



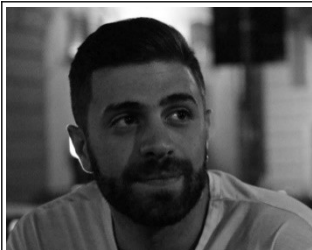
POLITECNICO DI MILANO POLO TERRITORIALE DI LECCO
School of Architecture Urban Planning Construction Engineering
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URBAN DESIGN + URBAN DESIGN STUDIO
Prof. A. Colucci, G. Minucci

URBAN DESIGN FINAL REPORT VITALITY CHAIN



TEAM 13

			
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INTRODUCTION

The first step to any transformation is the void felt in the context. In our case the focus is on the Caldene torrent based in Lecco, Italy and its setting area. The issue is that through the course of the history the river has lost its vitality and role inside the city. Yet, it is still an important element in the social memory and a substantial tool to present the spirit of the city. One of the most important features of Lecco collected by this torrent is that it can represent the transition that undergoes inside the city from the eastern part that is connected to Resegone mountain trail coming down to the lake Como. Studying this main section the city is divided into 3 zones: Mountain zone of the city with the texture mostly allocated to the natural aspects; The compact urban zone by the lake Como consisting the historical city center; The transitional zone that is the transition between compact urban zone and the Mountain zone. The Caldene passes through all of these zones and disembogues into the lake. The other aspect that is neglected is the fact that the city is enriching by new young and international demography annually. This fellow of people when taken into consideration can help the city not only to help the state of livelihood inside the city but also to become a target to more international tourism. The state of the livelihood of Caldene can immensely affect the livelihood of an important chunk of the city. To this day the social potential of the river has been neglected, but our idea is to revitalize the river and rearrange the surrounding the way that it creates a chain of vitality to the mentioned area and eventually the whole city of Lecco.

ABSTRACT

This report describes the process of developing a masterplan for the project of regenerating the area surrounding Caldene torrent and its embankment as of here onward referred to as “Caldene area”. In the process of gathering general and focused knowledge about the area and its specific characteristics we focused on the physical and the natural aspect of the Caldene area. We gathered knowledge around the greenery of the area, the surrounding natural features such as the mountains and lake also the important species of fauna and flora. Moving forward we gathered more general knowledge on the area potentials such as the mobility to the area, demographic situation and social demands, the dispersal of the services, and social inclusion and universal design aspects of the area. The process of synthesizing the related phenomena initialized on the gathered knowledge based on SWOT analysis of the area, map of indications on the possible opportunities and restraints regarding to our proposal for the area. Based on the aforementioned research we collected that the best route to revitalize the city is to include the now neglected torrent into the urban functions and propose a set of function that could best use the city potentials such as young demography and tourism attractions. To reach that idea, we aspired three goals for the area. The goals are for the Lecco to be a: Connected city; Attractive city; and a Quality city. For each goal there are several strategies to be sought. For Lecco to become a Connected city, we need to take care of the impediments and enhance transportation facilities, aptly we should consider universal design for the accessibility to the whole area. For Lecco to become an Attractive city, we considered introducing more leisure

amenities especially inside Caldene area which has the most ignored potential for this aim; developing engaging educational premises to attract and involve the young demographic to the area; moreover, introducing touristic services, with Lecco located in a strategic region between the beautiful mountain trails and famous lake of Como there is huge potential to attract tourism on this unique potentials but the first step toward this goal is to improve the state of the tourism infrastructure. For Lecco to become a Quality city, the public spaces must undergo a diligent design in regards of universal design, Taking care of the gap that is between urban structure and the surrounding nature by two strategies of improving human-nature relationship by proposing functions that can culture and make awareness for the people and also by improving the urban green quality and biodiversity. To take actions toward such strategies first of all we needed to acknowledge the physical aspects of the city and decide on how we want to direct the fellow of the people. Thus, we decided on a zoning that directs people from the compact urban context towards the attractive center of the Caldene embankment and then divide them to go toward the mountain in two main region one to get inspired and aware of the existing nature and one to have accommodation services and trekking services to get into the heart of the nature surrounding Lecco. Then considering the foreseen vacant sites in each zone, we propose appropriate functions inside each zone. Moving forward, we focus on the main attractive center of the Caldene torrent and to design the proposed functions the way that is required to reach the important goals of the project. That is how we do: the Vitality Chain.

CHAPTER 1: KNOWLEDGE

INTRODUCTION

The focus of the analysis is the system of the greenery in Lecco. It will include the morphology and the biodiversity of both animals and plants. The former point of the study was a general overview of the area. The whole territory was split into urban area and generic green area. Dividing also the urban system into two main categories, that are maintained and unmaintained green. The methodology is to focus on the green system in the urban area. The division was made in four main categories: forest, cultivated area, wooded urban greenery, garden or private area.

The latter focus was made on the habitats and ecosystem present in Lecco greenery. Different categories of trees were highlighted in order to understand the importance of the different species and the way human can intervene in them to preserve future problems. The second analysis was run onto the animals at first analysing the different species present in the different spaces of the city, and secondly on the different fishes that live in the Caldene river and more generally in the Lake Como. A brief analysis on the reasons that threat these animals was carried out in order to understand the constrains of the future urban planning.

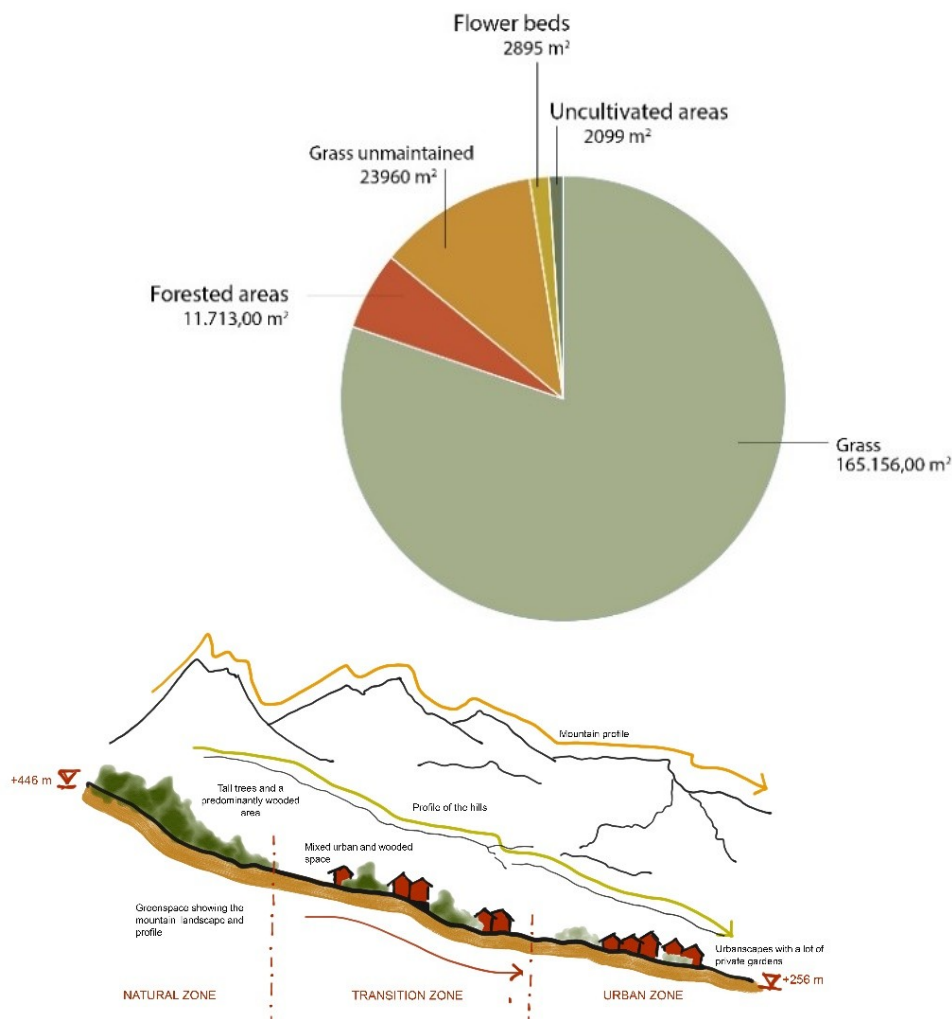
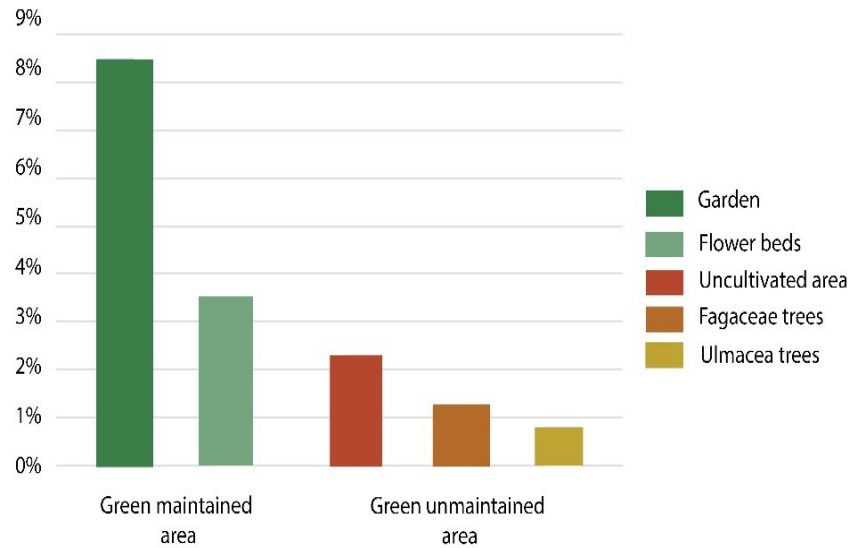
1. GREEN SYSTEM OF LECCO AREA

