BERAT - TOWN OF A THOUSAND WINDOWS
A NEW WINDOW TO THE TOWN

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A_ Description of the design concept

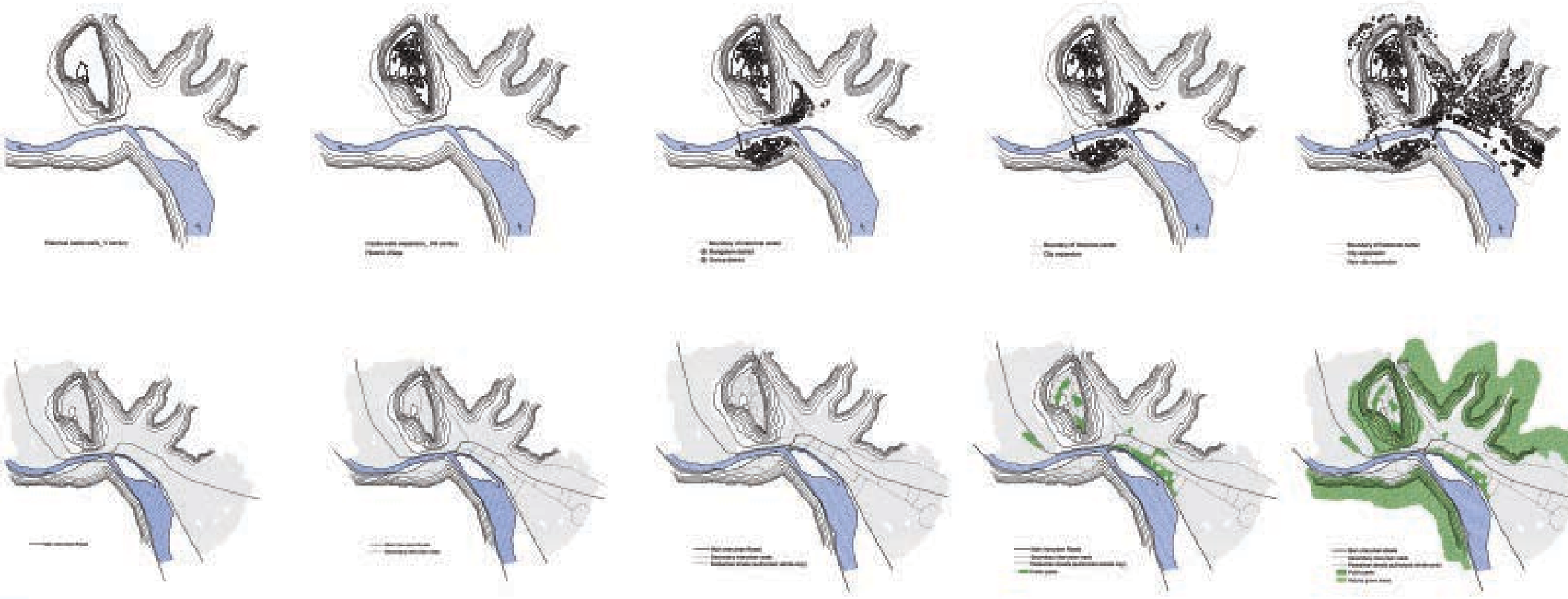
Short introduction about Berat:

Berat is a small city located in the south of Albania and one of the most historical of the country, part of the Unesco World Heritage Sites. Descending from the model of a Ottoman city, it has many religious buildings and ancient city walls.

The Osumi river, a tributary of the Seman which crosses southern Albania, cuts through the city.
A small island, that often changes its outline depending on the water level of the season, it marks the bend where the river broadens out.
The most significant element of the urban tissue is a series of small white houses covering the steep hillside.

The town is still renowned for its historic architecture and scenic beauty and is known as the "Town of a Thousand Windows", due to the many large windows of the old decorated houses overlooking the town. It is unclear whether it really means "Thousand windows". Indeed, the quarter is built in a very steep place and windows seem to be one over another. Similar views can be seen in Melnik, Bulgaria, Gjirokastër in Albania, as well as Catanzaro in Italy, where an Albanian minority once lived.

The presence of the Osumi River, whose route crosses mountains, is a significant element for Berat, not only for the relationship that is normally created between the city and its the river, the through the banks designing the waterfront, but first of all because of the changes in river water flows.
For these reasons the island that faces the city is continuously changing its shape, fighting with the river water level.



A NEW WINDOW TO THE TOWN

General strategy:

The task of the competition is the redesign of the island banks, to become resilient to flooding situations, transforming Osumi island in a real focal point for the city, not only for citizens, but creating a new landscape element for the whole country.

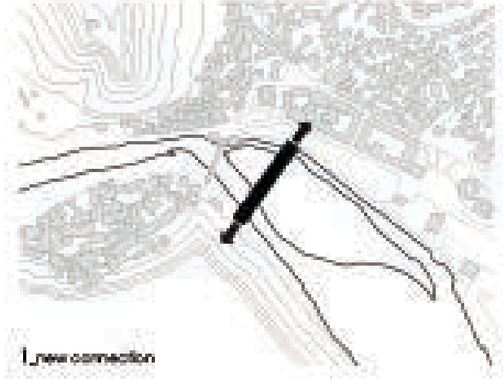
For all these reasons it is important and necessary to develop a project that enhances the image of the island and of the whole town, but at the same time represents a renewed and more usable functionality in terms of connections and fluxes, creating new opportunities for the city .
For an appropriate redevelopment, it is essential the search for unity and coherence between the different parts: river, island, new town, historical town, mountains and landscape.

For these reasons the intervention in Osumi island will combine clearly the external environment, designed with natural existing elements, with the building itself. A new image of the interior and exterior spaces in close dialogue with the studied views on the river and on the city, old and new, in order to make the most of all the available elements.

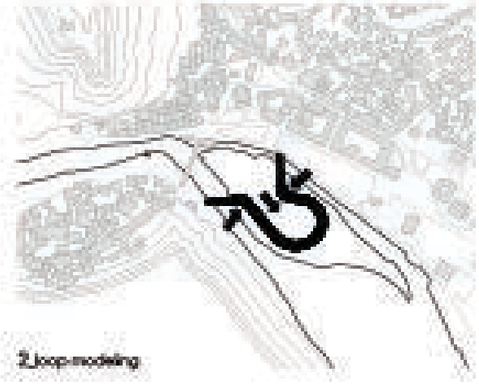
Osumi island and banks

The proposed concept design aims to create a new link, a new connection between the two banks of the river, from the city to the rocky mountain, crossing the island.
We propose a new pedestrian bridge across Osumi river covered in trees and shrubs to span the river between the two banks, as a new landscape element defining "urban by nature".
Berat is where it is because of the river osumi. But over many years the human experience of this amazing piece of nature has been marginalised by floods and transport moves.

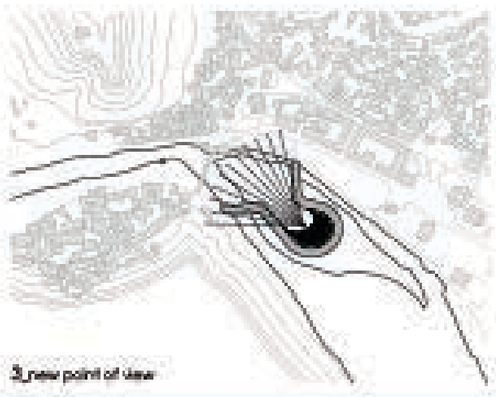
The historic district of the thousand windows and the new espansion on the other side of the bank are facing but almost isolated
There is now an opportunity to connect this two parts together, better than the existing, to give citizens a huge improvement in the quality of pedestrian river crossing in this area, enhancing the island as a natural park, to allow people to get closer to the river and at the same time to stimulate new regeneration possibilities at both ends where the new bridge lands.



1_new connection



2_loop modeling



3_new point of view

4_renovation of the island banks

5_banks

Project Masterplan

A NEW WINDOW TO THE TOWN

Functional program:

The new connection does not have to be seen only as a bridge but as new a landscape, sculptural and architectural building/ connector.

The shape of the new bridge is articulated to create a curviline-ar pedestrian walkway (500 m long), starting from the level of the city waterfront at + 57.00 m , re-aching the top level at 73.25 m (16.25 m slope) and descending to + 57,3 m on the other side.

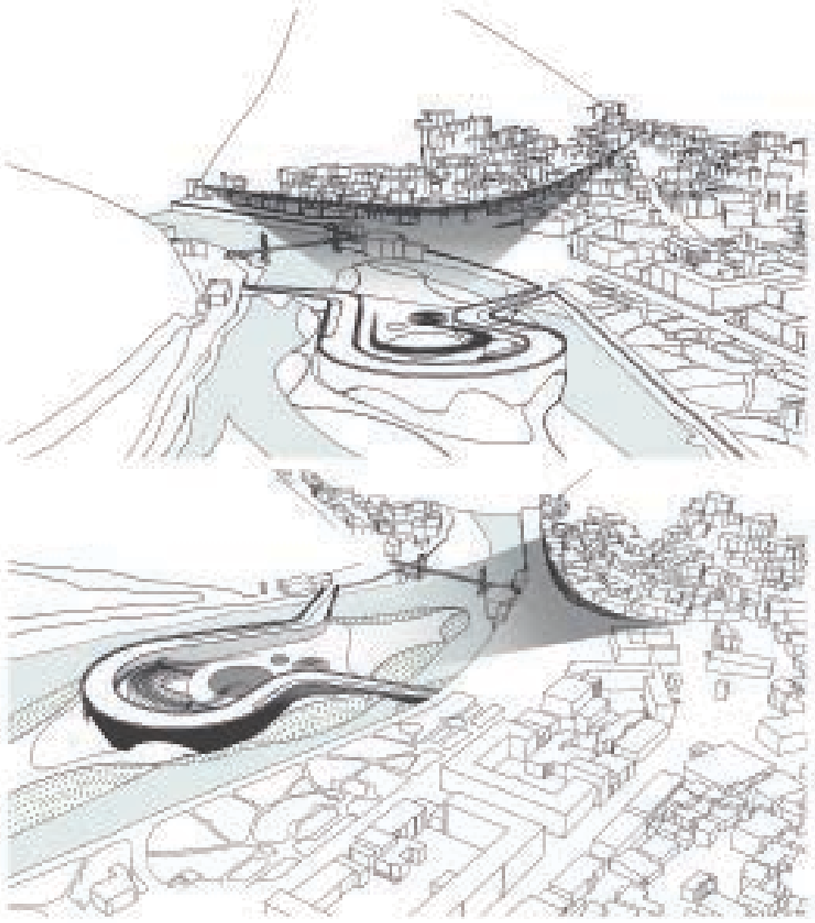
The bridge creates a loop, as a fluid element, that hosts an open theater facing the old town and laying on the island, descending to + 52.8 m.

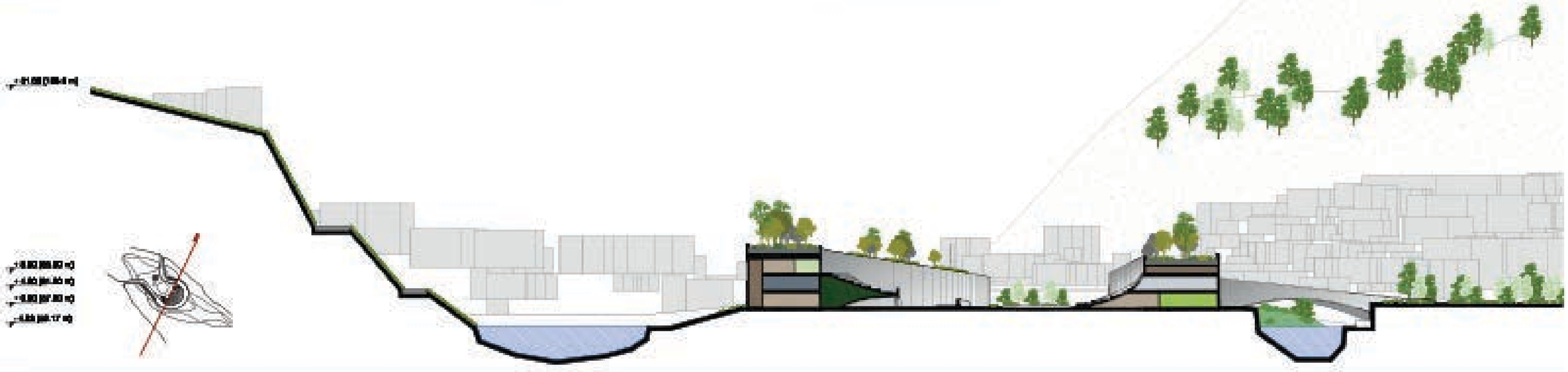
The new theater, as a polyvalent space inside the park, becomes a *new window to Berat, the one thousand windows city.*

To develop the potential of the island and of the whole city, the bridge has been designed as a multifunctional element, hosting functions and activities, articulated in 4 levels.

The bridge is a also a driveway link, located under the pedestrian path and covered by the garden, to mitigate the environmental impact of a street crossing the bridge.

This solution ensures the usability of the island for any kind of visitor, and it allows the servicing of the functions located in the bridge/ building.

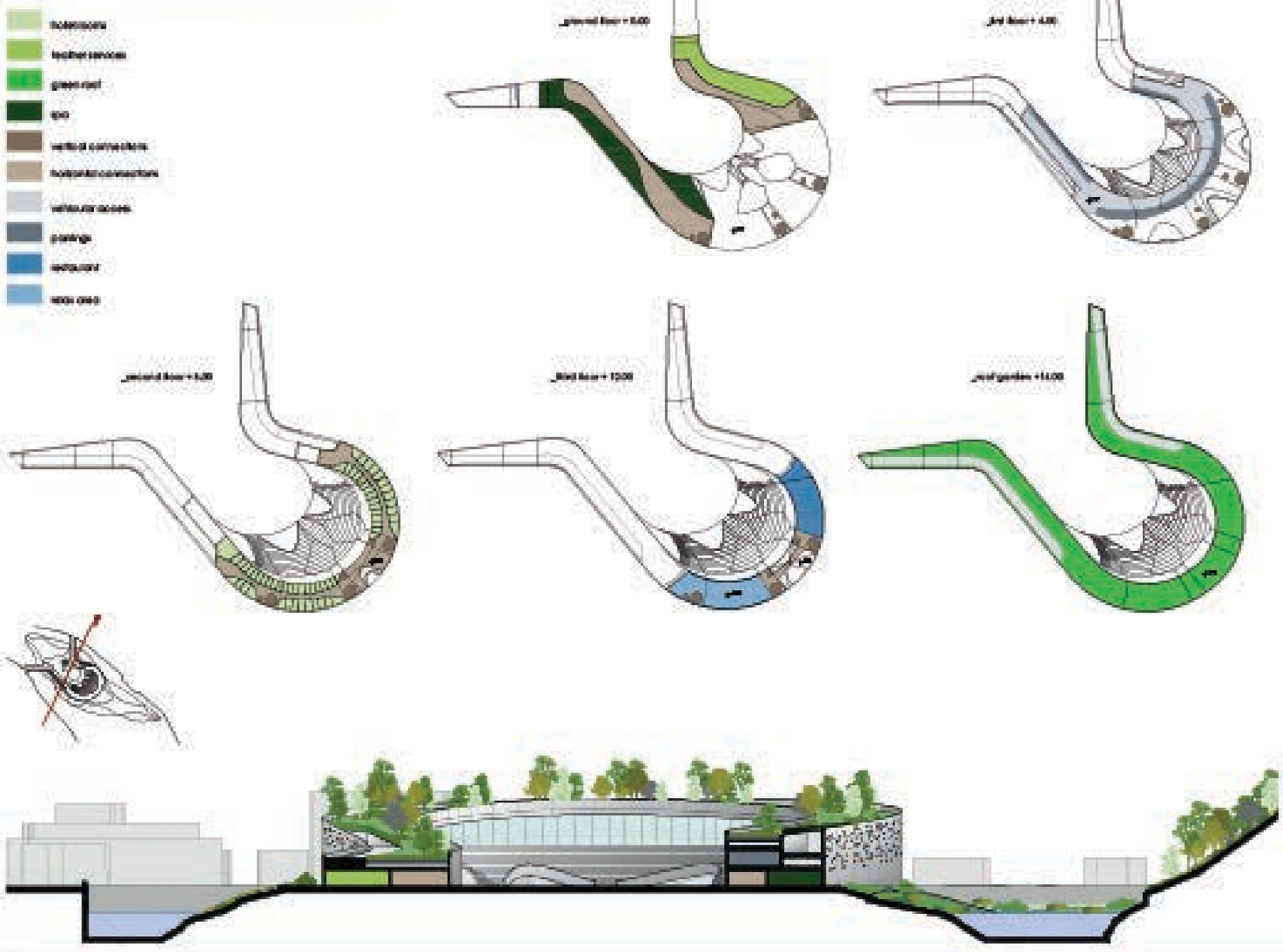


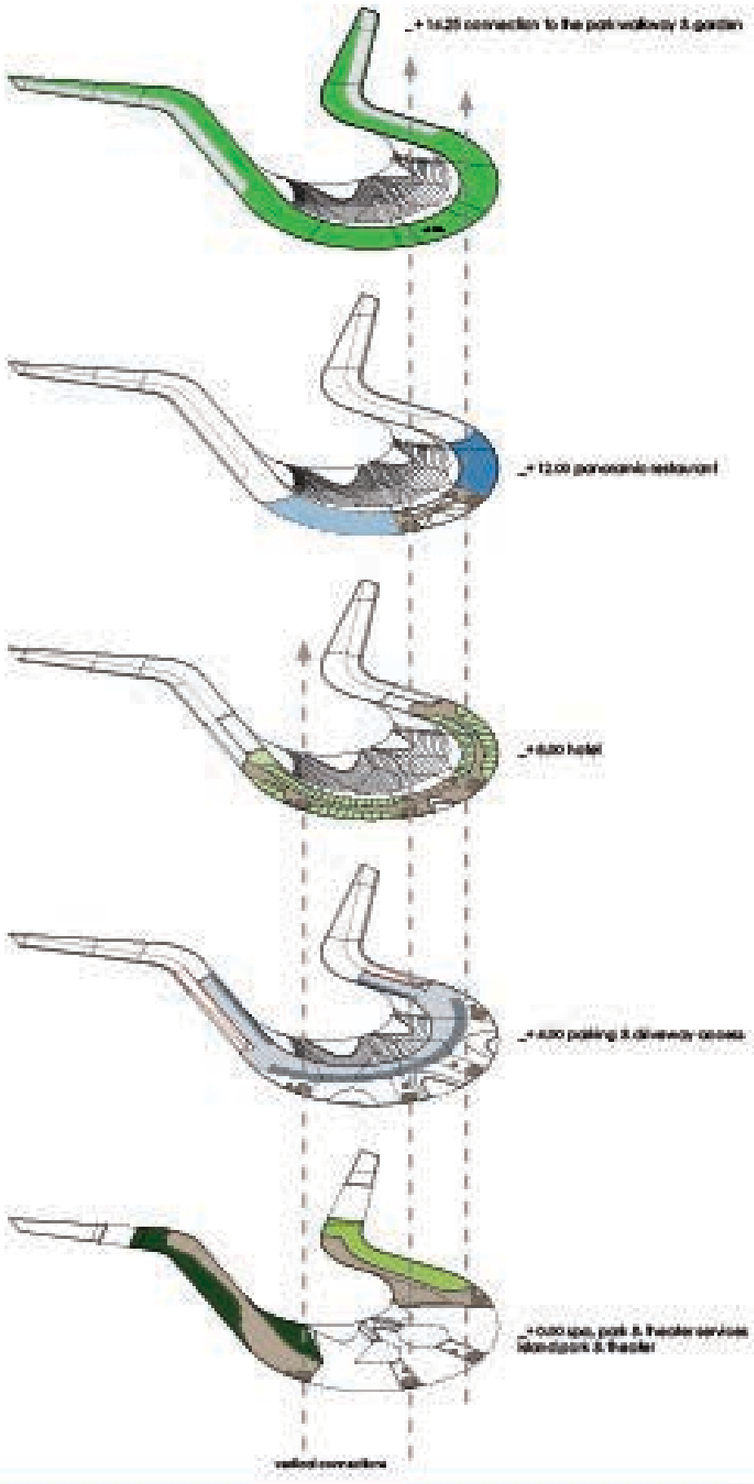


A NEW WINDOW TO THE TOWN

The building hosts:
-services and spaces dedicated to the open theater (ground floor);
-accommodations (restaurant and bar) dedicated to visitors (ground floor);
-services and spaces dedicated to the open theater (ground floor);
-a small spa area connected to the hotel (ground floor);
-a parking on the 1st floor served by the driveway;
-a hotel (2nd floor) provided with lounge and services;
-panoramic bar and restaurant on the 3rd floor;

The unique location of the hotel and services offers the possibility of establishing an intimate dialogue with nature, emphasizing the colours, sensations and atmospheres in an elegant and sometimes surprising way.





