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University / School AMERICAN UNIVERSITY OF BEIRUT

Academic year YEAR 4 - FINAL YEAR PROJECT

Title of the project RE-MORPHING THE QUARRYSCAPE OF THE METN EXPRESS HIGHWAY: HYBRIDIZED THEORIES, BETWEEN ECOLOGICAL RECLAMATION AND LAND-ART

Authors THEA MARIA MAROUN

TECHNICAL DOSSIER

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Title of the course	FINAL YEAR CAPSTONE PROJECT
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Department/Section/Program of belonging	LANDSCAPE DESIGN AND ECOLOGICAL MANAGEMENT / LANDSCAPE ARCHITECTURE
University/School	AMERICAN UNIVERSITY OF BEIRUT



Written statement, short description of the project in English, no more than 250 words

My proposal is using the science of ecological reclamation and the theoretical understanding of land-art in order to achieve the ecological revival of the site through the creation of new functional relationships between the area's different natural resources whilst giving it a new political and cultural meaning. Therefore, I am working with the topography, re-morphing the land and the different surfaces left over by the excavations in order to bio mimic different natural conditions, making topography the key element of the design. This will lead to the formation of different habitats on a small scale, achieving spatial heterogeneity on the larger scale, in order to accelerate the natural succession process and establish a healthy system. Therefore, the design of berms with different physical properties, terraces, cliffs and embankments will create unique micro-habitats for a highly diverse landscape. Moreover the site is completely stripped of any cultural meaning, becoming merely the background of the everyday commuter. This led me to the study of land-art projects in post mining landscapes. These projects aim at conveying a political message rooted in the frustration towards nature's destruction. Therefore, the way I translated this frustration into a physical design, was again, the sculptural re-morphing of the land, achieving striking moments. This new type of landscape aims at challenging our understanding of the space. The land-form was designed with the commuter in mind, creating a visual layering of the landscape that transforms with the motion of the driver through the different parts of the highway.

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CLIMATE CHANGE AGAIN

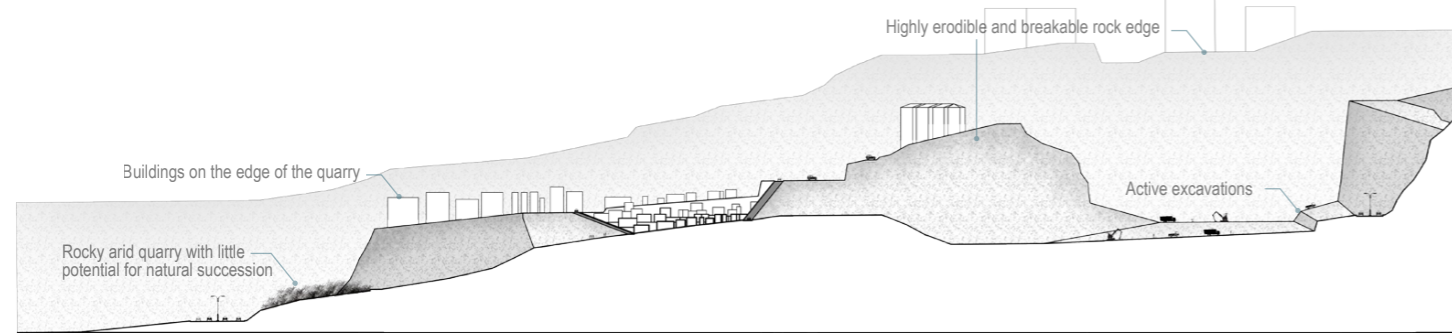
11th International Biennial Landscape Barcelona