1.1 DIFFERENT COMPONENTS OF GREENERY

The Municipality of Lecco, in collaboration with the Consorzio Consolidata, made a public census of the public green of the city of Lecco, with the aim of managing green to plan any retraining interventions.

The analysis show that the most of the green in urban area is made by grass, both public and private.

Forested areas come after the grass areas with the total area of 11.713m² which is less than a 7% of grass areas, to compare the vastness of that type of greenery. Here will show some of the results obtained from this census: unmaintained grass areas with the total area of 23.960m² is the second vast area after grass areas and flower beds and uncultivated areas with respectively 2895m² and 2099m² play their own part in the greenery of the district.



The section summarized the main aspects of Lecco's greenery. It is possible to divide the landscape of the city in three macro-categories: Natural zone, Transition zone and Urban

zone. The first one is characterized by the presence of wild vegetation and also wild animals. The second one is a hybrid between the “real” urban pattern and the mountain. Here is possible to find a less dense urban fabric. The buildings are smaller and with big private garden that are well harmonized with the neighbourhood. The third part is the urban zone where the greenery is limited by the presence of the buildings. This last part ends in the Lake Como.

1.2 TREES SPECIES ALONGSIDE CALDONE RIVER

The average tree age in the city of Lecco is 80-85 years old. Through the arboreal census, different macro areas characterized by prevailing plant species have been identified. The northern area of the Caldane river is characterized by the presence of pines and conifers, of the Pinaceae families, and Ulmaceae families' trees in the most pending areas of the Caldane's valley. In the middle level area of Caldane, we could find mostly Salicaceae and Fagaceae trees, that normally grow at low altitude. Each of these trees has some advantages and disadvantages in the urban contexts. Pines grow large so they usually used as wind breaker while They drop large cones from time to time and lots of needles, meaning that usually it is difficult to get other plants to grow near them. Fagaceae and Ulmaceae Have shallow roots which poses a problem to the foundation. They tend to grow quickly. The reason for this quick growth is because they drain a lot of water from the soil. This can cause the soil to shift around the foundation but they both are excellent filters for urban pollutant, Ulmaceae also has ornamental uses and creates huge tunneled effect. Salicaceae has the benefits of Providing environmental services and also used as a renewable energy source and for the remediation of contaminated sites.

2. HABITAT VALUES

The habitat values are the particular elements that characterize the environment, giving it importance. It is important to study and analyse them in order to learn the method to preserve it. In this part of the analysis of Lecco zone it was studied the biodiversity, that is the variety of living organisms in their different appearances and ecosystems. For the studies we referred to the “Carta ambientale del Sistema” and to the “Rete ecologica” contained in the PTCP (Piano di Coordinamento Provinciale.) For more detailed information about ecosystems in Lecco is possible to consult them online.

The importance of this part is to understand how to protect the natural habitat of flora and fauna:

- Reducing the disconnection caused by infrastructures and urban system
- Safeguarding natural spaces helping ecological functionality
- Maintaining and promoting environmental systems
- Rebalancing environmental system that has been damaged.

2.1 MOUNTAINS

As we mentioned before the area is divided into different areas, in which live different species depending on the different ecosystem. The priority of the study of the species is to set different strategies to preserve the threatened species. It is important to set the core areas, meaning the areas where the species can maintain a high level of population. The goal of the urban planner is to work in the buffer zone, in order to reduce the threats created by the urban landscape and the infrastructures.

2.2 RIVERS

At the foot of the mount Resegone, the rivers Caldane and Bione flow into the Lake Como. The rivers can be seen as a suitable connection for the different environments

we mentioned before. Into these rivers and lake can be found several types of fish, like eels, trouts, Coregonus, Pikes.

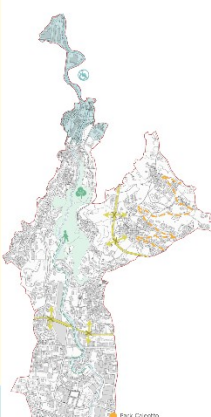
It is important to study the several motivations that threat these fish species, in order to act in urban planning to reduce them. The most relevant for our topic are: dam construction, water pollution and low level of water.

CHAPTER 2: SYNTHESIS

After a thorough investigation of the area we gathered a lot of information as knowledge about the Caldane area. But just knowing about the context is never enough for the team to be able to synthesize any transformation to the area. Thus, we need to process the investigation materials to know about the positive and negative aspects of the context so after a deep understanding of the spatial scales and possible intervention sites and interaction with elements of Lecco, to generate a set of phenomena to make possible to synthesize our proposal.

