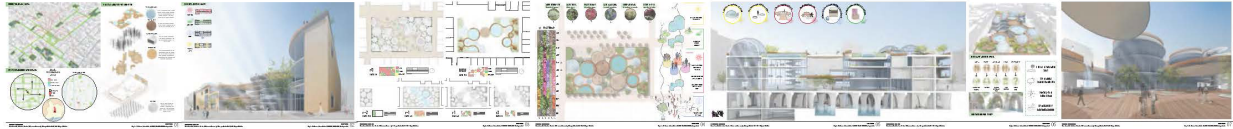
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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



A GREENER GRACIA: EXPANDING GREEN SPACE THROUGH ELEMENTS OF PERMEABILITY

Our project is an extension of the green space within Gracia using various elements of permeability. In order to emphasize the concept of permeability, we broke the project down into 4 categories: diversity, vegetation, water, and natural light. In doing so, we were able to create a sustainable and effective design that acts as a sponge that soaks up the green space, natural light, rainfall, and a diversification of people that inhabit Gracia. Our project is designed around a central plaza space that flows in complement to the natural course of water movement on site. Creating an easily approachable space was a key component for us and helped shape a building facade that invites people from virtually any angle.

The concept of permeability was created in order to help make a space to combat the dire situation due to a lack of green space. Barcelona is among the 100 European cities with the highest mortality caused by its green deficiency. Almost 43,000 premature deaths in Europe could be prevented every year if urban green spaces were increased. This is an urgent and growing concern within Gracia. Why wait when we could take action now in helping to decrease the problems that arise from this phenomenon? Vegetation soaks through on all levels and is prominent within the plaza space, green roof, and balcony spaces created by the interweaving facade of our building.

The circular programming also allows for plants to easily circulate the perimeter and creates inner vegetated courtyards from one program bubble to the next. The glass domes on the roof let light in from the top all the way to the lowest level below grade. This helps invigorate the surrounding plants housed in the interstitial spaces of the programming bubbles. In order to implement sustainable elements on the skin of our building, we utilized timbercrete because of its reduction of CO2 into the atmosphere and because of its great thermal insulation capabilities. Concrete was chosen for the underground arches to not only pay homage to Spain's Roman roots but also because of its minimal materiality and material consumption in the construction process. The photo-voltaic glass helps create thermal insulation and reduces radiation permeating the building. The multilayers for the glass are sustainable in the fact that they are 100% recyclable and because energy is saved during production. Wood can be found throughout the plaza floor, roof pathways, and within the bridges due to its ability to reduce CO2 and because of its renewable and recyclable capabilities.

CLEMSON UNIVERSITY

ANIA SUBER/HAYLEE MCMANUS

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



URBAN CONNECTIVITY

Our project creates a connection with the Gracia neighborhood by inviting the public in with our two major openings at the north and south entrances of the building. By creating those openings, the goal of having a clear public connection is accomplished. We were able to accomplish our goal of having clean connections within the buildings with the use of specific structural and sustainable methods.

One of the main goals was to make sure that Barcelona and, the Gracia neighborhood, is supported and expressed well within the environment. With the temperatures usually being on the warmer side in Barcelona and considering how close it is to the coast we knew that sun, wind, and water were going to play a big factor in making sure that this design method was going to be ethical. Our building was designed around that and we believe that environmentally, this building accomplishes those goals. The landscaping aspect also has a continuity from rooftop to underground and that is supported with the amount of pockets that our structural elements create vertically and horizontally.

Outside, as our tertiary system, a porous aluminum cladding panel is used to bring in light, continue the airflow into the building along with the other 2 openings, and to also create a sense of privacy within the building as well. Continuing in, there are 5m wide concrete columns that create pockets all along both sides of the building and those are structurally important but also play a very sustainable role, not only for landscaping continuity through the building but also to bring in sunlight, and let all of the hot air to rise up creating great ventilation throughout the building. Glass is also used to control the sustainable flows into the building and act as a separation between the aluminum panel and concrete columns.

With having the goal of creating a public connection, the programming is separated with that in mind as well. The major water spaces are on the underground and rooftop floors along with a separate circulation core for both creating a private like environment for both and the more semi private floors being level 1 and 2.

CLEMSON UNIVERSITY

DAVE PATEL/COLE POWELL ARCHIT/AND UNDERGRAD

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PROF. MIGUEL ROLDAN



INTO THE FOREST

Into the Forest is a reclamation of the neighborhood of Gracia. The original site was a run-down, fenced-in market. Not usable to the public in dire need of open space and greenery. Gracia itself lacks green spaces and as a result, is one of the hottest locations in Barcelona. This forest works to reduce heat, collect water and provide the community of Gracia with open spaces for gathering. The roof is slanted inward to collect water into a cistern which will then fall out into the waterfall. The waterfall is located at the center of the "forest", a three-story open atrium. The atrium is an open to the public where the water then continues its way down to the lowest point of our sight. From there it leads to the underground/"root" spaces of relaxation and water programming.

The waterfalls and waterfall pools function as a passage of water throughout the center of the building, navigating its way to the lowest point on our site and finally descending into the underground pool areas. This also works as a cooling system and at the same time purifies the water which will then be used in

the pool areas underground.

Another way of lessening the heat is to reduce hardscape and increase softscape. Gracia has a large amount of green spaces in the form of public plazas, however they have more pavement than grass, trees and shrubs. By implementing an increased amount of trees, grass, shrubs and reduction of pavement, the temperature will reduce on the site.

Moving to the interior dynamics of the building. The collection of trees/circular trunks creates overlapping circles that are then used as spaces for circulation and trends of light from the oculus-like openings to the underground areas. The programming of the forest including kitchens, polyvalent rooms and dining room areas set for the people of Gracia to gather around for the purpose of food and connection.

CLEMSON UNIVERSITY/ Texas A&M

VALERIE ULLOA + LESLIE GALDAMEZ arch undergraduate

ABACERIA MARKET - GRACIA SOCIAL CENTER
PROF. MIGUEL ROLDAN



URBAN RHYTHM

Markets in Barcelona are an iconic element of the city that celebrate community involvement. When approaching the design of this project, we wanted to honor the history of the old Abaceria Market while creating something new that reflects the needs of the neighborhood of Gracia. In our original analysis of the site and its surroundings, we identified that rhythm is a prominent element in the pre-existing market, the neighborhood of Gracia, and Barcelona as a whole. Using the original market's form as inspiration, we designed 16 ribs that maintain the building's structural rhythm. The ribs are elevated at points along the arches to give hierarchy to important areas of the program. With multiple access points around the structure, the ground level acts as an extension of the street. The program is divided into three distinct areas; cultural, public, and water spaces. The cultural spaces are located in the underground level and accessed through two depressed courtyards.

The water spaces are located in the upper levels of the interior volume, which is independent of the outer shell. This separation creates an intermediate space that acts as a transition between the urban context and interior volume. The more public areas of the program are primarily located within this intermediate space. The outer shell is covered with ETFE, which will filter the sunlight entering the space and control temperatures throughout the year. Customized ETFE vents on each side of the structure will allow for increased air circulation. Water that falls on the structure will be re-routed through an ETFE gutter system to an underground water catchment tank. The interior volumes will be clad with terracotta which responds well to warm climates and is an abundant material in Spain. Overall, the project aims to redefine the pre-existing market and create an iconic addition to the neighborhood of Gracia.

TEXAS A&M UNIVERSITY

MADDIE WOOD AND MACY SWEAT ARCH/LAND UNDERGRADUATE

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



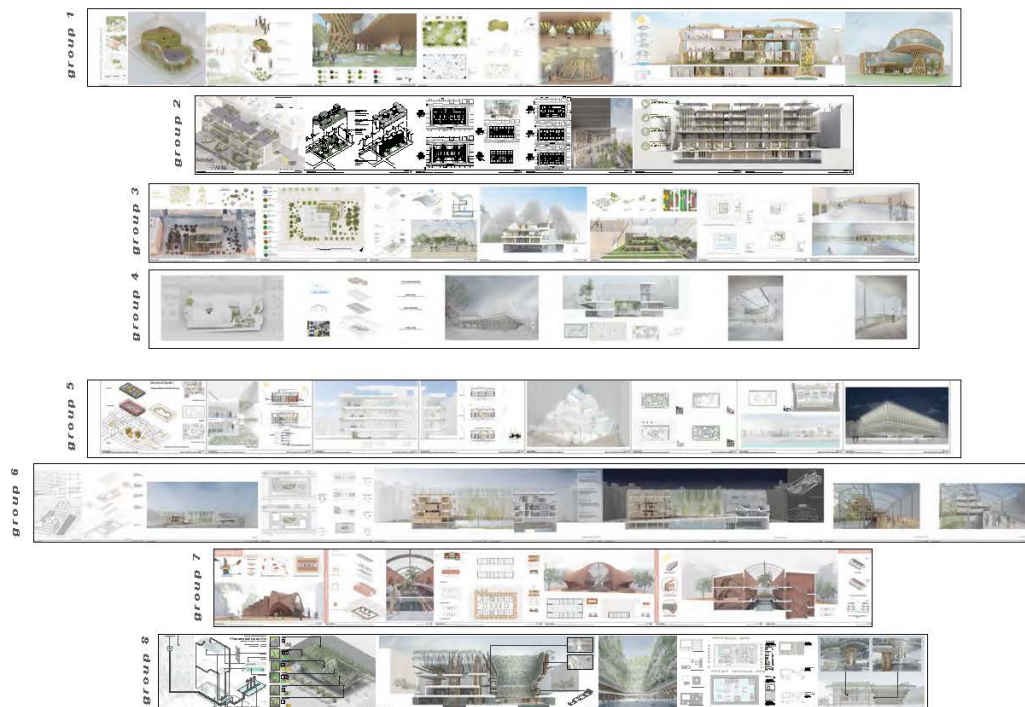
MULTIPLYING GRACIA

This is a building that is not just one structure, but rather the accumulation of buildings based on programming. All throughout the Gracia neighborhood there are blocks of establishments being determined by the buildings and the spaces between the buildings, forming empty courtyard spaces. So we thought why not take the given site and invert it, bringing the outside into the courtyard, so that the individual spaces are unified by the courtyard connecting both horizontally and vertically.

