1. The theme of the studio

Sustainable design studio allows students to research in a wide spectrum of building engineering topics and pursues solutions that go from a façade detail to an urban scale design, a wide spectrum of possibilities always related to the build environment with close material cycles, the best way to achieve sustainability.

I believe that this project pursues the goals of the studio by developing sustainable strategies from a macro scale building environment spectrum. As a final product the master plan of the island takes advantage of the renewable resources of energy and waste to close cycles, waste converted into food helps production to meet demand, this sustainable scenario design that accomplish the studio ideals of urban sustainability.

2. Methodical approach

Methodology is a systematic process that allows researchers to achieve step by step goals that lead to results with a define approach; it’s a guideline to solve problems towards concrete outcomes.

In my case after defining my theme of interest I selected “The New Stepped Strategy” (Dobbelsteen 2009) as the core methodology for this research project.

The New stepped strategy is based in 4 steps,

1st Diagnose. A research focused on the actual energy demand of the site with all the issues characteristic, information like landscape, culture. This information is going is used to support technically and theoretically the entire project, so it has a really strong value.

2nd Reduce. Find strategies on the reduction on energy consumption. This Step uses intelligent and bioclimatic designs based on the context of the site to help reducing the energy demand.

3rd Reuse. Strategies that reuse waste energy streams. This step makes optimal use of waste streams – waste heat, waste water and waste material that can be use form one building to the other from one district to the other. Also waste streams from one chain may be used in a different chain. The reuse of waste energy minimizes the energy consumption.

4th Produce. Use renewable energy sources as energy production to achieve energy neutrality and ensure that waste is reused as food.

This strategy has very clear approach of how to create a sustainable design by placing waste and energy in the same loop, converting problems into solution and creating balance. That is why I chose this method to work as a guideline to address the most important issues of project and to solve them in a sustainable way. As an outcome the strategies of reduction, reuse and production have created a clear path of study that allowed this project to reach concrete scenarios for a sustainable development of Santa Cruz Island.

3. Research and design

As an architect I am used to see design as the most important part of project and to research just until I find important aspects in which I can base the design on. But when the research becomes the pillar of the project and has to be explored deeper and deeper design loses the leading role and gets subjective (there are different ways to solve one problem) so the creative thinking goes form design into research, on how to process information to get useful results, on how to represent these calculation, scenarios and results.
This graduation project concentrates big part of the process in research but that doesn’t mean that has not been in balance with design or not interacting with it. Design has been appearing constantly into every subject researched by giving solutions and guidance, it has become like an implicit partner. In the other hand at the final stages where design had taken the lead research has been doing the same, giving the elements from which every system has been created. At the end bought steps have been overlapping and interacting, helping to create a better and more solid outcome.

4. The project within the wider social context

This project pursuit a sustainable development based on renewable energy and the balance between consumption and production. In a wider frame every country should be trying to achieve this balance. Producing sustainably energy is today’s trend, but consuming sustainably is as important. By the reducing and reusing energy and waste streams this balance finally seems possible to achieve. Therefore developing the Galapagos into a sustainable society could be a very interesting example that can demonstrate to the entire planet that nature, humans and their economy can live together in balance in the world of today and tomorrow.