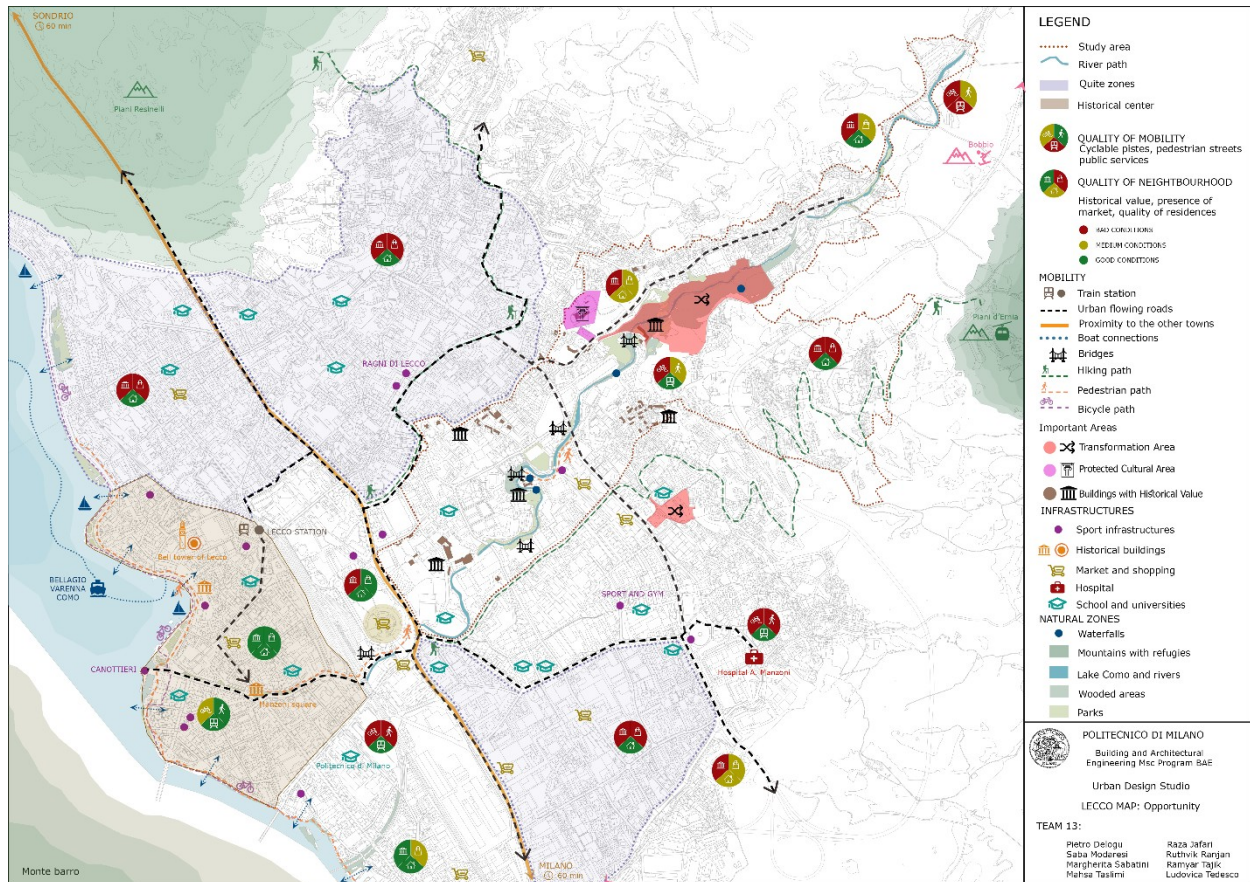
1. SWOT MATRIX

Following the deep investigation through the context we need to study the materials and information so we achieve a deep and strong understanding of the context in which we are going to propose transformation. The first step in processing this type of scattered information is to put them into a SWOT analysis table so with a more clear vision we an step forward. Thus, the following is our SWOT analysis of the Caldane area.

POSITIVE	INTERNAL	 STRENGTHS SOCIAL AND ECONOMICS Presence of ancient buildings, that after refurbishment could attract tourists. Presence of services nearby, as the hospital A. Manzoni and a branch of Università Bicocca, Politecnico di Milano and variety of secondary schools PUBLIC SPACES Presence of parks "Caleotto" and "Via Caduti" in good conditions and already used by the citizens as relaxing places mostly for families ENVIRONMENT Presence of significant forest in the area that according to the PGT should be preserved, in order to safeguard the variety of flora and fauna present in the area. View of the lake and the city from the upper part of the river, due to the slope. The river itself is a connection between the city and the mountain. CONNECTIVITY Mountain paths that connect to Pian d'Erna and Pian Resinelli Presence of the train station in the southern part of the river, that connects with Milano, Bergamo, Sondrio and Tirano Mostly well developed and maintained infrastructures network, as SS36, SS639. FACILITIES Presence of cablecars that connect the mountain top and to the beginning of other mountains paths and permit to discover Pian d'Erna and Pian Resinelli.	INTERNAL	 WEAKNESSES SOCIAL AND ECONOMICS Presence of high traffic roads which divide the area into three urban zones, that break the pedestrian path and are not easy to be crossed. PUBLIC SPACES Not well utilised and maintained green spaces in the centre of the area, which can be a not safe place in the city. ENVIRONMENT The site's slope is very high and it doesn't permit to use the territory easily. Risk of flooding along the Caldane river. CONNECTIVITY Difficulty to reach the area by public transport: longer waiting periods for buses, lack of bus stops, especially the upper part, that is also the most interesting one for tourists (picnic area, Sant'Epilii Church, Mountain landscape) The lack of wayfinding and indications does not permit to find easily the interesting mountain paths and sites. Pedestrian paths are not continuous alongside the road and the river Traffic jams during peak hours in the southern part of the city FACILITIES Lack of continuous cycling facilities infrastructures all along the Caldane river, especially to connect the Bonadina area to the city. Lack of activities: sports facilities, commercial, entertainment by the Caldane river and more in general in the whole city of Lecco. The tourism facilities are not well developed to support city tourism potential.	
	NEGATIVE	EXTERNAL	 THREATS SOCIAL AND ECONOMICS Decrease in young native residence and increase in senior citizen population that could cause a reduction in the use of entertainment facilities. PUBLIC SPACES The PGT even if encourage the development of low mobility, nowadays it does not provide specific plans for people with disabilities both in the area and in the city. ENVIRONMENT The continuous growing of the urbanization is threatening the wildlife territory, and the greenery of the area. CONNECTIVITY Faster growth in the use of private cars instead of public transport contributes to increase air pollution rate. FACILITIES Unbalanced growth in touristic accommodations considering foothills of mountains and lakeside. Low growth in international tourists and no plan for production of infrastructure pointing this demographic goal. No increase in nightlife activity and working hours of main city hubs Little growth in the numbers of Cafes, bar and restaurants compared to the new demographic residence in the city.	EXTERNAL	 Green spaces  New green corridor  Road for access to the river space  Mountain paths  New green corridor  University of Lecco  Campus of pedestrian and along the river 
POSITIVE	 POLITECNICO DI MILANO Building and Architectural Engineering Mac Program BAE Urban Design Studio LECCO MAP: SWOT Analysis TEAM 13: Pietro Delogu, Sara Molinari, Margherita Sabatini, Mehdi Tsalim, Raula Tafari, Kuchik Namjan, Ramyar Tajik, Ludovica Tedesco				