For our proposal, our building is broken up into three basic components- Culture, Water, and Public- and then subdivided into different categories: Kitchen building, Polyvalent Room building, bathroom building, etc. From here, we were able to incorporate a design that allows an individual to access each each of the buildings from the inside of the courtyard space, where they then have access to the other buildings taking part in this new "block" of Gracia. This proposal separates the needs of each individual into one specific building, but also allows for individuals to explore the different areas this structure has to offer.

TEXAS A&M UNIVERSITY

BRODERICK MILLER/ PABLO DE LA GARZA ARCH UNDERGRADUATE



BAC FALL 2022 FINAL DESIGN STUDIO PRESENTATIONS

CLEMSON UNIVERSITY / TEXAS A&M UNIVERSITY / ROGER WILLIAMS UNIVERSITY

ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



SPROUTING STEWARDSHIP

During the primary research stage we found that Gracia suffers from extreme heated temperatures disproportionately. This phenomenon is called the urban heat island effect. This consequence is the result of a lack of investment into green infrastructure and neglecting the water that naturally courses underneath Gracia. We also found that Gracia thrives off the culture of Plazas which socially connect the residents. The only downside to these spaces is that they are mostly scattered through the neighborhood and they are made of hardscape material further worsening the heat effect. In order to mitigate this, the Abaceria market is situated in an area which could effectively serve as a green step stone to connect Gracia to the surrounding green spaces around Barcelona.

In order to manifest our vision of a green social habitat, we decided to use nature's functions as a precedent to create a vibrant and green environment where residents are free to congregate and thrive as social beings. The market's sustainable functions, program, and activities reflect biomimicry, like a tree. By adapting to this concept we were able to include sustainable practices on each level including, water catchment, air ventilation, carbon sequestering and solar harvesting. As advocates for green spaces, we felt it was important to create a space for the neighborhood of Gracia that would induce healing and would redefine a relationship with nature. Our main intention behind this project was to give the gift of stewardship to Gracia.

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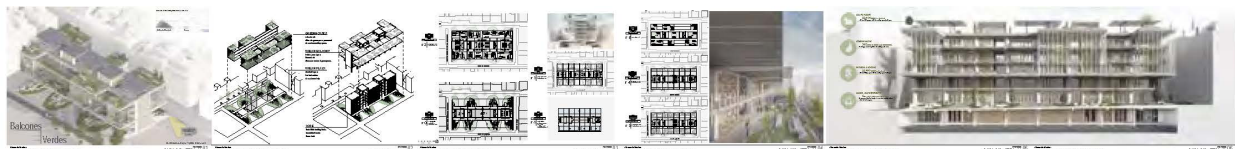
NICOLLE REBOLLEDO AND MADELYN STAFFORD ARCH/LAND UNDERGRADUATE

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



BALCONES VERDES

Balcones Verdes, green balconies, is our solution to tackle the urban heat island effect by bringing more vegetation and public space to the Gracia neighborhood. By condensing our interior programming to just a 10 square meter wide strip in the middle of the site, we allow room for nature to grow on either side in the form of public plazas. These plazas create spaces for the neighborhood to gather, while also creating a natural flow to the interior ground level. Soaring overhead of these ground level plazas are a series of cantilevers of various sizes. These cantilevers serve as the circulation between the interior spaces, while also acting as additional public greenspaces. The blending of the cantilevered spaces and interior rooms allow for flexibility of the programming. Interior spaces that have large events have the ability to flow out into the exterior spaces.

Encasing the cantilevers at certain points are our "greenhouses," which serve to create an intermediary space that helps cool and heat the building throughout the year to be more energy efficient. Native vegetation cascades over all these levels, creating a multi-tiered park that serves to combat the urban heat island effect of the area.

Two lightwells are located next to either core to bring in more natural light and ventilation. Each core runs from the top of the roof straight down into the bottom of the basement. Solar paneling on the roof offsets the buildings energy consumption while also providing shaded areas within the rooftop park. This park serves as the endpoint for guests to look out over the surrounding buildings while connecting with nature and each other.

CLEMSON UNIVERSITY/ TEXAS A&M UNIVERSITY

NIC BECK + LUIS ESTEBAN TREVIÑO ARCH UNDERGRADUATE

LARC 3550/3210 OFF-CAMPUS STUDIO/LA Seminar

BLA

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



URBAN UMBRACLE

Urban Umbracle serves to fill a void in the community of Gracia, and the greater city of Barcelona. The city itself is infamous for lacking public green spaces, and is often known for its rigid concrete infrastructure, with public plazas tending to be made from the same hardscape. Urban Umbrella fills this need for public space in a way that the city has never seen before, while still staying true to tradition.

Urban Umbracle serves as a cultural center for the people of Gracia, as its program is designed to respect the culture of the neighborhood. The inclusion of water features, industrial kitchens, gardens, and a performance space allows for the citizens of Gracia to engage with the building and site in many different forms and to bring the space to life through various activities. The use of natural materials and incorporation of green architecture also allows the building to relate back to the site in order to create a unique environment outside of the building's walls.

It was essential to honor the former use of the site, a once popular neighborhood farmers market that sold fresh goods for members of the community. This idea drove our overall landscape concept, "Food for All". The buildings surroundings are completely open and accessible from all parts of the street, with the only obstruction being planters featuring unique species of plants. The edible garden includes an array of trees, shrubs, and herbs, some for human consumption and others to feed pollinators and promote a healthy ecosystem within the city. Not only do these trees nod to the fresh produce once sold at the market before it, but they bring a new vibrancy and fragrance to stimulate the senses of the city in ways they may not be used to. The plants were carefully selected based on their position on the site and relationship to the sun, so they are in the optimal location to produce fruit. Other plants in the shade garden were selected for their resilience to partial sunlight, complimenting the concept of the overhanging canopy seen surrounding the site.

The nylon canopy is another way of honoring the former market structure. Resembling the curvature of the old Abaceria market, the nylon swoops over the site, waving through the sky and casting a blanket of shadows over the site. The nylon material varies in thickness throughout, offering more or less sunlight to certain areas depending on the needs of the plants. This shade structure also acts as a pergola for the people of Gracia, providing a safe, shaded area for hot summer days, and an outdoor experience unlike any other one available in the city.

CLEMSON UNIVERSITY

HANNAH MILLER AND ANDREW KLEBOWSKI ARCH/LAND UNDERGRADUATE

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ABACERIA MARKET

PROF. MIGUEL ROLDAN



COMMUNITY ELEVATION

Gracia is a unique neighborhood in Barcelona shaped by the forces of nature and brought to life by artists, creatives, business owners, travelers, and free spirits. One of the most densely populated and culturally rich areas of the city, the residents of Gracia use public plazas as places to gather, celebrate, eat, drink, dance, play music, or just relax. While Gracia's collection of small plazas has become integral to the district's identity, there is still not sufficient public space in the area to serve the entire community. This is especially true when green space is considered.

This project is a public space at heart. From program to form to neighborhood integration, every decision made during the course of this project's development related back to serving the Gracia community by providing them a new public space. By creating a raised elevated surface 3.5 meters off the ground, accessible via ramps at street level, the public plaza space of the site is doubled. This not only liberates the street level and allows it to be used freely by residents, but it creates a second green plaza at the +1 level, which blends into the neighborhood context via two ramps. Additional green space is added at two sunken courtyards at the -1 level. This creates two vertical green corridors that are used as central points of the building.

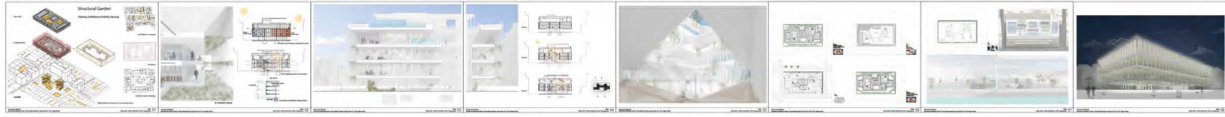
The underground level houses public pools that surround the courtyard, creating a natural oasis in the middle of the city. Isolated yet connected. The ground floor houses a cafe, reception, and administrative functions. The +1 and +2 levels house polyvalent rooms, and community kitchens respectively. Even these indoor spaces take on the attitude of a public plaza. Designed with glass walls to allow visibility, these rooms are communal and flexible.

The form of the building is curved, inspired by the running water of streams that used to traverse Gracia, and served as guides for streets when the area was being built. In a similar nod to history, the structural grid from the original Abaceria Market is reimagined and supports the new upper plaza. This symbolizes the past supporting the new. Growth rooted in history.

ROGER WILLIAMS UNIVERSITY / ROBERT WARD arch graduate

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TEXAS A&M UNIVERSITY

BARCELONA MUSEUMS COLLECTION CENTER
PROF. MIGUEL ROLDAN



STRUCTURAL GARDENS: Adopting a Multilayered Building Typology

As we began to tackle an approach for the revitalization of a previously occupied site within a overly developed city, an obvious issue began to inform the direction of our project. With our building's design, we aim to provide the people of gracia what they desire from their built environment, a new building typology that integrates a greener and more sustainable way of living. Our project consists of a greenhouse-inspired, double-facade structure fully integrated within the sustainability efforts of the building. This dual structure becomes the basis of our project's design and functionality.

