

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

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07.4 BIMzeED Toolkits

Final Edition



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|----------------------|----------------|
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1.

Executive Summary

This report is a useful toolkit of information for educators and students on the BIMzeED training course. The toolkit for educators is a short, summarised set of instructions for Higher Education Institutes on how to best use the [BIMzeED](#) project resources and the eLearning training platform. Moodle could be used to enhance undergraduate, post-graduate and VET (Vocational Education and Training) Programmes.



The toolkit for students is a short report and instructions for students on how to use the training platform and maximise the benefits of the course.

BIMzeED created new educational content and resources to address critical knowledge and skills gaps in the field of Building Information Modelling (BIM) and Nearly Zero Energy Buildings (NZEB). The Learning Units were designed and developed in cooperation with Education Institutes, Industry, SMEs (Small Medium Enterprises) and Research & Development units, these new educational trainings will upskill two key targets groups


1. VET and HEI (Higher Education Institutions) Educators & Trainers
2. SME (Small Medium Enterprises) workers, existing students, and construction apprentices.

The integration of SMEs and industry within the consortium strengthened employability, creativity, and new employment professional pathways in the construction sector across Europe.

Also involved were target groups in the definition of needs and the development of corresponding solutions – the National Steering Groups (NSGs) contributed to and reviewed the benefits, knowledge, and skills gaps in digitalisation (BIM) and NZEB within the HEI, VET, and construction sector for each partner country and across the EU.

The project goal, which was achieved, was to update the knowledge and skills of Educators, Trainers, Students and SMEs in the digitalisation transformation of BIM to achieve NZEB through provision of specific new innovative educational materials across Europe.

YouTube



Tommy Wickham
BIMzeED Learner from Wexford - Ireland

0:10 / 2:23

BIMzeED Learners' experience - part 1

Introduction to BIMzeED

2.1 Project Summary & Background

2. The BIMzeED project focuses on the training needs for the current and future construction industry with the main purpose to encourage **1) better employability 2) low-carbon growth, 3) digital and NZEB skills 4) increase in youth employment**. The challenge of the BIMzeED project is to overcome skills mismatching and improve employability in the current European construction market by improving and extending the existing skills of trainers, architects, SMEs, site managers, craftworkers and other experienced operatives.

The construction industry across Europe is facing major challenges in achieving energy efficiency targets, for Near Zero Energy Buildings (NZEB), but they are also experiencing a digital revolution, with Building Information Modelling (BIM) and other digital construction and management tools. The BIMzeED project intends to improve the human-capital basis of the construction sector, identified as a strategic initiative by the European Commission, acting on HEIs (Higher Education Institutions) and VET systems in Europe. The BIMzeED project supports the construction industry, through education and training to upskill on technical innovation and digitalization.

The objectives of the BIMzeED project are to:

- Identify the knowledge and skills gap in BIM and NZEB within the HEI and construction sector for each partner country, i.e., Croatia, Hungary, Ireland and Spain.
- Update the knowledge and skills of Educators and Trainers, Students and SMEs in the field of BIM and NZEB through provision of specific innovative active educational materials and delivery.
- Stimulate development of new training and education programmes at Higher Education Institute, HEI (Higher Education Institutions) or Vocational Educational Training, VET (Vocational Education and Training) in the fields of BIM/NZEB by grouping the micro-

learning units together to create new programmes or update existing programmes by integrating them into the programmes and finally use the micro-learnings as independent learning tools for HEI/VET and the construction industry.

- Transfer knowledge of BIM (Building Information Modelling) and NZEB to and from other countries.
- Strengthen links between lecturers, industry and SMEs with innovative technologies and installations creating connected learning communities (viewing case studies, on-site site visits, industry demonstrations)
- Strengthen employability in teaching and SMEs, known as business development cooperation.

2.2 Development of the Learning Units (LUs)

BIM & NZEB

Better management of the information during the whole life cycle of the NZEB is absolutely necessary in order to avoid mistakes and have access to accurate information at any time or when an intervention is required. This can be achieved by using BIM approach.