Barcelona September 2020

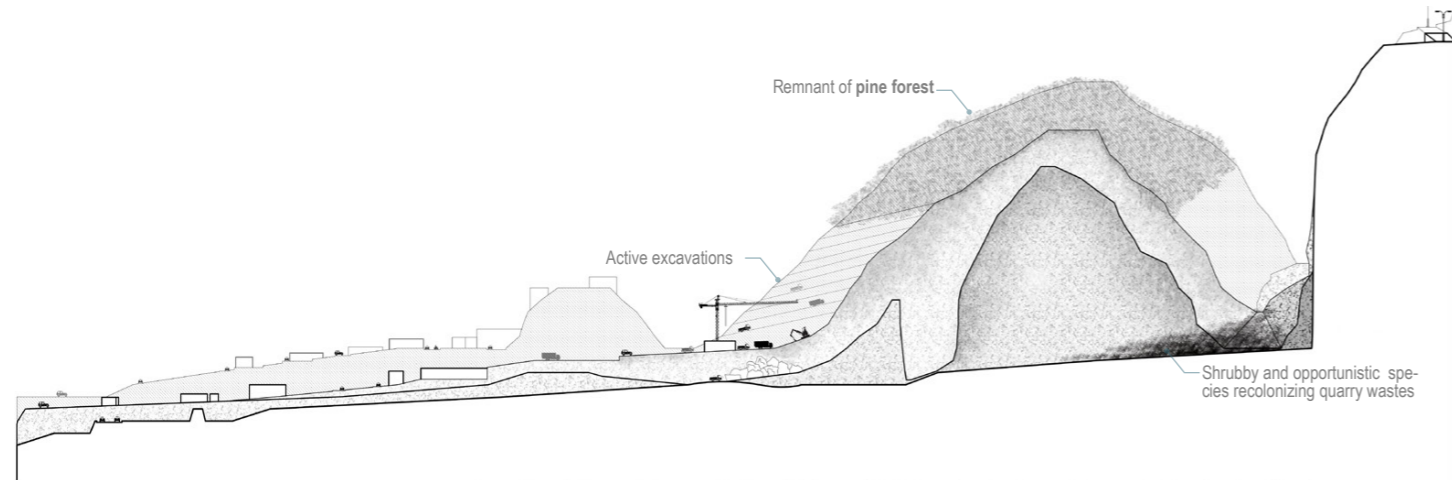
SCHOOL PRIZE

SECTIONAL ANALYSIS

The entire ecological system of the area is suffering. The removal of land cover and the subsequent disturbances of the water flow affects the stability of the ground, causing major degradation of habitats and habitat quality. All these failing processes severely hinder the natural succession and recovery process of the area



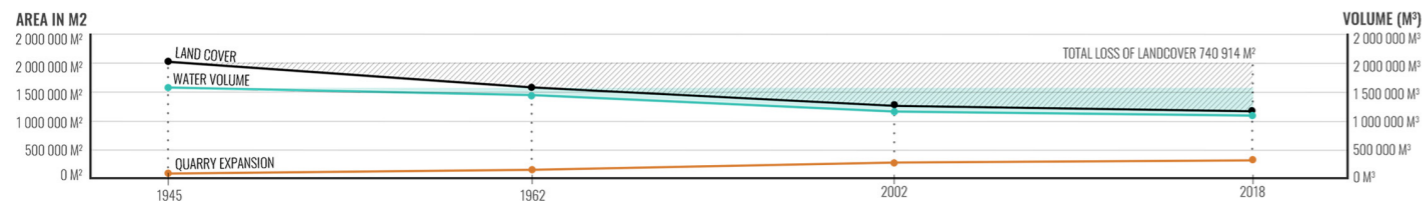
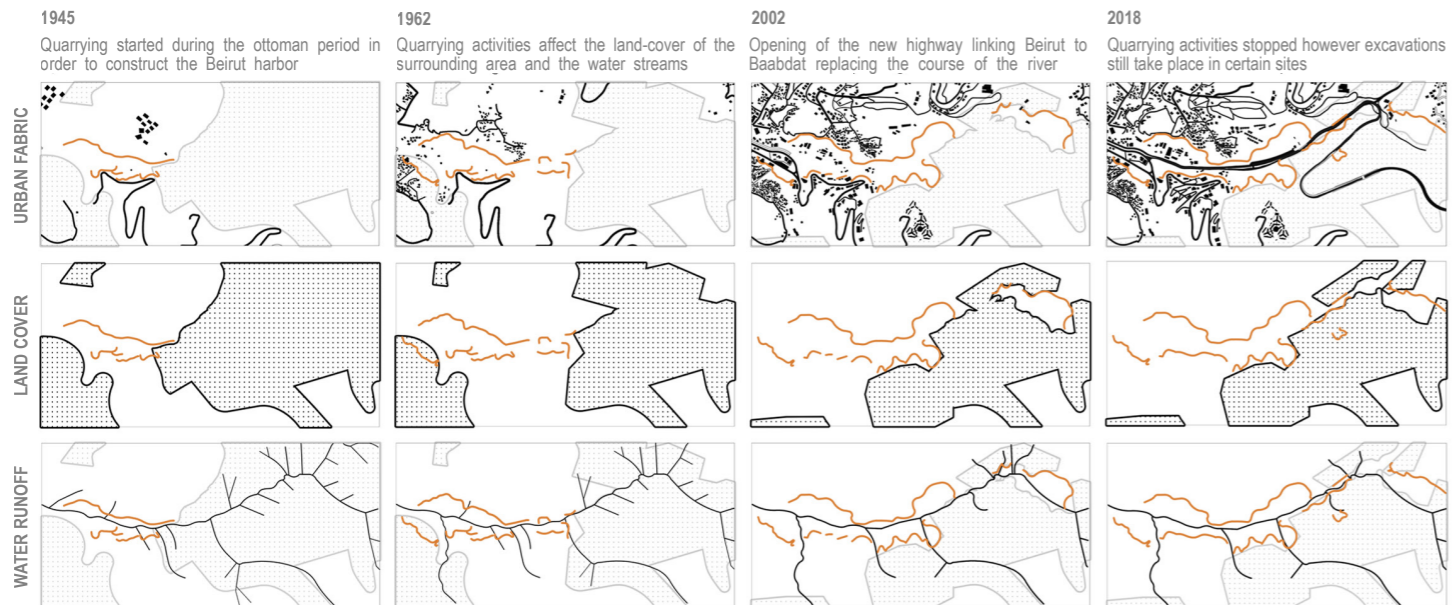
NORTH SIDE OF THE HIGHWAY



