

Project Reflection P4

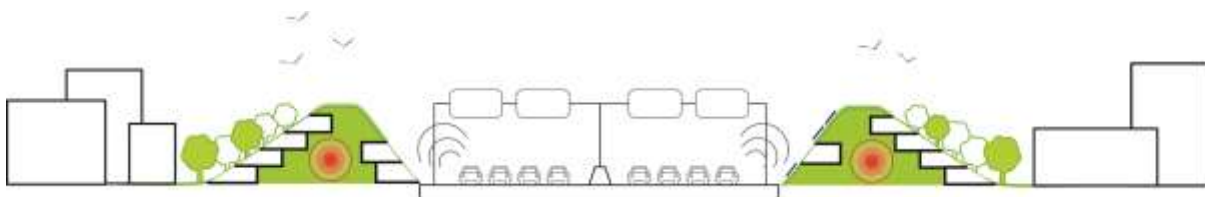
Studio: Architectural Engineering

Project Title: *Hilland – Engineering the Landscape*

Student Name: Maria Kaskareli

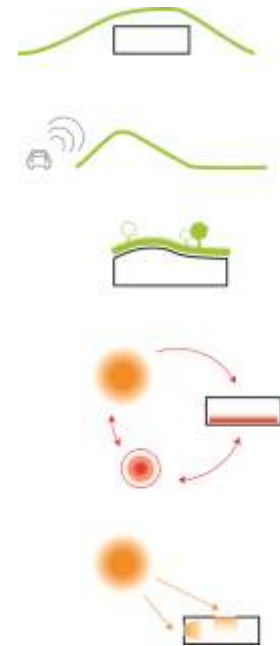
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The study domain of the chair Architectural Engineering is integrated building technology design with focus on innovative construction systems and design methods. In this respect I believe that my choice of subject agrees with the theme of the studio. The location and problem that I chose to address, by default make my project and topic strongly related to the aE studio. Moreover, I believe that the way I have developed the project also agrees with the studio's philosophy, integrating many more aspects in the built environment than just the pure aesthetic and visual side of architecture. My project, with a great focus on functionality, innovative ideas, technology and energy is a response to technical issues while in the same time sensitively addressing the quality of space, and keeping in mind the users. The idea of making "smart" use of something has a strong presence in the TU Delft generally and the aE department especially. It is an idea that I agree with and excites me, and is reflected in my choice of project, which is to make smart use of the earth berm sound barriers that are commonly used on the sides of highways by making them multifunctional.



The technical side of the studio is strongly reflected in its methodological approach which introduces an in-depth technological research in the first semester. This method suited my line of approach, as it enabled me to get a good understanding of the technical topics related to my project at an early stage, thus allowing me to explore the potentials and facilitating greatly the design process in the later stages of the project.

My technical research played a leading role in the formation of the project. The research that I did on five topics (the technique of earth sheltered construction, lighting conditions for earth covered or underground spaces, the acoustic performance of the earthen sound barriers, greening over buildings, and the thermal properties of soil and thermal energy storage that is possible in it), gave me the necessary knowledge and information to be able to develop an unconventional, innovative but yet coherent and complete design project. Coming close to the end of the design process now, I see that some of the information that I collected in my research paper was more relevant to my process and end product than others and consequently had a greater input.



This project can have a strong impact on the greater context in two major ways. Firstly, it illustrates a solution for building in unconventional places and more specifically in highway proximal environments. With the increase in urbanisation and population, cities are growing in their need to accommodate more people. It is frequent that a city is surrounded by major transportation infrastructure belts, which while acting as connections in one direction, are great barriers on the other direction. Such transport channels, whether highways or railways, are creating several problems to the areas they pass through. Mainly the sound pollution that they are a source of, has as a result that the proximal areas remain unused or are used but with low occupant satisfaction. This is exactly the case in the project location, the A12 zone in Utrecht, but the same conditions are met frequently in other locations. Secondly, this project engages with nature, by achieving a merging of building and landscape. I consider this aspect to be very important, as green in urban areas is under constant pressure and adding green in cities is a contemporary challenge, in the Netherlands and in the rest of the world. It is a fact that almost 40% of the Dutch population lives in districts with insufficient green recreational facilities. The need for more buildings means that green is undervalued and construction is preferred over parks and green public areas, also because it brings higher profit. Green has been proven to have numerous benefits and is much desired and even necessary in urban areas. In recent years, more information is becoming available about the benefits of green in cities. It is a fact that vegetation enhances the quality of life and brings several health benefits. Therefore, it seems inevitable that we must better learn how to overlap architecture and green space in smart ways.



As a general reflection, I think that I have executed the project in a good manner and that I have achieved the goals that I set for myself in the start of the project. A solution of smart sound barriers which achieves a merging of building and landscape and has a sustainable character has been successfully developed. With such a big project, and for the purposes of the graduation, I chose to resolve one part of my overall proposal. If I would develop the project further, I would have liked to address and resolve some additional aspects such as the connections over/under the highway and the extent to which infrastructure could be absorbed (such as the exit roads from the highway). However, given the time frame, I am happy to have resolved the part that I did well and through it show the potentials of such a proposal.