



BIM-based EU -wide Standardized Qualification Framework for achieving  
Energy Efficiency Training

## **D6.7 – BIMEET Workshops**

<b>WP 6</b>	<b>Leader: VTT</b>
<b>Task 6.7</b>	<b>Leader: VTT</b>
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## Abbreviations

CA	Consortium Agreement
DoA	Description of the Action
GA	Grant Agreement
ICT	Information and Communication Technologies
PC	Project Coordinator
PSC	Project Steering Committee
QA	Quality Assurance
WP	Work Package
WPL	Work Package Leader
BIM	Building Information Modelling
EE	Energy Efficiency
EQF	European Qualification Framework
ToC	Table of Content
Mx	Milestone date designating the start of a given task
My	Milestone date designating the end of a given document delivery deadline
BEM	Building Energy Model
BIM	Building Information Modelling
CA	Consortium Agreement
DoA	Description of the Action
EE	Energy Efficiency
EPBD	Energy Performance Buildings Directive
EPC	Energy Performance Certificate
EQF	European Qualification Framework
GA	Grant Agreement
ICT	Information and Communication Technologies
KSC	Knowledge – Skills – Competencies

# 1 Executive Summary

As part of Dissemination and Communication activities the BIMEET project partners have been participated or run five workshops. They have been provided valuable insight, common understanding and feedback for project results.

This report introduces the workshops discussing the national approaches on the themes of (1) adapting and implementing BIM enables energy performance analyses and (2) BIM learning outcome framework.

The main BIMEET workshops have been the Expert Panel workshops. Face- to face- BIMEET Expert Panel was organised two times. At the start the experts helped the partners with work connector to WP2: to identify new use cases and to improve the structure of the database to increase its usefulness. Further it gave as well as advice on the content and key stakeholders who could make use the learning outcome framework for BIM and energy efficiency training.

Towards the end of the project the Expert Panel gave further guidance on the scope of the BIMEET learning outcomes framework with suggestions for new areas to consider. It also gave a helpful steer on the BIMEET label in respect of its scope and audiences which are being integrated into the associated BIMEET label business plan.

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## 2 Workshops as dissemination & communication activities

Dissemination activities focus on providing information about the project to various target groups. Organising and participating workshops has been one way for BIMEET project partner to disseminate project outcomes and collecting feedback during development processes. The main forum has been planned in DoW, BIMEET EEAB, External Expert Advisory Board, which has met twice during the project (and some of them also during a final project event reported here). The both workshops were held in Brussels, the first WS in February 6<sup>th</sup>, 2018 and the second WS in November 26<sup>th</sup>, 2019.

The other workshops are:

- Workshop on BIM and EE adaptation in Luxembourg, held in October 2018 in parallel of the national event BIMLUX,
- EASME workshop - Contractors workshop in Brussels, held in June 2018
- BIM Skills for energy knowledge management, held in Helsinki in connection of Sustainable Building 19 Conference in May 2019