A NEW WINDOW TO THE TOWN

Objectives:

The idea of bridge/building aims to develop the island as a "pole" for the city and for the territory, as a 24 hours/day living multifunctional element, hosting features and business accommodation now absent in Berat, creating an economic strategy of public/private partnership to share the global cost of the intervention.

This is the first major milestone for the project and marks a very clear intent to create a new landmark not only for Berat, but in a larger territory scale.

The scheme has been shaped and developed into a proposal that will contribute significantly to the future of Berat's development and we are committed to ensuring the NEW Garden Brige/Building will be something that the whole country can be proud of.

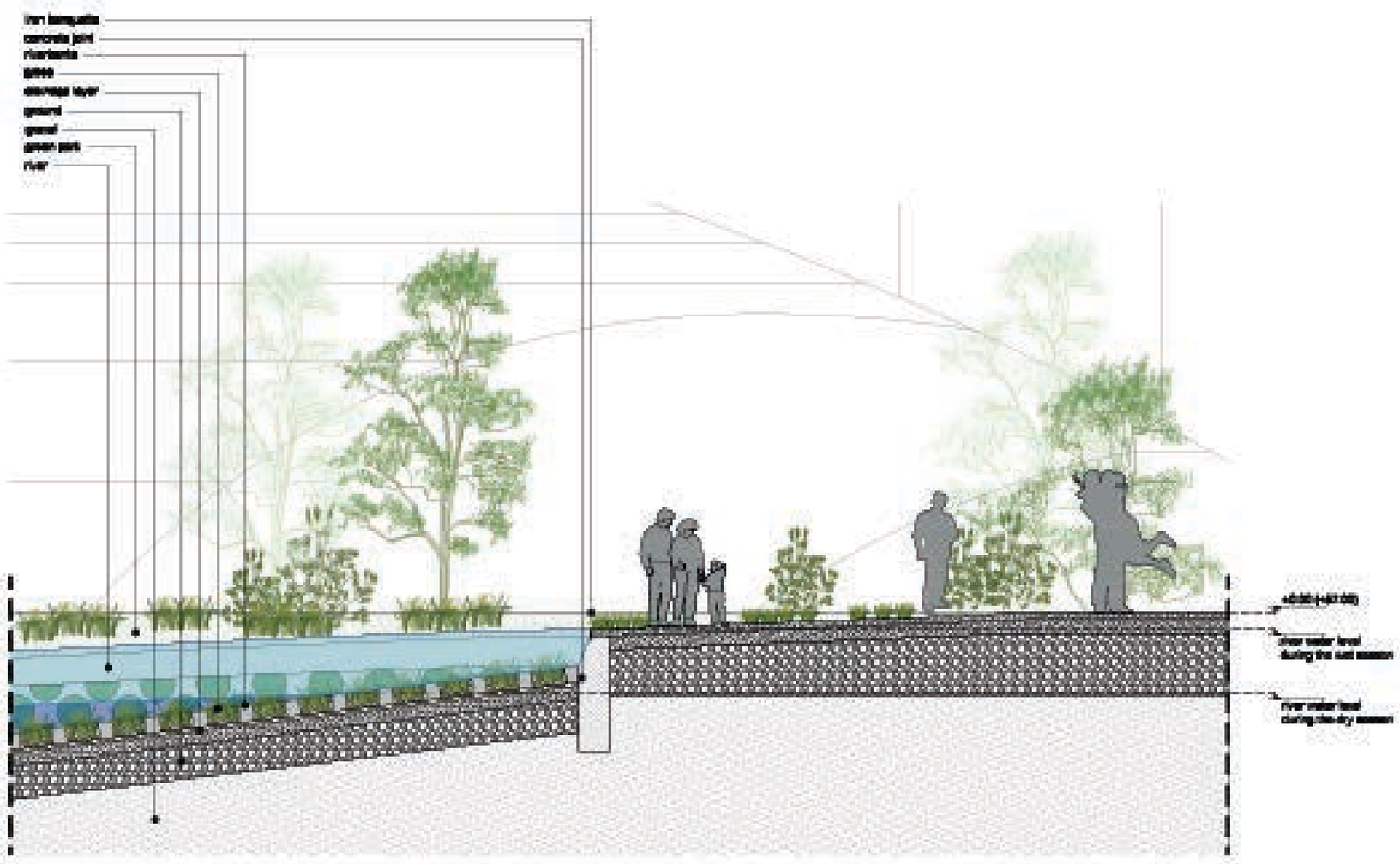
In this vision the new bridge becomes:
-a connection (pedestrian and driveway) between the two banks of the river;
-a green walkway on the whole landscape of the area;
-a park, open to visitors and citizens, with an open theater for special events, festivals and activities;
-a hotel for business and for visitors accommodation;
-a parking dedicated to visitor and tourists;
-a set of activities, connected to the hotel and opened to the park and to citizens.

View of theproposed solution

Description of flooding risk prevention strategy:

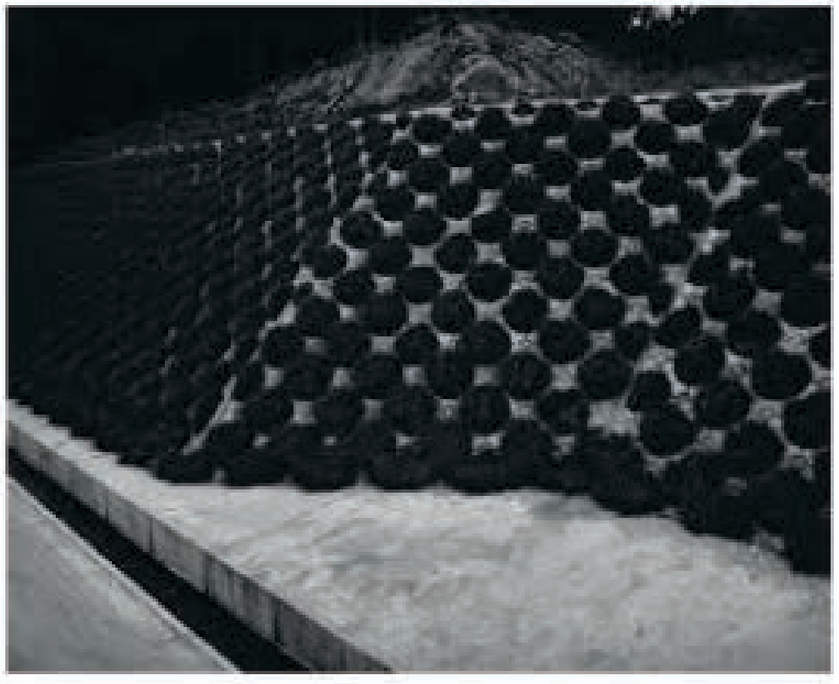
The redesign of the banks of the island and of the river is a focal point of the project, to preserve the city and the new bridge.
The banks of the island, and of the Osumi river where needed, are redesigned with concrete structure creating a grid that holds the ground, preserving the shape from water floods.

Gaps between the concrete grid are planted with humid shrubbery, compatible with water floods and holding the ground through the roots.
The higher of the new banks is defined starting the historic of water levels in past floods, and it is able to preserve the land of the island, it's shape and the new multifunctional building and both bridge walkay and driveway.



Bank detail

Reference: bank reinforcing structure



Reference: bank reinforcing structure

Water level diagrams

Maximum Water level
WET SEASON: +50.00 m

Intermediate Water level

Minimum Water level
DRY SEASON: +51.00 m

B - MATERIALS AND CONSTRUCTION

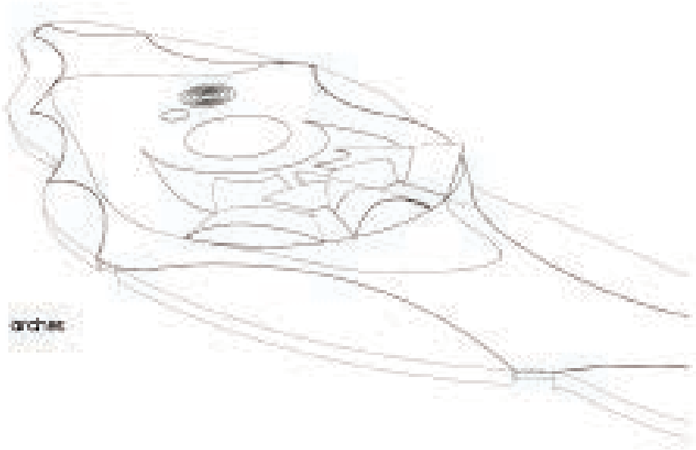
Structure and construction methods

A key element of the proposed project is the shape of the new bridge according to the traditional image of ancient historical and rural bridges, taking inspiration to local building traditions and materials, as seen in Ura e Gorica bridge.
This allows to re-configure a unified and continuous image of the building crossing the river.

The use of arches and vaults configure the pillars of the building, in which are located the vertical connections, creating external covered areas rebuilding a solid edge and creating multiples visual cones to the surrounding landscapes.

The structural design provided will mainly focus on using concrete elements for vertical pillars and horizontal elements, as the slab of the roof garden or the slab of the driveway, to ensure stability and durability of structures considering the humid environment we are working in due to the presence of Osumi river.
Concrete foundation is realized using micropoles, to structural loads to the depth soil, passing the riverbed that is not stable enough.

The proposed vaulted basement will be constituted by a main regular metal structure plus a secondary one that will bear the load of soft shaped parts.

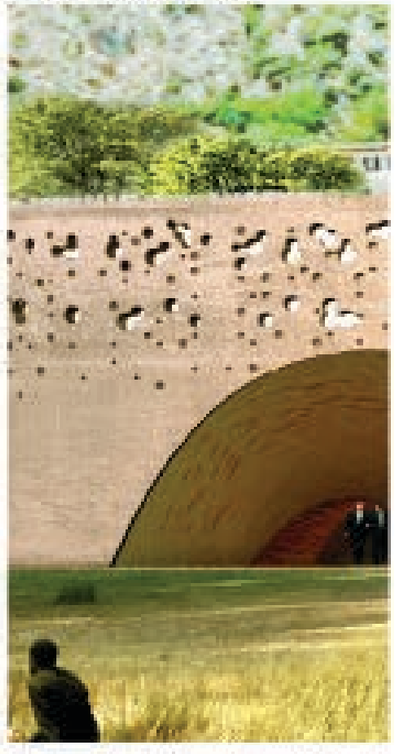


Façade design and materials

The proposed solution for the facade of the bridge/building has as objective the unity of the overall image, creating a subtle reference to the local traditional architecture, however, a composition characterized by a strong contemporary style.

To meet the highest aesthetic and ecological construction requirements, we would mainly used natural materials such as stones, ceramics, woods, metal, mounted according to dry-laying systems.
To achieve a unified image both internally and externally it is very important the proper use of few materials that well respond to the performance requirements dictated by the local climate and the presence of the river as humid source.

The façade will be made by prefabricated concrete panels, to ensure stability and durability of structures considering the humid environment, characterized by special round windows.


Facade Detail

Roof

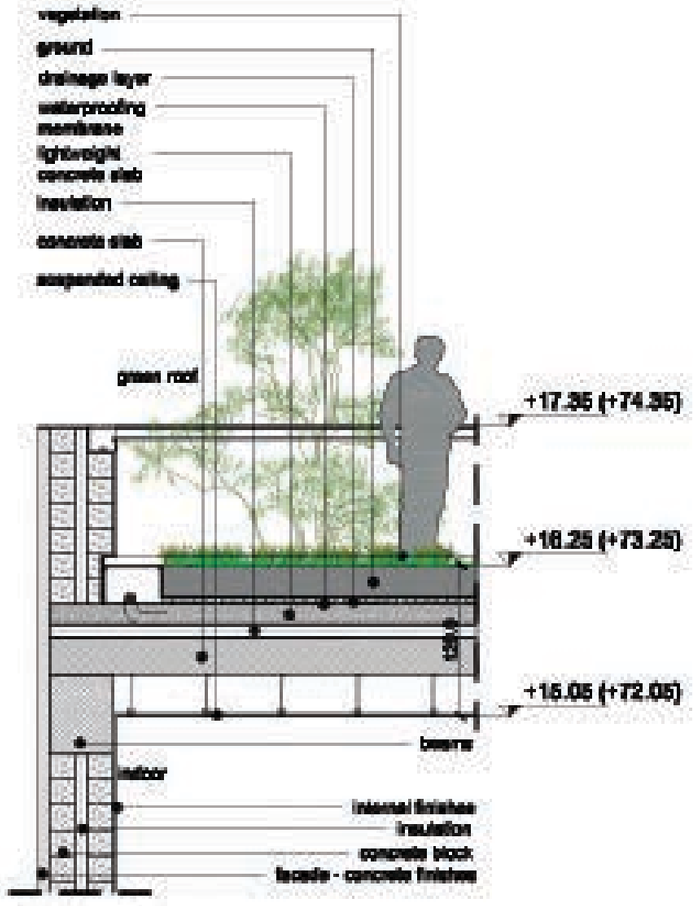
The roof is a pedestrian walkway planted with trees, shrubs and grass and organized with benches.
The roof garden is completely covered with vegetation planted on high fertility soil, to ensure the durability of plants. The structural slab is made by prefabricated concrete elements.

The most important features are the quality of the substrate, the amount of water accumulated, the supporting surface of the element of accumulation and the opening in the pores of the fabric filter. It is usually a system that has reduced thickness and weight to allow it to be used in roofing and requires little maintenance, as it is used a vegetation composed of essences of sedum that must be able to survive in situations of extreme drought, with high capacity for regeneration and self propagation.

It is a finishing technology that provides several benefits cover the building as protection sealing, adjusting the microclimate thanks to the lowering of the temperature in the urban environment and the fight against the heat island effect, isolation heat and therefore energy saving, the reduction of the presence of fine particles, creating new habitat for wildlife, the control of stormwater, in addition to reduced environmental impact and aesthetic.

It is generally composed of a "package" of more layers which comprehends:

- Diaphragm (or mantle) waterproof anti-root
- Separation layer and protection of waterproofing membrane
- Layer of drainage and water storage
- Fabric filter
- Substrate culture
- Vegetation



Roof Garden Detail

Roof Garden Top View

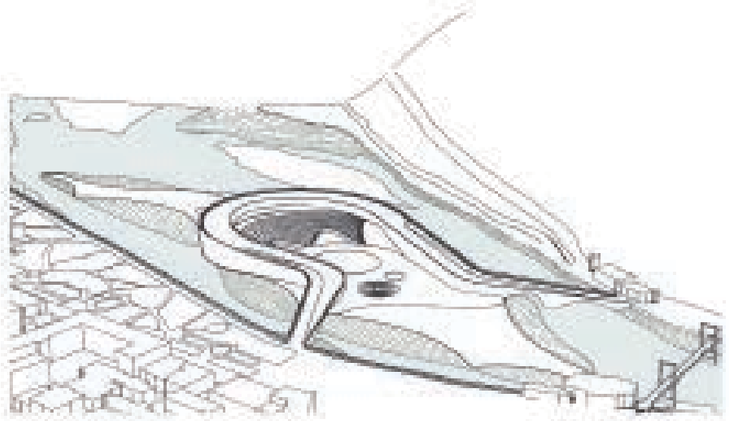
Technical plants

Our partners engineer's innovative design solutions embrace the latest technologies to improve a building's performance and sustainability. Integrated building services systems creating a balanced and controllable internal environment: natural ventilation, heating and lighting systems, combined with active systems, such as air conditioning, to provide a high level of comfort and operational efficiency.

To achieve the most appropriate solution we adopt a holistic approach, considering all aspects of the design process from 'abstract' issues such as occupant wellbeing to the detailed analysis of mechanical components and the impact of environmental regulations on the building's form and energy usage. Using sound building physics principles and advanced modelling techniques to analyses the envelope and spatial layout, our systems are integrated into the building fabric to create functional internal spaces and balanced, controllable conditions.

Building services represent a significant planning and cost factor on any building project, so it is essential to provide a fully integrated design solution that is delivered on time, on budget and which embraces the latest technology.

Designed to provide optimum levels of occupant comfort all year round, our MEP systems set a new benchmark for efficiency and sustainability.



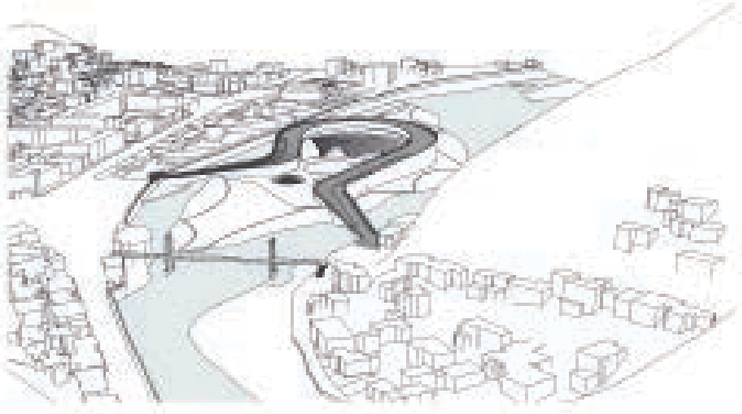
View of the Opera Theater

Sustainable designs

Energetic containment and reduction of the environmental impact due to the greenhouse effect, in response to the current global emergencies - represents the key factor that should lead the design, integrating building and systems solutions.
In other words, a green approach should be applied to the design of buildings, as every design choice has environmental implications.

Our design intentions converge to a proposal that has as its ultimate goal in respecting the environment and a high level of welfare of the users.

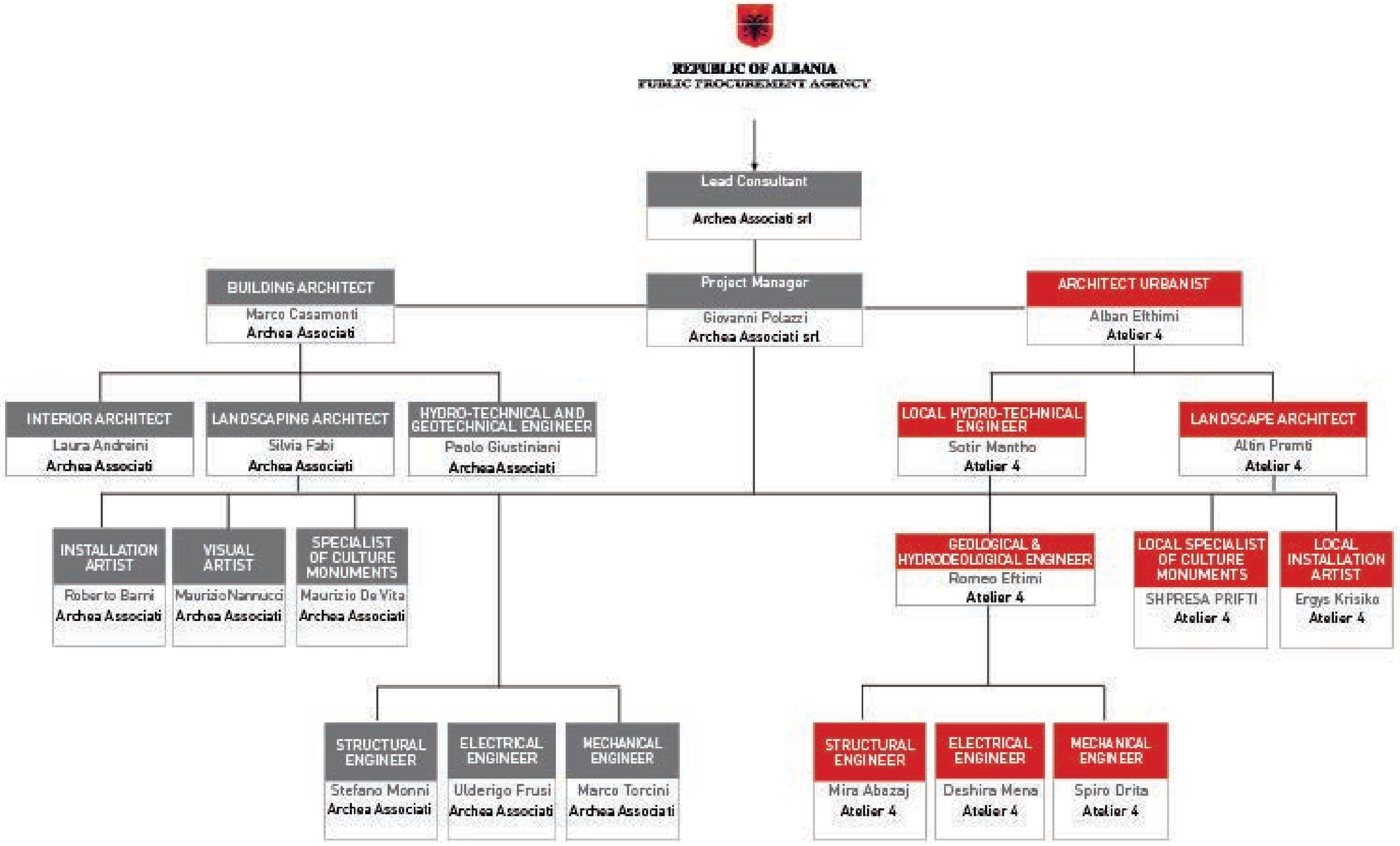
We indeed intend to adopt the following solutions in order to highly meet the criteria of a sustainable design:
- The reduction of direct solar radiation through the use of modular shading
elements. This will help to avoid overheat as well as guarantee a softer natural
lighting of the interior space.
- The insulation of the building shell through accurate definition of the insulation thickness for the opaque parts and a careful choice of the glass for the transparent surfaces, gaining a sensible reduction of energy requirements to cool the living areas.
- Plant efficiency that will reduce fuel consumption without compromising the overall performance.
- The use of bio-ecological materials such as ceramic, stone and dry construction system.