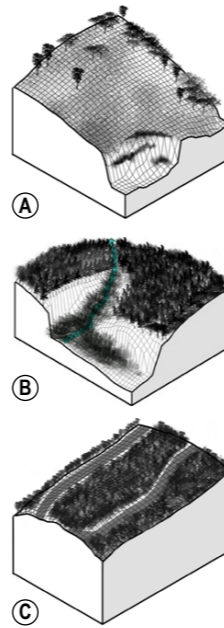
SOUTH SIDE OF THE HIGHWAY

LAND COVER AND AVAILABLE WATER VOLUME LOSS IN RELATIONSHIP TO QUARRY EXPANSION

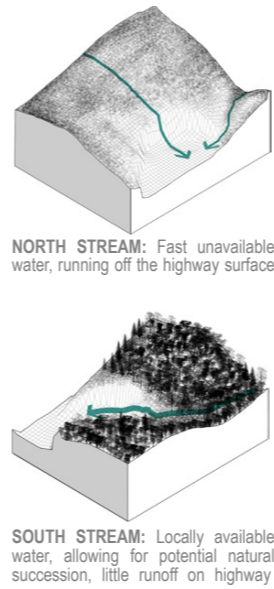
The mountain's exploitation originally started during the ottoman period and excavations illegally persisted till the mid 90's, transforming the area drastically. The quarries have been abandoned ever since, leaving these extremely large open spaces decay. The highway was constructed a few years later, giving access to this severely scarred landscape.



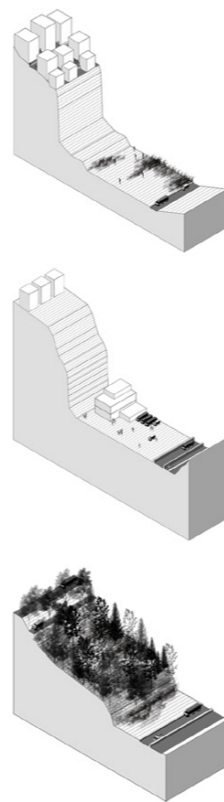
REMOVAL OF LAND-COVER AND DEGRADATION OF HABITATS