Within this double structure, an outer, inner, and in-between space is generated. This buffer houses a system of pivoting louvers that act as a ventilation mechanism for the building. This system in turn is able to house, disperse, and expel thermal energy based on the outer climate and needs of the building. In addition to the ventilation system, the structure also houses a system of water collection, filtration, and distribution that re-uses water that may be collected from rain or from the water spaces within the building, ensuring a self-sustaining approach to irrigation. Thanks to these systems, we were able to turn the building into a living and breathing space, with the buffer area housing around 2,000 square meters of vegetation alone.

TEXAS A&M UNIVERSITY

AIMAL RANA+ EVELYN ESQUIVEL arch undergraduate

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BARCELONA ABRACERIA MARKET
PROF. MIGUEL ROLDAN



CULTURAL CATALYST

Our project is a reflection of the complex culture of the district of Gracia. After our research, we came to the conclusion that Gracia is a mixture of three cultural and natural identities: institutions such as churches, ritual spots, art galleries, landmarks, public plazas, theaters, libraries, museums, and gardens, Informal expression such as self planted green spaces and graffiti, and lastly the communities and that make up Gracia. Our site is located within a dense concentration of these cultural identities, and Gracia's street life is where they all come together. Our design acts as a catalyst for these three identities, and extends the street using two 9 meter wide 30 meter long ramps. Each ramp leads to a different building with contrasting programs that act as cultural hubs to connect the people of Gracia, and envelops a massive green atrium towering with vegetation. Because of the lack of green spaces in Gracia, our atrium is designed

to cool down the building for its users and bring nature back to the neighborhood.

Ramp 1 leads to the institutional/formal building, consisting of wooden boxes of programs and 360 exterior circulation around the programs for views of Gracia and our atrium. Ramp 2 leads to the informal expression building, made of recycled white concrete to act as a canvas for Gracia's graffiti artists, the inhabitant is circulated through this building by free flowing, undulating concrete walls. The public space is then continued into the underground, where pools and treatment rooms provide the community with another form of connection. The glass enveloping the atrium allows in light to illuminate the underground spaces, and becomes the central element of the space.

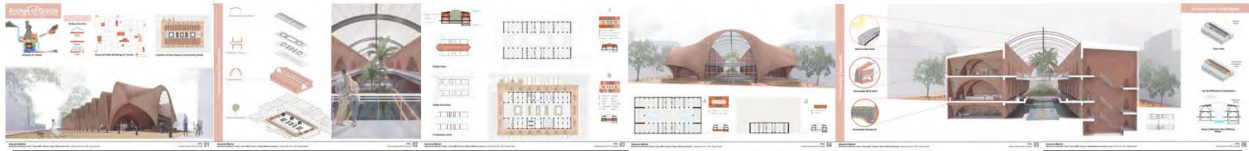
CLEMSON UNIVERSITY RACHEL HYATT +ANGIE MENDOZA arch undergraduate

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



ARCHES OF GRÀCIA

The project focuses on creating a covered plaza central core between two buildings made of a series of ceramic arches to house local artisans through art studios, kitchens, and flex spaces. The existing structure of the Abaceria Market's column grid generates the footprint of the series of arches. The existing roof's curve is continued on the front and back facades, while the sides open up to create entrances to the building.

Permeable materials are used throughout the design, from the roof to the site's hardscape. The roof of the central plazas is a mixture of glass and solar panels to generate energy for the building inhabitants and shade from direct sunlight. On the side facades, in between the arches, are porous brick walls to let in natural light and structure within the crafting spaces. The hardscape around the site follows the form of the arches, allows green to seep through the brick pavers, and allows water to drain.

CLEMSON UNIVERSITY

RACHAEL JACKSON ARCH GRADUATE

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ABACERIA MARKET - GRACIA SOCIAL CENTER

PROF. MIGUEL ROLDAN



TORRE DE RESPIRACIÓN

In a relations to the surrounding community, the layout of this project is centered around creating an open space for the community to enjoy freely. Encasing large open spaces for markets to thrive, large pools, therapy centers, community kitchens, and multi-purpose rooms, visitors can stroll effortlessly throughout the whole building as they please. Once they browse the large markets below, they can take their groceries and ingredients up to the kitchens to cook a meal within the community.

Additionally, this project has an emphasis on keeping a good carbon footprint. The pools and hydroponic vegetation system use recycled rainwater from the city's drainage system. The amount of vegetation packed into the roof and tunnel help the surrounding air-quality, as well helping to remove CO2 from the atmosphere. Additionally, by keeping the project open, it requires minimum energy to cool and heat the building, as the shading provided by the plants and the natural breeze from the sea help cool the building during the hot summers.

CLEMSON UNIVERSITY

JARED RASKIN & JAMARI EVANS ARCH/LAND UNDERGRADUATE

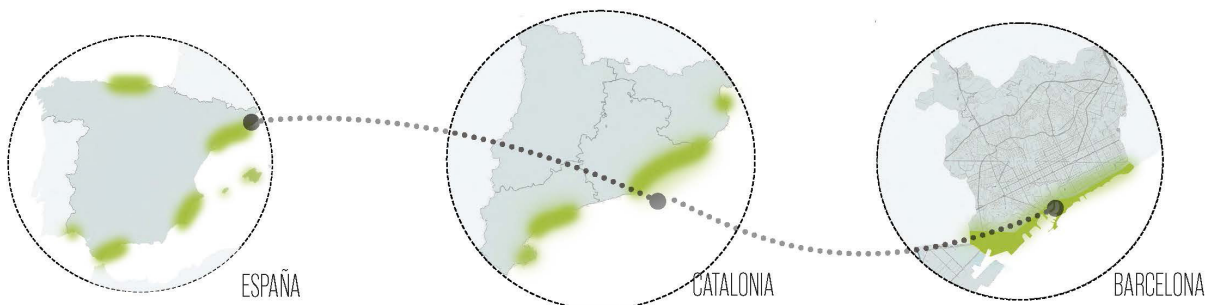


RECLAMATION

RECLAMATION represents the dynamic interplay between change and nature's untouched beauty. Initially serving as the vibrant stage for the America's Cup, it buzzes with human activity for three intense months. However, once the event ends, all traces of human intervention vanish, allowing the site to revert to its natural state. Over time, it evolves into a harmonious blend of urban and natural landscapes, illustrating the delicate equilibrium between human presence and the enduring forces of nature.

Haley Carpenter | Clemson University | Landscape Architecture

THE BUILT COASTLINES IN:



Les Tres Xemeneies - 1910

Industrial factories were built in the area now known as Barceloneta, causing mass pollution as well as temporary shantytowns for the workers to live in close proximity.

Somorrostro - 1940

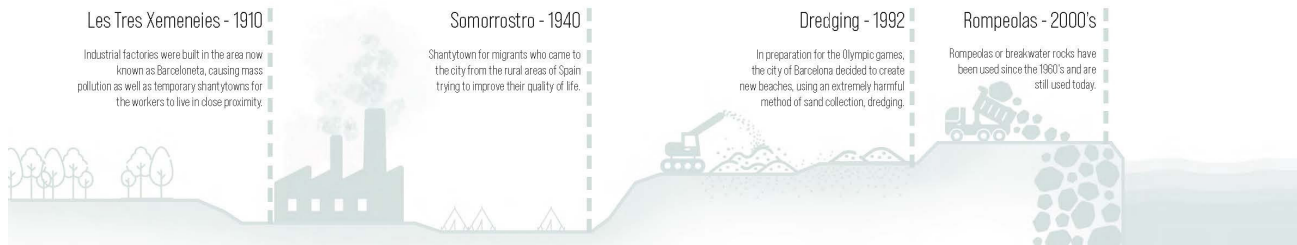
Shantytown for migrants who came to the city from the rural areas of Spain trying to improve their quality of life.

Dredging - 1992

In preparation for the Olympic games, the city of Barcelona decided to create new beaches, using an extremely harmful method of sand collection, dredging.

Rompeolas - 2000's

Rompeolas or breakwater rocks have been used since the 1960's and are still used today.

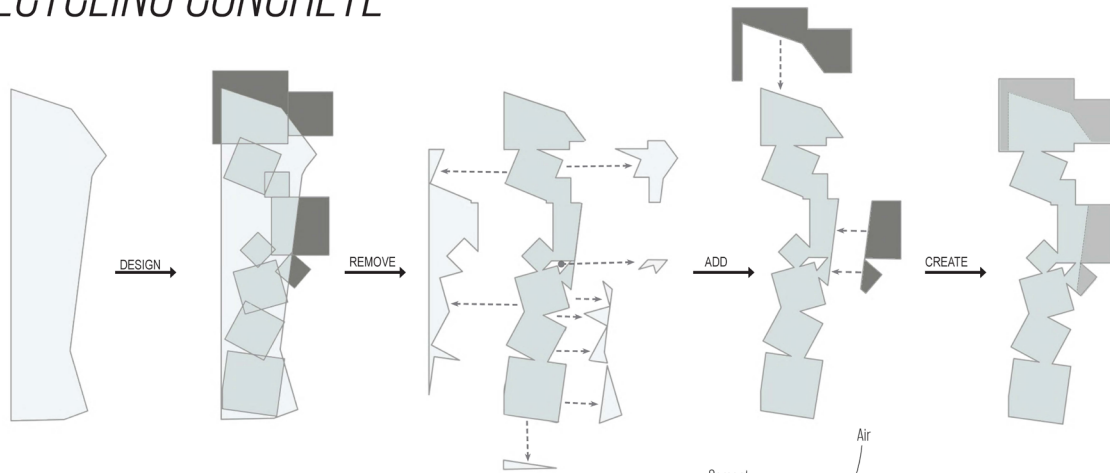


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Haley Carpenter / LAND ARCH Undergraduate

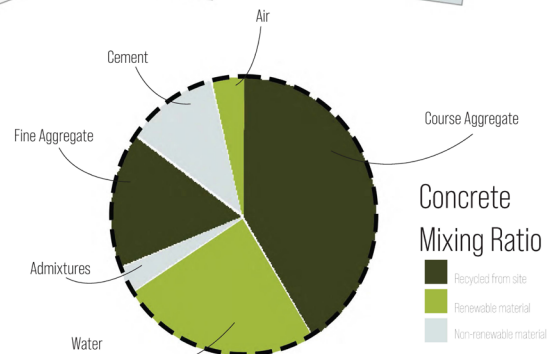
FINAL 01

RECYCLING CONCRETE



Concrete Mixing Ratio

The two materials used the most in concrete are large aggregate, and fine aggregate. By using a portable concrete crusher, all of the material removed from the site can be turned into both fine and large aggregate to then be used in the creation of new concrete for the site. By just crushing existing concrete over 2/3 of the new site material is both **Free** and **Recycled**.