C_ INVESTMENT COSTS ESTIMATION

	Architechture &Engineering	Build Up Area (BUA)m2	Construction Cost Euro /m2	Cost Esfimate (Euro)
1	**Riverbanks:13.350mq**	13.350,00	100	**1.335.000,00**
2	**Green area: 18.400mq**	18.400,00	50	**920.000,00**
3	**Open air theatre: 2.000mq**	2.000,00	300	**600.000,00**
4	**Green roof + Trees : 5.755mq**	5.755,00	50	**287.750,00**
5	**Façade area:8.300mq**	5.755,00 8.300,00	150	**1.245.000,00**
6	**Building total: 20.535mq**	20.535,00	630	**12.937.050,00**
	Ground floor: total 9.066mq	9.066,00		
	First floor: total 6.045mq	6.045,00		
	Second floor: total 3.112mq	3.112,00		
	Third floor: total 2.311mq	2.311,00		
7	**Vertical Connections**	750,00	720	
8	**Lifts: 42mq**	6,00	25000	**150.000,00**
	TOTAL VALUE			**17.474.800,00**
	CONTIGENCIES	**5%**		**873.740,00**
	TOTAL INCLUDING CONTIGENCIES			**18.348.540,00**
	TOTAL ADDED VALUE (TVSH)	**20%**		**3.669.708,00**
	FINAL TOTAL			**22.018.248,00**

D_ LIST OF ALLA MEMBERS OF THE DESIGN TEAM AND THEIR ROLES



E_ REDUCED SCALE A3 COPIES OF THE PANELS

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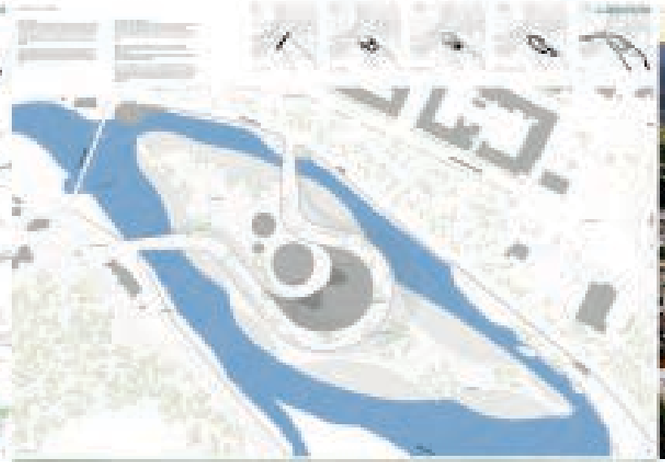

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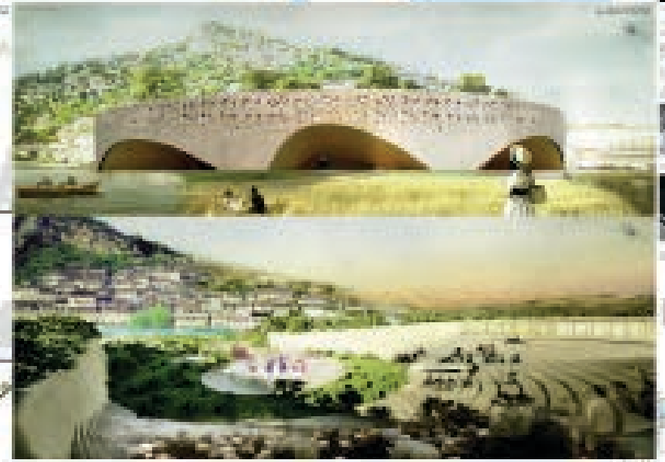

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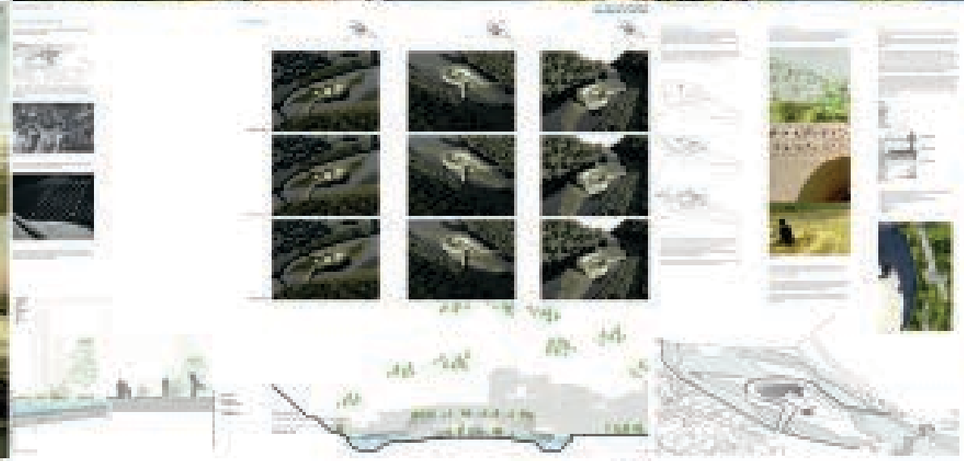

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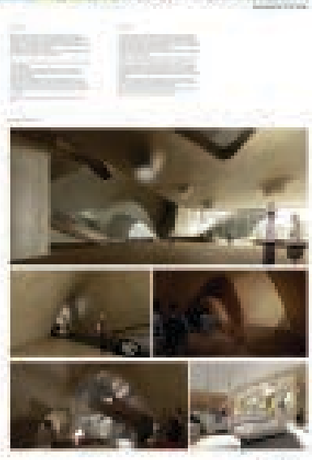
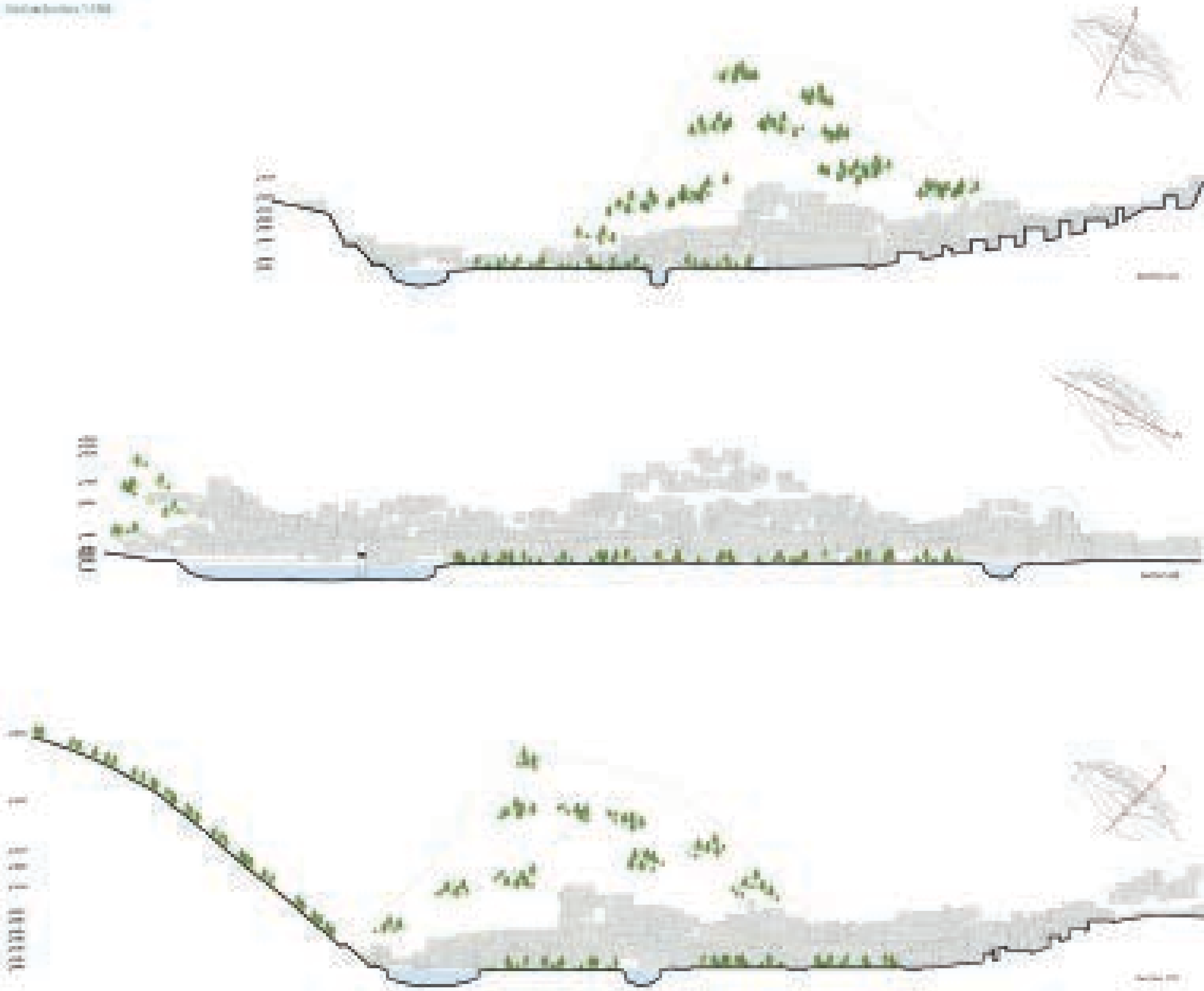
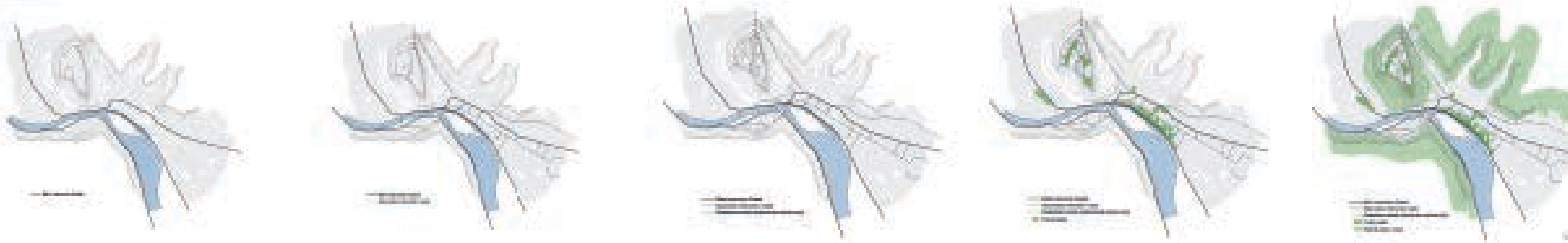
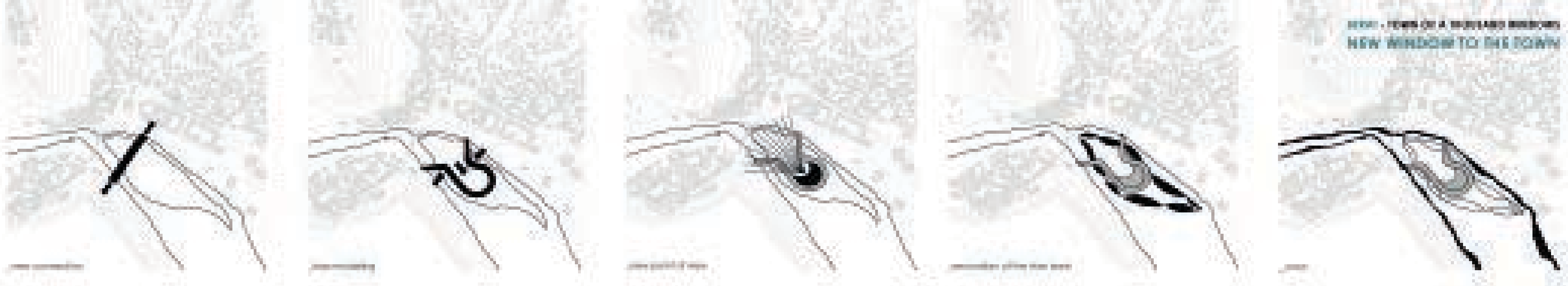
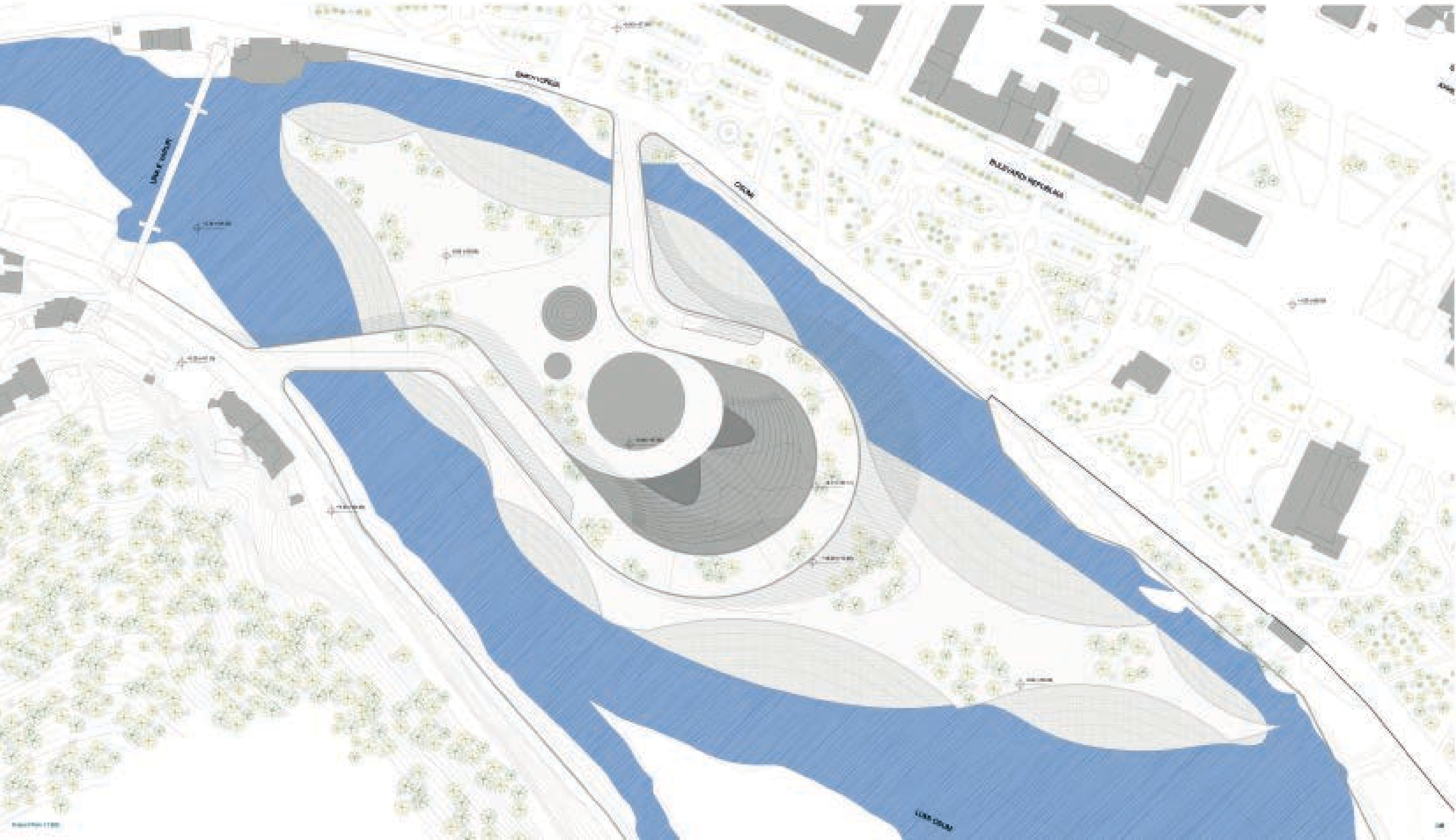