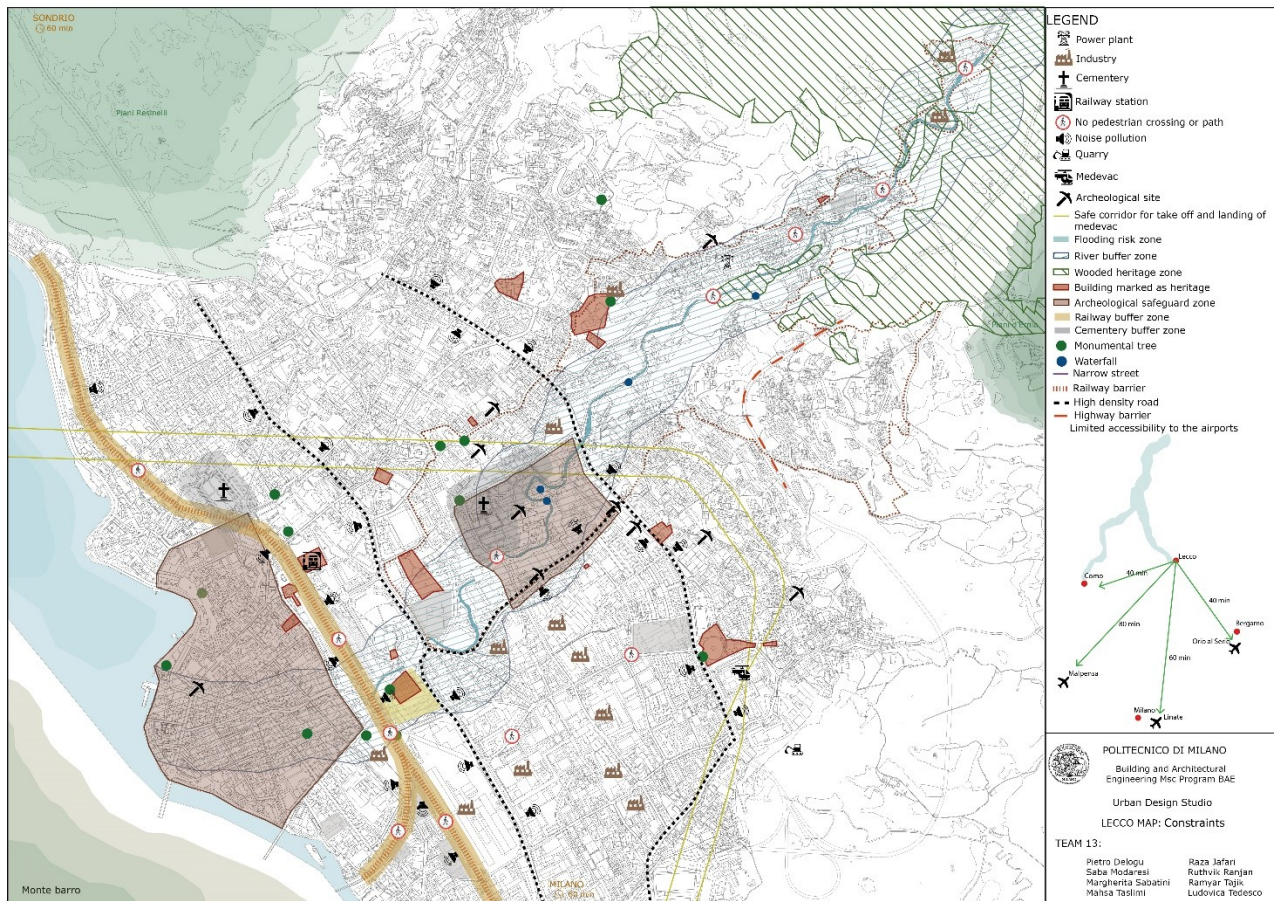
2. OPPORTUNITY MAP

The strongest element in the opportunity map is the connection of the two mountains at the upper part of the Caldene area which is the great potential for the tourists and young demographic who plan to hike and ski. There is one pedestrian and cycling path existing by the lake that elongates to the neighbouring cities so there is the opportunity to connect other cycling paths to this path and ease the access to our area by bike from cities in the vicinity. The possible transformation area indicated by the pgt is another opportunity to consider. And the neighbourhoods and mobility of each district is taken into consideration qualitatively.



3. CONSTRAINTS MAP

The Caldene torrent although has many opportunities creates some other constraints for our design. To name a few, there is the possibility of pretty fast floods that can take place in under three hours notice which creates a critical solution and also the torrent itself is a barrier between zones if adequate connections are not proposed for the area. Inside Caldene area, we have a high number of industrial sites which can both be a negative or a positive effect to our design, the negative being the noise and pollution they create. There is pretty much not even sufficient pedestrian paths existing especially in the upper part of the Caldene area. Another important barrier dividing city in parts and passing Caldene area is the two high traffic roads.



CHAPTER 3: CONCEPT

1. OUR VISION

The analysis of the area around the Caldene River was initially focused on the greenery areas and the use of them: from this analysis it became clear how some areas presented unused and often abandoned zones with several difficulties in accessibility. This preliminary analysis has somehow sensitized our vision for the project. The main aim is trying to create a place that doesn't alterate the landscape value that these green spaces cover but, instead, that works rather for a redevelopment of these areas in order to be able to enhance the true potential of the landscape.

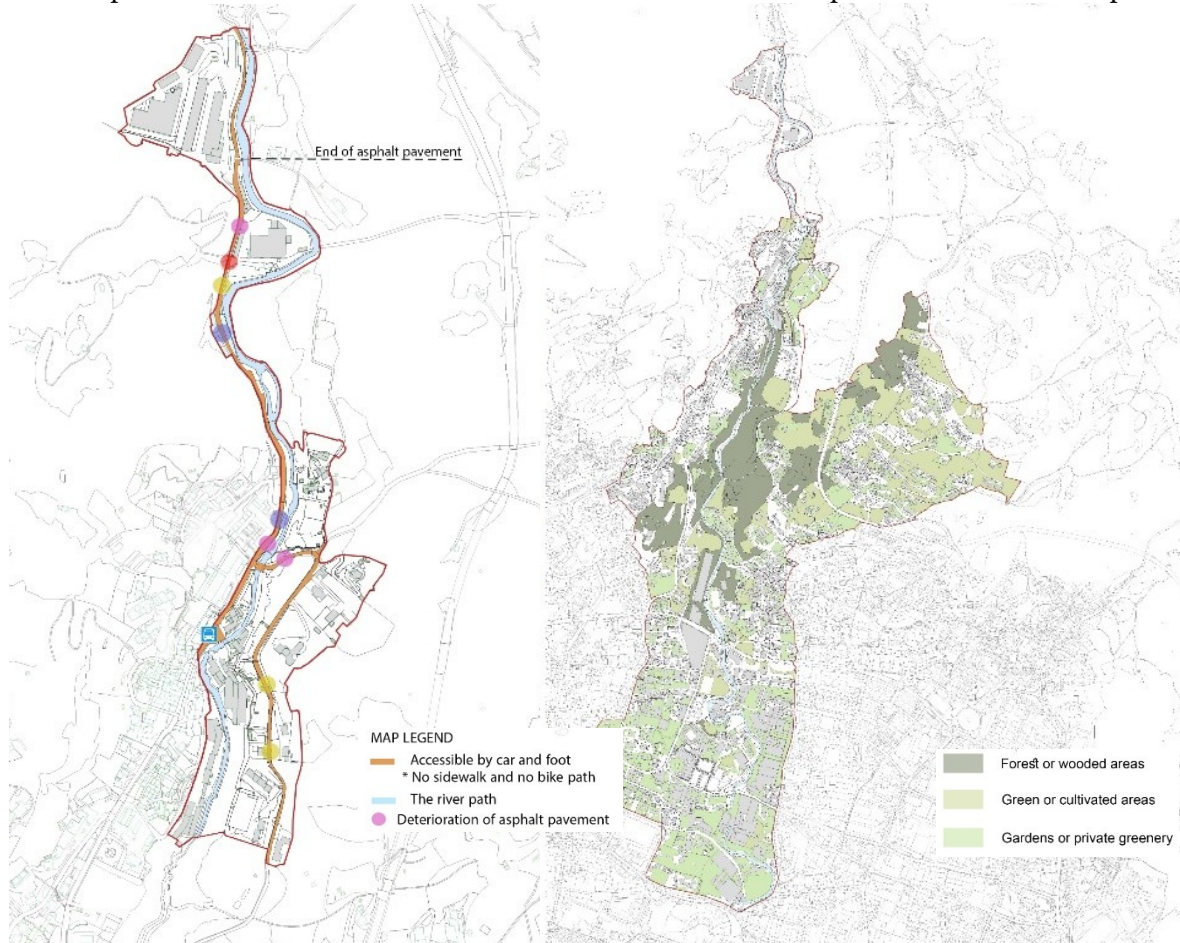


Figure 1 – Accessibility

Figure 2 - Green Analysis of Caldene River

1.1 WHY THE NAME “VITALITY CHAIN”?

The name "Vitality Chain" highlights the intention to connect the areas near the Caldene River both one to each other and both with the urban city centre of Lecco. At the moment, this area appears predominantly fragmented and totally disconnected from the activities taking place in the living center of the city, this is due to the presence of roads with high traffic and for the natural changes that appear in the landscapes. The world chain is also often interpreted with a negative meaning, as something that keeps you bounded and not free, so the goal of the project is to bring something negative to positive as the divisions that are present in the Caldene area. The idea is, therefore, to create a real chain, which aims to involve as many people as possible and especially in different time slots: the goal is to create activities sectors, for all kind of people like families, mountain lovers and

also students of all ages. This project would generate, at the same time, a learning space accessible to children and in collaboration with the surrounding schools.