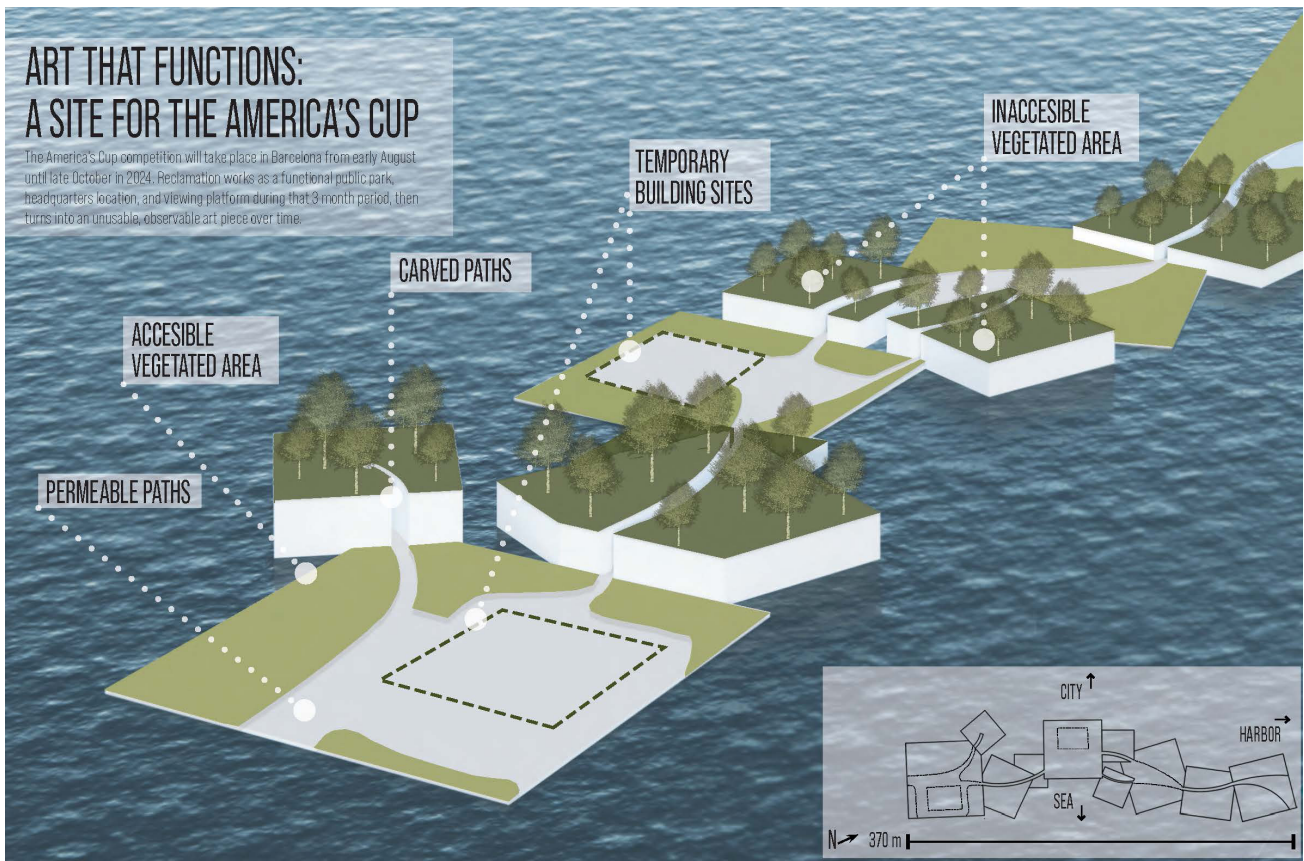


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FINAL 02
Hailey Carpenter / LAND ARCH Undergraduate

ART THAT FUNCTIONS: A SITE FOR THE AMERICA'S CUP

The America's Cup competition will take place in Barcelona from early August until late October in 2024. Reclamation works as a functional public park, headquarters location, and viewing platform during that 3 month period, then turns into an unusable, observable art piece over time.

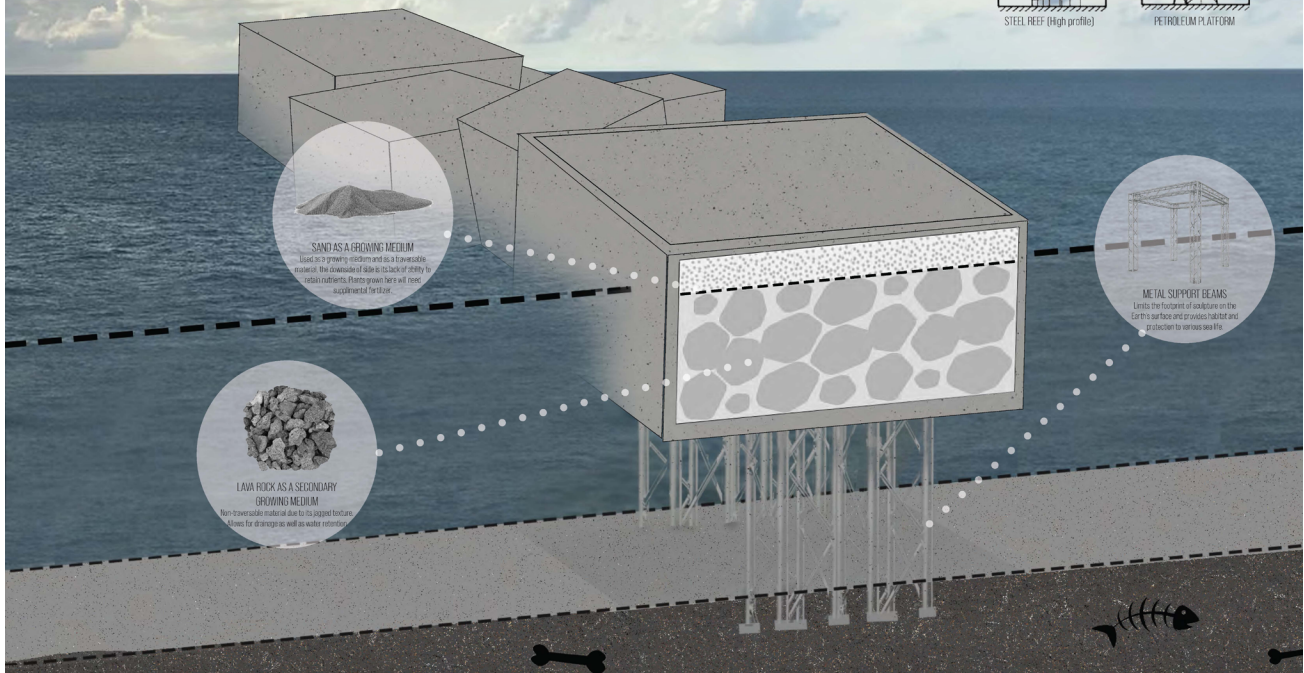
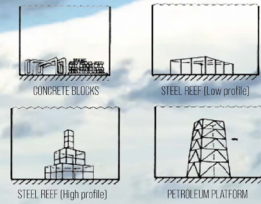


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FINAL 03
Hailey Carpenter / LAND ARCH Undergraduate

MATERIALS & INSTALLATION

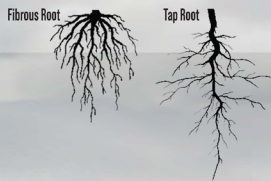
One of the hardest ways the built environment interacts with the natural is through installation. As seen through the ancient ruins still present in the city, it is almost always easier to build on top of previous sites rather than remove them. Something that is important to this piece is all additions have a limited connection to the physical surface of the earth.