WATER RUNOFF AND WATER AVAILABILITY



LAND STABILITY: EDGE ERODIBILITY AND LANDSLIDE POTENTIALS



Mass removal of land cover - Large arid rocky lands

Opportunistic species colonizing compacted quarry waste

Remnant of pine forest

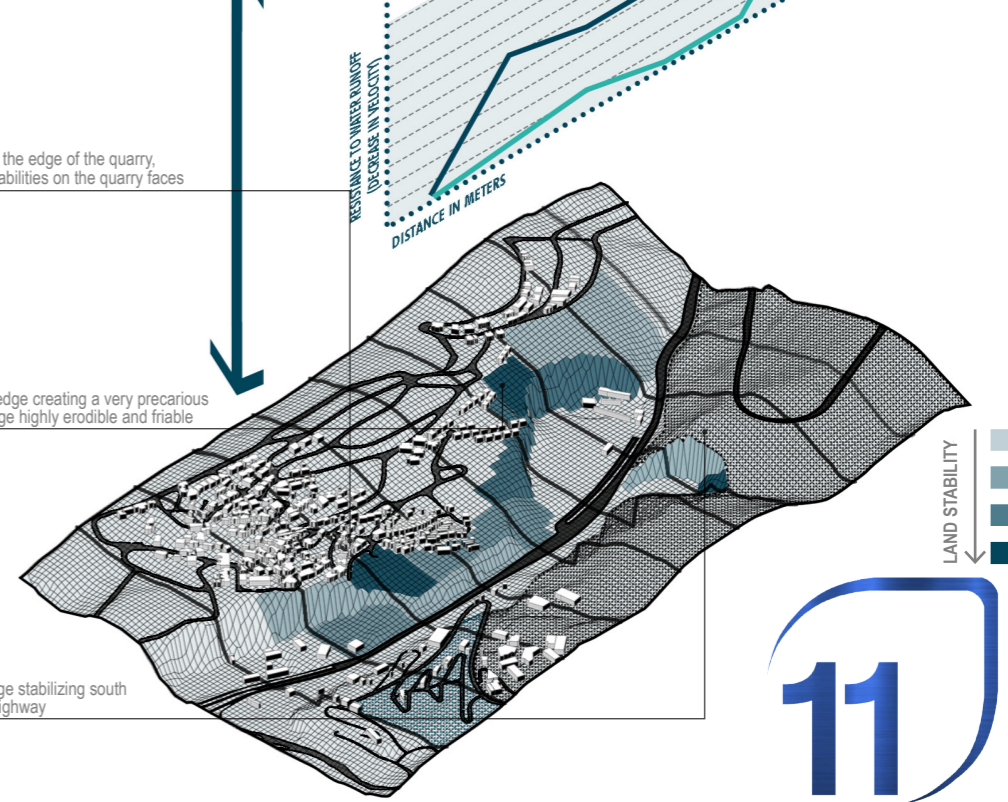
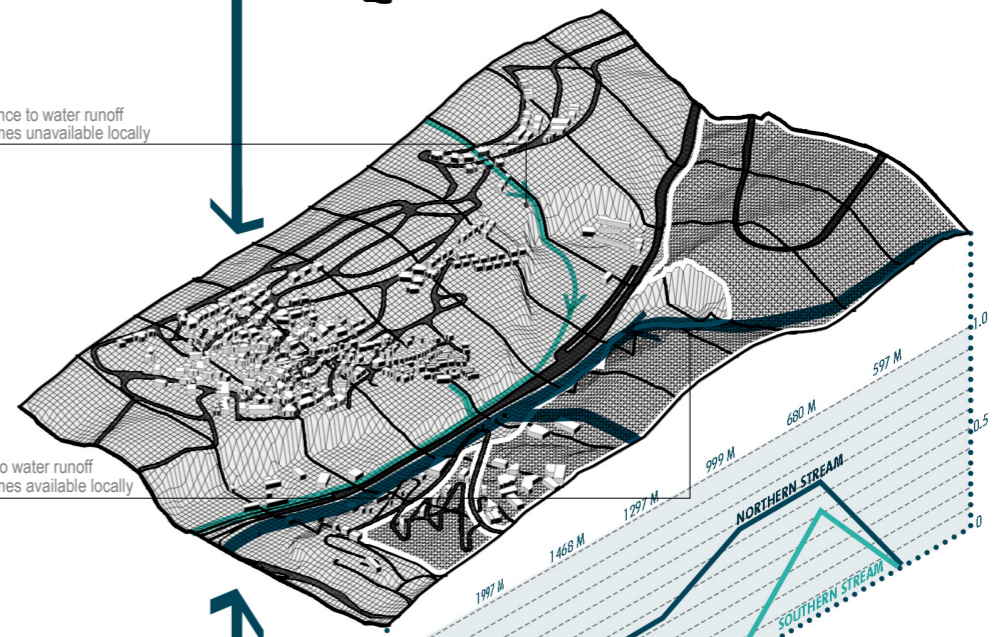
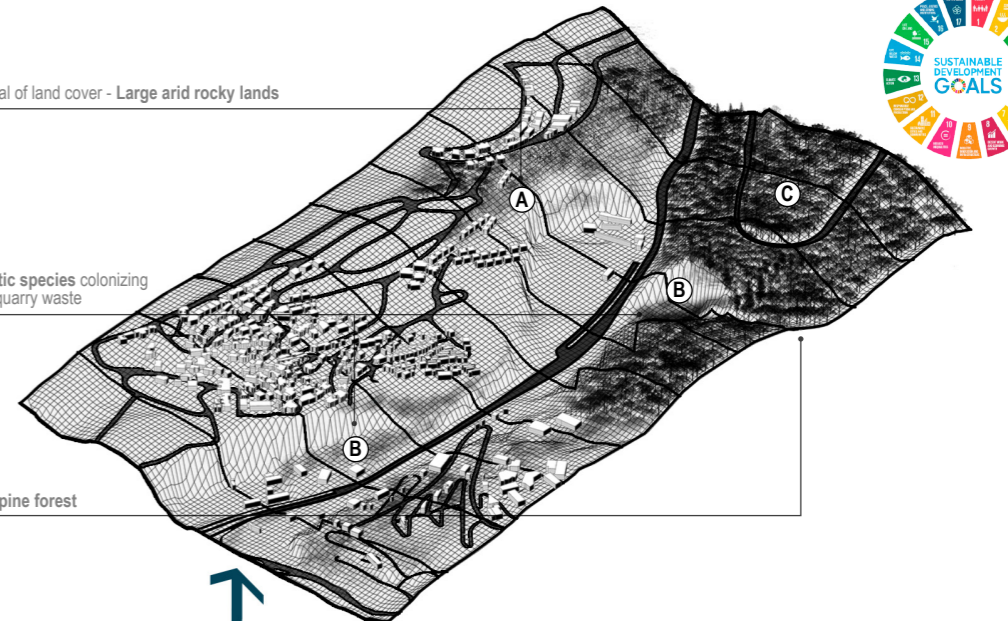
Little resistance to water runoff
Water becomes unavailable locally

Resistance to water runoff
Water becomes available locally

Buildings on the edge of the quarry,
creating instabilities on the quarry faces

Deforested edge creating a very precarious
situation, edge highly erodible and friable

Forested edge stabilizing south
side of the highway



MASTER PLAN

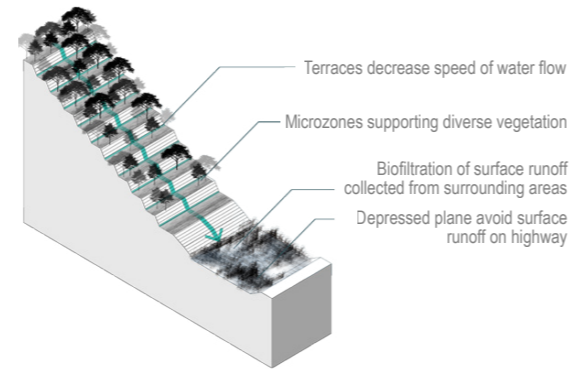
Achieve the ecological revival of the site through the creation of new functional relationships between the area's different natural resources whilst giving it a new cultural meaning