The primary objective was to eliminate the two barriers present in the territory that divided the area into three parts (natural zone, transition zone and urban zone) by building 4 main poles that are related to each other through the cyclable, pedestrian and cars paths, without forgetting the important role of the river, seen as the common thread and main character of the urban regeneration.

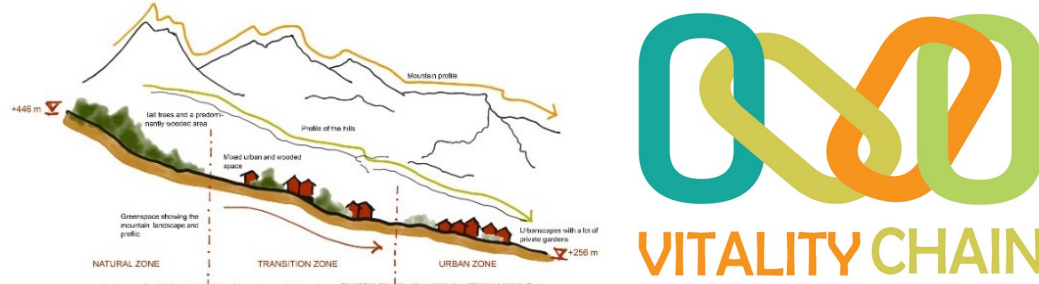


Figure 3 - Mountain section of actual configuration

1.2 GOALS

To achieve the true meaning of Vitality Chain we firstly need to have goals that correspond directly to the needs of the area. Thus, as the area lacks some important characteristics that create the aforementioned effect, the goals need to undertake a wide range of strategies to finally form the foundation of a deep livelihood in the area. Taking under consideration all mentioned we arrived at three different goals that although diverse, closely work together to create vitality chain.

- **The Connected City:**

Meaning a city that is deeply interwoven no matter if you're a pedestrian, a cyclist, or with a motor vehicle. This goal undertakes a range of strategies that work closely to take care of the ease of access to all parts of the area which is a huge gap in the urban comfort of the area and a main impediment for the crowd to flow into the place, thus the creation of separated zones.

- **The Attractive City:**

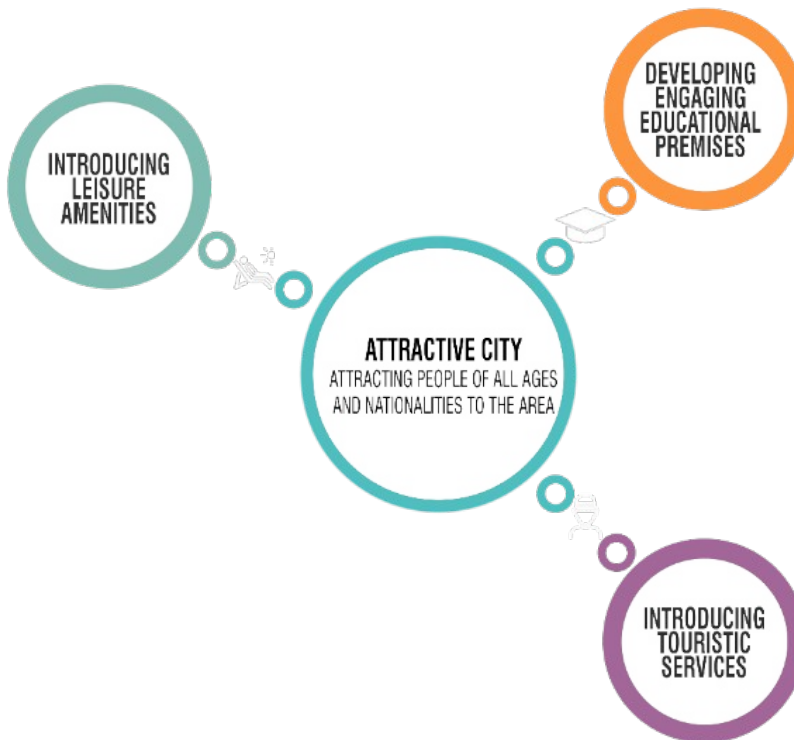
This goal mainly aims to expand the desirability of the place. As of now the place has lots of potential to bring people to the area but these potentials have been neglected so far. Taking into consideration all demographic groups divided by age, nationality, belief, and so on the place lacks some foundation first and then needs a revitalization of the potentials to bring in the people of all groups.

- **The Quality City:**

As our goal is not only to bring people inside but to revitalise this part of the city. The attractiveness is not enough to reach that goal, but we need people to stay inside and enjoy helping us achieve what is needed. This goal is achieved solely by improving the

quality of the spaces created. This quality benefits groups of people of all ages and ethnicities with or without any kind of disability.

1.3 STRATEGIES



To achieve each of the aforementioned goals there needs to be precise and concise strategies. So, for each goal we introduce some strategies to finally arrive to the desired value.

For **the Connected City**, we introduce two strategies. First is taking care of impediments. As the quality of the connections in the area hinders a wide range of accessibility, we need to solve the issue of impediments for people with diverse preferences for means of transportation. Also, there are some general impediments in the area

dividing the area into separated zones that need to be taken care of such as the Caldene river itself and the SS36DIR highway toward Ballabio. Second is to improve the transportation infrastructure.



For **the Attractive City**, we introduce three strategies. First, we need amenities to bring the potential of the area into action. As we have all kinds of natural attraction sources like the mountain, the green, the river and so on, we need leisure amenities that work corresponding

with them. Second, education can be a good tool to bring attention to the potentials of the area to the people. As we have a good percentage of young people present in the city either studying in the nearby schools or the internationals studying at the Politecnico di Milano there is high potential in this area so it is reasonable to provide them with all kinds of educational centers either closed space passive learning or open space active learning by the natural sources. And lastly, we need to bring the area into the attention of the touristic demographics and the main tool to do so is guidance and advertising. To bring attention of the area to the people the basic tool is signs and information centers and then we need to revitalize the attractive centers for tourists such as cultural centers either newly built or renovating the dismissed ones.



For **the Quality City**, we introduce four strategies. First, making spaces fit for people of all ages especially the children and the elderly. As for each space there some specific characteristics that is essential so the elderly and the young can have quality practice inside. Second, for sure the place should be fit for people with disabilities. As it was neglected in the past that we need to bring people with disabilities into the community there is a serious lack of service for disabled people thus taking care of this lackness should be one of the main strategies for a quality space. Third is consideration of the quality of the spaces in the case of

urban quality and biodiversity. As the urban green plays an important role in the urban space quality taking care of the unmaintained green spaces in the area and the quality of the public green and using biodiversity in correspondance to the needs of the public should be one of the main strategies for the quality city. And lastly, again as we have the high-potential natural resources the spaces should have the quality to improve the human-nature relationship. To do so there is the need of introducing specific services in the area that works as bridge in this relationship.

2. CASE STUDIES

The idea is to select two different projects regarding the same river in order to understand different possibilities to regenerate the banks of the river. All the three case studies has been selected predominantly for the generating ideas more than for the architectural design.