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FINAL 04
Hailey Carpenter / LAND ARCH Undergraduate

REDEFINING BEAUTY: USING 'WEEDS' AS LANDSCAPING PLANTS



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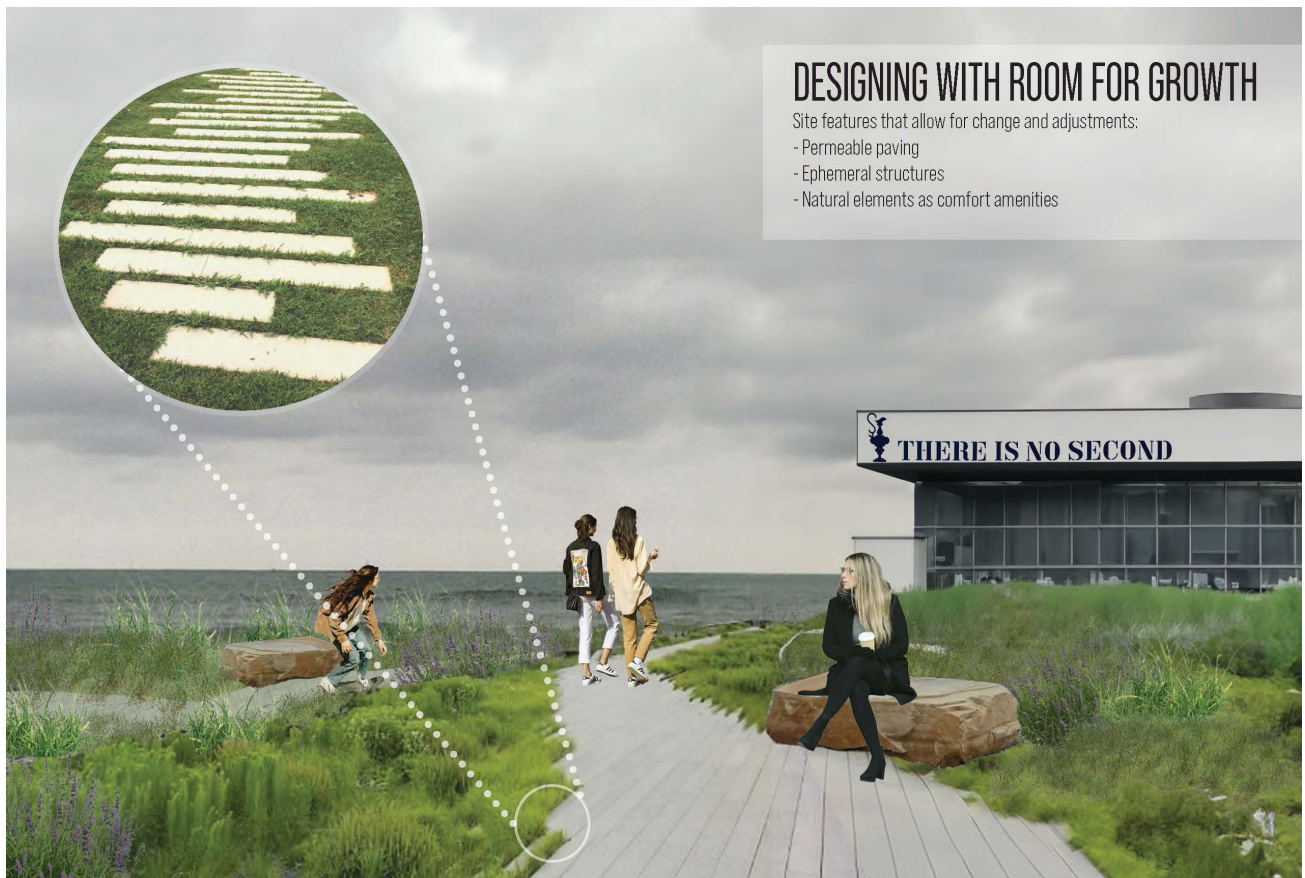
FINAL 05
Hailey Carpenter / LAND ARCH Undergraduate

ART THAT FUNCTIONS: AUGUST '24 UNTIL OCTOBER '24



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DESIGNING WITH ROOM FOR GROWTH

Site features that allow for change and adjustments:

- Permeable paving
- Ephemeral structures
- Natural elements as comfort amenities

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SUMMER

FALL

WINTER

SPRING

CHANGE THROUGH THE SEASONS

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08



5 YEARS OF GROWTH



50 YEARS OF GROWTH



100 YEARS OF GROWTH

CHANGE THROUGH THE YEARS

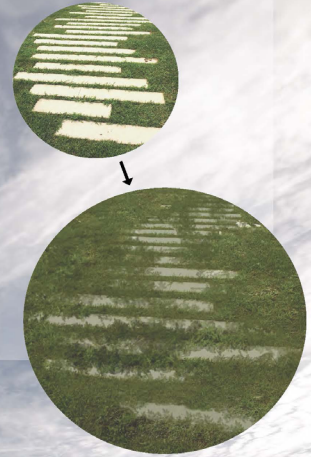
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FINAL
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09

ART THAT CHANGES: OCTOBER '24 UNTIL ?

RECLAMATION leaves us with a profound reflection on the intertwined relationship between humanity and nature. From the bustling energy of the America's Cup to the serene return to untouched wilderness, this project encapsulates the ever-changing essence of our environment. Let it serve as a poignant reminder of our responsibility to preserve and cherish the natural world, ensuring a harmonious coexistence for generations to come.



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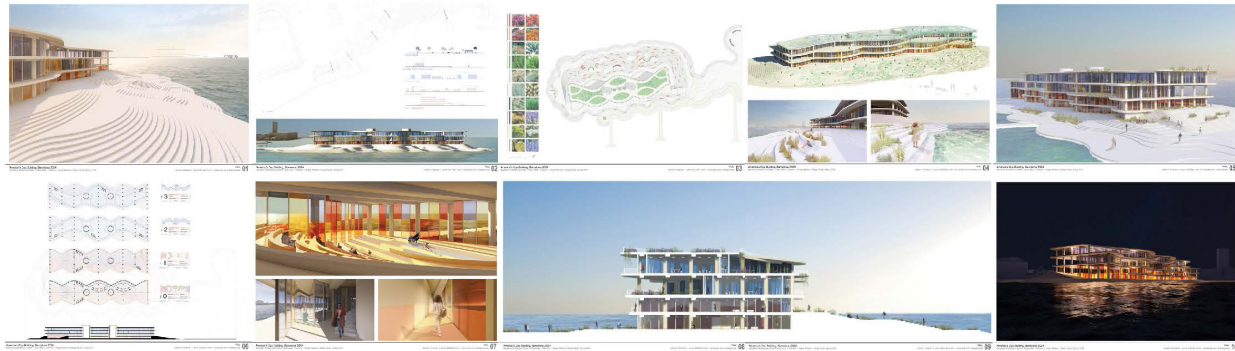
FINAL
Haley Carpenter / LAND ARCH Undergraduate

10

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AMERICA'S CUP BUILDING

**CONGRUITY**

exhibiting harmony of parts.

Congruity aims to create harmony between a harbor front site and the city of Barcelona by creating a public space for the viewing of the America's Cup, and future endeavors. Currently, the beachfront of Barceloneta lacks viewing points at higher elevations to enjoy the surrounding areas. A solution is needed.

To combat the lack of elevated viewing spaces, Congruity creates a series of micro and macro decks that transform a **mundane flat site into viewing platforms** for views of the sea and city of Barcelona.

The **micro decks** are represented by newly constructed **topography** that allows the public to ascend from the sea (0m) to the entrance of the building (6m). In order to connect materiality of the site to the nature of the surrounding areas, congruity proposes a series of dry garden beds that house native mediterranean plants that are drought tolerant and able to withstand the harsh sun conditions of the coast. Dry gardens allow for immersion of green spaces on the site, while having little to no upkeep, as these require no water, soil, or maintenance.

The **macro decks** are represented through the **building** itself. Reaching a total height of 20m, these decks allow for different views of the sea, city, and surrounding areas, through balconies and a walkable roof that also features dry gardenscape.

In **section**, the form reveals the micro decks transforming into the macro. The topography harmonizes with the building, by ascending as one.

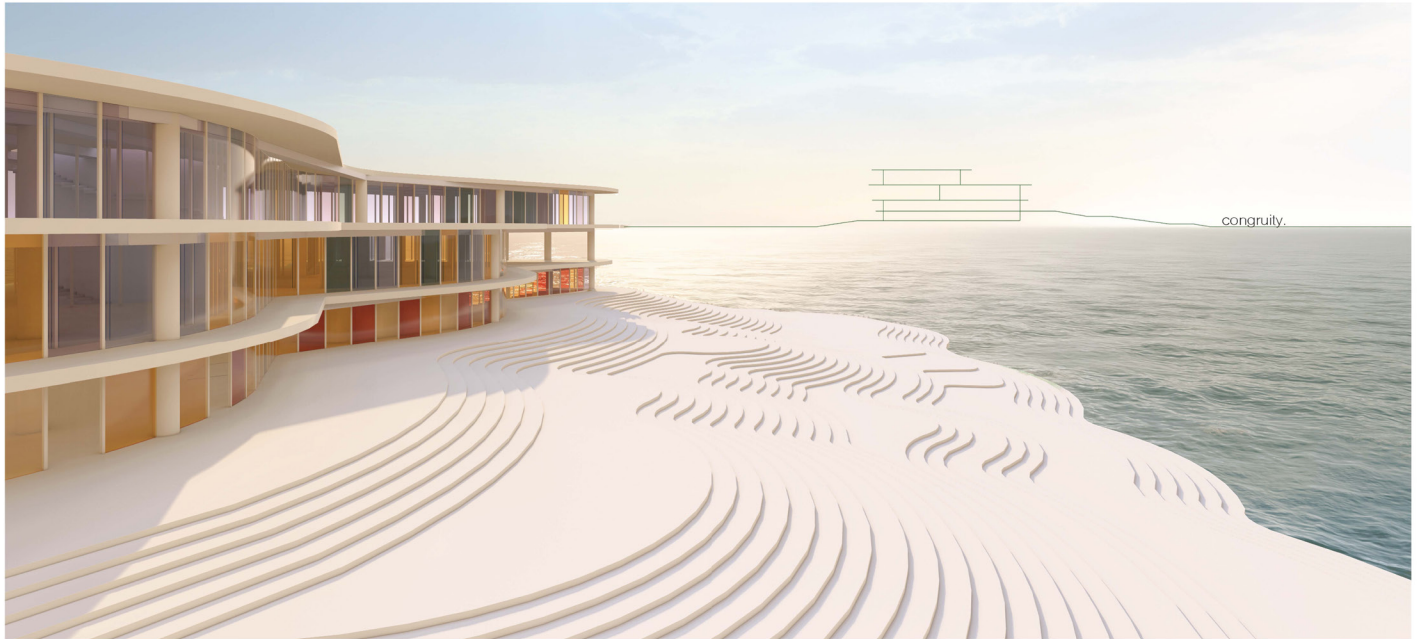
In **plan**, the building resembles the shape of a double helix, creating tight interior spaces for circulation, and expansive interior spaces for program distribution.