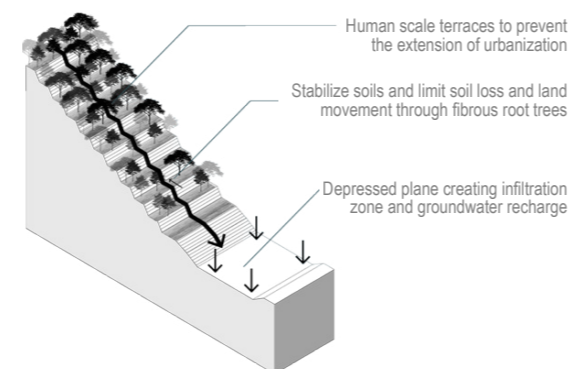
LANDSCAPE FUNCTIONS TO BE RESTORED

The focus of the ecological approach is on the different functions the landscape can provide

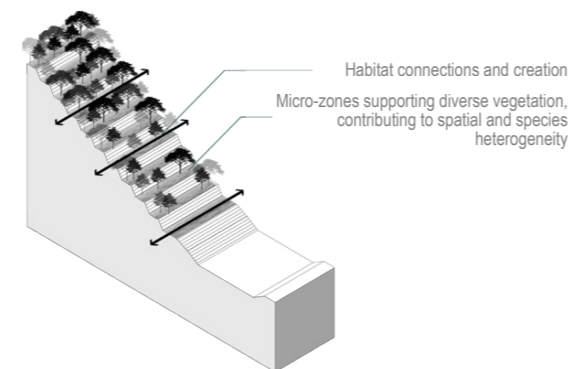
WATER REGULATION



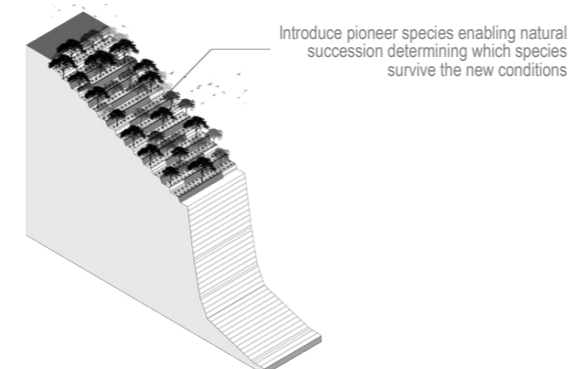
SLOPE STABILIZATION



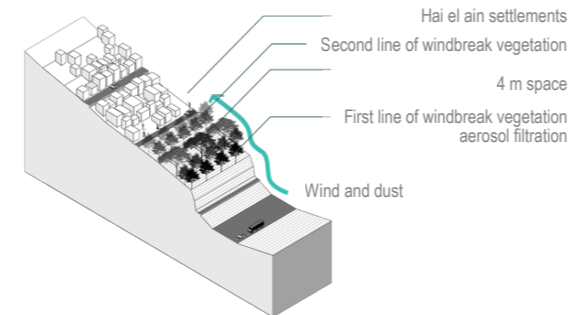
HABITAT CONTINUITY



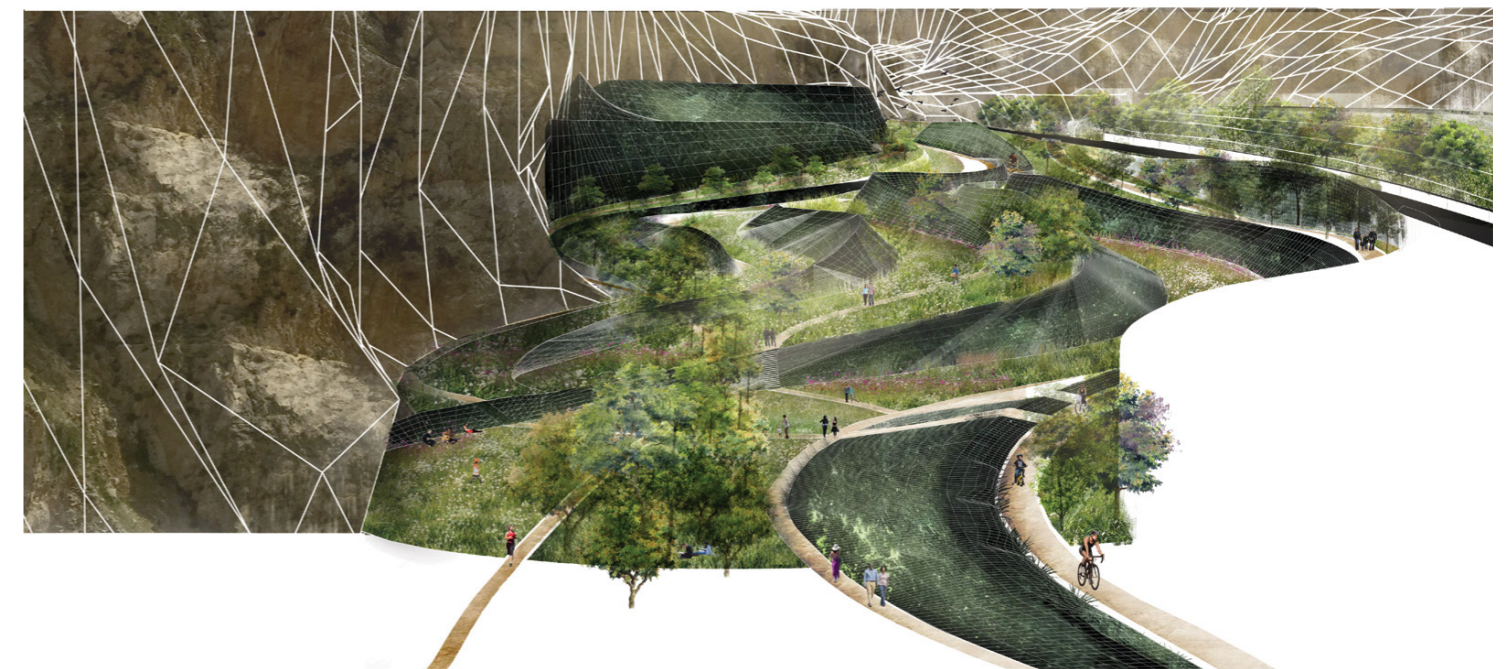
HABITAT RESTITUTION



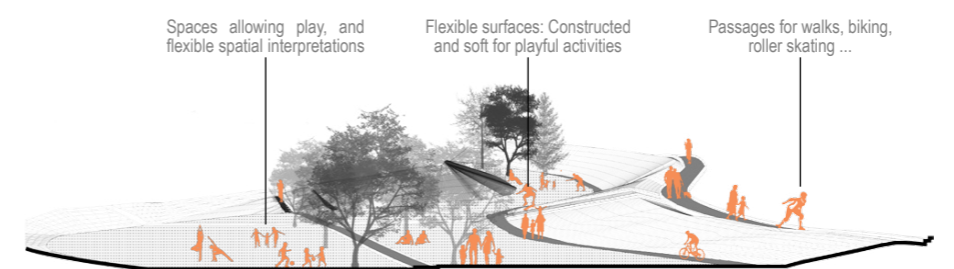
