Aspect 1: Relationship between research and design

When I started the graduation project mistakenly I had the impression that the design and the elaboration of the design will be a linear process that consist from a number of steps. For this reason the time planning that I was asked to do was simply consisting from several step until the project is finished. However, it turned out that the design and elaboration process were non-linear and that I would never be able to predict the number of steps needed or how many times I have to do each step again because another step would change my perfective on the matter.

Until the P3 I think that the most useful part of my initial research was the materials and the principles of shell structures. When I look back to the last one and a half month I realized that because of these two parts of my literature review I was able to have a continuous workflow that wasn’t interrupted by knowledge “caps”. For the period between P3 and P4 I think that the extensive research that I have done on the types of connections, construction principles and moulding techniques helped me to work efficiently and to come faster to the desired result and gave me time to elaborate the project further more.

Aspect 2: The relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework.

The Building Technology Master studio consists of three themes, not strictly separated from each other, that are related to sustainability: Climate design, Structural Design and Façade design. As the subject of this graduation project is the design of a large scale canopy, this graduation project is oriented towards the design of a structure.

Nevertheless, since my goal is to prove that it is possible to construct the canopy, I will try also to design the details that prove that the canopy can be constructed. One of the main aspects of the Façade design is the detailing and thus my project after the structural design will be focused in the Façade design. I will have to deal with issues like drainage, connections of different parts of the structure and detailing of the polycarbonate covers of the holes in the canopy.

Furthermore, my project satisfies also some aspects of Climate design. For instance, an FRP canopy needs minimum maintenance when compared to other materials, since the material has to be maintained after 100 years. Also the canopy can be constructed from one mould that can produce 16 or 32 pieces and these pieces can be assembled in the site. Finally through the
structural optimization and the optimization of the thickness of the shell structure and the laminate it is possible to reduce the used material to the maximum, something that reduces the energy needed to spend for the production of the materials.

**Aspect 3: The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework.**

The methodical line of approach of the graduation lab is a sequence of research, design and evaluation of design and it is organized in P presentations. In the P1 my task was to select my graduation topic and built a scheme of my objectives and research question to be answered. In P2 my task was to present my literature review over materials, production techniques, detailing design principles and principles of designing shell structures. For the P3 although the task was to elaborate and finalize the design, in order to do that I had to evaluate it in every step with structural calculations. That happened because the project has as a main focus the structural design and thus I couldn’t randomly design and evaluate it at the end. For the P4 my task was to define the production technique of the GFRP panels, to make an estimation of the costs of the materials, to organize the assembly process and to elaborate and finalize all the details which are necessary in order to prove that the canopy can be constructed.

**Aspect 4: The relationship between the project and the wider social context.**

The most important properties of an urban canopy are that it provides protection to the pedestrians from the weather conditions and it can transform the experience of the urban space. By providing shelter it upgrades the quality of the site that it is located and people tent to gather or meet in such urban spaces.

More specifically the proposed design for Kotzia square provides shelter to the archeological space of the square and to the flea markets that are organized there. That means that people for the first time will be able to enjoy the ancient ruins without being exposed to the extreme weather conditions (heat or rain). At the same time the flea markets will be able to attract more people that are willing to stay longer since they are protected.

Finally the materiality of the canopy itself can influence the architects of Greece. The curvature of the geometry and its slimness can inspire architect to research more on the material and its capabilities. Also the durability of the material is an aspect that directly affects the public, since the lack of need of maintenance is beneficial for public spaces.