European Project Semester

PROJECT OUTLINE

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:
Fabien DUCO (Teacher ENIT)
fabien.duco@enit.fr

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.

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

Studied topics:

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.

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.