**Project dates:** March 2018 - June 2018

**Title:** Positive-energy building design

**Project activity areas:**
- Architecture and Civil engineering
- Thermal and mechanical engineering
- Project management

**Keywords:**
- Sustainable development, Green building,
- Energy management, eco-design

**Tutor’s name and coordinates**
Client – End-user: Building Company
Technical ENIT Supervisor + contact:
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**Project origin**
Civil Engineering Department

**Project technical background:**
This project deals with the design of a positive-energy house, located in the South of France, in Saint-Jean de Luz (64).

From the plans of the land, the end-user requirements and some photos, the objectives of this project are as follows:

- To draw the plans of the house
- To optimize the orientation and window area of the house (solar irradiation)
- To design the power generation system (renewable energy)
- To design the heating system (main system and supplementary if necessary)
- To design the lighting system
- To design the air-conditioning system
- To choose the adapted insulation (floor, walls, roof base)
- To evaluate the solution proposed with the appropriated softwares

The primary energy consumption (PEC) of this positive-energy house will be lower than 0 kWh/m²/year, limit determined for this kind of house.
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<td>The aim of this project is to design a “positive-energy house”. This step is essential in order to obtain the building authorizations and so to begin the construction work.</td>
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The following topics will be covered in this projet :

- Exposure of the house
- Construction materials
- Electricity production
- Heat production
- Hot water production for sanitary purposes
- Lighting

The recruitment of students in civil engineering, in thermal and mechanical engineering, in architecture will enable to constitute an adapted team work to lead this project.