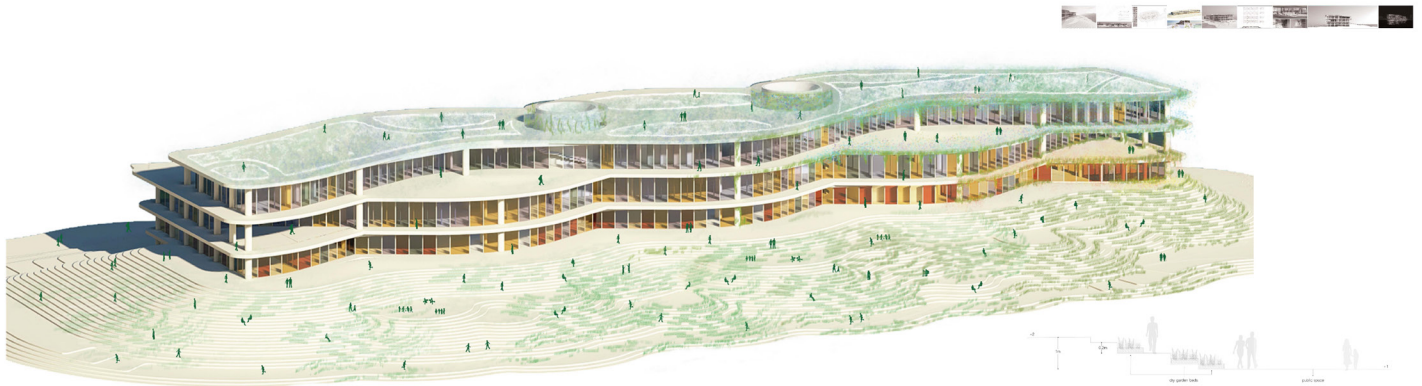
The **facade** of the building consists of warm and cool toned transparent tinted glass. As the topography ascends, plantings follow alongside, blooming in warm and cool colors as you reach the top. Functionally, the tints provide extra sun protection. Metaphorically, the tints represent the materiality of Barcelona (warm tones), as well as the atmosphere (cool tones).

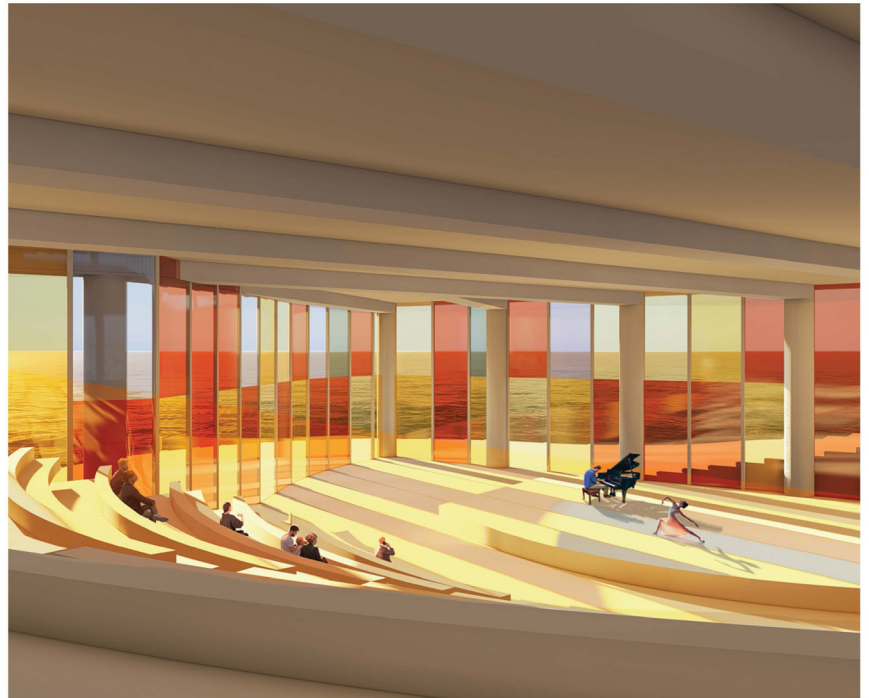
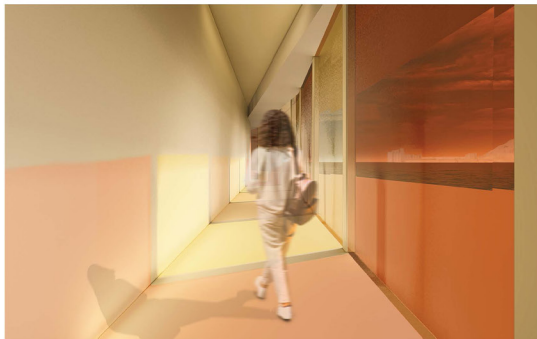
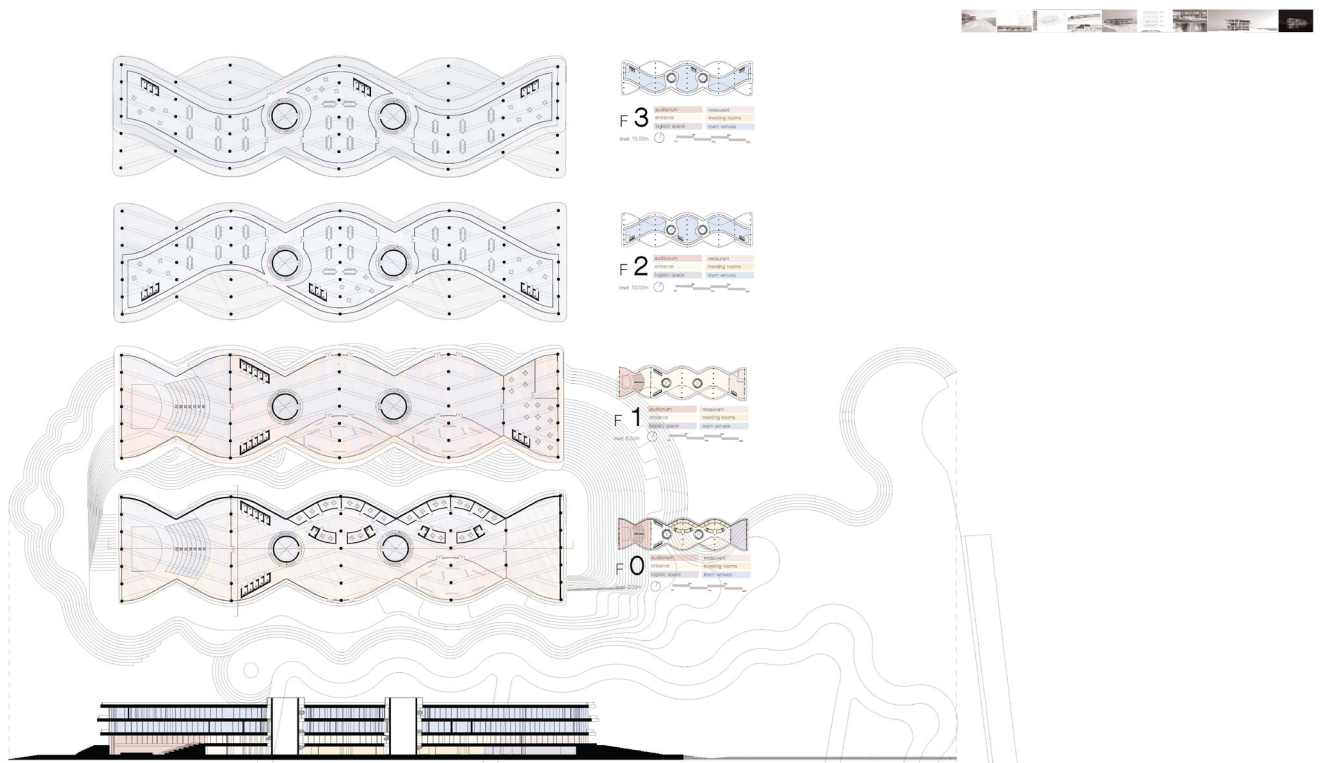
CLEMSON UNIVERSITY