NEW WINDOW TO THE TOWN

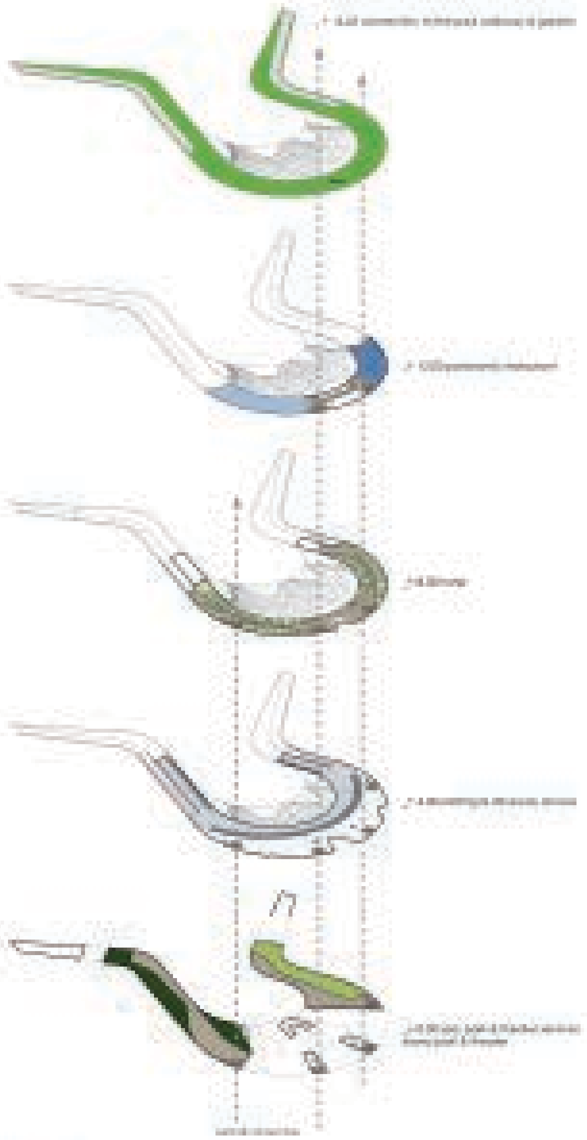


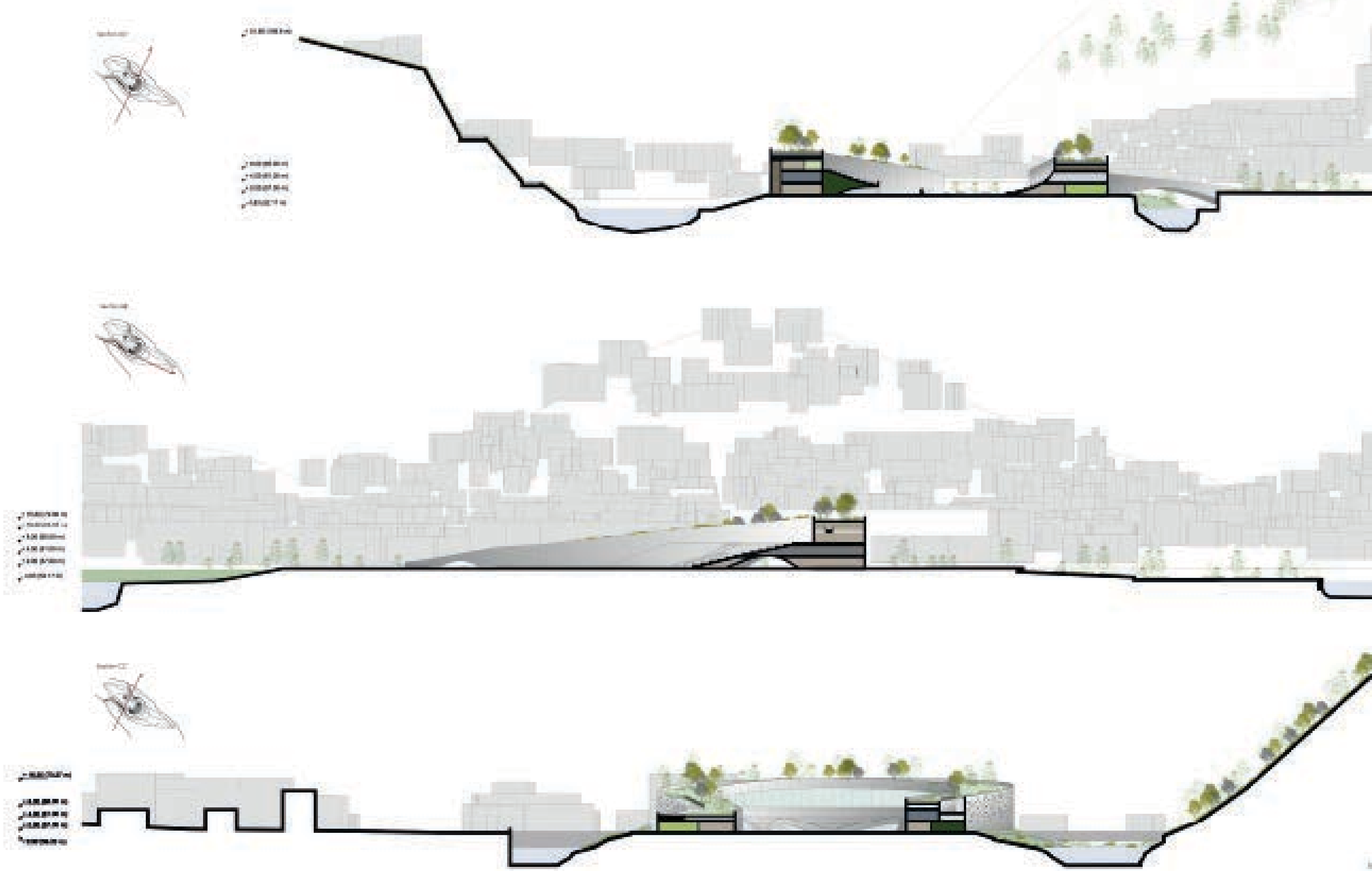


NEW WINDOW TO THE TOWN

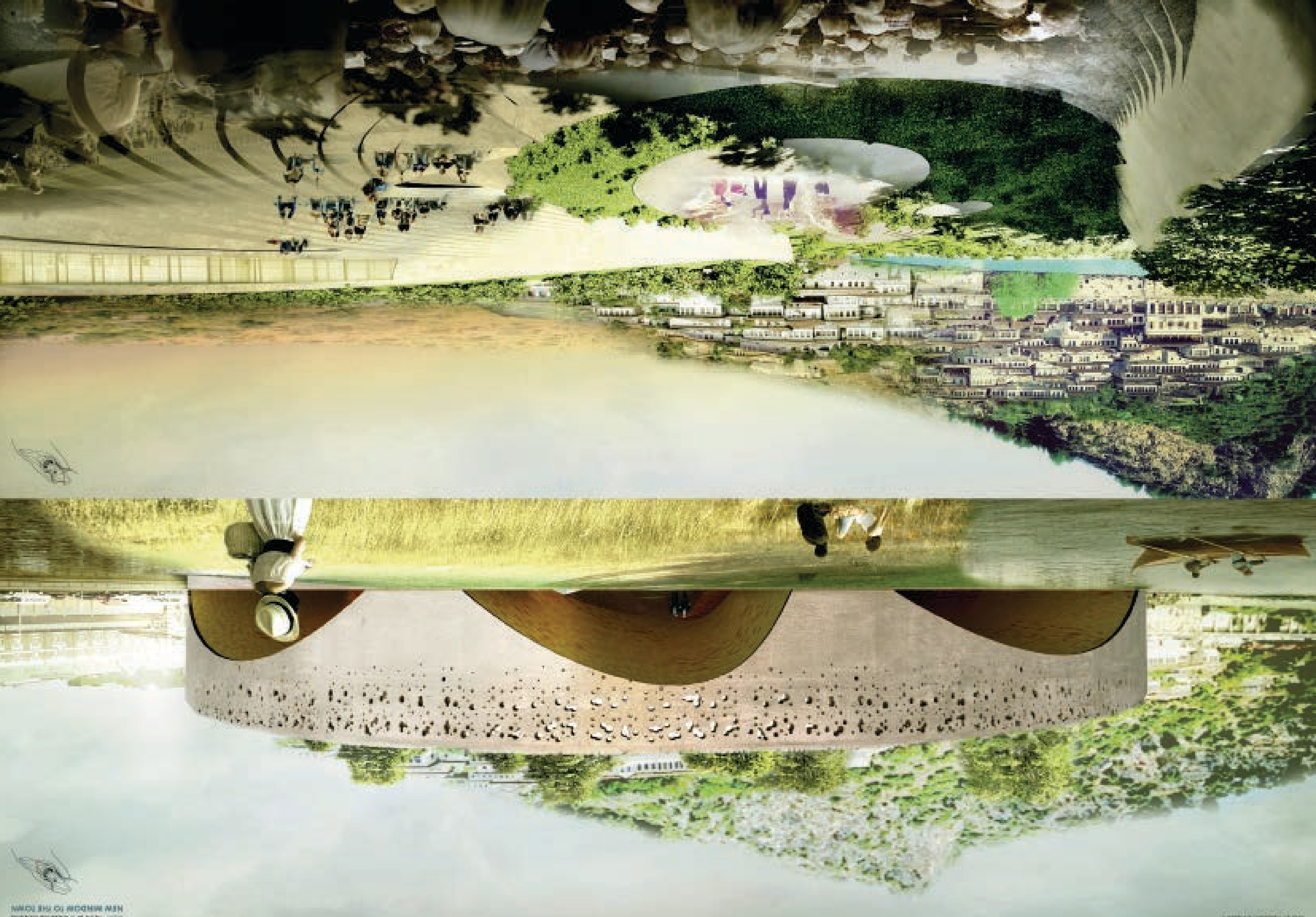
NEW WINDOW TO THE TOW

Functional program



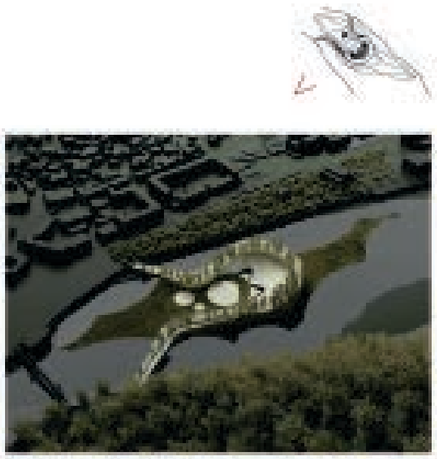


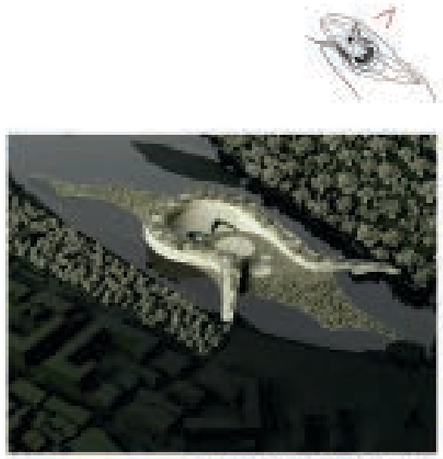
Objectives

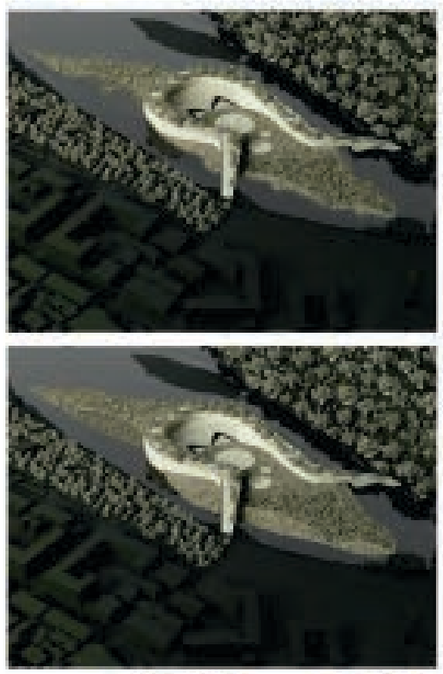


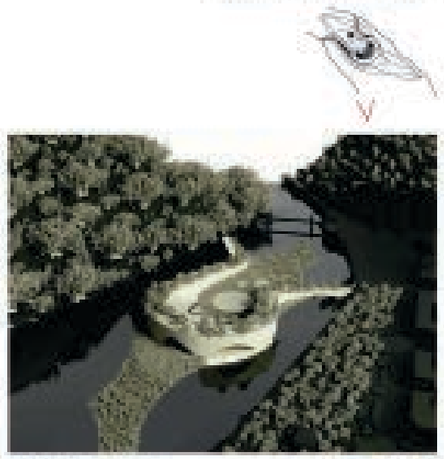
Description of bounding box generation strategy

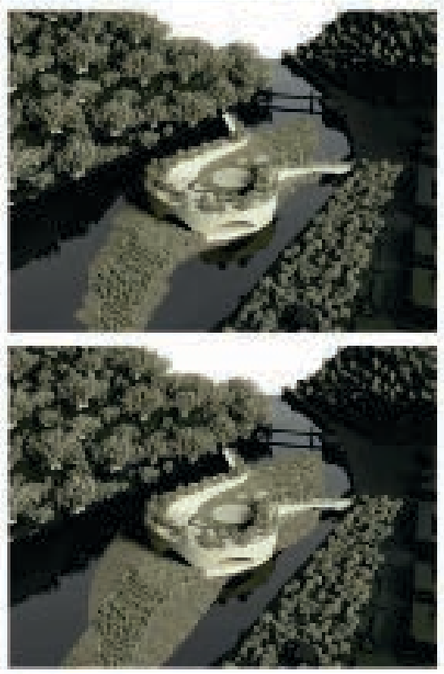
Initial mood diagrams

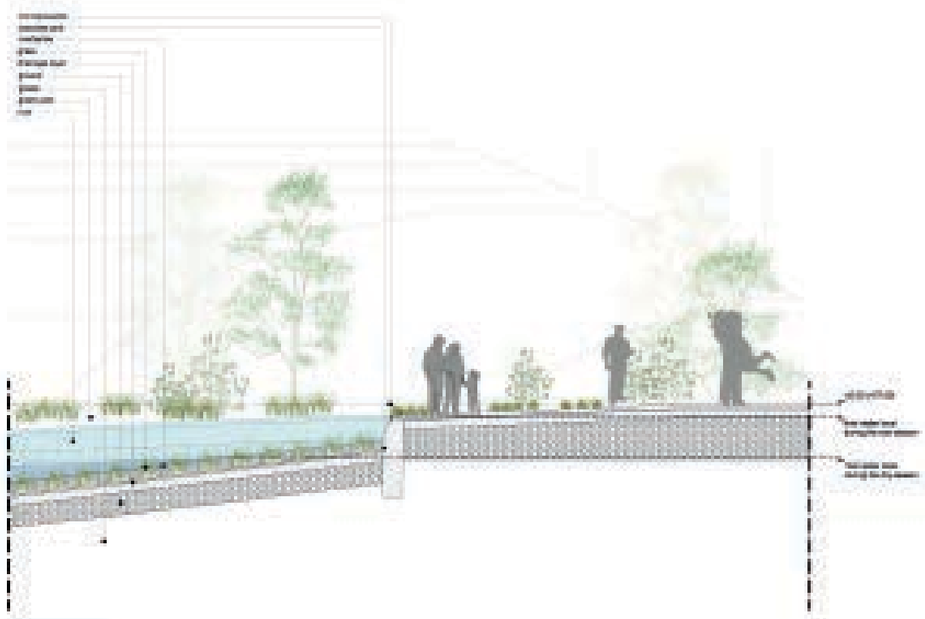


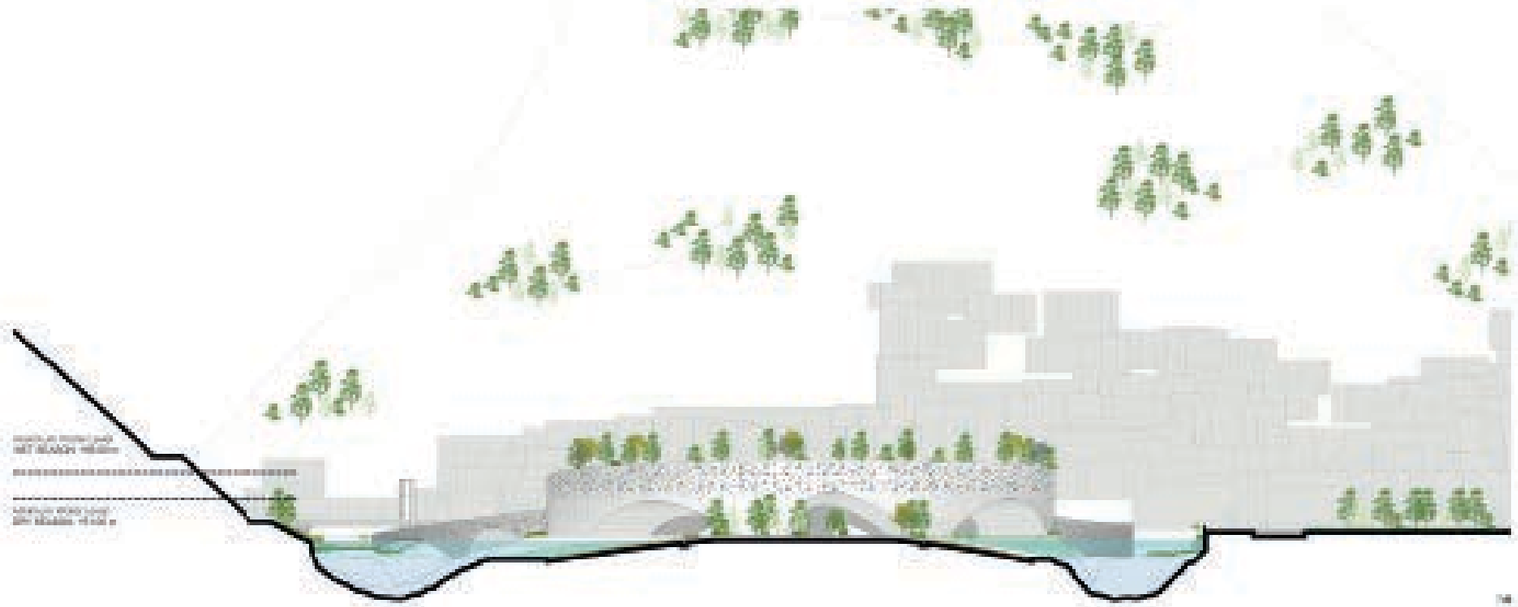








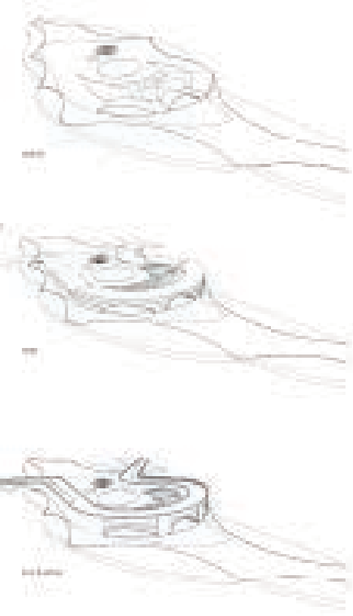




Working with constructive methods

Initial statement of the proposed project is the design of two monolithic sculptures - the Settlement Image of Ancient Nabatea and archaeology making reference to rock building traditions and materials, as seen in Jebel Dahr village.
The idea is to configure a collaborative architectural image of Petra while keeping the two

The use of monolithic rock-like geometry allows of the building, in one single location, the traditional function of creating spaces for human habitation, while creating landscape which works to help control natural elements.

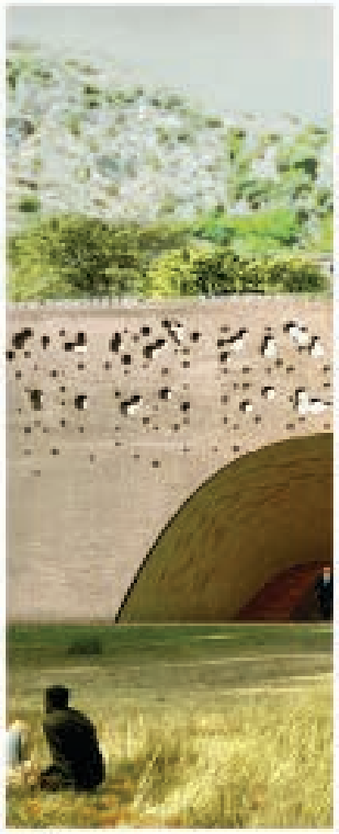


and facilities and tourism development, on the site of the Ain Qandil, in the form of two architectural sculptures, which are carefully constructed considering the context and built with the same building materials as seen in Jebel Dahr village.
The idea is to configure a collaborative architectural image of Petra while keeping the two

The use of monolithic rock-like geometry allows of the building, in one single location, the traditional function of creating spaces for human habitation, while creating landscape which works to help control natural elements.

Design and Construction

The proposed project for the Hotels at Petra Archaeological Park by Jebel Dahr Hotels and Resorts, is a unique opportunity to create a new landmark in the Nabatean Kingdom of ancient Petra, which will be a contemporary addition to the rich tradition of Nabatean architecture, however in a new fashion characterized by a strong geometrical relationship.



Jebel Dahr Hotels

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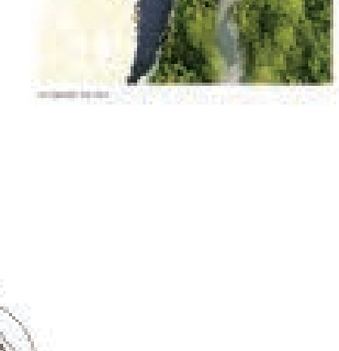
Roof

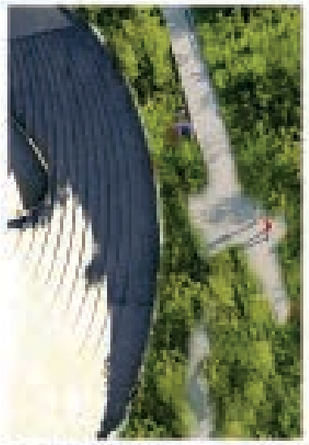
The roof is a combination of monolithic concrete shells and pergolas with Nabatean motifs.
The roof pergola is completely covered with vegetation creepers on high-trellis and to ensure the durability of plants, the roof surface is made to accommodate concrete elements.

The most important structural and quality of the cylinders, the purpose of made structural shells. The outer thick surface of the cylinders is of concrete and the quality is necessary of the highest. Also it is usually to contain high load capacity and must cover weight of cubes of the cylinder in both ground and spaces. Also maintenance, due to use of vegetation, composed of materials of medium thickness must be able to survive in situations of extreme drought, with high capacity to evaporation and heat accumulation.

Since Working Technology that includes accommodation, ensure the building process from making, adjusting the measurements made in the merging of the temperature in the cubes and contact with the field against the resistance effect, creation load, and therefore energy saving. Introduction of the elements of the surfaces, providing new material into cubes, the control of environment. In addition to spaces and internal measurements.



The assembly composed of: • Drainage • Concrete slab • Compartment • Insulation • Concrete, reinforced and cure • Waterproofing membrane • Layer of drainage and water storage • Concrete tiles • Reinforced concrete • Vegetation



Architectural Design

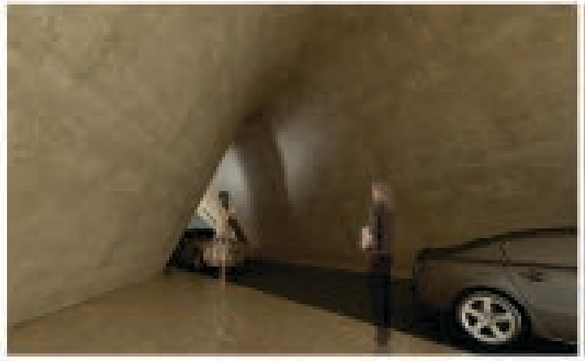
Energetic considerations concerning the building envelope and the overall reduction of greenhouse effect in response to the current political emergencies - represent to me, Rome, the future of sensitive design, integrating building and climate solutions.
In other words, a green organism in touch and qualities in the shape of buildings, as every design choice has a functional and technical reason.
Our design intention and image is to propose a concept and an eco-friendly good-looking that is also attractive and, at night, as an oil-painting work.