2.1 Guanlan River Eco-cultural corridor, SLAB (Shenzen, China)

The project aims to insert public resources and through them start the improvement of the fragmented, disconnected and under-served spaces. The idea is the one of improving the territory making in growing in entrainment facilities and services. This attitude change a bit the landscape perception in the, but being a really big project this is not really perceived in the totality .



2.2 Guanlan River Corridor, CAAU (Shenzen, China)

This project tends to not change the perception of the natural parts of the river. This is made in an optic to bring the nature to the city and on the opposite bring the city to the nature. The projects propose the insertion of nine different thematic hub, with unique identities. The intersections of the different elements create unanticipated nodes.



2.3 Agriculture Learning Centre, KONODESIGNS (New York, USA)

The Agriculture Learning Center was a proposal to develop a facility to introduce visitors to the socially responsible harvesting processes. Visitors can experience the planting, growing, and harvesting of the plants and see first-hand how they are used in many everyday food products. Through these activities, visitors will be given the opportunity to learn about health, environment, sustainability.



3. THE CONCEPT

The concept is basically aimed at summarizing the goals and actions set and trying to apply the strategies hypothesized to the best of making the project as a whole fluid and coherent. As already explained before, the concept is based on the creation of a dynamic connection of the whole area along the river, which shows different possibilities of use; now it's often just a simple natural element, sometimes difficult to cross, it would become a place to live, as an element adjacent to the low mobility's facilities, cycle paths and pedestrian sidewalks, and would host activities, especially the green areas at the top of it, thought for families.



ACTUAL CONFIGURATION

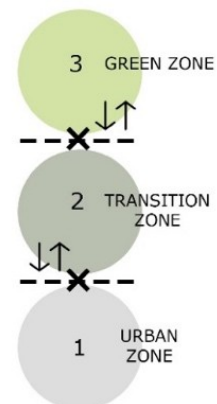


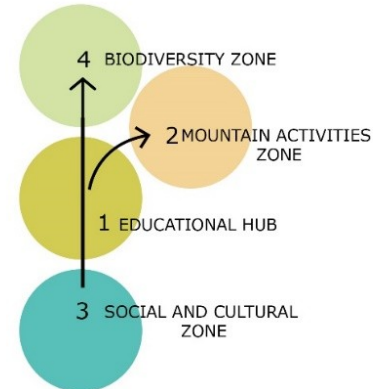
Figure 4- Actual configuration
3.1 A DYNAMIC CONNECTION THROUGH THE RIVER

The currently critical break points of the area corresponding to the three major roads crossing the city and the river, are no longer perceived as threats but as starting points for finding a balance and recreating a central pole around which the secondary poles gravitate connected to him. The connections between the poles happen favoured by the river and the roads, the one that are already present and those that will be added in the project.



Figure 4- Connection of new poles

NEW PROPOSAL



3.2 PROPOSAL OF NEW POLES

The proposal is to create four different poles within the territory, which, although their use appear to be totally autonomous and detached, are insolubly linked. The idea is to create a sort of main pole located in the geometric center of our area, in correspondence with the main urban circulation nodes, as a multi-functional and interactive place for educational activities, connected to mountain and biodiversity issues, which connects the other two parts placed to the north. These two parts, using and enhancing the public greenery, put the attention towards biodiversity and "living immersed in the green" and mountain activities, a widespread practice in the Lecco area. The southern part, adjacent to the most active urban part of Lecco, will instead be aimed to social and cultural activities, which can therefore also involve the educational sector.

EDUCATIONAL HUB

The aim is to create an interactive and dynamic pole open and accessible for all ages, starting from nursery and primary schools, to courses and entertainment for the elderly. The idea came from the urban analysis from which emerged the presence of a lot of schools in the area around Caldono. The structure is seen as a multifunctional pole that has different functions depending on the season; during the winter season it could provide workshops, laboratories and activities involving students from the, already mentioned, surrounding schools. In the summer season, it can host events and entertainment for the community, also taking advantage of the outdoor spaces, that can be connected to the social and sporting functions of the surrounding poles, like open-air cinema, musicals or festivals. The possible functions that will complete the area concern educational activities, fitness trails and open-air entertainment.



Figure 5 - Pole of Educational HUB

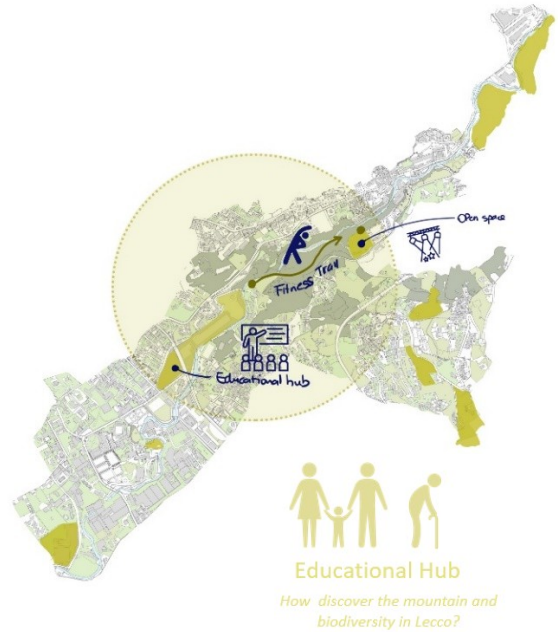


Figure 6 - Possible functions



Figure 7 - Open space into an Educational Hub



Figure 8 - Garden and green spaces for learning activities

SOCIAL AND CULTURAL ZONES

The southern area is the best connected with the city centre and with the main facilities of Lecco. The strongest idea is therefore to create an attractive magnet so that this pole could be the starting point to discover the new green corridor. In these areas there are places, such as bars, cafes, restaurants, and for entertainment, such as cultural center, sport facilities and cinema, currently absent in the city. In this area there is one abandoned building right on the Caldene river, that could be used as great starting point of rethinking of the river.



Figure 9 - Pole of social and cultural activities

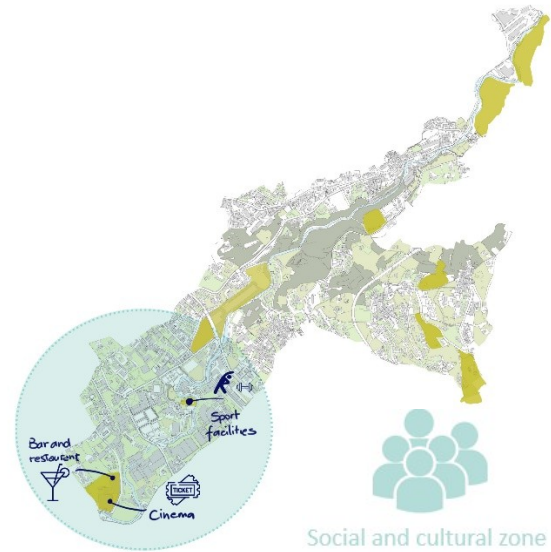


Figure 10 - Possible functions



Figure 11 – Bar and café

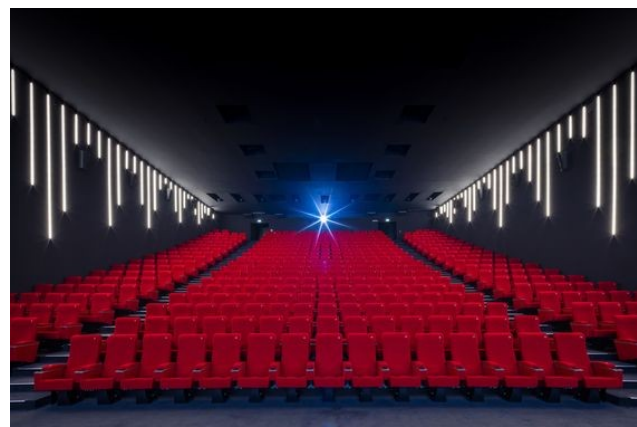


Figure 12- Cinema

MOUNTAIN ACTIVITY HUB

The pole closely connected to the Educational Hub is certainly the one best linked to mountain activities; the main idea is to connect the existing paths for access to mountain and climbing areas and in the meanwhile create a meeting, refreshment and shared pole for mountain lovers. The facilities provided in this area are based on the possibility of being easily connected to the touristic areas. From this side there is also has a scenic view of the city, given by its elevated position. This zone is mainly thought for young athletic people that enjoy the mountain.