JACKSON COPELAND AND JANINA MCDUFFIE ARCH + LAND ARCH UNDERGRADUATE









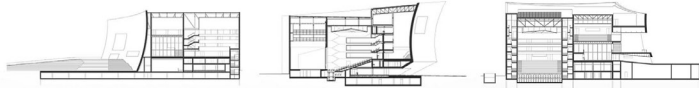




AGUILAS AUDITORIUM

ARCHITECT: BAROZZI VEIGA
LOCATION: AGUILAS, SPAIN
YEAR: 2004-2011
AREA: 2,000 SQUARE METERS AND 25.50 METERS HIGH

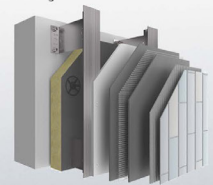
STRUCTURE



LOCATION



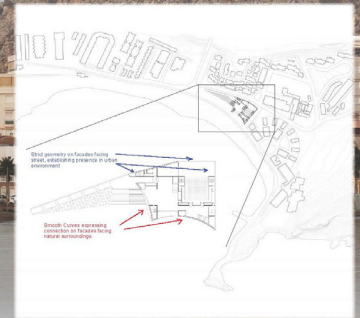
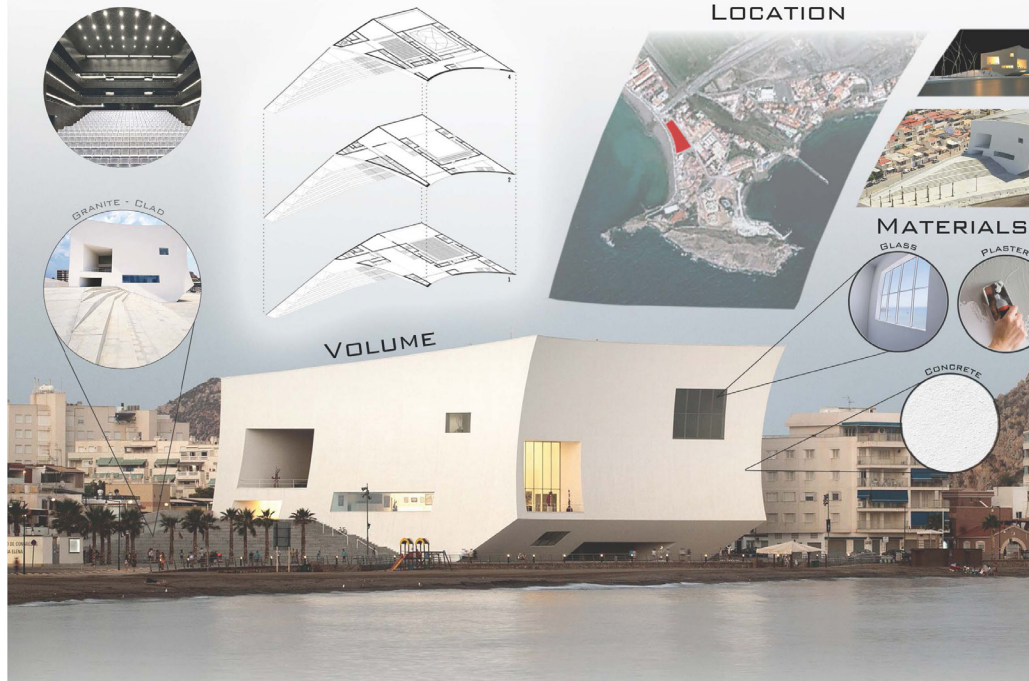
RAINSCREEN CLADDING FAÇADE SYSTEM



MATERIALS



VOLUME

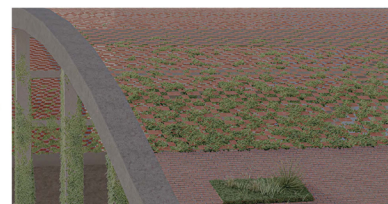
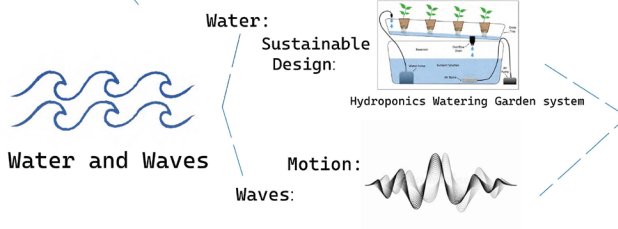


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Nick Ceva / Rodrigo MuñozLedezz / ARCH / LAND ARCH Undergraduate

PHASE 0 01

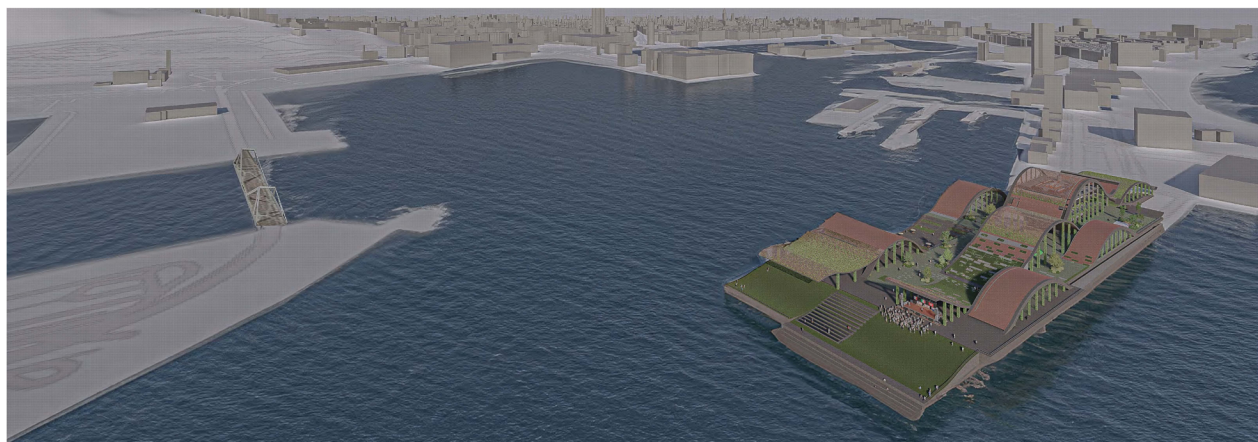
Las Olas



Flexibrick
(connection to local building techniques)



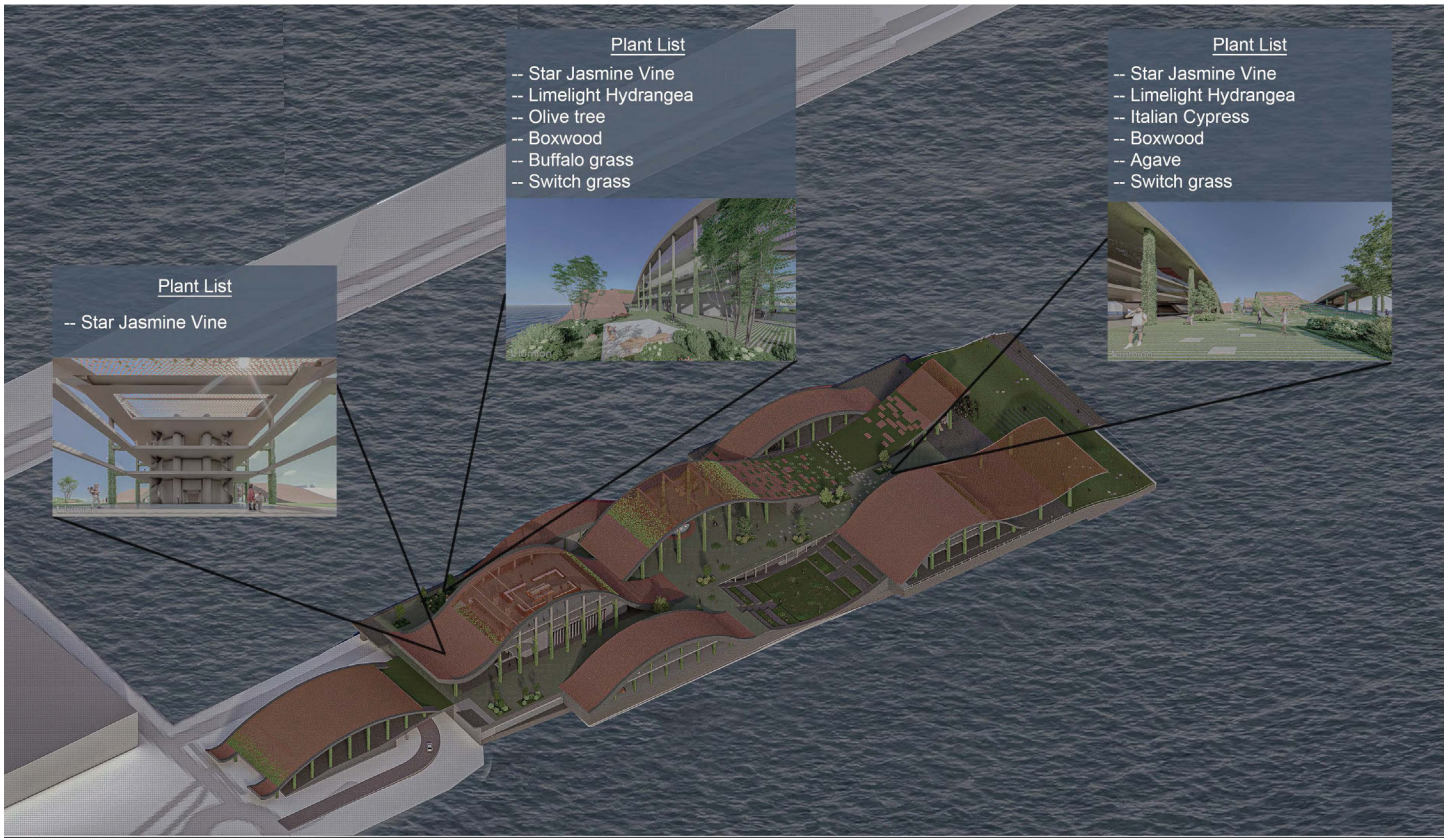
Site (Barcelona, Spain)