Pre-course surveys were completed by educators and construction workers to assess their skills and knowledge and skill provided by educations.

The scale for the BIM section of the survey was the same as in NZEB section:

1. Fundamental Awareness (basic knowledge)
2. Novice (limited experience/basic level of competency)
3. Intermediate (practical application/proficient)
4. Advanced (applied theory)
5. Expert (recognised authority)

2.3 Learning Units

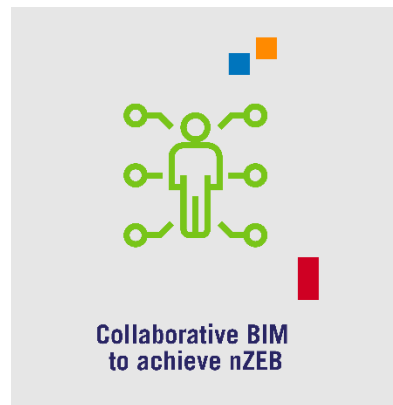
The following section elaborates on each learning unit.

ALL LUs can be found and accessed through registering on our project website:

https://bimzeed.eu/user-account/?action=eb_register

- 1) Collaborative BIM to achieve NZEB
- 2) BIM and NZEB for Workers
- 3) NZEB Realization and commissioning: Building Envelope and Air Tightness
- 4) NZEB Realization and commissioning: Building Services and Smart Technologies
- 5) NZEB Realization and commissioning: Quality Assurance
- 6) BIM Model Uses during construction
- 7) BIM Model Uses for specification and quantification
- 8) BIM Model Standardization for NZEB Design
- 9) Building Energy Modelling (BEM) Design and Export
- 10) Energy Simulation with BIM Tools
- 11) Nearly Zero Energy Building Facility Management
- 12) BIM in Facility Management Software (CMMS)

2.4 Descriptors and Learning Outcomes for Learning Units



LU1: Collaborative BIM to achieve NZEB

Descriptor

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.

Learning Outcomes

- 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.



LU2: BIM and NZEB for Workers

Descriptor

The following learning unit is intended to inform workers of the BIM methodology that has been used during project design, in this way, not only is the process speeded up, but there is an awareness to prevent and anticipate solutions. For this reason, digital communication using BIM tools on site between the design team and the construction team is essential. Knowledge of NZEB will help you recognise the parameters which you should pay more attention to and execute effectively.

Learning Outcomes

- Carry out communication between design and construction teams.
- Use the BIM methodology on site to apply problem solving workflow.
- Evaluate the situation and apply the necessary prior actions to prevent setbacks using BIM methodology.
- Understand and apply the NZEB principles on site.

LU3: NZEB Realization and commissioning: Building Envelope and Air Tightness**Descriptor**

The following learning unit is aimed at the creation of BIM objects suitable for NZEB design and their correct use within the BIM model. Therefore, principles and parameters affecting building envelope and air tightness, quality controls to guarantee NZEB values as well as best practices will be studied. All this with an active and innovative methodology, thanks to the digital tools that provide greater ease in the application of solutions in the design.

Learning Outcomes

- Use tools for BIM object creation (foundations, walls, roofs...)
- Understand the principles that affect an element to be suitable in an NZEB building design.
- Guarantee a correct NZEB design through the application of a quality control of the construction model.
- Base NZEB building design on suitable BIM objects.

LU4: NZEB Realization and commissioning: Building Services and Smart Technologies**Descriptor**

The following learning unit is aimed at the creation of BIM objects suitable for NZEB design and their correct use within the BIM model. Therefore, principles and parameters affecting building services and smart technologies, quality controls to guarantee NZEB values as well as best practices in the field will be studied. All this with an active and innovative methodology, thanks to the digital tools that provide greater ease in the application of solutions in the design.