Figure 13 - Mountain activity hub



Figure 14 - Possible functions

For these reasons within the area, have been proposed activities related to the mountain themes, considering facilities for climbers such as camping areas or accommodation zones, as hostels or shared houses. In this area could be also interesting to add a mountain bike hub, including cross country trails, retail shops and new cross-country trails.



houses and hostels

Figure 15 - Mountain bike paths

Figure 16 - Sharing

GREENERY AND BIODIVERSITY ZONE

The highest part of the entire area is currently predominantly green, the one that we called "natural zone" in the analysis. In this case, it was decided not to change or build anything in the area trying to maintain its identity and exalt it. The problem of the risk of deforestation, the reduction of green areas and the threats that these bring to biodiversity has made us decide to create an area to preserve the existing greenery. In this area the functions and activities can be several and they are in particular aimed at families or community activities.



Figure 17 - Greenery and biodiversity zone

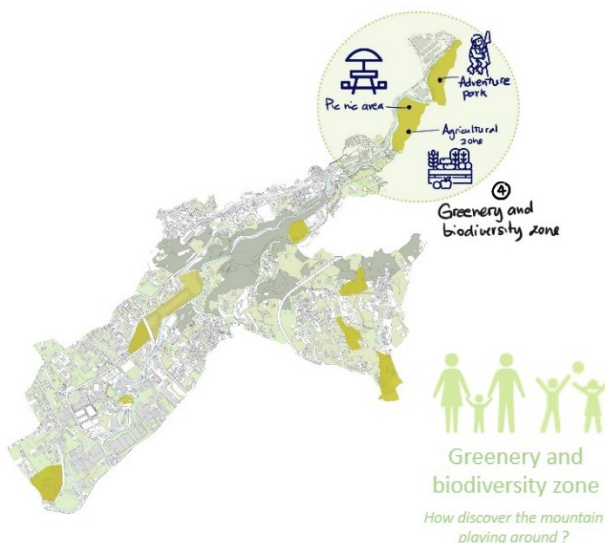


Figure 18 - Possible functions

Among the possible activities within the area there are those for children and families such as adventure parks, maybe with different grades of difficulty to attract also teenagers, picnic areas and nature observation areas. Furthermore, as from the analysis emerged that the agricultural use of the land is really low in the Lecco territory, it was decided to use some areas for agriculture, cultivated fields and agricultural learning center.



Figure 19 - Parks

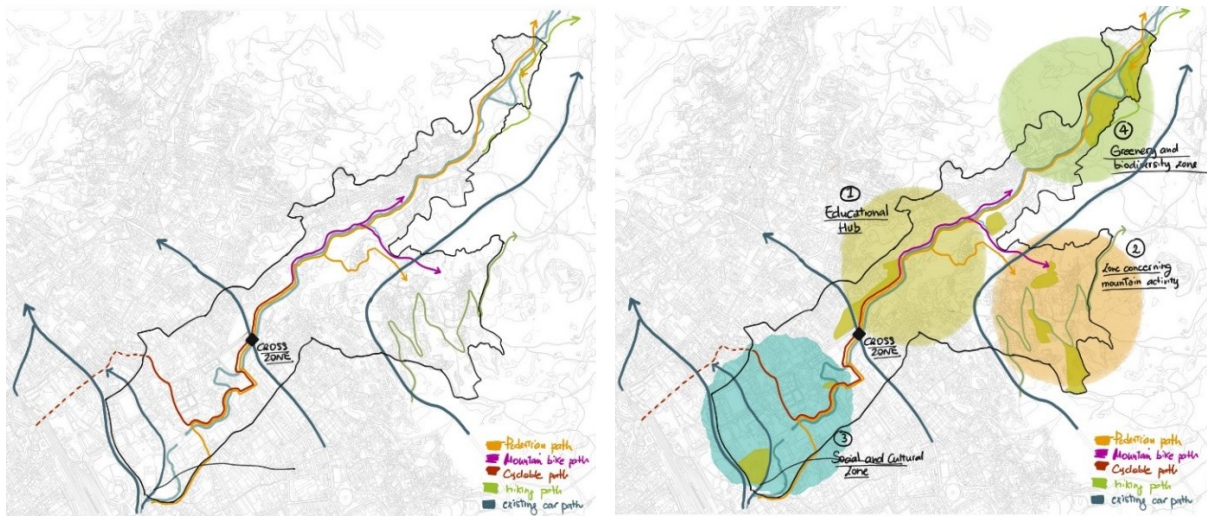
- Activities for children



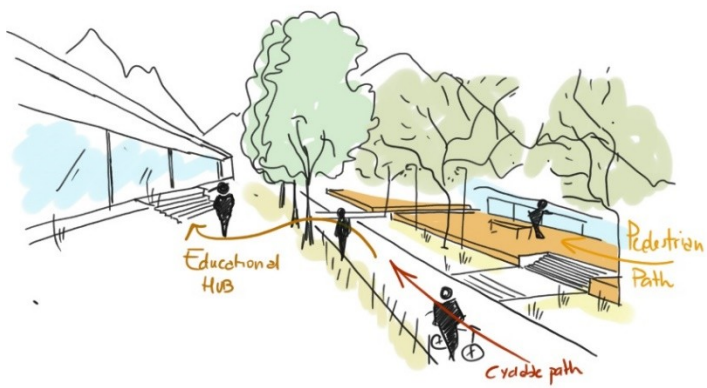
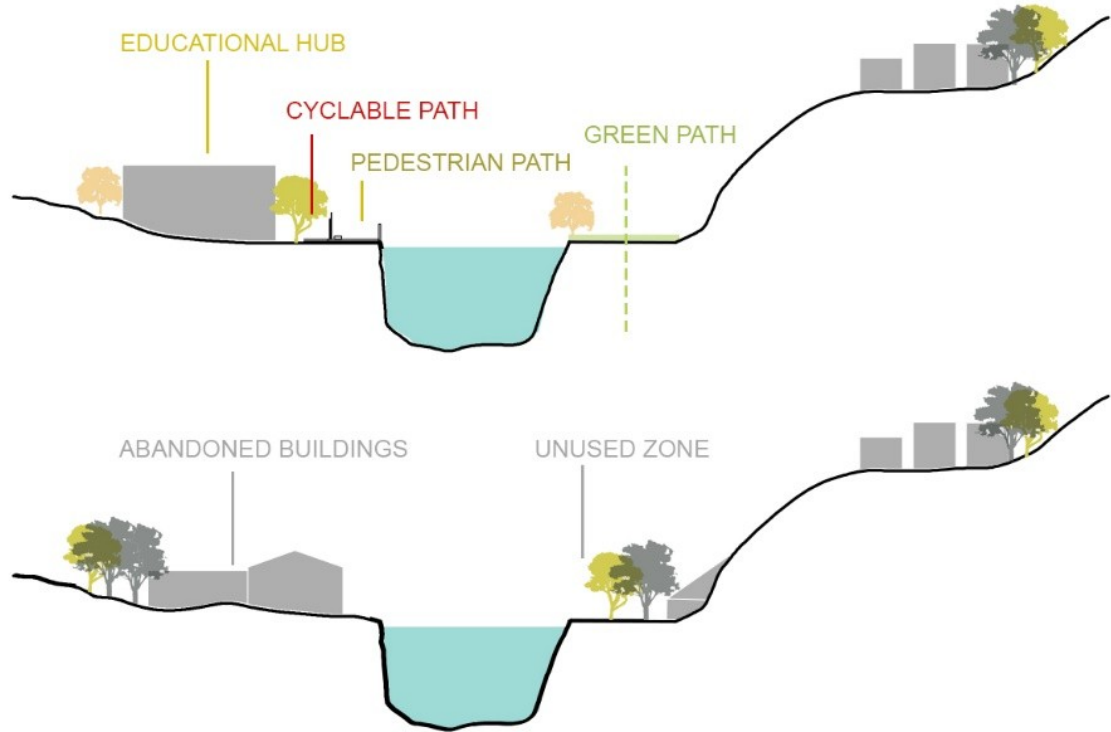
Figure 20

