Tides without waves
Graduation thesis report

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Tides without waves

The waters of the vajont
# Index

**Starting point**
- 6 Motivation
- 10 Man meets mountain
- 12 Landscape infrastructure

**Site of investigation**
- 16 Valle del Vajont
- 18 Location
- 24 Historical background
- 32 Experience, memory and hope

**Proposal**
- 54 Problematique
- 55 Objective
- 9 Framing the assignment
- 10 Activities
- 11 Places

**Conclusion**
- 12 Reflexion
- 13 Acknowledgements

**Appendix**
- 14 Bibliography
- 15 Interviews
Starting point
Motivation

Man and mountain

Behind this project stands a long-lasting motivation. Having grown up in Lausanne, Switzerland, the Alps were simultaneously the background of my daily view and a frequent destination for my free time. It is not so much the dramatic visual landscape that fascinates me, but rather the observation of human agency in this environment. There is a continuous effort for adapting one's environment as well as adapting oneself. One transforms the other, the relation goes both way. It is a story of men and mountains.

This graduation project became the opportunity to engage with this relation. I sought to engage with the alpine landscape of our days and find out what position a landscape project could have in this context. It starts with the human dimension of the words landscape and territory. Because landscape is a result of perception, and territory is a result of occupation.
Childhood view of the French Alps above the Lake of Geneva
The story of men and mountains has its key moments, which echo with distinct mental images of this landscape. The wild Alps refer to its state prior to the presence of humanity. The vernacular Alps refer to its state after the permanent settlement of communities. At this time, the transformation of the landscape is characterized by works conducted by individuals and communities. The latest idea of the Alps is the modern era, or hybrid state. It is characterized by the industrial revolution and the arising of alpine tourism. In this era, environmental transformations took another dimension. Pushed by the new opportunities offered by machines, works gained a new scale which reached up to entire territories. These forged the idea of infrastructure in its modern sense. New forms of landscape appear as far-reaching pedestrian, road and railway networks go on and through the mountains; as artificial lakes meander through entire valleys and feed hydroelectric power plants; and as ski resorts transform mountains into networks of recreational boulevards. Mankind competes with natural forces at an unprecedented level.

-10'000 BC

First sedentary settlements
Agriculture
Rock exploitation

vernacular

1800

Industrialisation
Tourism
Hydropower
Agricultural decline

modern, hybrid
The new clash of infrastructure and existing landscape put in crisis the traditional understanding of the landscape. It was usual, and often still is, to distinguish natural features from man-made ones. Where the first one evokes nature, aesthetics and recreation, the second one evokes artifice, function and exploitation. But when looking at an artificial lake for example, the border gets ambiguous. Whilst the dam is obviously man-made and the water comes in as an intended consequence, the result is both infrastructure and landscape. The dam is man-made, but the omnipresent water is also an object of aesthetic enjoyment and leisure. New approaches are necessary in order to tackle such landscape configurations.

The graduation studio of Flowscapes proposes to hybridize the two notions as a premise for design. Landscape can actually be seen as infrastructure, for it sets conditions for ecological, economic and social processes, and infrastructure as landscape, for its effect on the environment go beyond purely functional considerations. This idea is encapsulated in the notion of landscape infrastructure. By hybridizing the two notions, a more integrative approach can be achieved in design, better suited to contemporary situations of ever-growing complexity. This approach offers promising perspectives for engaging with infrastructure in landscape architecture, and becomes highly relevant in the alpine context.

Landscape or infrastructure?
Site of investigation
Valle del Vajont

Vajont as place

In the Carnic Prealps in Italy, 85 kilometres north from Venice, lies a remote valley. Called the Valley of the Vajont, or Vajont Valley, it takes its name from the river that runs through. The main valley is roughly seven kilometres long from East to West and presents heights ranging from 400 to 2200 metres. 388 people live in this territory, distributed in the main villages of Erto and Casso, and in several smaller hamlets.
Valle del Vajont

Vajont as case

The Valley of the Vajont has much to tell about infrastructures in the Alps. The name of the Vajont has a second dimension. To evoke 'the Vajont' is to refer to a historical case, which revolves around the Vajont landslide of 1963. The importance of this case was such that the United Nations denominated it the worst case of environmental management in human history.1

The Valley of the Vajont today
22

10'000 BC - 1920

Off the map

The story of men and mountains in the Vajont valley goes back to the Neolithic Era, where the first mentions of the village of Erto are found. The village of Casso appears later, in the Middle Ages.1 Where Erto and the eastern part of the valley share the background of the Friuli region further East, Casso and the western part show family ties with the Bellunese region, to the West. Both sides speak different dialects, and conflict repeatedly in time over the right of land exploitation for agriculture and forestry.2

The valley is a remote branch of the wider and busier Piave Valley. The first road that goes through is implemented in 1913, making the link with Friuli region.

