Education for zero energy Buildings using Building Information Modelling

Grant Agreement: 600946-EPP-1-2018-1-IE-EPPKA2-KA

Learning Unit 5

Co-funded by the
Erasmus+ Programme
of the European Union

nZEB REALIZATION AND COMMISSIONING: QUALITY ASSURANCE

EQF	4-5	Target	Technicians Craft workers Apprentices Specialized workers Construction workers
Description			

The following learning unit focuses on quality assurance of the elements granting a nZEB qualification to the building, like energy production systems and constructive elements, using BIM methodology as a communication tool.

Objectives

- Guarantee energy saving systems and sustainable materials quality.
- Determine different quality controls and verify their good implementation.
- Coordinate the project team to ensure the quality control in the construction site.

Generic competence

- Ability to apply construction procedures, methodology and planning techniques.
- Review the performance of oneself and others.
- Discipline following the project's workflow.
- Collaboration and ability to work in a team.
- Ethical commitment and environment sensitivity.
- Solving problems by selecting and applying basic methods.
- Motivation for quality and improvement.

Specific competence

- Establish the coordination framework required from Design - Construction - Operation by using data inputs and model structure to organize modelling elements efficiently.

- Quality checking procedures for construction standards and compliance including safety with the model.
- Explain how act influence of heating and cooling generation on energy performance
- Identify specifics and basic parameters of heating and cooling
- Determine different energy production systems in relation to energy performance
- Recognise importance of energy reduction systems in relation to energy performance
- Identify sustainable building technologies and appropriate application
- Identify the interaction between energy performance and IEQ
- Assess systems related to building function and architecture
- Investigate, determine and advise on energy reduction systems to reach nZEB
- Select sustainable construction technologies and materials
- Determine performance, benefits and costs of various technologies
- Identify application of passive or active technologies
- Design and engineer energy reduction systems to reach nZEB
- Evaluate the integrated design
- Select sustainable materials and technologies in nZEB design

Recommended learning methodology

Methodology

The recommended methodology for the course would be Gamification, is based on the application of elements of games (non-playful context), in order to influence the behaviour of people from the stimulation of their motivation.

In addition, another recommended methodology would be Problem Based Learning, is based on group learning that uses real problems as a stimulus to develop skills in problem solving and acquire specific knowledge.

Method

The recommended teaching methods should be based on problem solving and collaborative work.

Recommended assessment methodology
The recommended assessment methodology would be the realization of a portfolio with the resolution of practical cases made in the course and individual reflective exercises.