- **Learning Outcomes**
- Use tools for BIM object creation (energy systems, mechanical ventilation...).
- Identify the principles that affect an element to be suitable in an NZEB building design.
- Guarantee a correct NZEB design through the application of a quality control of the construction model.
- Base NZEB building design on suitable BIM objects.
- Perform analyse energy demand calculations for building services design.
- Compare and contrast different technologies to facilitate selection of an appropriate solution or solutions.

LU5: NZEB Realization and commissioning: Quality Assurance



Descriptor

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.

Learning Outcomes

- 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.



LU6: BIM Model Uses during construction

Descriptor

The following learning unit focuses on the uses that BIM models provide for optimization during construction and a digital twin design. In an innovative way, solutions for clashes between different disciplines and engineering calculations via a BIM model, will be explained. Likewise, special emphasis will be placed on an active work methodology aimed at anticipating and solving problems.

Learning Outcomes

- Implement and design a digital twin of the building.
- Optimize the BIM model and create models with zero clashes.
- Implement an active working methodology in the use of BIM for constructive design.
- Generate structure and systems calculations from the BIM model.
- Audit the BIM model project provided by the client (Clash detection, technical issues, LOD)

LU7: BIM Model Uses for specification and quantification**Descriptor**

The following learning unit is intended for the model data exploitation through cost extraction, site planning and material listing. Furthermore, you will acquire knowledge in the design of a construction model considering time (4D) (construction planning, tasks management...), cost (5D) (budgeting, cost efficiency...) and environmental aspects (6D) (bill of materials, LCA...).

Learning Outcomes

- Design construction models based on the effectiveness and efficiency provided by the BIM methodology.
- Analyse model data to minimize costs, time and clashes in site planning.
- Conceptualize and apply the BIM dimensions (4D, 5D and 6D).



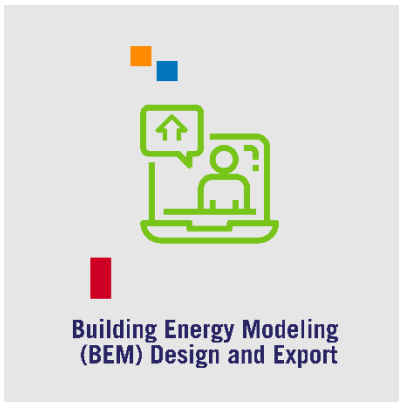
LU8: BIM Model Standardization for NZEB Design

Descriptor

The following learning unit is based on standardizing the structure of the BIM model based on European regulations and national requirements to achieve an NZEB design. Also, the necessary documentation to validate NZEB will be studied and thus optimize the workflow.

Learning Outcomes

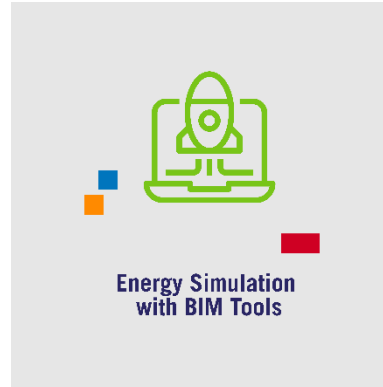
- Standardize the BIM model data structure to accomplish NZEB goals based on European directives and national requirements.
- Generate the required documentation for NZEB validation.
- Optimize the design workflow based on the standardized BIM model.

LU9: Building Energy Modelling (BEM) Design and Export**Descriptor**

The following learning unit will teach you how to develop a Building Energy Model (BEM) and how it affects the design of NZEB buildings. BEM grants advantages to thermomechanical and energy performance fields. Export properties and functionalities will be explained to deliver a BEM to an energy simulation tool. Considering the knowledge acquired in this training you will speed up your work, be able to prevent future needs and provide a preventive solution.

Learning Outcomes

- Generate a Building Energy Model (BEM) and evaluate its positive impact on the workflow of NZEB design.
- Design and export a Building Energy Model (BEM) considering NZEB requirements and parameters.
- Generate a Building Energy Model (BEM) of existing buildings to rehab them into NZEB buildings.