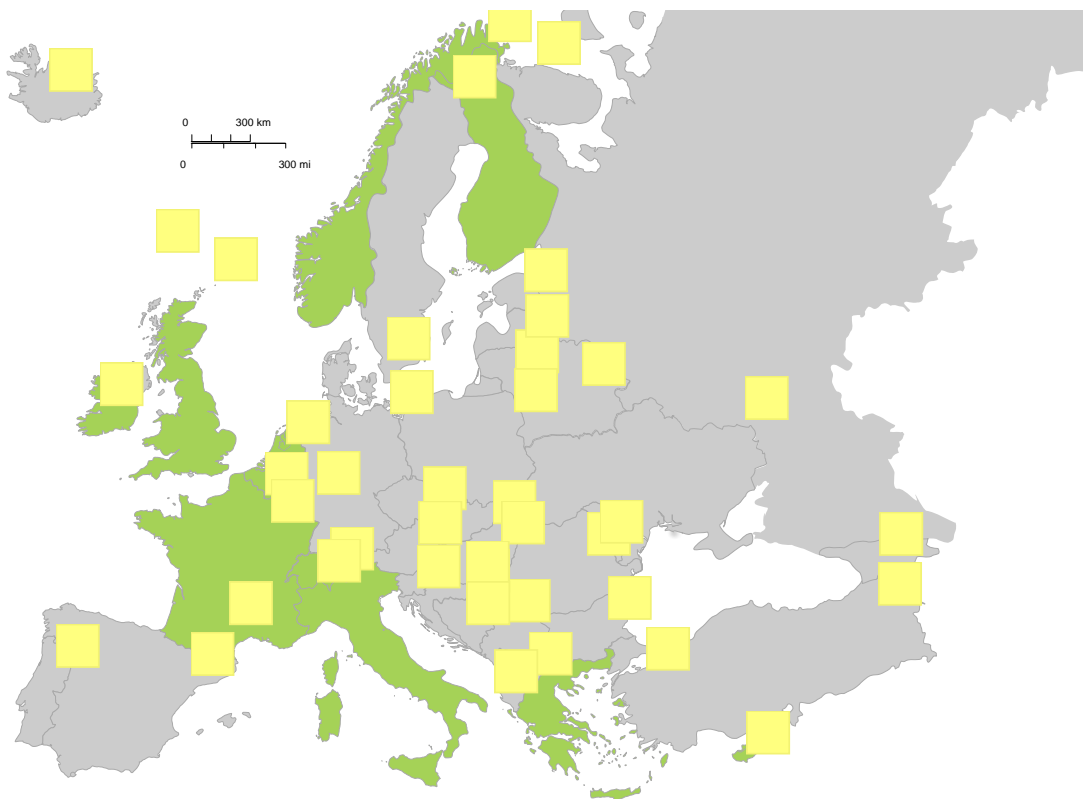


Figure 1: Geographical coverage of the BIMEET EEAB, External Expert Advisory Board

## 3 Introduction of BIMEET workshops

### 3.1 Workshop on BIM and EE adaptation

#### 3.1.1 Goal of workshop

The goal of this workshop was to provide an understanding of maturity of BIM enabled EE tools for energy analyses and simulation processes as part of design practices in Luxembourg. A training day was organised for professionals (Table 1). After the lectures, the researchers from LIST and INES could outline the potential of BIM EE process adaption and implementation of tools by asking the opinions from the audience.

Table 1: Workshop topics and participants

Luxembourg 12/10/2018 One day	The use of Building Information Modelling (BIM) for energy efficiency in building	<ul style="list-style-type: none"> <li>- Energy context in France</li> <li>- Introduction to BIM fundamentals</li> <li>- French and Luxembourg thermal regulation</li> <li>- How BIM can optimise the energy efficiency at different stages of a construction project</li> <li>- Presentation of BIM to BEM workflows and new responsibilities in the domain.</li> <li>- Elaborate a BIM model in Revit, export it to gbXML, import it to Pléiades and do some thermal simulations.</li> </ul>	Architects, thermal engineers, BIM coordinator, BIM manager, researchers  14 participants
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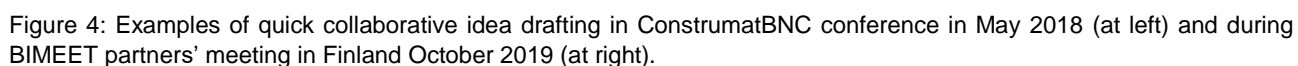


Figure 2: First BIMEET training delivered in Luxembourg with brainstorming workshop

#### 3.1.2 Outcome

In addition to training day a workshop was held on the future of BIM based energy efficiency. The respondent provided interesting ideas and workflows to use BIM for EE in Luxembourg. It appears BIM is not enough developed to be efficiently used in relationship with Energy Efficiency (simulation, energy performance certificates) now.

Small brainstorming sessions and idea sharing have been part of dialogue in other events and seminars, and during BIMEET partner meetings. Examples provided in Figure 3 and Figure 4.