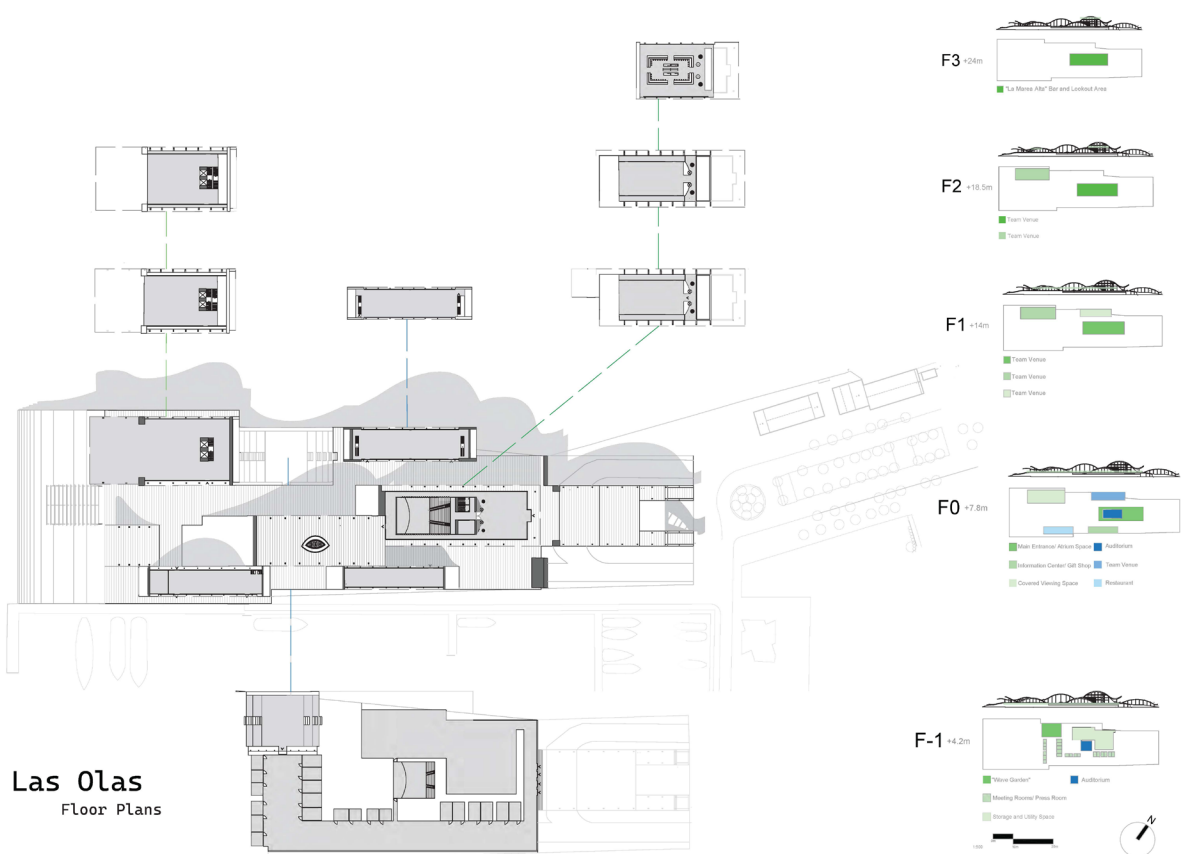
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Nick Ceva and Rodrigo MuñozLede / ARCH / LAND ARCH Undergraduate

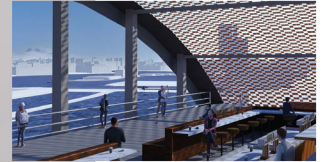
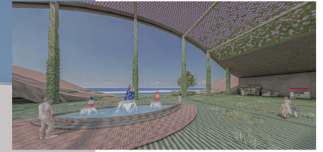
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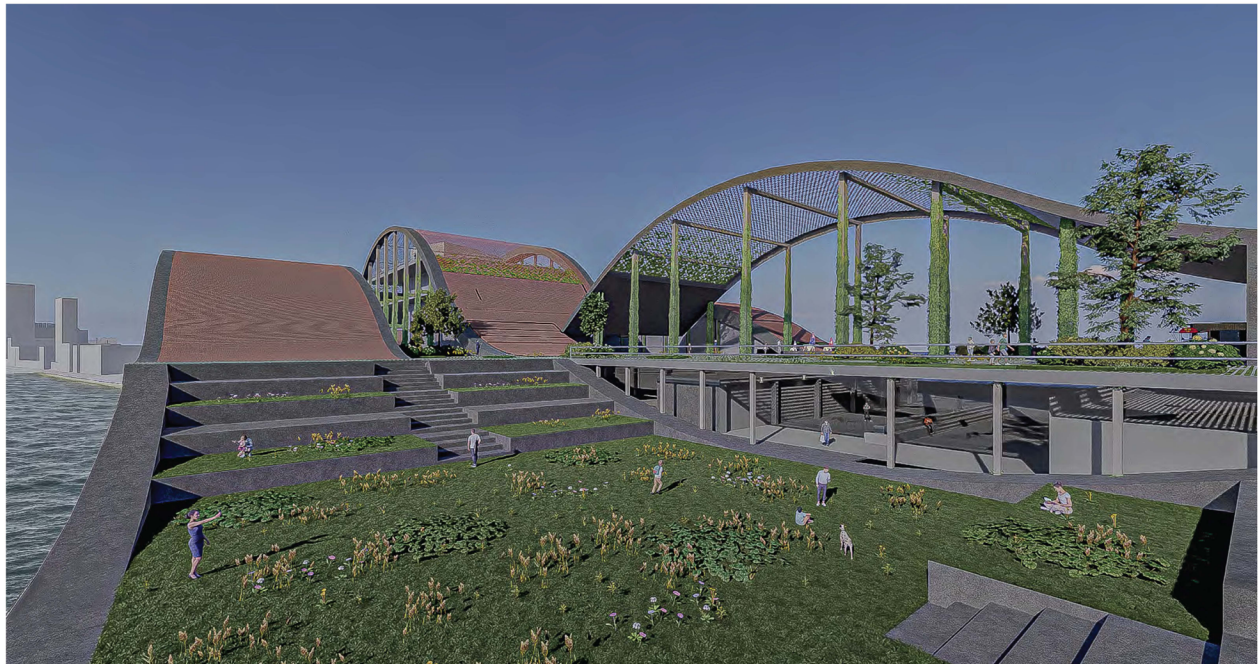


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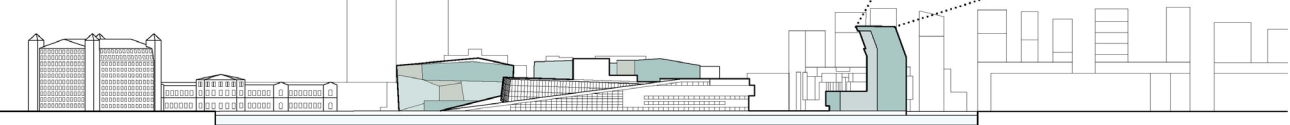
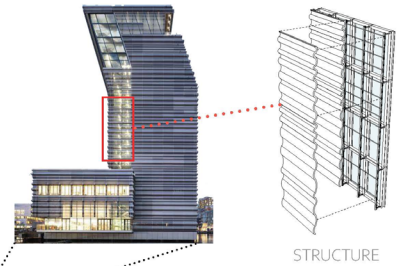
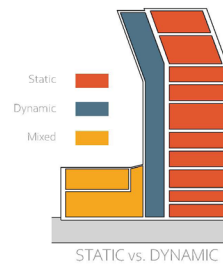
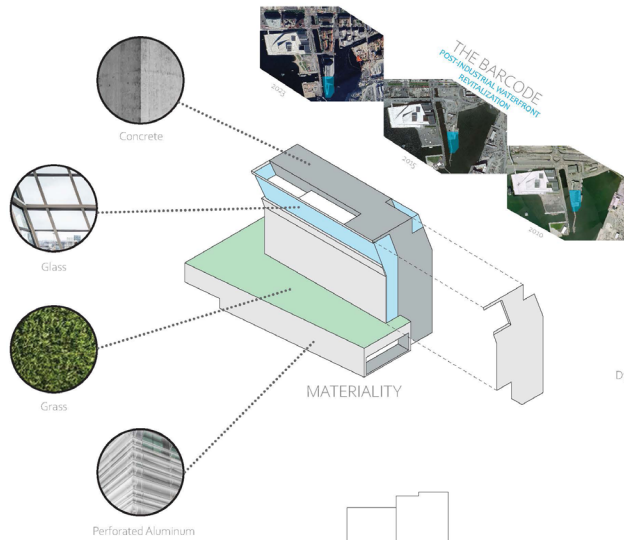
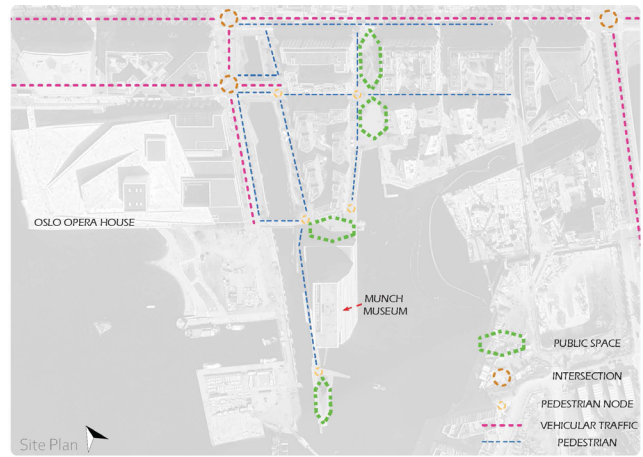
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MUNCH MUSEUM
 Architects: **Estudio Herreros**
 Location: **Oslo Norway**
 Area: **26300 m²**
 Year: **2021**



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