LU10: Energy Simulation with BIM Tools

Descriptor

The following learning unit focuses on the analysis and interpretation of a Building Energy Model (BEM). In order to guarantee economic viability and to provide solutions, advanced knowledge in BEM analysis is indispensable in the first steps of the construction design process. Aspects and parameters involved in a NZEB qualification will be studied and analysed to ensure NZEB values before construction. Preventing and anticipating future problems will speed up your work and all the agents involved.

Learning Outcomes

- Analyse a Building Energy Model (BEM).
- Make economic feasibility studies and apply solutions.
- Verify and evaluate the parameters needed to accomplish a NZEB building.
-



LU11: Nearly Zero Energy Building Facility Management

Descriptor

The following learning unit provides you with knowledge to improve efficiency during facility management. Preventing and anticipating future problems or improvements and documenting them in a digital communication system between the design team and the facility team is essential. This learning unit will give you the knowledge to understand the building parameters to consider in order to guarantee its NZEB qualification during its use, like spaces and users schedules, climate control changes, etc.

Learning Outcomes

- Diagnose and improve energy efficiency during the facility management.
- Implement tools and techniques for communication with users to collect suggestions.
- Validate and carry out preventive efficiency controls.



LU12: BIM in Facility Management Software (CMMS)

Descriptor

The following learning unit focuses on the object classification, data structure and model generation in order to create a correct BIM model for facility management systems. This unit will focus on standards like COBie and best practices documents. A facility management software (CMMS) with the support of a BIM model is essential to speed up urgent interventions and to communicate issues to other agents detailing placement and situation in the building.

Learning Outcomes

- Structure model data for a correct facility management implementation with BIM.
- Classify BIM objects, spaces and other BIM parameters to be compatible with facility management software.
- Generate a model considering maintenance parameters.

2.5 Moodle

Moodle is one of the world's most popular and most used e-learning management system. It is a robust secure and integrated open-source learning platform used by many educational bodies (Universities and Vocational schools) supports Web, Android, iOS.

One of the best benefits of the Moodle LMS (Learning Management System) software is that it is free to download and the code is open source.

<https://reviews.financesonline.com/p/moodle/>

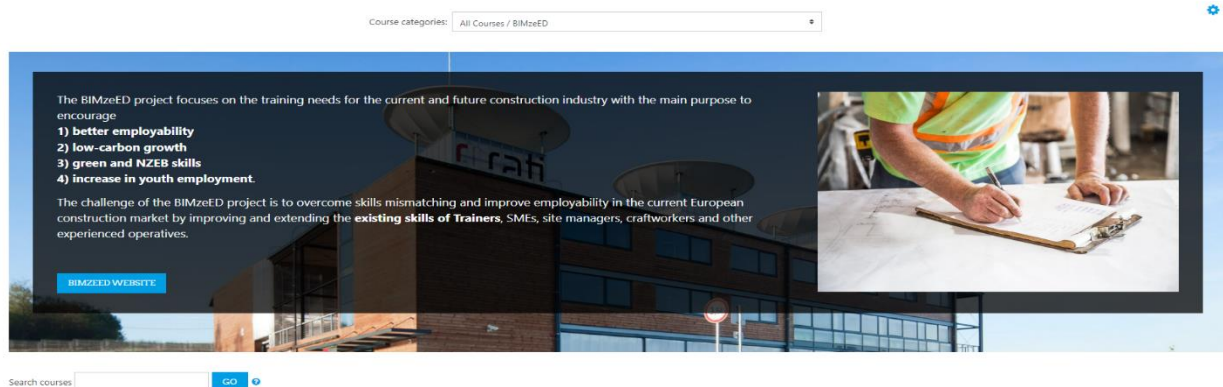
Moodle has ease of functionality and features and flexibility to adapt as courses may change through feedback from users and updated information or new research that may require content to be changed in the future.

Moodle's course builder tools and eLearning programs can be created utilizing a number of methods:

1. Self-paced, non self-paced and blended learning.
2. Easily upload and share resources, articles, videos, pictures, and anything else students may need to complete coursework and assignments at set times. Moodle Badges plugin are available to award students upon successful completion of each training.