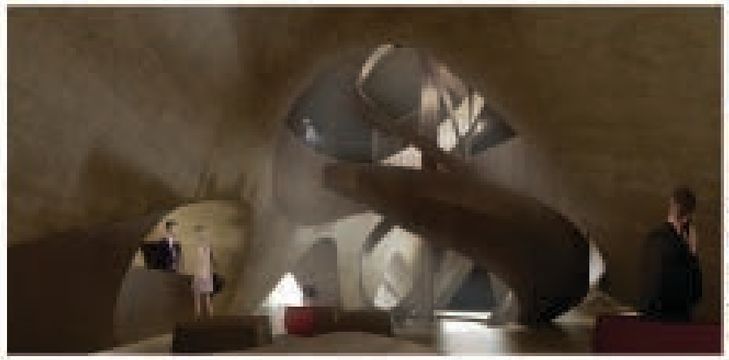
We believe that with careful the following solutions in order to highly meet the criteria of sustainable design:
- Reduction of electrical installation through the use of natural and passive lighting and ventilation systems, as well as appropriate comfort-natural lighting of the interior spaces.
- Encapsulation of the building shell through accurate definition of the insulation thicknesses for the various parts which creates choice of the glass for the transparent coverings, guiding controlled reduction of energy requirements in cool and hot seasons.
- Use of efficient and low consumption lamps and luminaires with full control and the overall performance.
- Choice of materials and detailed solutions such as electric, water and any construction system.

Technical Aspects

Our northern engineer's know-how always considers the most technological solutions in order to guarantee environmentally sustainable, integrated building service systems meeting a balanced environmental comfort between ventilation, heating and lighting systems, combined with maintenance costs as air conditioning, in an energy saving point of comfort and economical efficiency.
Considering the most appropriate comfort standards for each apartment, considering all aspects of the design of comfort.
- Comfort index and accurate control of the relative values of temperature and humidity, with the support of an automatic regulation of the heating, cool and energy usage. Using such a technological tool, all parts of a dimensional monitoring technique to evaluate the possible and comfort levels - our systems also integrate the building plants to create functional internal spaces and optimum combination conditions.
Building plants represent a significant planning point, and have a main systems, project in an integrated way with the Architectural design, which will be developed on time, and suggest any action and providing latest technologies.
Designed to minimize costs of waste of consumption comfort. Above we use, with systems we understand and to efficiency and sustainability.

Exhibition of Winner projects





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A_ Description of the design concept

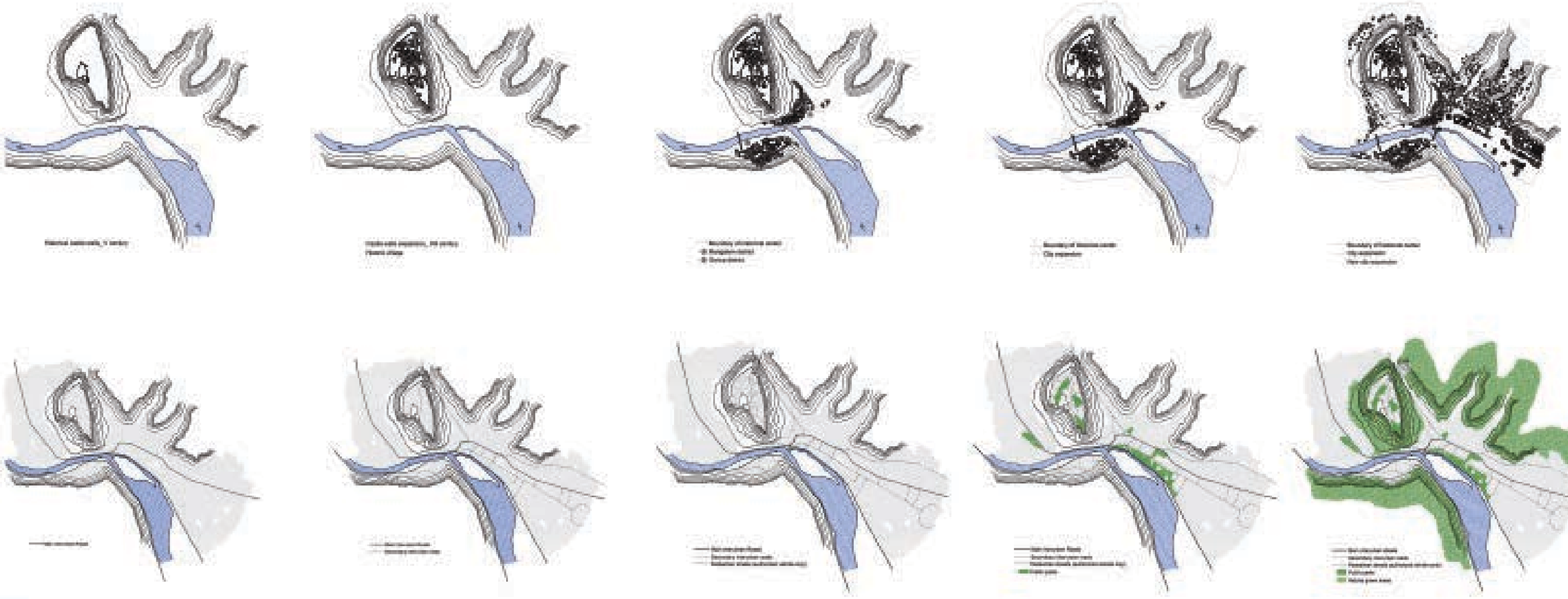
Short introduction about Berat:

Berat is a small city located in the south of Albania and one of the most historical of the country, part of the Unesco World Heritage Sites. Descending from the model of a Ottoman city, it has many religious buildings and ancient city walls.

The Osumi river, a tributary of the Seman which crosses southern Albania, cuts through the city.
A small island, that often changes its outline depending on the water level of the season, it marks the bend where the river broadens out.
The most significant element of the urban tissue is a series of small white houses covering the steep hillside.

The town is still renowned for its historic architecture and scenic beauty and is known as the "Town of a Thousand Windows", due to the many large windows of the old decorated houses overlooking the town. It is unclear whether it really means "Thousand windows". Indeed, the quarter is built in a very steep place and windows seem to be one over another. Similar views can be seen in Melnik, Bulgaria, Gjirokastër in Albania, as well as Catanzaro in Italy, where an Albanian minority once lived.

The presence of the Osumi River, whose route crosses mountains, is a significant element for Berat, not only for the relationship that is normally created between the city and its the river, the through the banks designing the waterfront, but first of all because of the changes in river water flows.
For these reasons the island that faces the city is continuously changing its shape, fighting with the river water level.



A NEW WINDOW TO THE TOWN

General strategy:

The task of the competition is the redesign of the island banks, to become resilient to flooding situations, transforming Osumi island in a real focal point for the city, not only for citizens, but creating a new landscape element for the whole country.

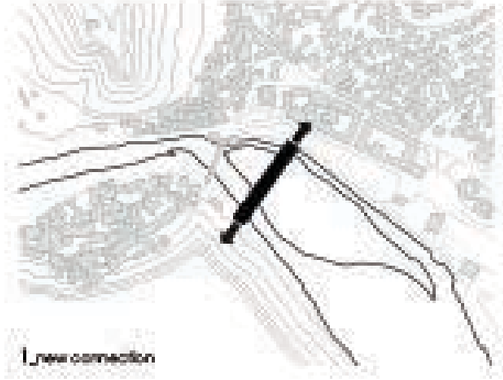
For all these reasons it is important and necessary to develop a project that enhances the image of the island and of the whole town, but at the same time represents a renewed and more usable functionality in terms of connections and fluxes, creating new opportunities for the city .
For an appropriate redevelopment, it is essential the search for unity and coherence between the different parts: river, island, new town, historical town, mountains and landscape.

For these reasons the intervention in Osumi island will combine clearly the external environment, designed with natural existing elements, with the building itself. A new image of the interior and exterior spaces in close dialogue with the studied views on the river and on the city, old and new, in order to make the most of all the available elements.

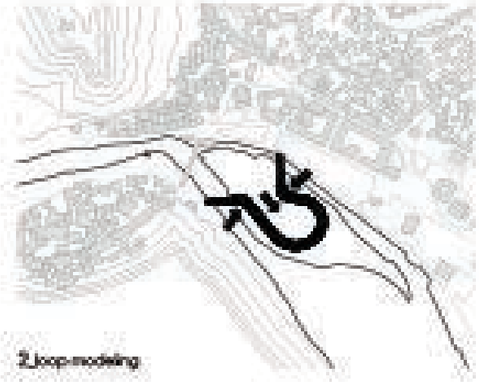
Osumi island and banks

The proposed concept design aims to create a new link, a new connection between the two banks of the river, from the city to the rocky mountain, crossing the island.
We propose a new pedestrian bridge across Osumi river covered in trees and shrubs to span the river between the two banks, as a new landscape element defining "urban by nature".
Berat is where it is because of the river osumi. But over many years the human experience of this amazing piece of nature has been marginalised by floods and transport moves.

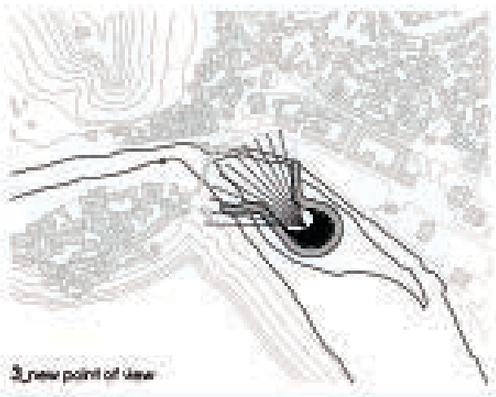
The historic district of the thousand windows and the new espansion on the other side of the bank are facing but almost isolated
There is now an opportunity to connect this two parts together, better than the existing, to give citizens a huge improvement in the quality of pedestrian river crossing in this area, enhancing the island as a natural park, to allow people to get closer to the river and at the same time to stimulate new regeneration possibilities at both ends where the new bridge lands.



1_new connection



2_loop modeling



3_new point of view

4_renovation of the island banks

5_banks

Project Masterplan

A NEW WINDOW TO THE TOWN

Functional program:

The new connection does not have to be seen only as a bridge but as new a landscape, sculptural and architectural building/ connector.

The shape of the new bridge is articulated to create a curviline-ar pedestrian walkway (500 m long), starting from the level of the city waterfront at + 57.00 m , re-aching the top level at 73.25 m (16.25 m slope) and descending to + 57,3 m on the other side.

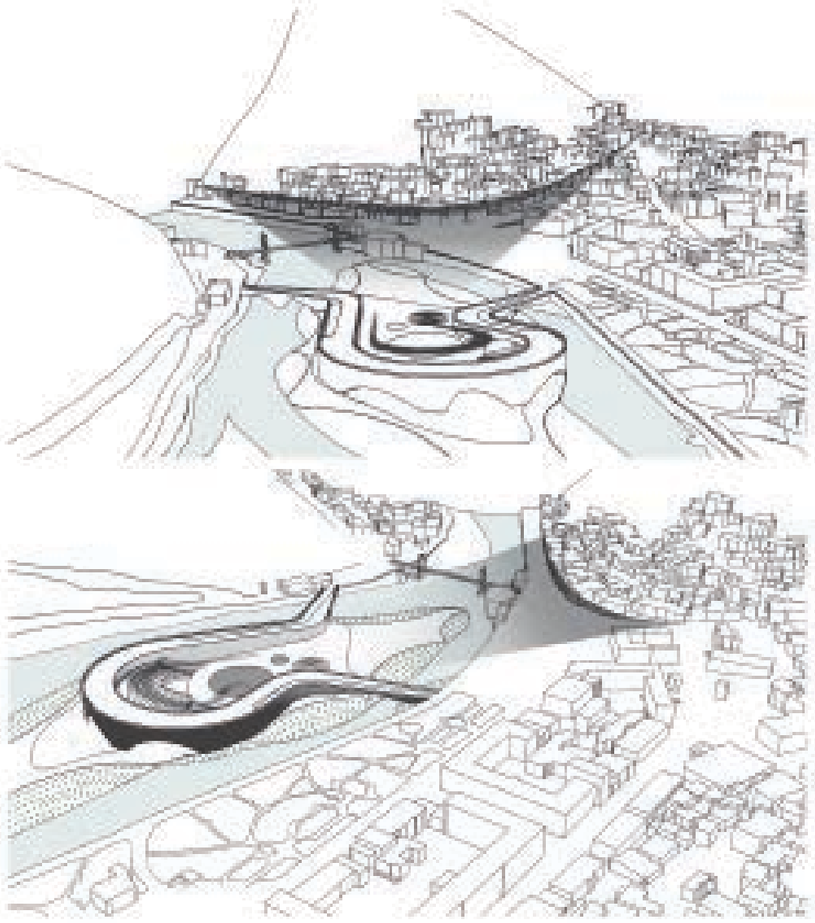
The bridge creates a loop, as a fluid element, that hosts an open theater facing the old town and laying on the island, descending to + 52.8 m.

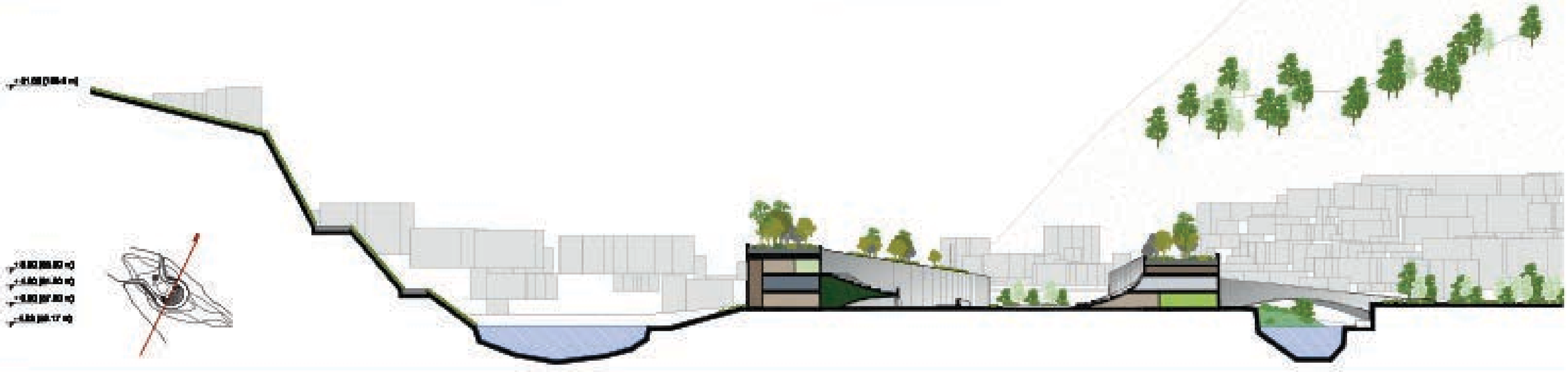
The new theater, as a polyvalent space inside the park, becomes a *new window to Berat, the one thousand windows city.*

To develop the potential of the island and of the whole city, the bridge has been designed as a multifunctional element, hosting functions and activities, articulated in 4 levels.

The bridge is a also a driveway link, located under the pedestrian path and covered by the garden, to mitigate the environmental impact of a street crossing the bridge.

This solution ensures the usability of the island for any kind of visitor, and it allows the servicing of the functions located in the bridge/ building.

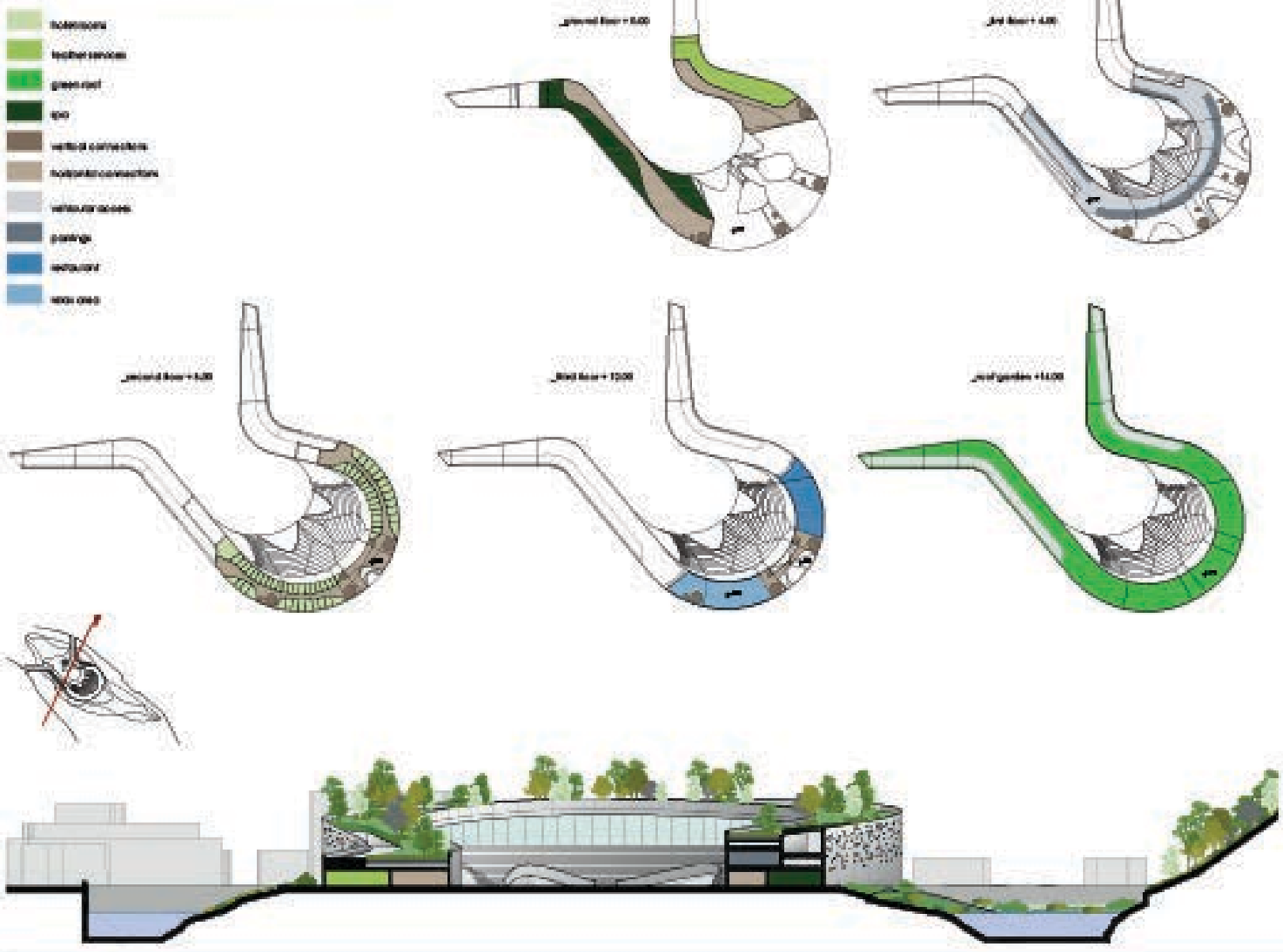


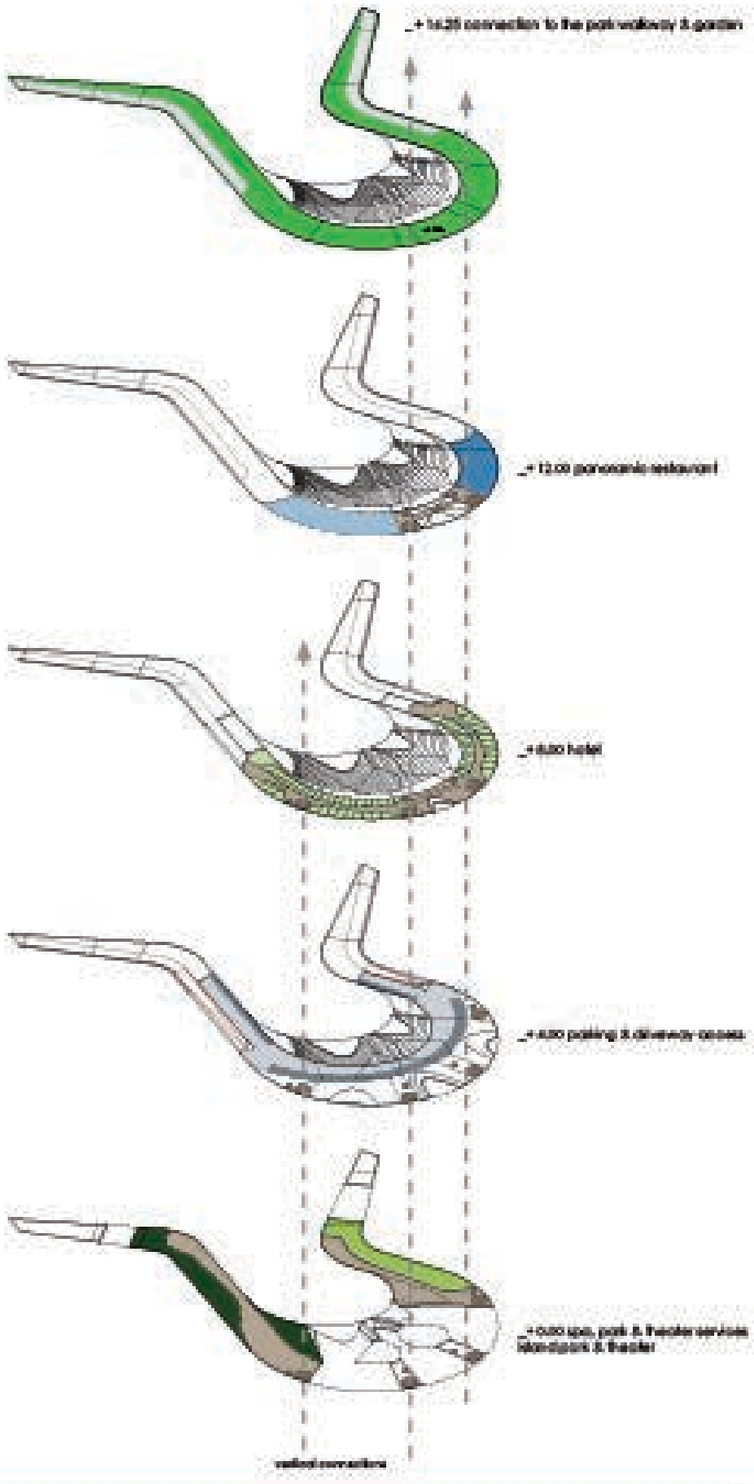


A NEW WINDOW TO THE TOWN

The building hosts:
-services and spaces dedicated to the open theater (ground floor);
-accommodations (restaurant and bar) dedicated to visitors (ground floor);
-services and spaces dedicated to the open theater (ground floor);
-a small spa area connected to the hotel (ground floor);
-a parking on the 1st floor served by the driveway;
-a hotel (2nd floor) provided with lounge and services;
-panoramic bar and restaurant on the 3rd floor;

The unique location of the hotel and services offers the possibility of establishing an intimate dialogue with nature, emphasizing the colours, sensations and atmospheres in an elegant and sometimes surprising way.