Locals live from rural activities of breeding (cows, sheep, goats), cultivation (potato, bean, corn), forestry, coal production, craft of wooden objects, itinerant trade and seasonal work.3

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2 Valussi, G., ‘Aspetti geografici di una vecchia lite fra due comunità prealpine (Erto e Casso)’, in Deon Cardin, E. (ed.), ‘Une strada lunga cent’anni (da Longarone a Cimolais)’, Quaderno Pulchra nr. 6, 2015, p. 25
3 Ibid. p. 25
1-2 Rural life on the flank of Monte Toc, where the landslide will occur in 1963

3 The eastern side of the valley. The Vajont river can be seen at the bottom, with several settlements in proximity
1920 - 1963

Modernizing

Studies for the construction of a dam over the Vajont start in the twenties; the SADE (Adriatic Society for Electricity) obtains the rights for the construction of a dam on the Vajont river in the forties'. The construction of the dam starts in 1957 and ends in 1959. At 262 metres of height, the Vajont dam is the tallest in the world at that time. For the first time, the Vajont Valley is under the spotlight, gaining recognition from the nation and beyond. The dam brings a major change in the valley and embodies the arrival of the modern era.

As the water level is brought up to form the Vajont lake, the lower part of the valley is progressively abandoned. Fields and houses disappear under the new water body. At the same time, the new landscape created by the dam and lake becomes a point of interest, attracting visitors from outside.

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1 Associazione ProLoco Longarone, 'Longarone - the history', Longarone: author, 2001, p. 26
1 Houses lost in the lake

2 The lake becomes an attraction, the valley a destination

3 The Vajont lake in the landscape. Source: www.twocalls.net
1963 - 1970
Disastruous

On the night of the 9. October 1963, an 2-kilometres wide portion of the Mount Toc detaches. A mass of 260 million cubic metres slides down at a speed of approximately 100 kilometres per hour, into the lake of the Vajont, generating a wave up to 250 metres high. This wave wrecks the lower valley and spreads to the neighbouring valley of the Piave, larger and more densely populated. In total, an approximate 2000 victims is counted, the majority of which in the Piave valley. The dam remains, only affected by superficial. The mass of the landslide blocks the existing lake and forms a new topography right behind the dam.

Following the event, the valley is put into quarantine. Survivors are sent in other villages of the region, or even in new settlements built for this occasion, such as the village of Vajont located 30 kilometres south-east. The valley is closed of by the army, who works at restoring the roads, evacuating the water (leaving a residual lake at the bottom of the valley), and building a modern extension to the old village of Erto. The lower valley, the area of the landslide and most ruins remain abandoned, however.
Emergency on the night of the landslide

The wrecked landscape of the Vajont valley after the landslide. Grey areas reveal the absence of vegetation, washed away by the wave.

New cemeteries in the following days

The wrecked landscape of the Vajont valley after the landslide. Grey areas reveal the absence of vegetation, washed away by the wave.
1970 - today
Neglected

Whilst the Piave Valley has undergone a complete reconstruction in the same period, the Vajont Valley remains highly abandoned, scattered with ruins and other traces of the disaster. For the sake of memory, a memorial chapel is built by the dam, a cemetry that will remain unused and smaller, acupunctural memorials. After these works, tendencies point rather to a decline than development of the landscape. In particular in areas affected by the landslide: where there was once a lake, there is now an overgrown, abandoned territory; where the landslide occured, a new topography, also abandoned. Opportunities to physically engage with this territory are scarce.

The socio-cultural scene, however, is strongly active with the setting of museums and art platforms, for example. These provide a basis for both local people and visitors to engage with this changed territory and its past dimensions.

Once the quarantine ends, seven years after the calamity, only a fraction of the survivors return. A new social configuration takes place. 'New inhabitants lived next door with survivors of the disaster for years, but in most cases no particular sense of community arose'\(^1\). In this landscape which changed radically in its physical, visual and social dimensions, a new identity builds up on the remembrance of the disaster. A projection in the future, in the 'after-Vajont', has barely, if not at all taken place.