BIMzeED

Dashboard / My courses / All Courses / BIMzeED



The screenshot shows the Moodle course page for BIMzeED. At the top, there is a navigation bar with the course category 'All Courses / BIMzeED'. Below this is a large banner image featuring a modern building and a person in a high-visibility vest working on a clipboard. The banner contains the following text:

The BIMzeED project focuses on the training needs for the current and future construction industry with the main purpose to encourage

- 1) better employability
- 2) low-carbon growth
- 3) green and NZEB skills
- 4) increase in youth employment.

The challenge of the BIMzeED project is to overcome skills mismatching and improve employability in the current European construction market by improving and extending the **existing skills of Trainers**, SMEs, site managers, craftworkers and other experienced operatives.

Below the banner is a search bar with the text 'Search courses' and a 'GO' button.

All the LU (Learning Unit) Moodle .mbz files can be requested and used by all individuals registered on the site and shared. This will allow organisations with their own Moodle platform to upload the LUs to their site and create a new course or add to an existing course.

Moodle also facilitates:



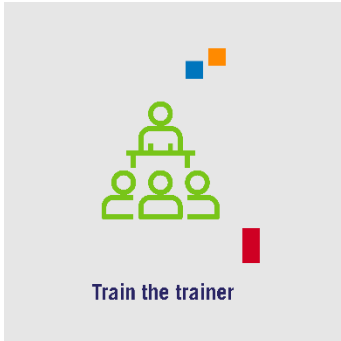
- Gamification
- Discussions Forums
- Uploading submissions, assessments etc for grading
- Quizzes and other types of online assessments to be self-completed making the process easier for both the trainee and trainer/teacher
- Ease of use of automated and manual assessment grading
- Collaboration between all that are learning and teaching a course

3. Toolkits for Educators

The piloting phase was designed to test the BIMzeED Learning Units through organisations own course curricula or company. This piloting provided feedback on the LU modules implementation and delivery which guided changes and improvements to the course content and sequencing.

3.1 Train the Trainer Resources

Train the trainer was part of the pilot and trained 184 individuals from 12 countries. After completing the programme successfully trainees were issued with badge as a Certified BIMzeED Trainer.



After the project is completed the TtT module will not be on the site. The LU descriptor documents and summary videos will be accessible on the individual LU module pages.

3.2 LU Training Resources

Training material has been developed for all Learning Units to support educators when teaching the BIMzeED course in parts, or as a whole.

Also, individuals can register and access all the content to increase knowledge and self-upskill themselves.

The material, as outlined in chapter 2.3, is accessible through the Moodle pages which are accessed through registering on the project website: https://bimzeed.eu/user-account/?action=eb_register

It contains:

- Introductory videos & LU descriptors
- Slides and presentations: PPT with comments and guidelines.
- Instructions for practical exercises.
- Theoretical Assessment – short Quizzes.

- Practical Assessment – short projects worked on during the course using BIM tools.
- A checklist table (spreadsheet) defining the different points to be evaluated and the different indicators to score.
- Instructions to facilitate grading and correction activities will be developed. Different type of files (PDF, WORD, EXCEL, etc.)

Toolkits for Students/ Learners

4.

4.1 LU Resources

The various LUs are targeted to particular professions, neither white or blue collar but aimed at the new category: **Green-Collar** workforce, that encompasses all workers. Green jobs include those whose tasks seek to increase sustainability and to decrease waste, energy use, and pollution. This workforce includes newly created jobs also the greening of existing jobs improving their impact for both the environment and worker. Due to concerns of climate change and environmental resource scarcity it is critical to have a workforce which creates the resources and infrastructure to prevent, mitigate, and conserve.

