

Architectural engineering TU Delft:

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Project name: Transhumance

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1. What is the relation between your graduation project topic, your master track (Ar, Ur, BT, LA, MBE), and your master programme (MSc AUBS)?

The graduation topic looks into the use of newly found biobased building materials and their implementation into the build environment. With this research is being done on the creation and evolution of building systems into more widely used architecture by coming up with easy to use systems. With the research a strong link is made between the use of materials from a more technical perspective, as well as the experience in construction as well as during use of the architecture. From my belief, the way we experience buildings is of large importance in the design of projects and should also be taken into account when choosing which materials are being used in construction. This gives a strong link in interests of a more experience based architecture and its technique (as being the focus of architectural engineering).

2. How did your research influence your design/recommendations and how did the design/recommendations influence your research?

The research started with a strong technical interest. A part of the ambition to have a technical focus was to provide knowledge and with this a strong backbone in the choice for materials, as this was one of the main interest starting the project. The research's outcome provided both ideas regarding the buildings material choices as well as the building layout.

From a more technical perspective, the goal of the research was to find materials that could both be grown on the location as well as improve the local architecture. With the use of biobased materials, made of plants that used to be grown by the old farmers, the existing architectural indoor climate could be improved regarding warmth and humidity.

On the other hand the research also influences the buildings and landscape layout. The research was divided into the separate parts of the biobased process: Growth, production and implementation. All these steps can be seen back in the layout of the building. As the growth researched ideal ways to provide both biodiversity to the surroundings as well as the most gain in harvest, this was used to make choices regarding the landscape layout.

As the research and design were almost fully done in two steps, first doing and finishing the research before starting the design, there are no design choices that influenced the main research. An interest in the way we experience architectural design started a second smaller research into phenomenology of architecture. This made the found buildingssystems in the research evolve from solely an efficient object to spaces that provide a positive experience.

3. How do you assess the value of your way of working (your approach, your used methods, used methodology)?

Within the project there have been many different ways in trying to find the right answers to the found problems. Especially in the beginning of the project different ways of finding interesting solutions have been used. In cases it has been not the goal to try and find one solution but rather to find a way to research it, rather trying to produce drawings and models to see if this could help the project. This means that in the end there are a lot of products, though it is to question how many of these had a strong influence on the project.

Solely the research paper had strong goal in the project process. Besides this there have been a large number of hand drawings, CAD drawings, digital and physical models. All having their own influence on the project. Looking back it would have been helpful for the project if there was a stronger influence on physical models, as materialization is one of the main topics in the project. Real physical models show the most accurate aesthetic and lighting, both being important for the project.

4. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

The project can be divided into three parts, the technical research and the research regarding phenomenology and the project design. The first two both look into building systems that can improve the existing architecture but from another perspective.

On the one hand the project starts with a technical research that looks into the growth, production and implementation of biobased materials in the sub-alpine zone of the Italian alps. The research itself is rather site specific, as it researches plant growth and local architecture of the western alps. Besides this the research on growth looks solely into the growth of plants on the sub alpine elevation, this makes this part of the research solely useful in this location. With looking into the full process of growth towards implementation, it does question what needs to be researched to start implementing the currently widely researched biobased materials on a larger building scale.

The, smaller, research on phenomenology questions what influences the way we experience spaces: the weather, other people and the architecture itself. With this it questions how the architecture can adapt to the stark contrast of winter and summer, that shapes the way life is lived, in the alpine area. Within the scale of the project this is something that is of large importance and easily noticeable. Though not as noticeable in other architectural projects, the change of weather does play a part in how we experience it. The research through design shows a changing architecture adapting to weather changes that are visible in almost every architectural project.

The design question of the project was how the historical farms of the Italian alps could be restored, as a consequence of the found interest of citizens moving from the city to the more rural areas. The building design looks into the technical, climate and functional aspects of the concerned architecture. There are multiple aspects of the project that could be used in different cases of the revitalization of rural farms.

5. How do you assess the value of the transferability of your project results?

Looking into the question of the research is rather specific or more general, it can be said that the research has a broader scaled than only the researched valley. Though the topic and location of the design being specific to one town, the climate and the problems that are tackled are more broad. The abandonment of farms is widely seen throughout Europe, with people having fled towards the cities. The project, in it's growth and implementation of biobased materials and use of the principle of 'New Farming', can be used as a case study for other farms.

When looking more specific, the researched project is one of many Italian alpine farms that have been abandoned. Within the research, the researched area was mainly confined by the elevation, as this influences plant growth, and the specific architecture, that can be found

throughout the whole Western Alps of Italy. This means that all the similar towns, can directly look into the research, using all chapters in their own case.

6. How has contact with people being that are in direct contact with the project/topic/sight?

There has been contact with different people, being dividable in people with knowledge in the project's architectural topic and focus (besides the tutors) and people with knowledge regarding the site and it's way of life.

As the project's location was almost completely foreign for me during the start of the project, contact with the people living there was therefor of great importance. What helped with this was the fact that my main tutor Mauro grew up in an area close by, giving me more insight into the way the houses are set up and used. During the beginning of the process there have been many occasions where an effort has been made to reach out to people with knowledge on the site, though this often came to a dead end or no response.

In a couple occasions, there was a video call or a mail with helpful information, for instance with people working for the Politecnico di Torino. Reaching the end of the project more helpful contacts had been made with people from the municipality and family of an important local architect. This still was helpful in the process, creating more proof of some assumptions that had been made before conversations with these contacts.

7. How do you asses the time spend on different parts of the project process?

A large part of the time has been spent on figuring out what the given problem statement and with this research topic is. With deciding to do a self-found project, and with this having to find my own site and problem statement, a large part of the process was spent on divining the problem. This is indeed needed, though it is to question if the project would have had a better outcome if more time was spent on working out the project. It is to be said that good projects often aren't made by just good ideas, but gain value with a properly worked out plan. In comparing the first and second half of the project-period, a stark contrast can be seen. Where in the second half of the project more time would have been helpful, the first part of the project did not feel as a hard work load.