DISTURBANCE PROTECTION



AREA 1 DETAIL: Lower end of the project consisting of a large open space allowing for flexible programation and playful interpretations, due to the different constructed and vegetated surfaces. This gives the power to the users of the site to actively choose how to occupy the space, that allows for a myriad of activities, that can't be practiced in the city

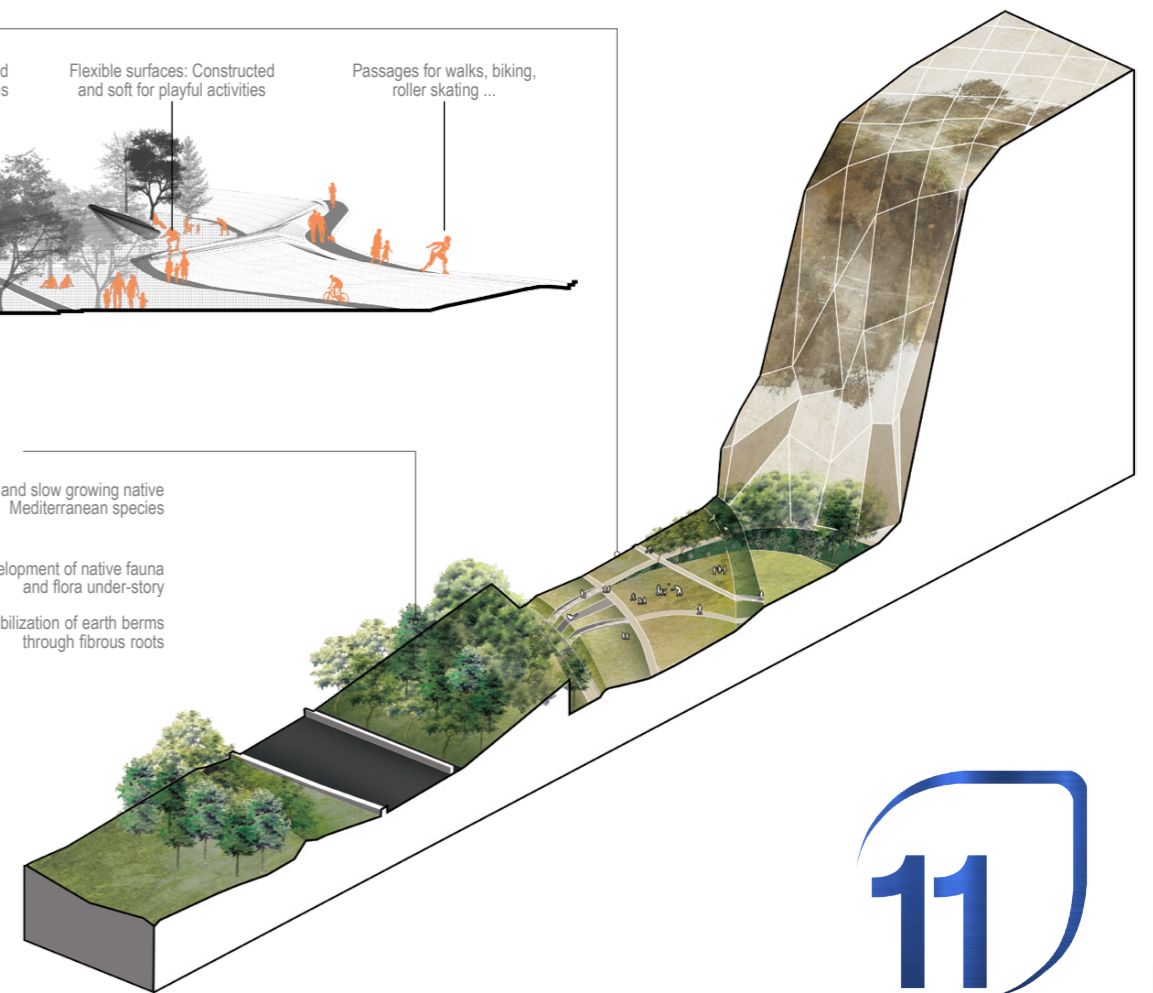
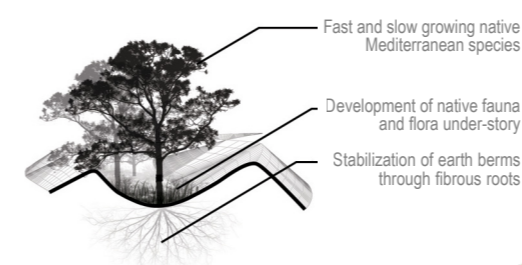