Any of the following can be considered **green-collar** jobs:

- Designing "green" buildings
- Retrofitting homes and office buildings to make them more energy-efficient
- Producing biofuels or working in a biofuel station
- Manufacturing nontoxic cleaning products
- Designing and maintaining parks
- Recycling and composting
- Manufacturing environmentally friendly products, such as hybrid cars and wind turbines
- Installing solar panels
- Working on water conservation projects
- Growing organic food on a sustainable farm

The various LUs are rated through the European Qualifications Framework (EQF), an 8-level, learning outcome-based framework translation tool between different national qualifications frameworks. The table below illustrates the EQF levels of each Learning Unit.

| LU | EQF |
|----|--------|
| 1 | 4 to 7 |
| 2 | 4 to 5 |
| 3 | 6 |
| 4 | 6 |
| 5 | 6 |
| 6 | 5 to 7 |
| 7 | 6 |
| 8 | 6 to 7 |
| 9 | 7 |
| 10 | 7 |
| 11 | 5 to 6 |
| 12 | 6 to 7 |

This framework helps improve transparency, comparability and portability of people’s qualifications and makes it possible to compare qualifications from different countries and institutions.

| Profession | Recommended Learning Units |
|----------------------|---|
| Apprentices | LU1, LU2, LU5. |
| Architect | LU1, LU3, LU4, LU5, LU6, LU7, LU8, LU9, LU10, LU12. |
| Construction Manager | LU1, LU3, LU4, LU5, LU6, LU7, LU8 |
| Construction Workers | LU1, LU2, LU5 |
| Consultant | LU1, LU3, LU4, LU5, LU6, LU7, LU8, LU9, LU10, LU11, LU12. |
| Craft Workers | LU1, LU2, LU5 |

| | |
|------------------------------|--|
| Engineer | LU1, LU3, LU4, LU5, LU6, LU7, LU8, LU9, LU10, LU12 |
| Facility Manager | LU1, LU5, LU10, LU11, LU12 |
| Project Manager | LU1, LU3, LU4, LU5, LU6, LU7, LU8, LU9, LU10, LU12 |
| Quantity surveyor | LU1, LU5, LU6, LU7 |
| Site Engineers | LU1, LU5, LU6, LU7 |
| Site Engineers | LU1, LU5, LU6, LU7 |
| Site Supervisor | LU1, LU5, LU6, LU7 |
| Specialist in Green Building | LU1, LU3, LU4, LU5, LU6, LU7, LU8, LU9, LU10, LU11, LU12 |
| Specialized Workers | LU1, LU2, LU5 |
| Technicians | LU1, LU5, LU11 |

The table outlines the recommended Learning Units by profession.

4.2 Learning portal Moodle

To login to the BIMzeED learning portal, please the following steps are required.

1. Visit www.bimzeed.eu
2. Click 'Login' on the Menu bar
3. Enter the username and password you received when you registered for the course

There is a video on how to use Moodle and how to login

4.3 Discussion Forum

A place that gives all learner and trainers an opportunity to hold discussions online. The discussion is started by one member by posting a topic, other members reply and interact.



This allows the group to share information and ideas. And continue collaboration development and troubleshooting over the two-year period the site will be open post project

4.4 Digital tools

- BIM for design
- Digital tool on site
- Mobile apps
- NZEB tools
- Building Performance modelling & Management tools

4.5 In Class exercises and Tasks

Demo videos, demo activities, (use of vimeo for the videos)

4.6 Self-directed resources

These resources will be all logged in a trainer file on Moodle to guide all that have registered as to where the additional content is it included but is not limited to:

- Reading resources

Learning Unit 5 - nZEB Realization and commissioning. Quality Assurance

[Dashboard](#) / [My courses](#) / [All Courses](#) / [BIMzeED](#) / [BIMzeED LU5](#) / [Topic 5.1 Introducción](#) / [View EU Resources](#)

View EU Resources

- [LU5.1 2018 EPBD Recast.pdf](#)
- [LU5.1 2019_The European Green Deal.pdf](#)
- [LU5.1 2020-Renovate Europe-BPIE-Research-Layout_FINALPDF.pdf](#)

DOWNLOAD FOLDER

Learning Unit 1 - Collaborative BIM to achieve nZEB

[Dashboard](#) / [My courses](#) / [All Courses](#) / [BIMzeED](#) / [LU1](#) / [Topic 1.2 - NZEB Fundamentals](#) / [Quiz 1.2.2 - nZEB Fundamentals](#)

90:50

In order to improve energy performance in buildings, we should:

A Use less energy by turning off some installations like heating in winter.

