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**Education for zero  
energy Buildings using  
Building Information  
Modelling**

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# Learning Unit 1



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## COLLABORATIVE BIM TO ACHIEVE NZEB

<b>EQF</b>	7	<b>Target</b>	Project manager Consultant Designer Construction manager Specialists in green building
<b>Description</b>			

The following learning unit aims to give all tools and knowledge necessary to all project team members for BIM workflow generation and application. For this purpose, roles and responsibilities of the different construction team members will be taught, as well as the necessary documents and regulations to consider for BIM methodology application.

BEP, BIM Management Plan, statement of requirements or statement of work are some of the topics we will deal in an innovative way.

### Objectives

- Create a collaborative workflow between all construction team members using BIM.
- Identify the role and responsibilities of each construction team members.
- Identify the building regulations applicable and generate all documents to achieve nZEB design.

### Generic competence

- Knowledge of the project organisation chart and team management involved in the construction processes.
- Ability to apply construction procedures, methodologies and planning techniques.
- Knowledge, skills and ability to apply the necessary legislation during the project.
- Personal self-development and quality performance.
- Apply critical and problem-solving skills.
- Discipline following the project's workflow and reach consensus on decisions.
- Collaboration and ability to work in a team and transfer information effectively
- Ethical commitment and environment sensitivity.
- Motivation for quality and improvement.



### Specific competence

- Identify BIM Project Collaboration requirements based on the Project Performance Requirements (BIM Uses), and Project Roles and Responsibilities – Contractual Hierarchy.
- Develop and define the Statement of Requirements (SOR) or Statement of Work (SOW) describing the BIM deliverables, essential requirements, and specifications.
- Evaluation of tender for the project BIM deliverables, requirements and expectations.
- Establish the information framework required to assist communication and collaboration from Design - Construction - Operation for asset handover.
- Utilize data from classification systems such as Omni Class, UniFormat etc.
- Strategically map the project workflow.
- Describe integrated design processes and concepts.
- Recognise and illustrate effective communication within projects aimed to achieve nZEB.
- Identify interdisciplinary teamwork towards common goals.
- Illustrate the use of information modelling in design teams and management of information modelling within the nZEB design.
- Specify energy reduction systems and performance in materials in tender documents.
- Communicate in contracting phase, understand and respect the role of all actors involved.
- Coordinate the project team, contractors and suppliers to ensure building quality by effective communication.

### Recommended learning methodology

#### Methodology

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The recommended learning methodology for the course will be Problem Based Learning, based on the group learning method, using real problems (case studies) as a stimulus to develop skills in problem solving and acquire specific knowledge.

In addition, another recommended methodology would be Design Thinking. A methodology that considers innovation as a holistic approach, where students through technology and their own interests or training needs, converge through an action plan designed by themselves. It is based on finding the most original solution to a real problem given by the teacher, and for which the students will have to analyse the situation, establish hypotheses, and foresee possible impacts of the action.

### **Methods**

Use of simulation-oriented learning method, group work and group dynamics for the acquisition of the ability to create a good workflow.

### **Recommended assessment methodology**

The recommended assessment methodology would be the resolution of practical cases and the realization of tests destined to evaluate the knowledge of building regulations and the necessary documentation for building nZEB.

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