A NEW WINDOW TO THE TOWN

Objectives:

The idea of bridge/building aims to develop the island as a "pole" for the city and for the territory, as a 24 hours/day living multifunctional element, hosting features and business accommodation now absent in Berat, creating an economic strategy of public/private partnership to share the global cost of the intervention.

This is the first major milestone for the project and marks a very clear intent to create a new landmark not only for Berat, but in a larger territory scale.

The scheme has been shaped and developed into a proposal that will contribute significantly to the future of Berat's development and we are committed to ensuring the NEW Garden Brige/Building will be something that the whole country can be proud of.

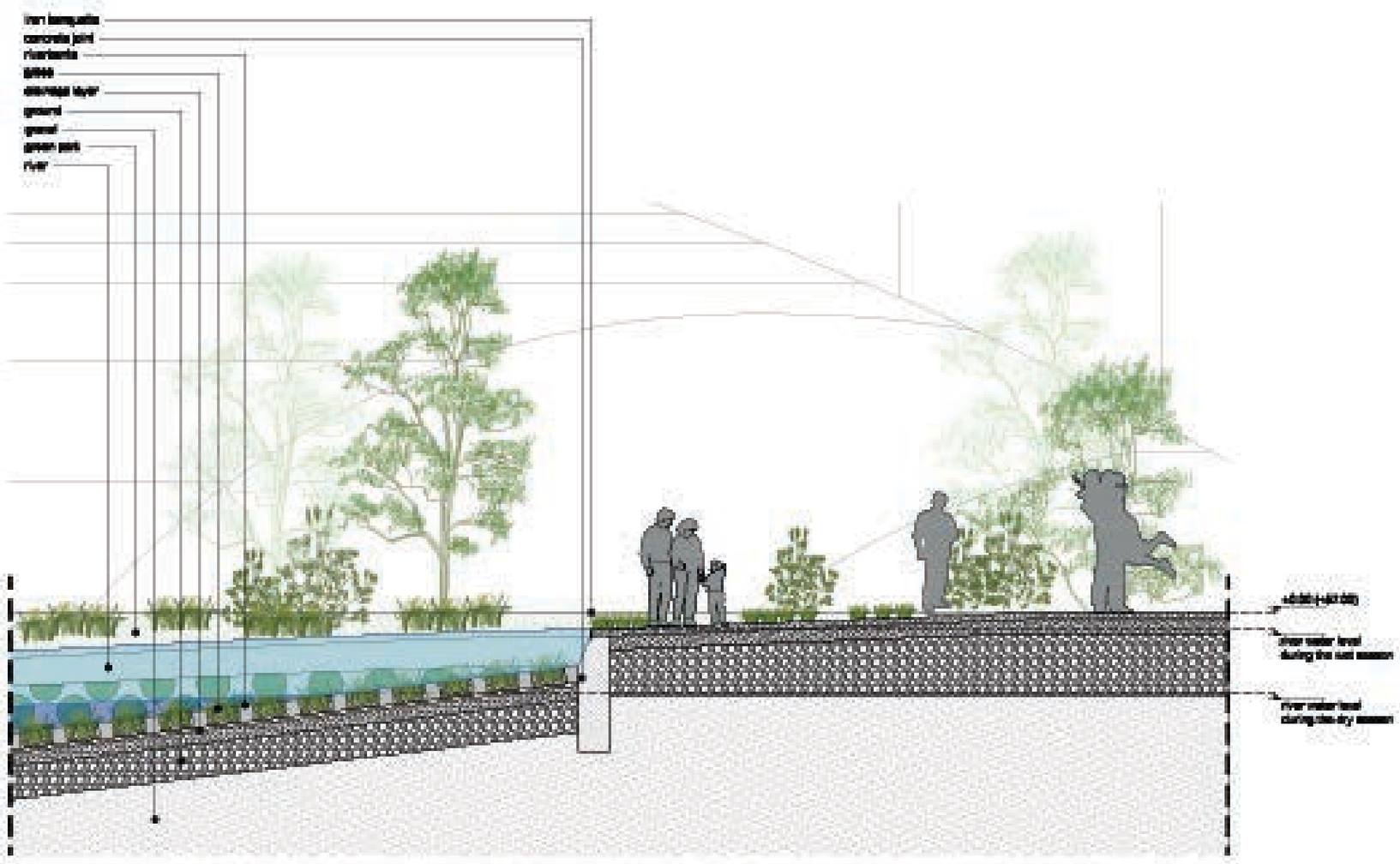
In this vision the new bridge becomes:
-a connection (pedestrian and driveway) between the two banks of the river;
-a green walkway on the whole landscape of the area;
-a park, open to visitors and citizens, with an open theater for special events, festivals and activities;
-a hotel for business and for visitors accommodation;
-a parking dedicated to visitor and tourists;
-a set of activities, connected to the hotel and opened to the park and to citizens.

View of theproposed solution

Description of flooding risk prevention strategy:

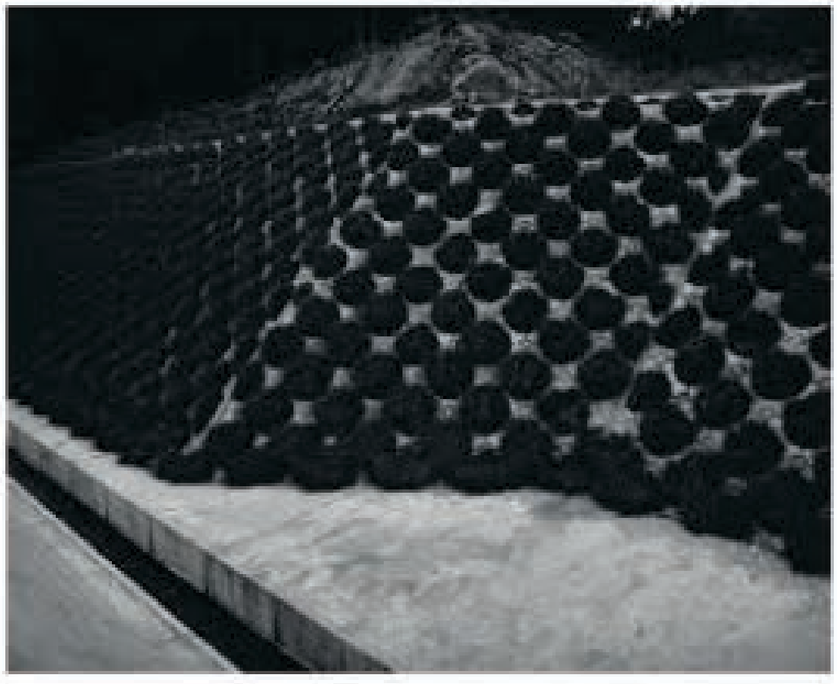
The redesign of the banks of the island and of the river is a focal point of the project, to preserve the city and the new bridge.
The banks of the island, and of the Osumi river where needed, are redesigned with concrete structure creating a grid that holds the ground, preserving the shape from water floods.

Gaps between the concrete grid are planted with humid shrubbery, compatible with water floods and holding the ground through the roots.
The higher of the new banks is defined starting the historic of water levels in past floods, and it is able to preserve the land of the island, it's shape and the new multifunctional building and both bridge walkay and driveway.



Bank detail

Reference: bank reinforcing structure



Reference: bank reinforcing structure

Water level diagrams

Maximum Water level
WET SEASON: +50.00 m

Intermediate Water level

Minimum Water level
DRY SEASON: +51.00 m

B - MATERIALS AND CONSTRUCTION

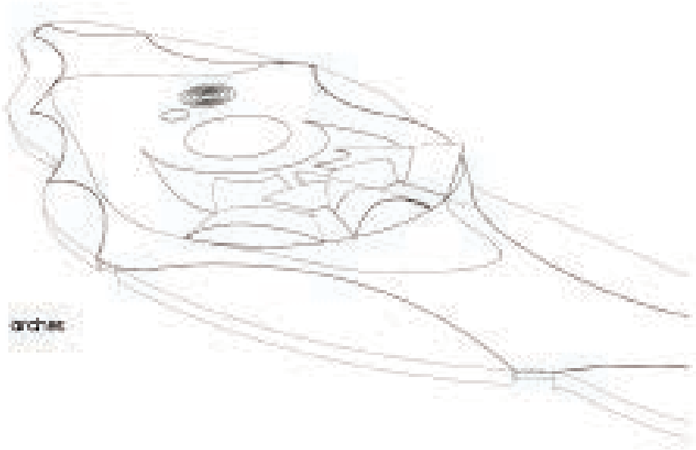
Structure and construction methods

A key element of the proposed project is the shape of the new bridge according to the traditional image of ancient historical and rural bridges, taking inspiration to local building traditions and materials, as seen in Ura e Gorica bridge.
This allows to re-configure a unified and continuous image of the building crossing the river.

The use of arches and vaults configure the pillars of the building, in which are located the vertical connections, creating external covered areas rebuilding a solid edge and creating multiples visual cones to the surrounding landscapes.

The structural design provided will mainly focus on using concrete elements for vertical pillars and horizontal elements, as the slab of the roof garden or the slab of the driveway, to ensure stability and durability of structures considering the humid environment we are working in due to the presence of Osumi river.
Concrete foundation is realized using micropoles, to structural loads to the depth soil, passing the riverbed that is not stable enough.

The proposed vaulted basement will be constituted by a main regular metal structure plus a secondary one that will bear the load of soft shaped parts.

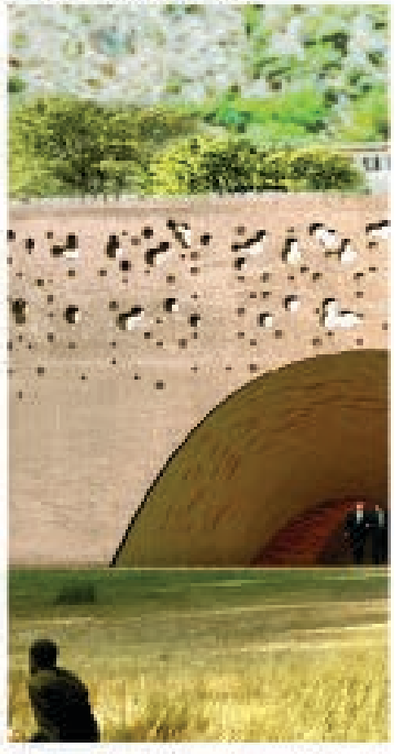


Façade design and materials

The proposed solution for the facade of the bridge/building has as objective the unity of the overall image, creating a subtle reference to the local traditional architecture, however, a composition characterized by a strong contemporary style.

To meet the highest aesthetic and ecological construction requirements, we would mainly used natural materials such as stones, ceramics, woods, metal, mounted according to dry-laying systems.
To achieve a unified image both internally and externally it is very important the proper use of few materials that well respond to the performance requirements dictated by the local climate and the presence of the river as humid source.

The façade will be made by prefabricated concrete panels, to ensure stability and durability of structures considering the humid environment, characterized by special round windows.


Facade Detail

Roof

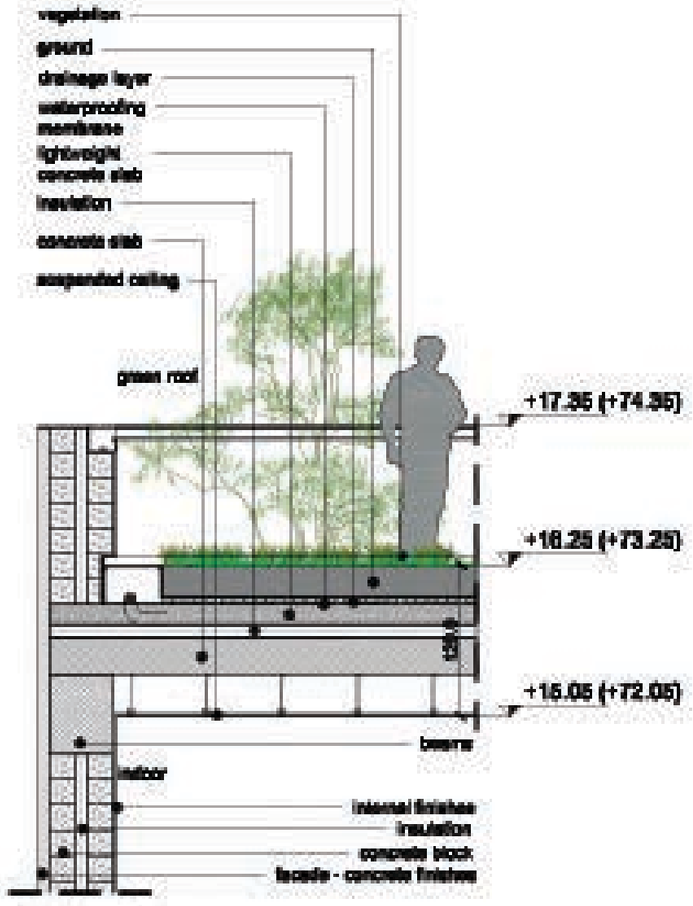
The roof is a pedestrian walkway planted with trees, shrubs and grass and organized with benches.
The roof garden is completely covered with vegetation planted on high fertility soil, to ensure the durability of plants. The structural slab is made by prefabricated concrete elements.

The most important features are the quality of the substrate, the amount of water accumulated, the supporting surface of the element of accumulation and the opening in the pores of the fabric filter. It is usually a system that has reduced thickness and weight to allow it to be used in roofing and requires little maintenance, as it is used a vegetation composed of essences of sedum that must be able to survive in situations of extreme drought, with high capacity for regeneration and self propagation.

It is a finishing technology that provides several benefits cover the building as protection sealing, adjusting the microclimate thanks to the lowering of the temperature in the urban environment and the fight against the heat island effect, isolation heat and therefore energy saving, the reduction of the presence of fine particles, creating new habitat for wildlife, the control of stormwater, in addition to reduced environmental impact and aesthetic.

It is generally composed of a "package" of more layers which comprehends:

- Diaphragm (or mantle) waterproof anti-root
- Separation layer and protection of waterproofing membrane
- Layer of drainage and water storage
- Fabric filter
- Substrate culture
- Vegetation



Roof Garden Detail

Roof Garden Top View

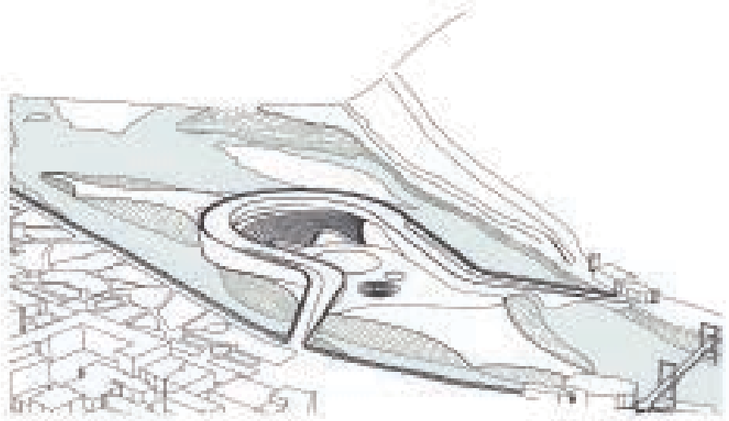
Technical plants

Our partners engineer's innovative design solutions embrace the latest technologies to improve a building's performance and sustainability. Integrated building services systems creating a balanced and controllable internal environment: natural ventilation, heating and lighting systems, combined with active systems, such as air conditioning, to provide a high level of comfort and operational efficiency.

To achieve the most appropriate solution we adopt a holistic approach, considering all aspects of the design process from 'abstract' issues such as occupant wellbeing to the detailed analysis of mechanical components and the impact of environmental regulations on the building's form and energy usage. Using sound building physics principles and advanced modelling techniques to analyses the envelope and spatial layout, our systems are integrated into the building fabric to create functional internal spaces and balanced, controllable conditions.

Building services represent a significant planning and cost factor on any building project, so it is essential to provide a fully integrated design solution that is delivered on time, on budget and which embraces the latest technology.

Designed to provide optimum levels of occupant comfort all year round, our MEP systems set a new benchmark for efficiency and sustainability.



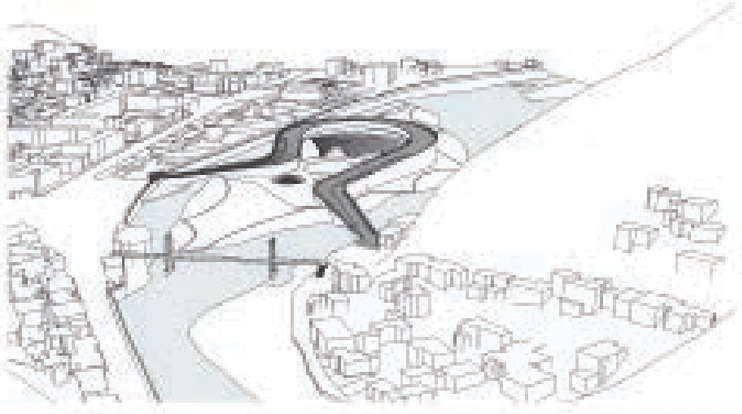
View of the Opera Theater

Sustainable designs

Energetic containment and reduction of the environmental impact due to the greenhouse effect, in response to the current global emergencies - represents the key factor that should lead the design, integrating building and systems solutions.
In other words, a green approach should be applied to the design of buildings, as every design choice has environmental implications.

Our design intentions converge to a proposal that has as its ultimate goal in respecting the environment and a high level of welfare of the users.