B None

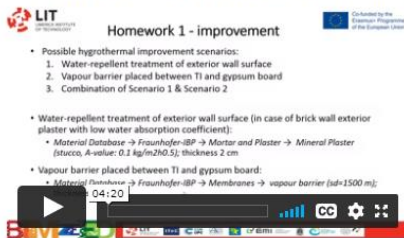
C Minimize heat losses and reduce the demand of energy through architectural design

15 150000
14 80000
13 40000
12 20000
11 10000
10 5000
9 4000
8 2000
7 1500
6 1000
5 500
4 400
3 300
2 200
1 100

- Videos

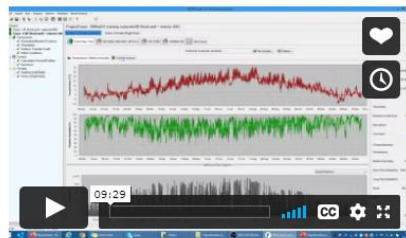
 Task 5 - HAM modeling - Wufi - Internal insulation

You can find the description of the task in the following video



 Task 6 - HAM modeling - Wufi - Influence of material selection

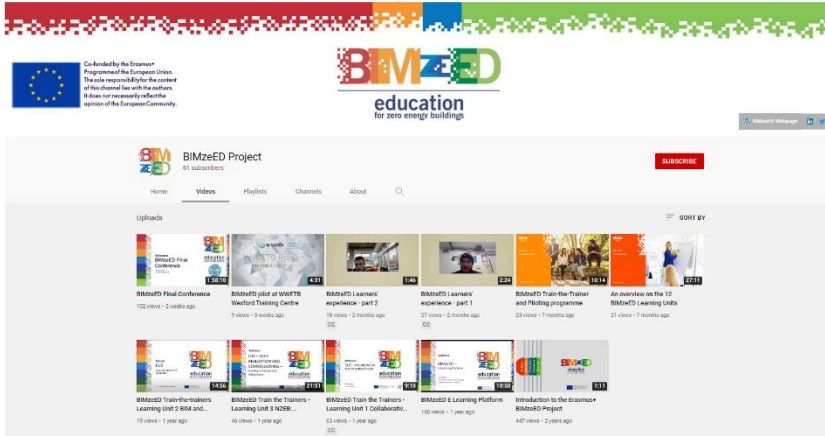
You can find the description of the task in the following video



 Task 7 - HAM modeling - Wufi - Influence of airtightness

- [URL Links](#)

- [YouTube videos](#)



YouTube search results for 'bimzeed'.

Collaborative BIM to achieve nZEB

EQF = 5 - 7

CIM UPC

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TOPICS

- Topic 1.1 Introduction and required Software
- Topic 1.2 nZEB Fundamentals
- Topic 1.3 BIM fundamentals
- Topic 1.4 nZEB & BIM
- Topic 1.5 BIM achieve nZEB

| Assessment Schedule | | |
|--|---------|----------------------------------|
| Description/Type | % Total | Timing of Assessment |
| Pre survey questionnaire | 0 | Registration |
| ASSESSMENT 1 – Quiz 1.1 – nZEB Fundamentals | 15 | Completion of L1/L2. |
| ASSESSMENT 2 – Quiz 1.2 – BIM Fundamentals | 15 | Completion of L1/L3 |
| ASSESSMENT 3 – Quiz 1.3 – nZEB & BIM | 15 | Completion of L1/L4 |
| ASSESSMENT 4 – Quiz 1.4 – Collaborative BIM | 15 | Completion of L1/L5 |
| ASSESSMENT 5 – Task 1.2 – Business Case | 20 | A week after completion of L1/L3 |
| ASSESSMENT 6 – Task 1.4 – Networks demonstration | 20 | A week after completion of L1/L5 |
| Post survey questionnaire | 0 | Completion of L1/L1 |
| | 100 | |

An overview on the 12 BIMzeED Learning Units
21 views • Sep 16, 2021

4.7 Home Study activities

Activities such as:

- Self-Study



Self-study

These resources could be useful for students who would like to learn more about the specific topic.