\(^1\) Casagrande, G., 'Spaces and places fifty years after the Vajont tragedy', Journal of Research and Didactics in Geography (J-READING), 1, 3, June, 2014, p. 58
Inhabitants of the hamlet of San Martino

No land use is to found below 725 metres of altitude in the whole. Former cultivated slopes have turned into young forests of mixed broad-leaves and conifers. The residual Vajont lake can be seen on the background, and above it, the mark of the landslide in the mount Toc. The latter is omnipresent in views in the valley.

The yearly organised 'Percorsi della memoria', a walk through the territories of the Vajont that gathers thousands of people under the idea of memory.
Experience, memory and hope
A key to interpretation of the territory

The Valley of the Vajont is a complex cultural landscape. The many drastic transformations of this territory, and its cultural reach at national and international level, have turned it into a dense node of values and emotions. The historical load of this landscape asks for a consideration of the past in relation to the present and future. To design in this landscape requires strong awareness of these temporal directions. This lead to the elaboration of a basic temporal matrix which relies on three notions: experience, memory and hope. With this approach, one can read this landscape and structure a way of thinking which will be the basis for the project.

We design                      Points of approach

in the present             experience
on basis of the past      memory
for the future            hope

Experience is understood here as the result of personal perception and evocation in the landscape in the present condition. The project starts with experience (the one I had in the mountains in my childhood, the one I had whilst visiting the Vajont Valley for the first time) and ends with experience (the ones the project creates in this landscape).

Memory brings together all the processes of reconstruction and transmission of the past in the present day. It includes processes of evocation, remembrance, commemoration and forgetting. A distinction is made between the memory of the people and the memory of the landscape. The memory of the people is the part of the processes that are operated by people; the memory of the landscape is its capacity to trigger remembrance and convey certain narratives.

Hope is the projection of our wishes and desires into the future. It is the motor that drives us through the present, to go forward.
Experience

The following pages present two photographies taken during my visits. These are the most synthetic representation of my experiences in-situ. Selected words from my personal notes are overlaid on these images. This combination offers an insight into a personal perspective on which the entire project built up.
Strong

No-man's-land

Visitors

Consequences

Undealt with

Failure

No-man's-land

Untouched
People are carriers of memory. Discovery, learning, remembrance, transmission and forgetting are all processes related to how we reconstruct our past and what we do with it. Memory is not only individual. It is also the work of community and that of the whole society. This idea was brought up by French philosopher and sociologist Maurice Halbwachs. This observation allows to realise that memory occurs at different scales – what happened in the Vajont Valley was remembered by individuals, by the local communities and by the whole Italian nation. We will here refer to the three forms of memory distinguished by Bouvier.

Individual memory is performed by individuals. It is the personal dimension of memory, which each person develops through his/her acts and relations.

Social memory builds upon relations between individuals. It takes shape within a community of people that know each other, brought together by links of family, activity or proximity.

Collective memory takes place within the large context, with individuals not necessarily related.

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The memory of people
Individual memory

It is essential to meet people who live in the landscape itself or are somehow related to it. This allows to unveil the social dimension of the site. During my site visits, I met persons who live in the valley, persons who used to live but moved out after the landslide, persons who live in the nearby surroundings and persons who live further away but developed an important personal relation to the Vajont Valley. These people received me and helped me with information, advice and historical documents. These encounters and exchanges allowed to form a social portrait of this territory.

I met Rico Mazzocco on the parking lot by the Vajont dam. Survivor of the events of 1963, he gradually dedicated himself to keeping alive the memory of the events. Together with his wife Elsa, he conducted research in archives and personal knowledge to gather historical documents, local stories, personal experience and poetic writing. With these, he published several books on the subject. Rico is found most days of the week on this same parking lot, where he welcomes visitors to the dam and freely explains them about the history of the place, along with models of the valley he built himself. Rico says he dedicated his life to the Vajont, and remarks that less and less tourists come each year.

Carlo Corona crossed my way in the woodlands on top of the landslide. To my surprise, he is a survivor of the disaster but does come back to this area: he was picking mushrooms when I met him. His wife Cecilia does have a different relation to this place. She usually does not go there herself, as she feels anger and injustice when she sees the dam and the surroundings. Carlo and Cecilia now live in the town of Vajont, a new town that lies 30 kilometres at the South-East of the valley, which was built after the disaster to host the survivors that moved out of the valley.