MOBILITY

Obviously in this scenario the mobility design is really important. The zone, as already said, is connected, but these infrastructures does not highlight the potential of the river. From the studies on the paths, both cyclable, pedestrian and mountain ones, emerged that the existing infrastructures are not well connected one to the other. The aim of the project is to connect these paths crossing the new poles that we aim to create.



The idea is to use the banks of the river as new paths turning unused land or abandoned zones in new transversal connection zones, meant as connection from the bottom to the top of the river and from the river to the new facilities.



CHAPTER 4: MASTERPLAN

INTERVENTION AREA

After diligent investigation on the possible transformation areas available by the pgt we chose the four zones in the mentioned in the concept. Then for further detailed design we apprehended that the most important part to be developed is the central zone that has several importance to us. Firstly, it is not only the central connection to zones but the centre for awareness and attracting the target demography. Second, to develop the central zone there is the possibility for us to develop the important transitional parts between zones too.

MASTERPLAN DESIGN

The proposed masterplan consists of a set of related function that works with the two transition zones and the centre; change in the urban context mostly the solution related to the mobility; and some solutions related to the torrent and its flood risk mitigation.

The set of functions proposed for the area is connected not only by the physical mobility but also in their function to each other. Starting from the lower level of the city we have more urbanised functions related to the compact social situation which connect to the central zone by an complex of bars and restaurants and seasonal exposition. Then there is the Lecco's Living Room that is the attractive and flexible centre of the whole project. Moving further up, the fellow divides into two zones by the means of a Mountain Hub. The mountain hub works as the second transitional zone directing people to their target area by giving them the necessary tools, equipment and information.

The change in the urban context is composed of a set of paths dedicated to pedestrians and bicycle riders to reach our area and move into our zones whilst enjoying the view of the torrent and using the services and settings provided for them by the torrent. Also, there is a configuration of the shared street with 30 km/h limit for vehicles for the main entrance to the central area located on the Via Ugo Foscolo street from the intersection with Via Fiume until intersection with Viale Tonale.

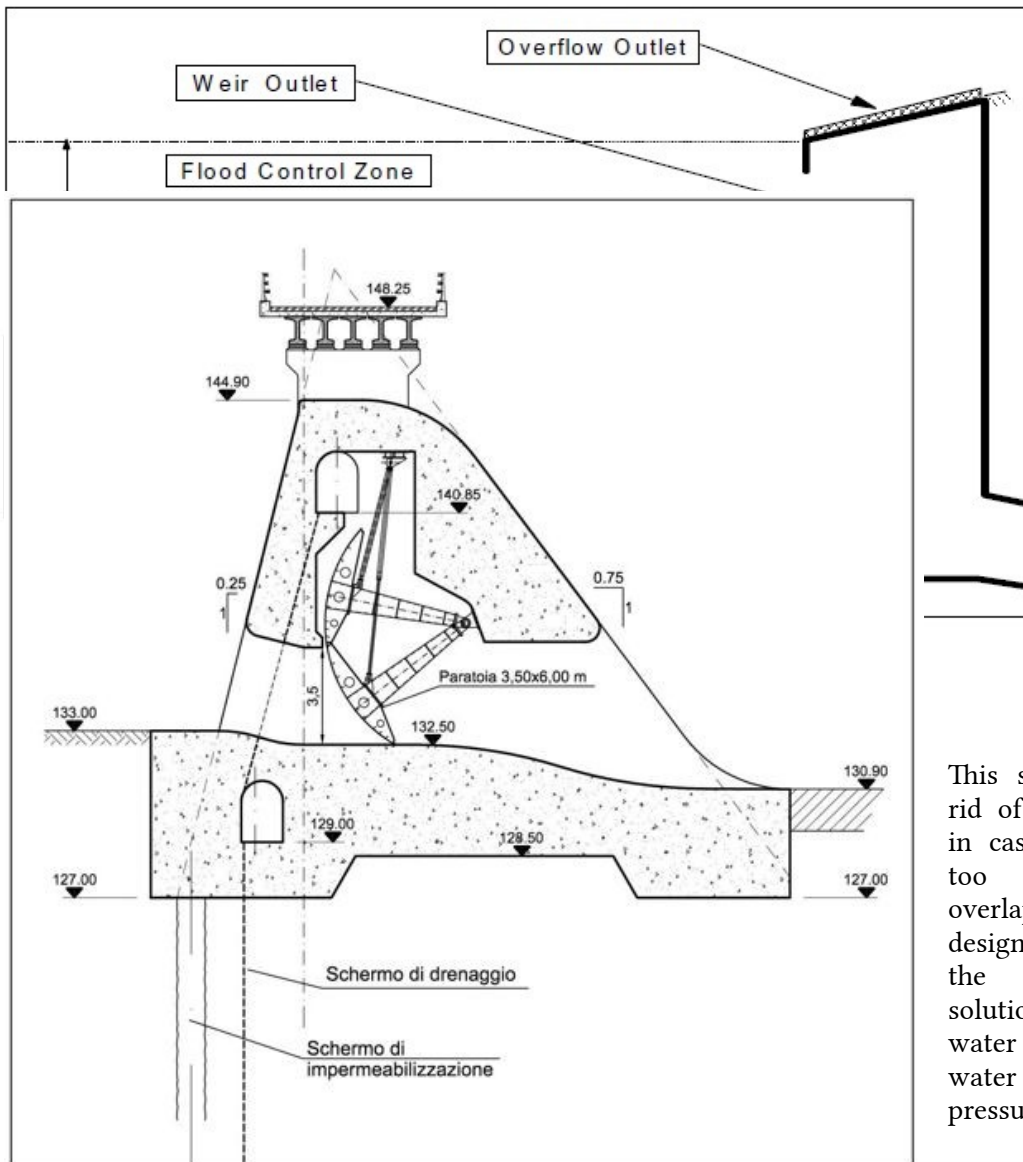
To mitigate the issue of the torrent embankment being opposed to the risk of flooding especially that our area is close to an important catchment area we propose this solution that consists of two tools to catch the debris in different sizes working with two different design for underground channels that work with the existing water management channels of the city to direct the water flow away from the catchment area and lowering the risk on the people.



This solution is dedicated to gather the large debris and must be located at the points that are located with enough depth of the torrent position.



This solution is proposed for the less large debris that can pass the last solution and can be in the banks with less depth.



This solution is proposed to overcome the issue of water rising in case that large debris is collected by the first solution rises the level of the water excessively.

This solution is to get rid of the excess water in case of water rising too much and overlapping the designated functions by the torrent. This solutions works with water pressure, as the water height rises the pressure caused by the

weight of the water causes the movable hatch to open up and let in the excess water to the underground channels.

PHASING & STAKEHOLDERS

The sketch of phasing and stake holders....

Possible solution:

Pavement... Public spaces... bars&restaurant&other rentable function done gradually(rented by public to private to raise funds)... Lecco's living room... mountain hub