ProfTrac - Tools and Training contents for Building Companies

ProfTrac - BIMplement Methodology Guide

Q&A - Personal Development

Dear trainers and students, You can all use this forum for announcements related to this specific topic and/or for discussing content this topic or related reading materials.

- Assessments



Assessment / Exam

Assessment 4 - Crossword

Assessment 5 – DIALux Activity

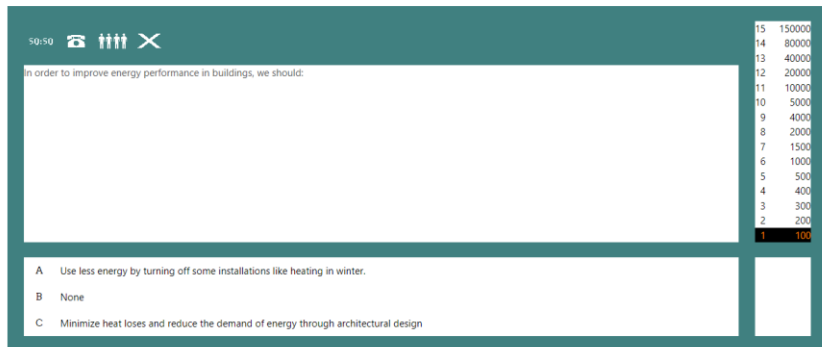
Download Assessment 5, Please read the .docx file, which provides instructions on how to complete this task.

Upload the Dialux EVO model

- Quizzes

Learning Unit 1 - Collaborative BIM to achieve nZEB

Dashboard / My courses / All Courses / BIMzeED / LU1 / Topic 1.2 - NZEB Fundamentals / Quiz 1.2.2 - nZEB Fundamentals



4.8 Tips on how to gain the most out of on-line education

Some of the difficulties students encounter with on-line education include:

- Technical issues.
- Distractions and time management.
- Staying motivated.
- Understanding course expectations.
- Lack of in-person interaction

In order to mitigate these challenges, below are some simple tips on how to gain the most out of on-line education:

- Familiarise yourself with online learning practices and expectations.
- Ensure you have reliable internet access.
- Have a dedicated study space.
- Identify your learning objectives and goals.
- Create a study plan and follow it.
- Participate in online discussions.
- Eliminate distractions.

Conclusions and Recommendations

5.1 Report Conclusion

This Toolkit has presented an overall introduction, explanation and guide to accessing and using the content created and Moodle system for BIMzeED.

Maintaining the Moodle site for two years after project completion will guarantee that BIMzeED is not a one-off endeavour and will promote the sharing of the learning units and content.

The steps and actions described above to access and if required, teach the LUs, or adapt them to organisations current or new courses, can be easily followed by reviewing the toolkit. This guidance will make the process more user friendly and easier to develop. This final updated edition will undoubtedly raise awareness across the sector and help with the improvement of the delivery of better buildings through collaboration between all stages of either a retrofit or new build from Design to Build to Operate, for all of the Green Collar professions involved.

It is also important to highlight that in order to ensure BIMzeED's sustainability, effective dissemination was performed by all partners, using the project's communication instruments. TUS also commits to ensure the continuity of free access to the open e-learning courses for 2 years after the end of the project while TEA will maintain the project website.

5.2 Contact information for questions

For any questions or queries you may have in relation to the course, please contact your country specific partner info@bimzeed.eu or the project coordinator at Technological University of the Shannon (TUS) Ireland- benny.mcdonagh@lit.ie