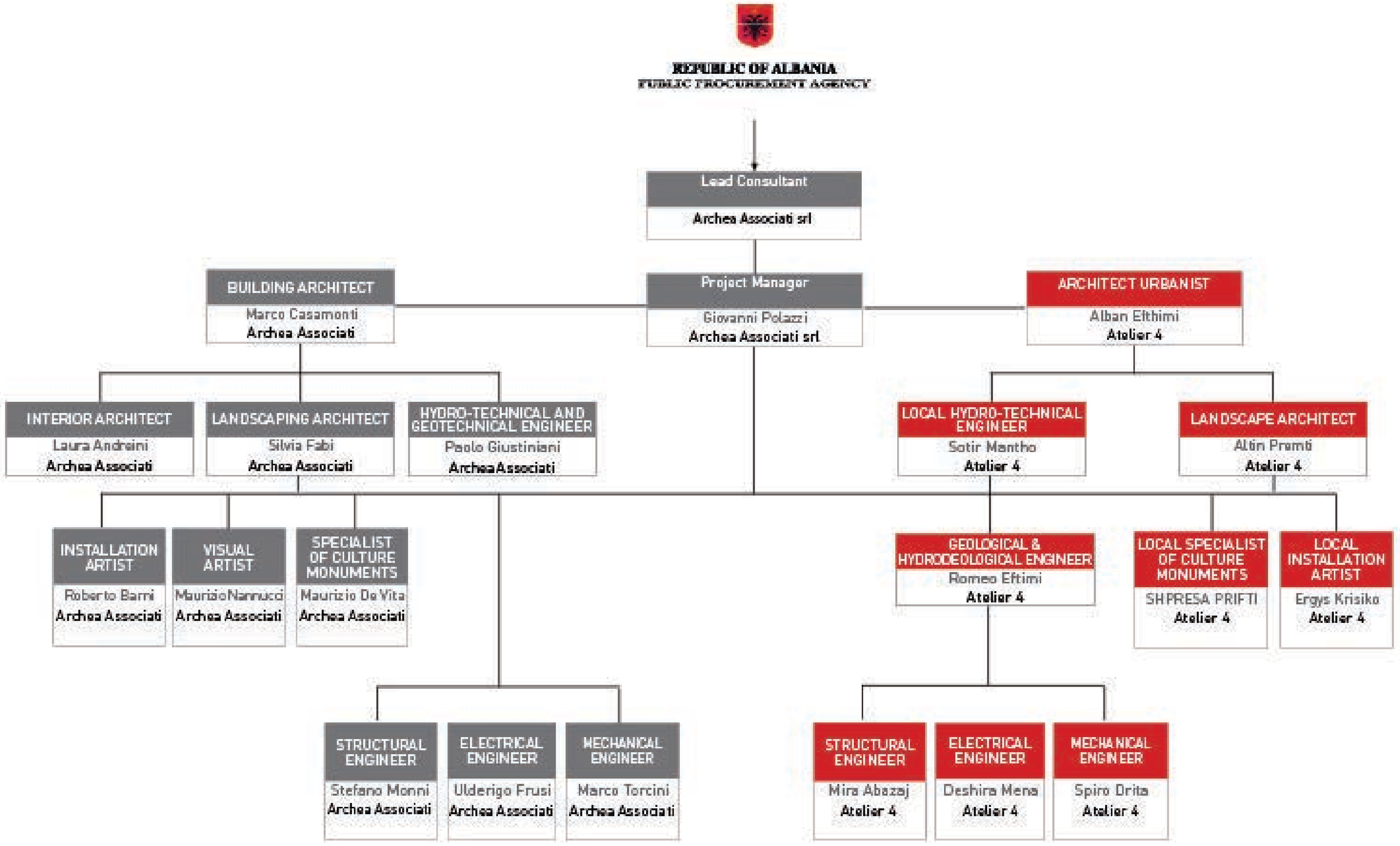
We indeed intend to adopt the following solutions in order to highly meet the criteria of a sustainable design:
- The reduction of direct solar radiation through the use of modular shading
elements. This will help to avoid overheat as well as guarantee a softer natural
lighting of the interior space.
- The insulation of the building shell through accurate definition of the insulation thickness for the opaque parts and a careful choice of the glass for the transparent surfaces, gaining a sensible reduction of energy requirements to cool the living areas.
- Plant efficiency that will reduce fuel consumption without compromising the overall performance.
- The use of bio-ecological materials such as ceramic, stone and dry construction system.



C_ INVESTMENT COSTS ESTIMATION

	Architechture &Engineering	Build Up Area (BUA)m2	Construction Cost Euro /m2	Cost Esfimate (Euro)
1	**Riverbanks:13.350mq**	13.350,00	100	**1.335.000,00**
2	**Green area: 18.400mq**	18.400,00	50	**920.000,00**
3	**Open air theatre: 2.000mq**	2.000,00	300	**600.000,00**
4	**Green roof + Trees : 5.755mq**	5.755,00	50	**287.750,00**
5	**Façade area:8.300mq**	5.755,00 8.300,00	150	**1.245.000,00**
6	**Building total: 20.535mq**	20.535,00	630	**12.937.050,00**
	Ground floor: total 9.066mq	9.066,00		
	First floor: total 6.045mq	6.045,00		
	Second floor: total 3.112mq	3.112,00		
	Third floor: total 2.311mq	2.311,00		
7	**Vertical Connections**	750,00	720	
8	**Lifts: 42mq**	6,00	25000	**150.000,00**
	TOTAL VALUE			**17.474.800,00**
	CONTIGENCIES	**5%**		**873.740,00**
	TOTAL INCLUDING CONTIGENCIES			**18.348.540,00**
	TOTAL ADDED VALUE (TVSH)	**20%**		**3.669.708,00**
	FINAL TOTAL			**22.018.248,00**

D_ LIST OF ALLA MEMBERS OF THE DESIGN TEAM AND THEIR ROLES



E_ REDUCED SCALE A3 COPIES OF THE PANELS

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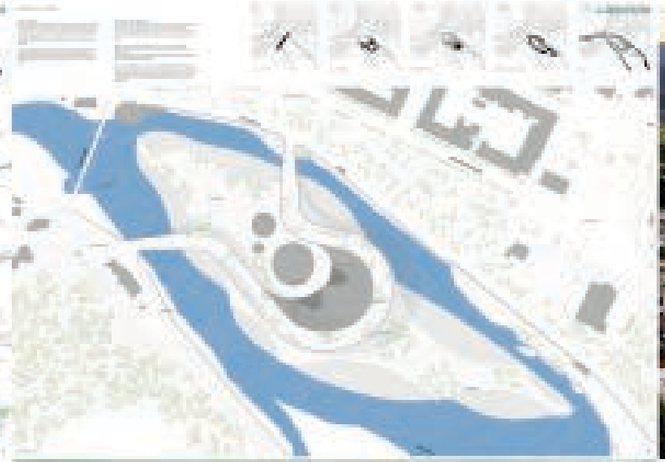
2/8



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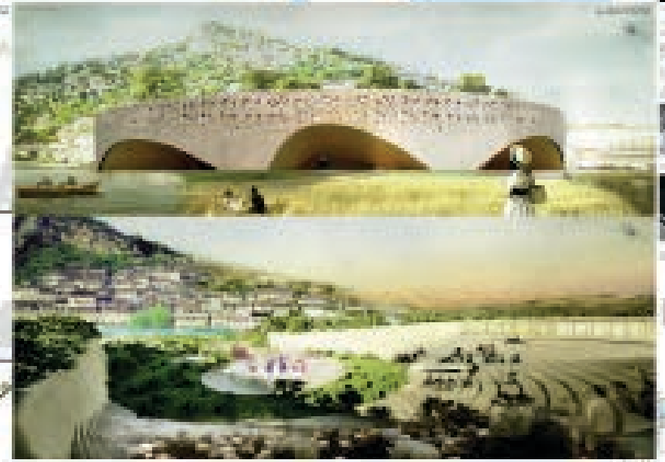

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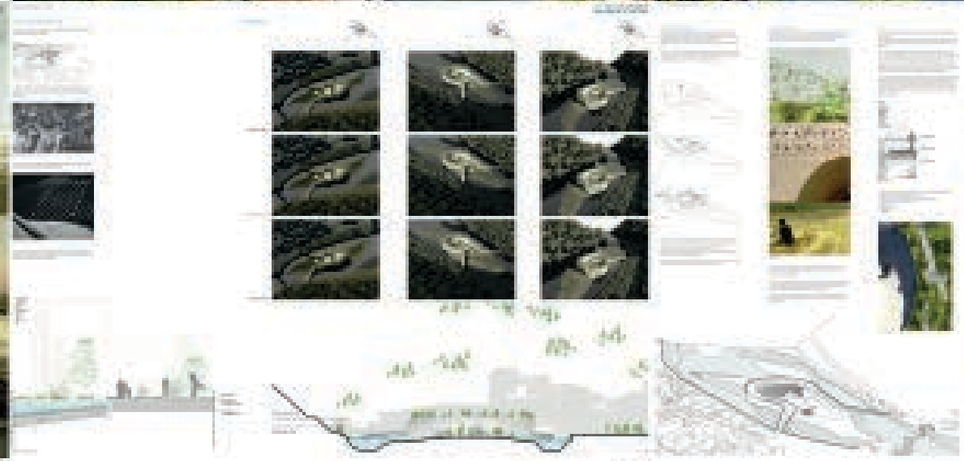

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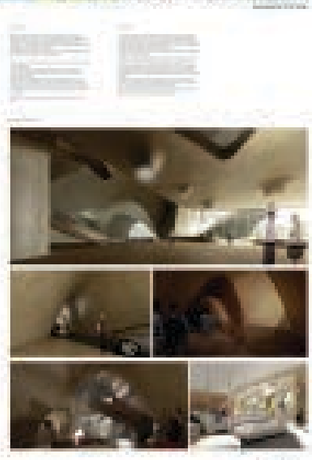
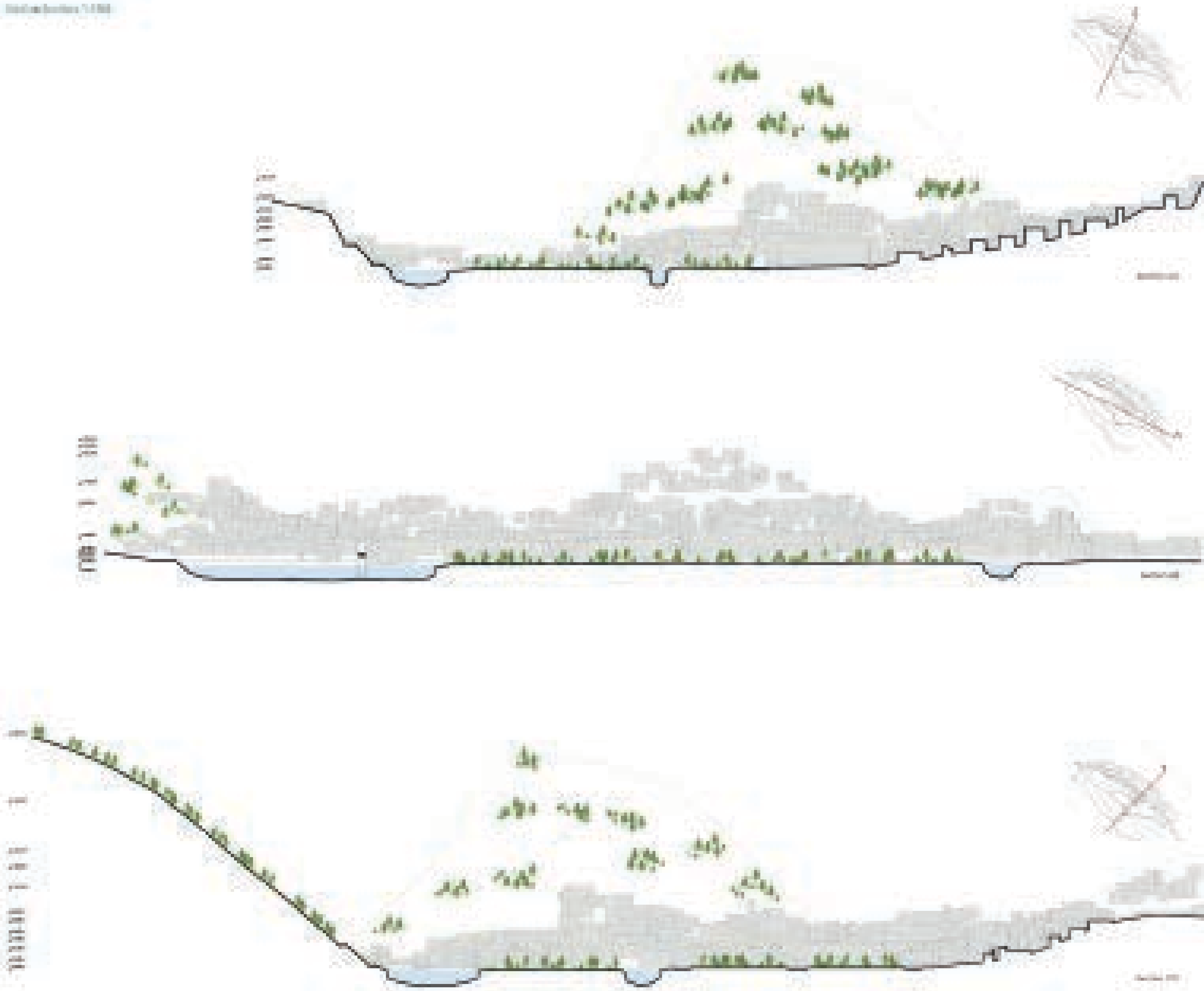
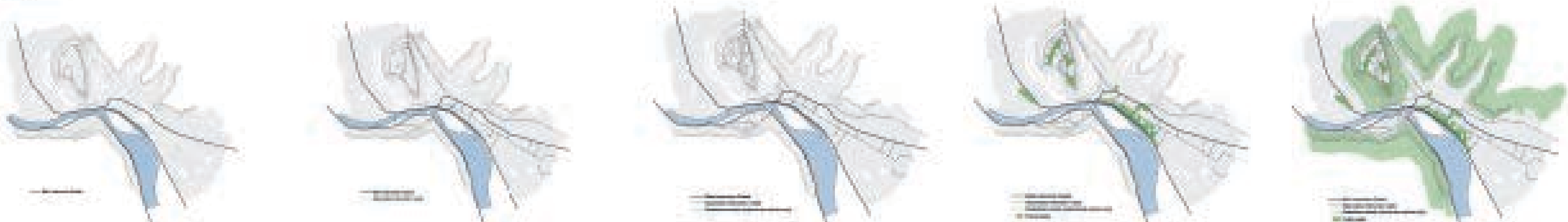
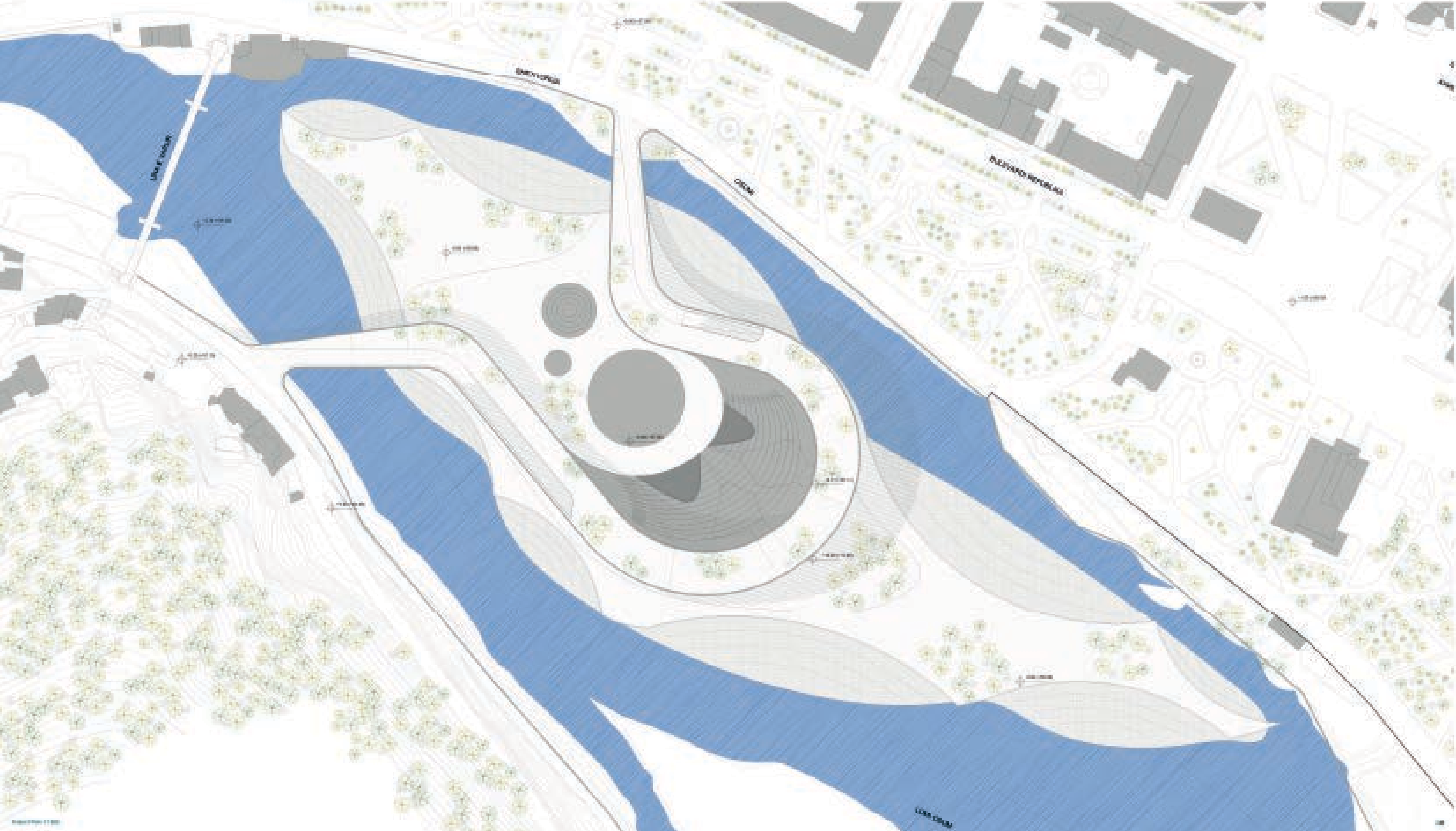