Giovanni Mazzucco also lives in Vajont. He is a survivor of the landslide, the only of his family. Very involved in the transmission of memory, Giovanni gathered historical photos on the basis of which he could paint, on the wall before his house, the landscape of the Vajont Valley before the events of 1963. It is noteworthy that this depiction includes the dam and lake, instead of representing the valley before the construction of the hydroelectric infrastructure. Giovanni says he wanted to paint the landscape of his childhood, his own ‘paradise’, in order to show it to those who didn’t know the setting as it was before.
53 years after the disaster of the Vajont, the memory of what happened remains vivid in local communities. Many of the survivors of the disaster remain and tell their story. Local associations were formed to bring together people around the concern of memory, of what to do with this story. The generations that followed the landslide learn the story from their relatives and transmit it themselves. For many of the local people, not one day passes by without the disaster coming into conversation.

The memory of people
Social memory
The landslide of 1963 did not mark only the local individuals and communities. It also affected the entire country. The news spread, and the further development of the case was accounted for by several journalists who dedicated an important work to the subject (here the works of Tina Merlin must be mentioned, for her dedicated support to local communities). Most Italian citizens learned about the case through newspapers, books and later on, movies, documentaries, TV and theatre shows.

The position held by the Vajont in collective memory was, and partly still is, prominent. The case left a mark in the Italian culture, to the point that it strongly slowed down all the hydroelectric development that followed and laid a climate of doubt on the development of new infrastructures generally. To engage with the Vajont Valley is also to engage with this national dimension.

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1 Casagrande, G., ‘Spaces and places fifty years after the Vajont tragedy’, Journal of Research and Didactics in Geography (J-READING), 1, 3, June, 2014, p. 60
The historian Maurizio Reberschak states that the landslide of 1963 was not only an act of destruction, but also an act of foundation. After the events, many inhabitants moved out of the valley definitely. Others came back to the valley after some years of quarantine, accompanied by new inhabitants. But the community was radically changed. With different people living in different locations, the neighbour was no longer the person with a family one knew throughout generations. The social landscape at that time resembled a ‘tabula rasa’, where people who didn’t know each other as well had to re-create a community on top of ruins and abandoned lands. What did gather them was the landscape, and its important history laid the basis for a new identity based of the catastrophe.
The memory of the landscape

Landscapes are carriers of memory. They bear traces of the passing of time and have the capacity to narrate these past states. The works of Swiss architecture and urbanism historian André Corboz established up the notion of landscape as palimpsest: an accumulation of temporal layers, superposed, where the lower layers can be revealed by scratching off the surface above. This understanding is crucial in the Valley of the Vajont, because memory continues not only through people, but also through the landscape. In fact, people remember so strongly because the landscape is always there to remind, with its traces of the past. These are of various scales, sometimes anecdotic, sometimes monumental. In the following pages, an extract of these traces is presented, with a short mention of the main narratives evoked.
The Vajont dam – accidental monument, evocations (positive and negative), locals do not go, too expensive to be accessible
The old forest – this patch of forest, originally located on the part of the mountain that slid, found itself in a new altitude (400 metres lower) and new inclination visible in the angle of the older trees with the ground. A very unusual setting was created, distinguishable from all other forests in the valley. These surviving trees became a inspiration for many further investigations, especially in the artistic field. Source: Sergio Camplone
The scar in the mountain – the mount Toc still bears the mark of the original position of the mass that slid. This clear stone surface is visible from most locations in the valley. Colonisation by pioneering species has only started and will take many human generations before this clear image disappears. It is a natural moment which will slowly change in time, until the point it can disappear and remain only in stories.
Memorials – individuals agencies for a work of memory
The residual lake – present, avoided, inaccessible Water is generally unaccessible nowadays in the valley.
Hope

In the Valley of the Vajont, hope is the too absent component. In parallel to a large part of the alpine range, it is subject to depopulation and land abandonment. The disaster of 1963 struck deeply a valley that had never been rich in the past. Due to this, it is not exactly representative of other alpine territories, but rather a representative leap into their future. In this sense, designing in this location has the potential to provide material for other situations. New direction for the Vajont could suggest new directions for the rest of the alpine range.

There is little hope to live in this valley, and this has much to do with economical dynamics. Historically, the mountains north of the Veneto plains were places of intensive wood production, providing Venice and other important cities with timber and coal. The Vajont valley was part of this system. Other activities were the crafting of wooden objects and tools, the breeding of cows, sheep and goats, and the culture of potato, beans and corn. Facing the already scarce economic perspectives, many had specialised in itinerant trade and seasonal work. In the current context, wood production has moved to areas easier to exploit, with lesser slopes, easier access and conditions easier to control. The extensive agriculture of Alpines landscapes cannot compete with intensive methods applied in the plains. Tourism, seasonal work, and emigration are the only progressing tendencies.