ACTIVITIES

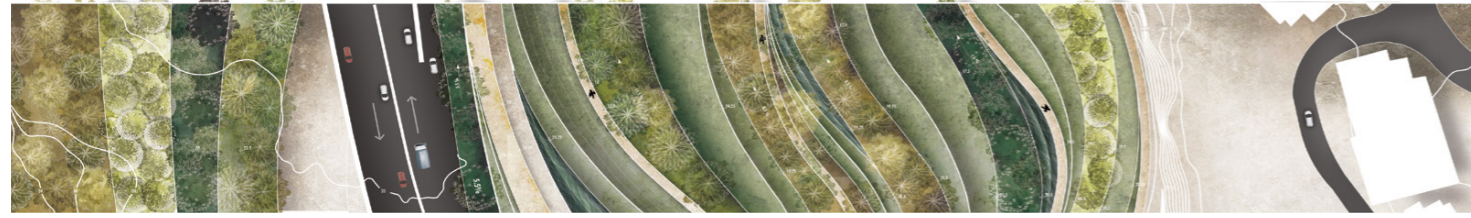


PROPOSED MICRO-HABITATS

NATIVE SCRUB AND WOODLANDS

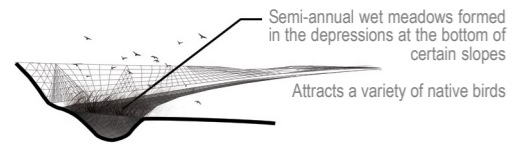


AREA 2 DETAIL: Re-morphed left over quarry waste forming small scale spaces with different characteristic, challenging the user's spatial perception through drastic scale changes, acting as reminders of the destructive power of men over nature. Passages through the new topography create a sense of discovery. As time passes, these berms will be colonized and natural succession will happen, placing the site into the dimensions of time and space