### 3.2 Workshops<sup>1</sup> with External Experts Advisory Board

BIMEET has established its External Experts Advisory Board. The panel includes stakeholders from different EU countries. The experts were supposed to participate in two BIMEET meetings. Experts take part in the orientation of the activities, by providing advice and suggestions. The expert panel at the end of the project is reported in D5.1, and summarised below (Table 2):

Table 2: List of the EEAB members (whole project duration)

Workshop	Country	Name of expert	Organisation	Expertise
Brussels 2018	Belgium	Alain Zarli	ECTP	Secretary General of the European Construction Technology Platform (ECTP). Expert in Construction IT, BIM and European Policies towards sustainable buildings.
Brussels 2018	Belgium	François Snoeck	BESIX	Engineer and BIM Project manager. Member of IFMA.
Brussels 2018	Cyprus	Anthi Charalambous	Cyprus Employers and Industrialists Federation	Director of Energy & Environment at Cyprus Employers & Industrialists Federation (OEB). Specialist in Vocational Training engineering.
Brussels 2018	Finland	Irmeli Mikkonen	Motiva Services Oy	Senior Expert and group leader in Motiva Oy. Expert in Energy efficiency.
Brussels 2018	Finland	Vishal Singh	Aalto University	Assistance Professor in Aalto University, department of civil engineering.
Brussels 2018	France	Guersendre Nagy	Mediaconstruct (BuildingSmart Chapter)	Responsible for public relations and communication at Mediaconstruct – BuildingSmart France. Expert in BIM and Vocational Training engineering
Brussels 2018	France	Gilles Charbonnel	ADN Construction	President of ADN Construction Professional Association (Association pour le Développement du Numérique dans la Construction)
Brussels 2018	France	Henri Le Marois	Alliance Ville Emploi	Expert in Vocational Training. Representant for the EU sister project BIMplement.
Brussels 2018	Greece	Nicoleta Panagiotidou	Break with an architect	Architecture and Vocational Training engineering. Autodesk Certified Instructor.
Brussels 2018	Ireland	Elisabeth O'Brien	Limerick Institute of Technology	Expert in Vocational Training engineering for building sector.
Brussels 2018	Italy	Anna Moreno	Institute for BIM Italy	Coordinator of Net-Ubiep EU sister project. Expert in BIM and Vocational Training engineering.
Brussels 2018	Luxembourg	Marcel Deravet	IFSB	Responsible for training development in Institut de Formation Sectoriel du Bâtiment. Expert in Vocational Training engineering for the building sector.

Brussels 2018	Luxembourg	Moreno Viola	CRTI-B	In charge of missions for the Resource Centre for Innovation in Building, Luxembourg. CRTI-B is a professional association in charge of developing the BIM strategy in Luxembourg.
Brussels 2018	NL	Arjan Schrauwen	ISSO	Expert in Building Energy Efficiency and Vocational education. Specialist of the Dutch input to EPBD.
Brussels 2018	Norway	Eilif Hjelseth	Norwegian University of Science & Technology	Adjunct Associate Professor at Norwegian Research Center for Computers and Law. Expert in BIM and Vocational Training engineering
Brussels 2018	Switzerland	Simon Ashworth	ZHAW (Zurich Hochschule für Angewandte Wissenschaften)	Lecturer at ZHAW, expert in BIM and Facility Management. IFMA Member
Brussels 2018	UK	David Comiskey	Chartered Institute of Architectural Technologists	Senior Lecturer Ulster University. Expert in Architecture, BIM and Vocational Training engineering
Brussels 2018	UK	Mervyn Richards	BuildingSmart UK. Avanti Partnership	Director BuildingSMART UK. Expert in BIM, Vocational Training engineering
Brussels 2018	UK	Alexi Marmot	University College London	Professor of Facility and Environment Management at UCL / IFMA Member.
Brussels 2019	Belgium	François Snoeck	BESIX	Engineer and BIM Project manager. Member of IFMA.
Brussels 2019	Belgium	Cléo Wiseman	BESIX	Engineer and expert in BIM. Member of IFMA.
Brussels 2019	Canada	Jean Carriere	Trailloop	Managing Director at Trailloop. Expert in BIM to Building Energy Modeling software workflows. BIM and EE trainer.
Brussels 2019	Finland	Maaria Laukannen	Eksergia	Expert in BIM and energy simulations. BIM/EE trainer.
Brussels 2019	Greece	Nicoleta Panagiotidou	Break with an architect	Architecture and Vocational Training engineering. Autodesk Certified Instructor.
Brussels 2019	Italy	Anna Moreno	Institute for BIM Italy	Coordinator of Net-Ubiep EU sister project. Expert in BIM and Vocational Training engineering.
Brussels 2019	Luxembourg	Guillaume Karman	IFSB	Expert in Vocational Training engineering for the construction sector.
Brussels 2019	New Zealand	Robert Amor	University of Auckland	Professor at The University of Auckland, Expert in Computer Science and BIM in AEC
Chambery 2020	France	Luc Floissac	EcoEtudes, Toulouse	Engineer and expert in energy simulations. Trainer in environmental aspects of buildings.
Chambery 2020	Ireland	Gordon Chisholm	Department of Architecture, Waterford Institute of Technology	Architect. Lecturer at Waterford Institute of Technology.