In my interactions with local inhabitants, one question came up repeatedly: 'What hope is there for the next generation here?' The concern is very much present and all understand that if leaving is the only possibility, then they will do so. The Vajont Valley as a territory, that is, as land that is lived by human communities, is the weak future perspective. Tendencies seem more prone to a progressive decline, and in the extreme case, total abandonment. With an approximate half of all constructions being abandoned, one already feels that this tendency is underway.

Population of Erto e Casso municipality
Doors of abandoned houses in the valley. Source: www.mementoloci.altervista.org
Proposal
Problematique

The Vajont Valley is a neglected reality with the following:

Experience
A missing experience, due to:
· Strong impressions of absence and uncanny
· Unaccessibility, lack of opportunities to explore the landscape

Memory
Much to remember, little opportunities to engage with it in the landscape:
· Traumatic individual memories
· A local identity built on a past rather than the present
· A national and international fame based on this same past
· Unaccessible opportunities to confront traces of the past in the landscape

Hope
Lacking hope:
· Absence of projection into the future of the territory
· Low competitiveness with areas easier to reach and exploit
· Little economic perspective
Objectives

In reaction to this problematique, the project’s objective is to propose the design of a landscape infrastructure which will

Shape conditions for rich and diverse experiences, both playful and uncanny

Enhance conditions to engage with memory

Create hope for the future of communities within this landscape
Framing the assignment

Radical experiments

In the process of designing for the Vajont Valley, the formulation of a relevant design assignment is key. The programme must have the potential to meet all the objectives set. In order to frame the assignment, a series of radical models was formulated. A clear method was set:

1. name programmes or design intentions that appear to have this potential
2. dedicate two days of design to each
3. reflect on the results, discuss them with other people.

In the following pages, the main panels used for sketching and reflecting are presented.

Pages 57-58-59: a memorial
Pages 60-61: to turn the abandoned topography of the landslide into a cultivated landscape
Pages 62-63: to bring back the lake of the Vajont

This method allowed to approach the project from different perspectives, therefore enriching the knowledge of the site. It became a form of active analysis, where the needs and potentials of this location are discovered not through prior analysis but rather their answer to radical design intentions.

The work on radical models, combined with site visits, literature studies and historical photographs studies had an unexpected result: bringing back the lake was the one assignment capable of articulating, in one project, the different issues and scales at play. The intervention seemed highly possible, if the hydrogeological security allowed for it, because all the land where it would take place is unoccupied. The lake could be at the scale of the whole valley, generating relations throughout the whole territory. It could combine experience, for which it creates a wide array of possibilities; memory, as the relation to water embodies much of the relation to the valley's past; and hope, as it could activate new economic potentials, allowing people to live in the valley, from the valley. The atmospheric qualities of water, that may evoke peacefulness and continuity, further confirmed these observations. The design assignment therefore became the design of a lakescape, that is, the design of a lake and the interface of this lake with its context.
The story is written in the landscape, where?
Topographic intervention regeneration through agriculture and hydroelectricity leisure image.

In what condition is the dam? Can it stay in the future? Can it be in the long term? What can we do to look after it? How can we monitor the condition of the dam?

Agriculture plain + raised land.
In their article ‘Mapping flows, Switzerland as operational landscape’, Cary Siress and Marc Angélil expose how a given territorial figure can shape a territorial identity. In their case, it is the Dufour Map of 1832-1865 which presented for the first time a precise physical contour of a nation whose political unity was still in preparation. With this map, everyone could refer to this map to identify his/her location within a clear national boundary and the entire territory could be embraced at once. This became a key part of a strategy for ‘unifying a Swiss economic and legislative space’.

A core argument in the Tides without waves project is that this logic applies to other forms of territorial figures. The direct shape of the territory is key in the process of identification, and a clear figure that helps read the territory can be much stronger in effect than a map. In the current setting of the valley, settlements are isolated from each other, hardly visible from a distance and progressively taken over by growing forests. With the implementation of the lake, all the settlements gather around this one figure, building a strong and direct relation to this landscape element which would become a new base for identity.