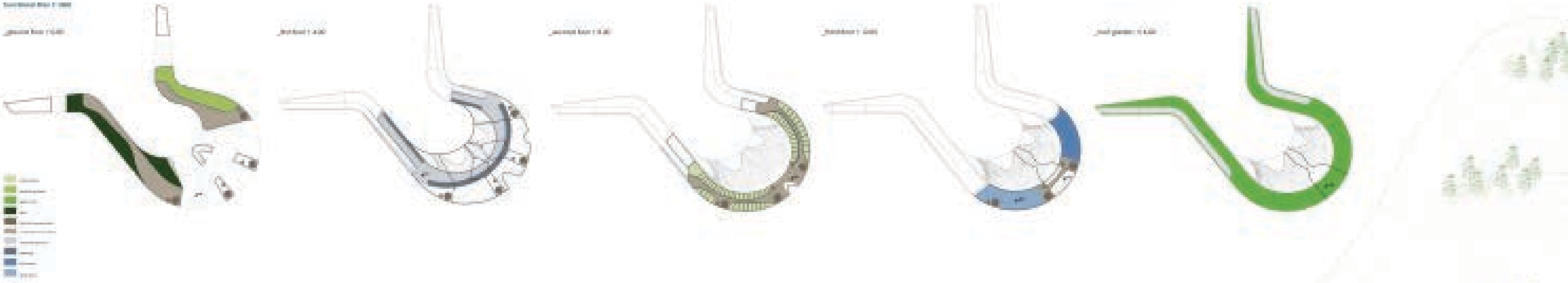
TOWN OF A THOUSAND WINDOWS

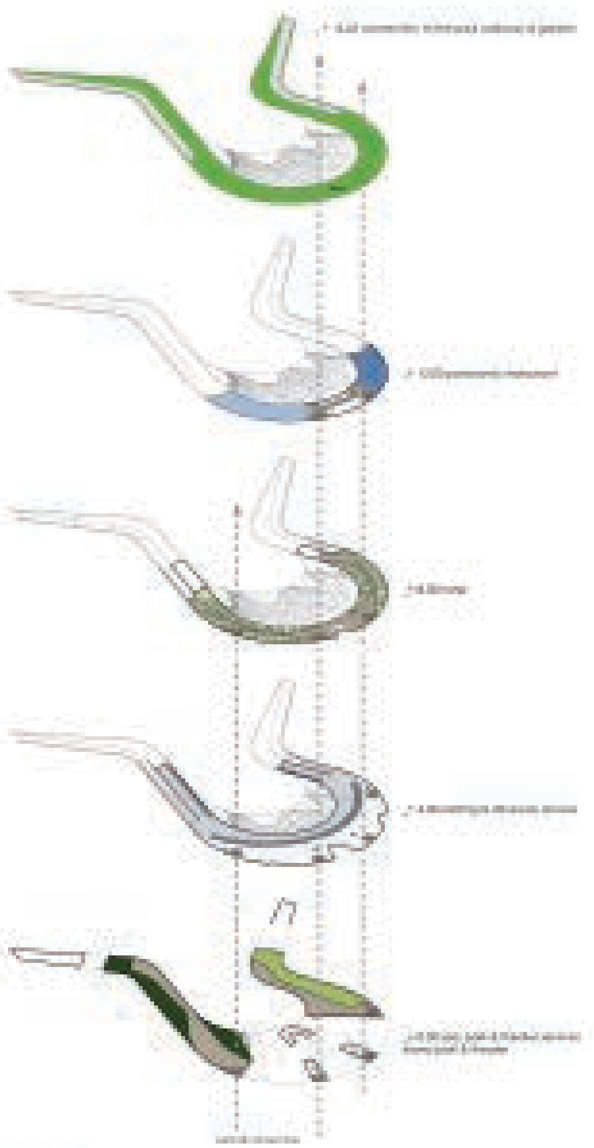
NEW WINDOW TO THE TOWN



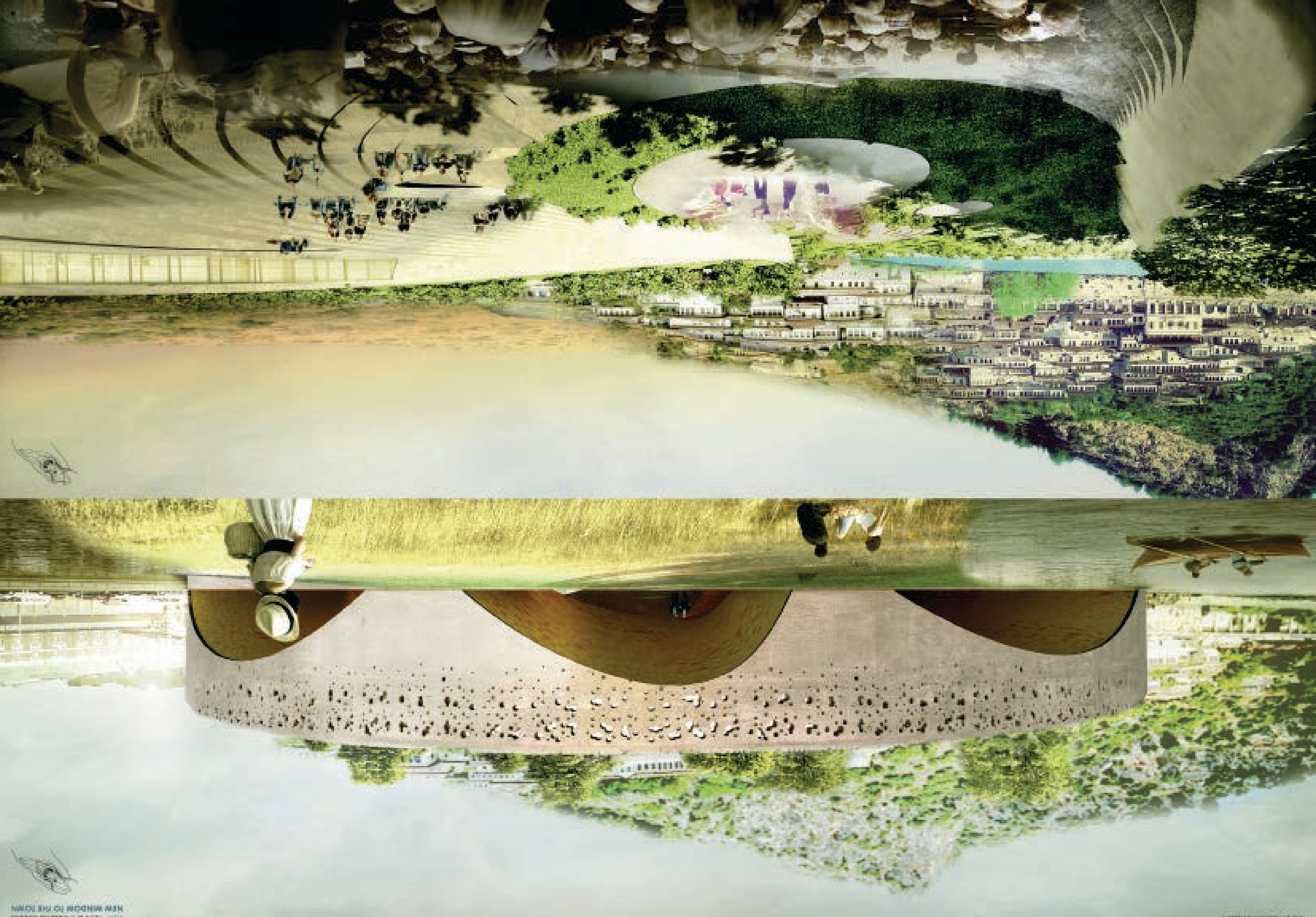
NEW WINDOW TO THE TOWN

Functional program



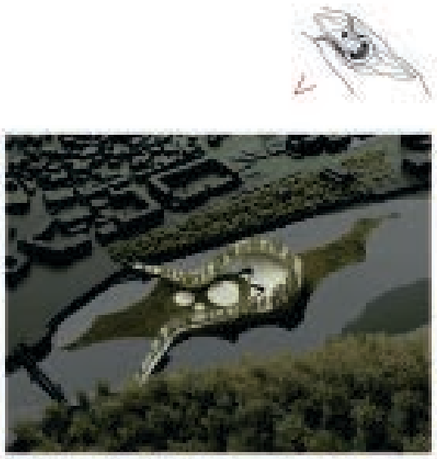


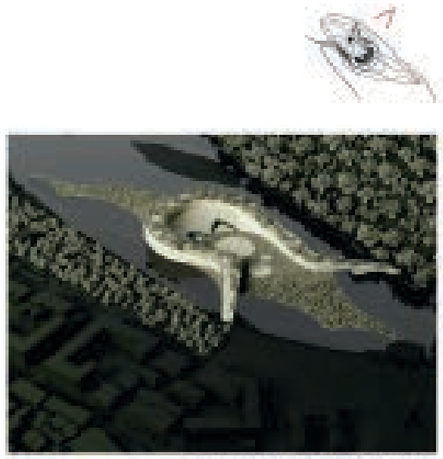
Objectives

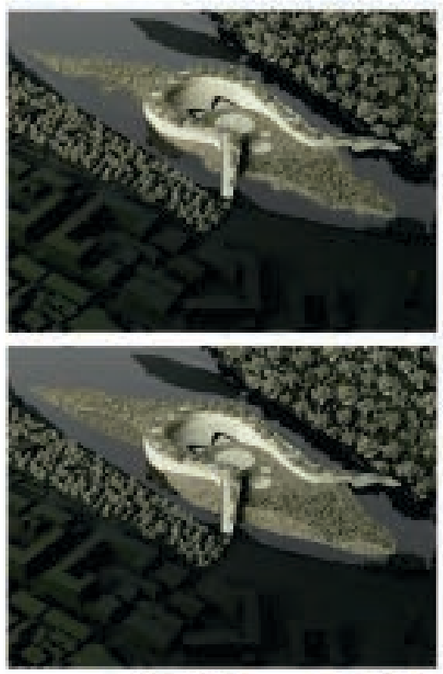


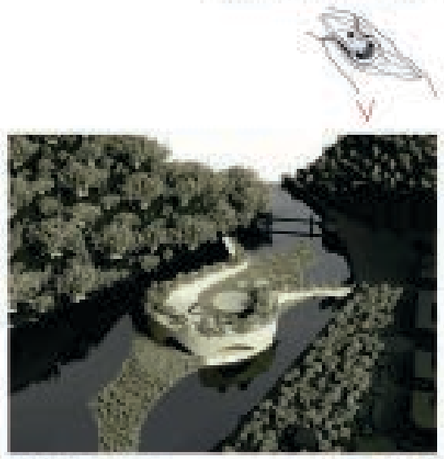
Description of bounding box generation strategy

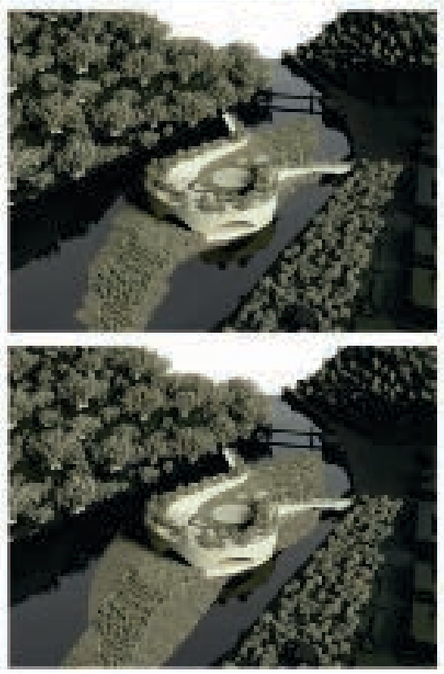
Initial mood diagrams

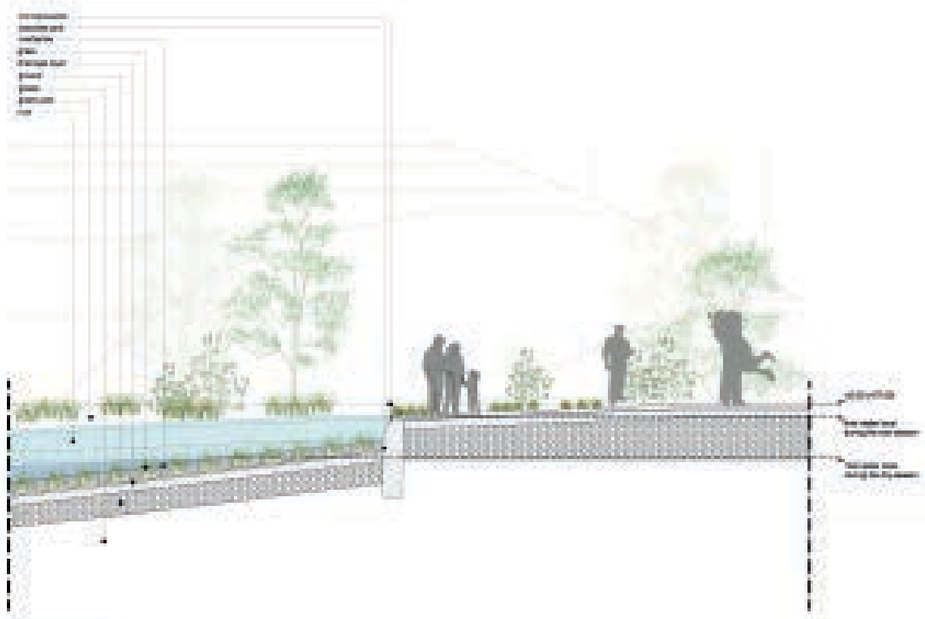


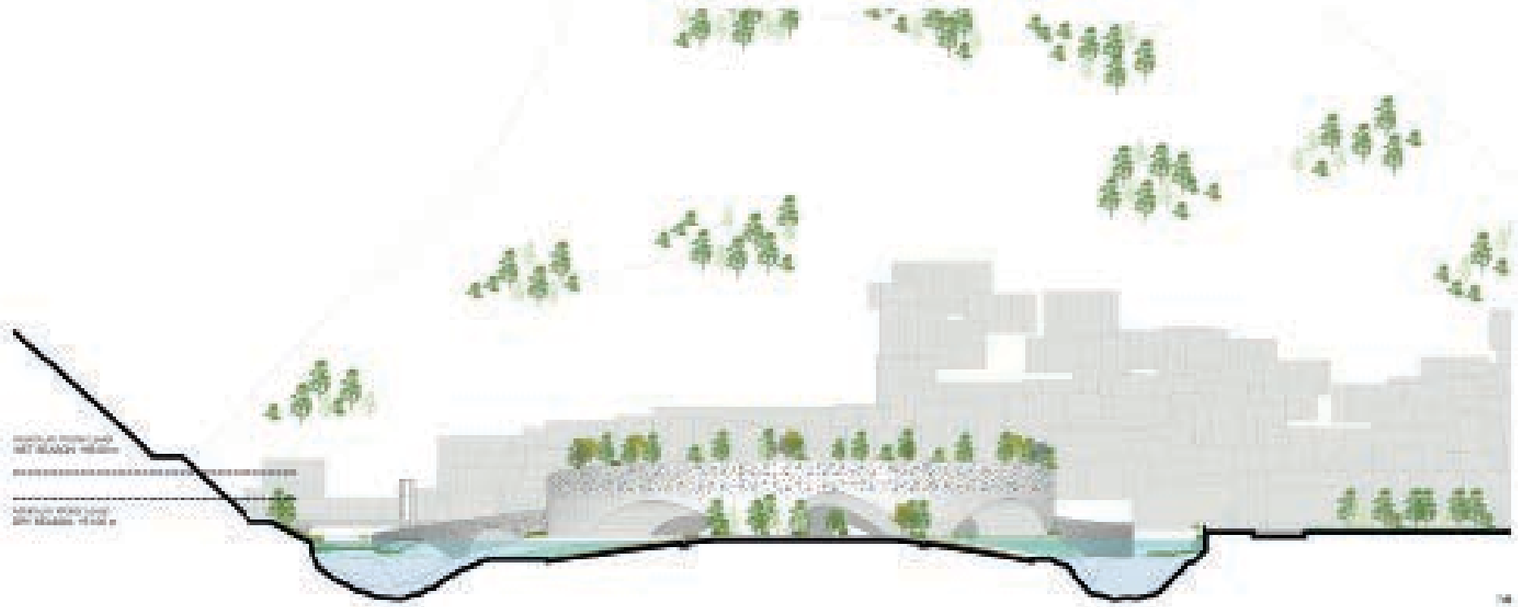








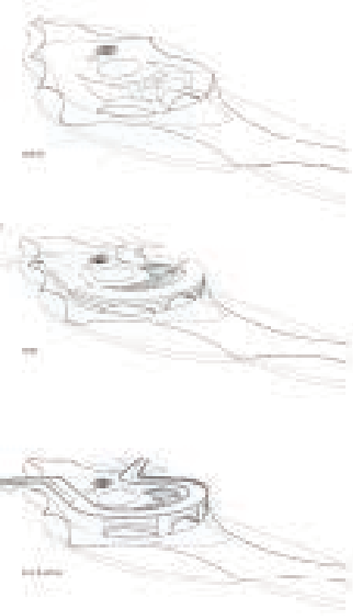




Working with constructive methods

Initial statement of the proposed project is the design of two monolithic sculptures - the Settlement Image of Ancient Nabatea and archaeology making reference to rock building traditions and materials, as seen in Jebel Dahr village.
The idea is to configure a collaborative architectural image of Petra while keeping the two

The use of monolithic rock-like geometry allows of the building, in one single location, the traditional function of creating spaces for human habitation, while creating landscape which works to help control natural elements.

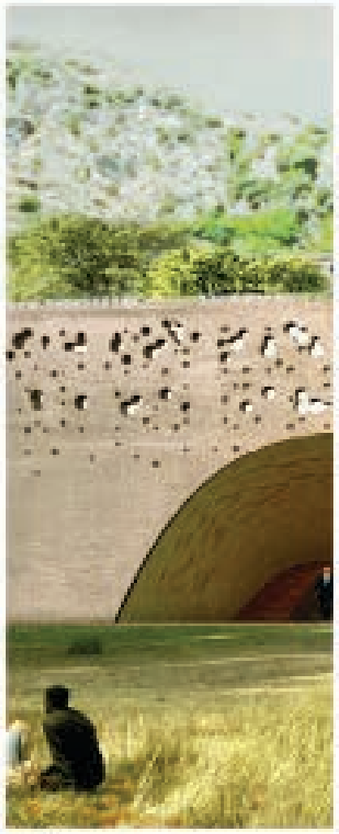


and facilities and tourism development, on the site of the Ain Qandil, in the form of two architectural sculptures, which are carefully constructed considering the context and built with the same building materials as seen in Jebel Dahr village.
The idea is to configure a collaborative architectural image of Petra while keeping the two

The use of monolithic rock-like geometry allows of the building, in one single location, the traditional function of creating spaces for human habitation, while creating landscape which works to help control natural elements.

Design and Construction

The proposed project for the Hotels at Petra Archaeological Park by Jebel Dahr Hotels and Resorts, is a unique opportunity to create a new landmark in the Nabatean Kingdom of ancient Petra, which will be a contemporary addition to the rich tradition of Nabatean architecture, however in a new fashion characterized by a strong geometrical relationship.



Jebel Dahr Hotels

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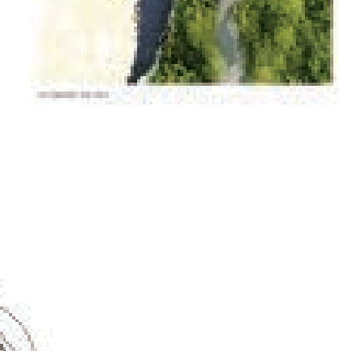
Roof

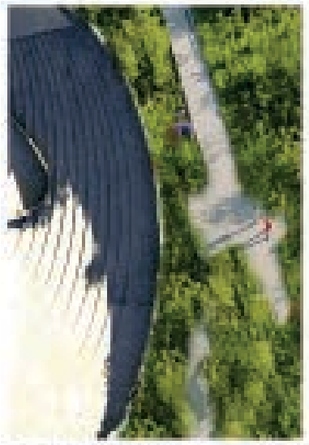
The roof is a combination of monolithic concrete shells and pergolas with Nabatean motifs.
The roof pergola is completely covered with vegetation creepers on high-trellis and to ensure the durability of plants, the roof surface is made to accommodate concrete elements.

The most important structural and quality of the cylinders, the purpose of made structural shells. The outer thick surface of the cylinders is of concrete and the quality is necessary of the highest. Also it is usually to contain high load capacity and must cover weight of cubes of the cylinder in both ground and spaces. Also maintenance, due to use of vegetation, composed of materials of medium thickness must be able to survive in situations of extreme drought, with high capacity to evaporation and heat accumulation.

Since Working Technology that includes accommodation, ensure the building process from making, adjusting the measurements made in the merging of the temperature in the cubes and contact with the field against the resistance effect, creation load, and therefore energy saving. Introduction of the elements of the surfaces, providing new material into cubes, the control of environment. In addition to spaces and internal measurements.



The assembly composed of: • Drainage • Concrete slab • Compartment • Insulation • Concrete, reinforced and cure • Waterproofing membrane • Layer of drainage and water storage • Concrete tiles • Reinforced concrete • Vegetation



Architectural Design

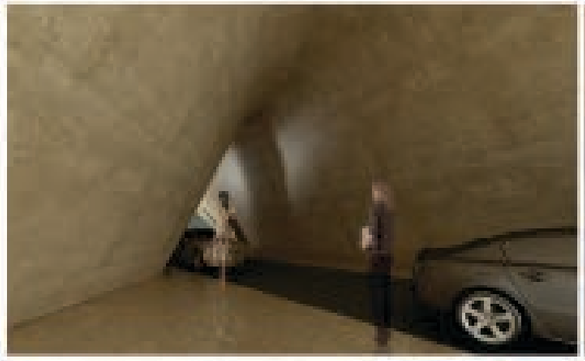
Energetic considerations concerning the building envelope and the overall reduction of greenhouse effect in response to the current political emergencies - represent to me, Rome, the future of sensitive design, integrating building and climate solutions.
In other words, a green organism in touch and qualities in the shape of buildings, as every design choice has a functional and technical reason.
Our design intention and image is to propose a concept and an eco-friendly good-looking that is also attractive and, at night, as an oil-painting work.

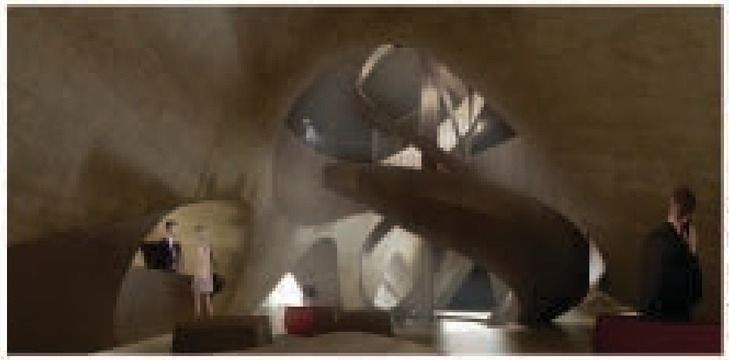
We believe that with careful the following solutions in order to highly meet the criteria of sustainable design:
- Reduction of electrical installation through the use of natural and passive lighting and ventilation systems, as well as appropriate comfort-natural lighting of the interior spaces.
- Encapsulation of the building shell through accurate definition of the insulation thicknesses for the various parts which creates choice of the glass for the transparent coverings, guiding controlled reduction of energy requirements in cool and hot seasons.
- Use of efficient and low consumption lamps and luminaires with full control and the overall performance.
- Choice of materials and detailed solutions such as electric, water and any construction system.

Technical Aspects

Our northern engineer's know-how always considers the most technological solutions in order to guarantee environmentally sustainable, integrated building service systems meeting a balanced environmental comfort between ventilation, heating and lighting systems, combined with maintenance costs as air conditioning, in an energy saving point of comfort and economical efficiency.
Considering the most appropriate comfort standards for each apartment, considering all aspects of the design of comfort.
- Comfort index and accurate control of the relative values of temperature and humidity, with the support of an automatic regulation of the heating, cool and energy usage. Using such a technological tool, all parts of a dimensional monitoring technique to evaluate the possible and comfort levels - our systems also integrate the building plants to create functional internal spaces and optimum combination conditions.
Building plants represent a significant planning point, and have a main systems, project in an integrated way with the Architectural design, which will be developed on time, and suggest any action and providing latest technologies.
Designed to minimize costs of waste of consumption comfort. Above we use, with systems we understand and to efficiency and sustainability.

Exhibition of Winner projects





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