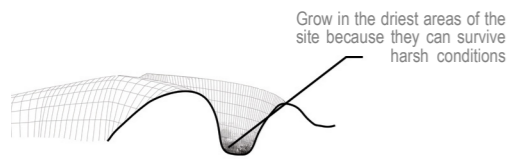


PROPOSED MICRO-HABITATS

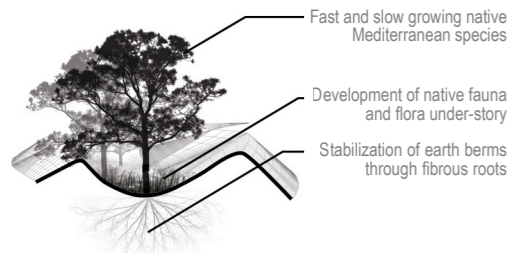
SEASONAL - SEMI ANNUAL WET MEADOW



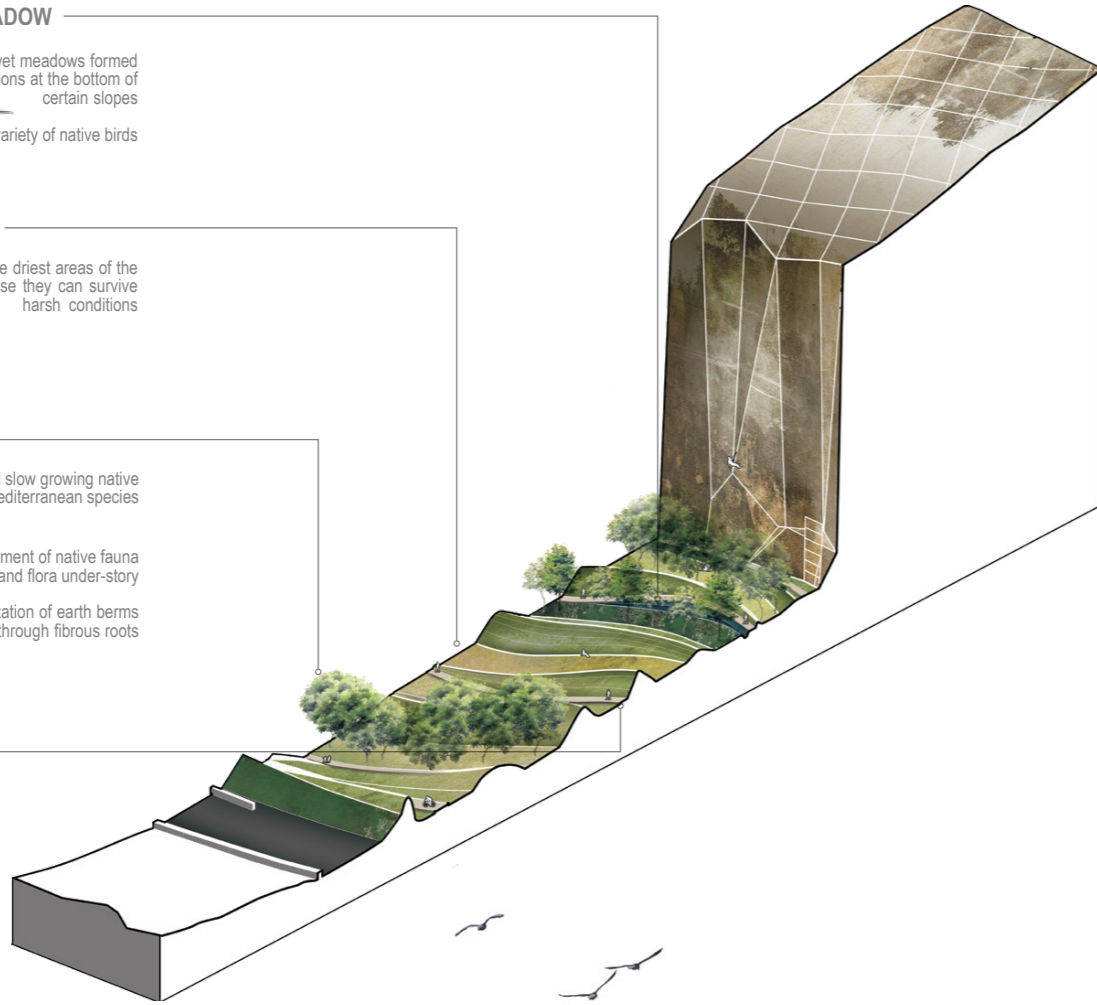
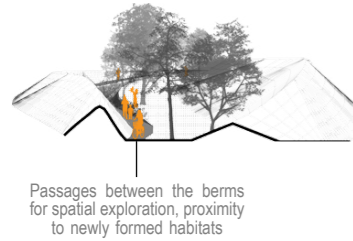
NATIVE SEMI-NATURAL GRASSLAND



NATIVE SCRUB AND WOODLANDS



ACTIVITIES

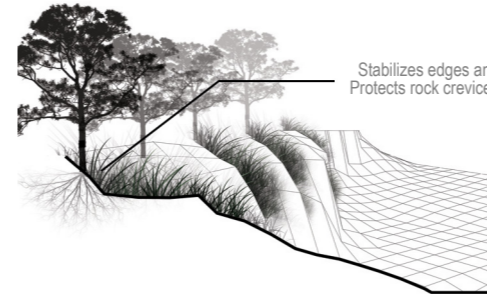


AREA 3 DETAIL: Single path inside the third quarry that is being left without any permanent intervention. The user will be able to feel the immensity of the destruction carried out by the quarrying activities, inspiring feelings of awe and shame. This quarry will serve for seasonal activities (festivals...) + Landscape terraces slowing down water, stabilizing edges and connecting the woodland habitats

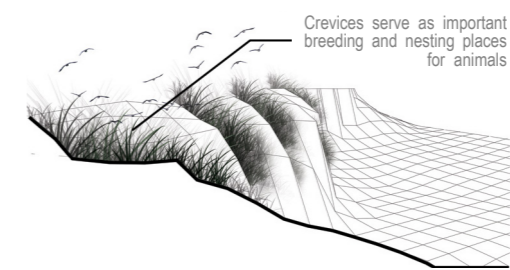


PROPOSED MICRO-HABITATS

FAST GROWING EROSION CONTROL WOODLANDS



CREVICES AND ROCK SURFACES HABITAT



ACTIVITIES