2 Ibid
1910

1963 - before landslide

1963 - after landslide

2016

proposal
Current setting. In this 1:25'000 model, the main road is materialized in a black thread, water in silver colour and black pins represent 10 inhabitants. The model is cut to the visual landscape experienced whilst progressing through the valley between East and West.
The new lake in the landscape. The lake fits in the relief, reveals the topography and unites places in the valley around one accessible water body.
Concept
Onto hope, experience and memory

The second argument of the project is that it could bring in balance the temporal dimensions of the site. In the current context, there is an almost overload of memory, and identity builds upon this, upon the memory of the calamity. By becoming a second pillar for identity which does revolve exclusively around the past, the lake can bring more hope into the daily life of the valley, bringing back a necessary balance.

From imbalance... to re-established balance.
Concept
Onto water

The third argument is that the intrinsic qualities of water will reinforce the effect of the lake on the territory. As water naturally levels in one flat surface, it forms a clear shape which one can read with ease. As it follows one given contour line, it reveals the topography whilst also clarifying it. The spatial complexity of the valley’s relief is given a horizontal reference with which it can be compared, measured, read. By mirroring views of the landscape, it strengthen it visually. The clear shape of the lake and the fact it can be seen from most locations within the valley makes it a central piece of this landscape and, following the thesis of Angélil and Siress, a basis for local identity to develop.
The new lake in the valley and its interface
The first concern that comes when proposing to re-invent the Vajont lake is the risk of other geological accidents. The works conducted by geologists in the valley provide us with a first answer. When the construction of the dam was planned, the first proposal consisted of a smaller located further east in the valley. The lake formed by this dam would not have reached the Mount Toc. On this matter, the geologists Semenza and Ghirotti write that 'had the reservoir been built at this original location, it is likely that there would have been no problems with landslides.'

What happened on Mount Toc was due to a specific geological condition, due to an ancient landslide that left geological stratas at an angle of 40°. Once saturated in water, the clay present in some of the ground layers acted as 'soap', allowing the layers above to slide. According to Semenza and Ghirotti, this condition was exclusive to the Mount Toc. Now that this landslide was already triggered, the hypothesis can be emitted that the new lake will not trigger a similar major landslide. This conclusion is a premise for design, however by no means do we assume its certainty in the reality of the present day. It goes without saying that to go towards implementation, major geological research is necessary.

2 Ibid, p. 89
Geological setting prior to the 1963 landslide. The clay layer is highlighted in red.

Geological setting after the landslide.
Water
A large-scale infrastructure
Water Fluctuation
Activities
To experience

To be completed
To be completed
To be completed
Activities
To hope

To be completed
To be completed
Experience - an extended representation
Vajont dam basin
Interventions in the existing
Plan - water level 703 m. asl - contours per 1 m.
Section through the dam and basin
Water level 722.5 m. a.s.l. - May - June - July - August

Water level 717 m. a.s.l. - December - January
Water level 703 m. a.s.l. - March - April

Water level 670 m. a.s.l. - October - November
Into the water
Sunken chapel

Sinkhole
Against the dam
Into the water
The islands of Pineda
Experiment for a new island that can be walked to when the water level is low.
Reflections
Tides without waves
The essence of an alpine lake
Confronting the Vajont
The contemporary alpine landscape
Roles for landscape architecture
Landscape infrastructures
Beyond memory
Experience, hope and memory
Active analysis
Fascination
Relation between mankind and the Alps

Graduation lab theme
Landscape infrastructures

Site selection
Vajont Valley

Verification
Does it answer the site

Design experiments
Different general directions, radical models

Site visits (physical explorations, interviews and discussions)

Research in literature (both historic and thematic) and historical photographs

Problematique formulation
Implementation of a lake

Verification
Does it answer the problematique

Design experiments
Towards the formulated problematique

Final proposal

Reflection

*Diagram of the research process*
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Bibliography


Image sources

7 Paul Sunderland
8-9 Author
10 Willy Wagner, 'Wo Berge sich erheben', Zürich: Ex Libris Verlag AG, 1955
11 Willy Wagner, 'Wo Berge sich erheben', Zürich: Ex Libris Verlag AG, 1955
14 Author
15 Author
16 Author
17 Google Earth Pro
19 Giovanni Mazzucco
21 Marina Canevé
27 Tabacco Editrice, 'Dolomiti Friulane et d'Oltre Piave - Carta topografica per escursionisti', 2015, 1:25'000', Tavagnacco: Tabacco Editrice, 2015
28 Author
29 Author
30 Author
31 Author
32 Author
33 Author
34-35 Author
36-37 Author
39 Author
40 Author
41 Author
44 <http://dentroilvajont.focus.it/wa_3_pi/pa_1hvaiohurmx8a8/big_pira-
Appendix
10. L'invaso del bacino del Vajont.