Chambery 2020	Italy	Letizia Martinelli	PhD in Environmental Design Research fellow at ISPC-CNR	Post-Doctoral Research Fellowship at the Institute of Heritage Science of Consiglio Nazionale delle Ricerche. Expert in BIM for heritage buildings.
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### 3.2.1 Organization of the first seminar with the BIMEET EEAB

Experts were invited to the first workshop in Brussels in February 2018.



 	
<b>4. Agenda</b>	
Meeting starts at 10.00am CET	
10.00am	→ Meeting opening, welcome Welcome by Sylvain Kubicki (LIST, BIMEET Project Coordinator) Overview of BIMEET project
10.15am	→ Review of agenda Aims of the workshop
10.20am	→ Introduction and presentation of each expert With focus on BIM & Energy Efficiency activities
10.50am	→ Review of BIM & Energy Efficiency requirements and use cases (by CU) Presentation of use cases: European projects, real construction projects Results of the interviews conducted, EU projects analysis
11.30am	→ Comments, discussions and classification by the experts (animated by BRE) Grouped in 4-5 small teams Aim: augment the use cases repository (identify new projects) Aim: Classify the use cases (/stage lifecycle, /stakeholder, /usefulness)
12.30	→ Lunch break
01.30pm	→ Wrap-up and discussion (led by LIST)
02.00pm	→ Towards BIMEE Training (animated by INES) Status of training offer regarding BIM in each country, description of existing BIMEE training if any Opportunity for BIMEE training, barriers
02.30pm	→ Brainstorming BIMEE Skills (animated by BRE) Grouped in 4-5 small teams (with a standard grid) Aim: Identify the skills required (/stage lifecycle, /stakeholder), barriers, levels, delivery and assessment/certification
04.00pm	→ Wrap-up of group discussions
04.30pm	→ Conclusion (LIST) Communication actions Sharing of initiatives in the field of BIM&EE Training: experts and community of interest

Figure 5: Agenda of first Expert panel meeting

There were 19 Expert Panel members in attendance: 16 in person and 3 connected remotely. As noted above, the purpose of this workshop was to provide an initial steer on the project's direction and to give feedback on the first set of outputs.

Following a welcome by the project coordinator and a brief introduction by each of the experts the structure of the day was:

- Review of BIM & Energy Efficiency (EE) requirements and use cases  
*Project partners gave a summary of the database of BIM & EE case studies identified by the project which was presented together with the key themes that had been identified in terms of savings, types of projects covered etc. Feedback from the experts was gathered.*
- Workshop A – BIM & EE use cases  
*Panel members and project partners grouped into 4 small teams each with a facilitator to identify new projects and to collectively fill-in/discuss the objectives, impacts and target disciplines of BIM & EE and to better understand the actors involved, the information*

*exchanged, the modelling and simulations performed as well as the software tools used. Findings were reported back and discussed.*

- BIMEET portal and BIM & EE training  
*Project partners introduced the energy-bim.com portal and summarised the current status of BIM & EE training*
- Workshop B – BIM & EE training  
*Panel members and project partners grouped into 4 small teams each with a facilitator to identify the skills required (categorised by key RIBA construction stage lifecycle and stakeholder), the barriers, the required levels, the delivery mechanism and scope for assessment/certification. Findings were reported back and discussed.*



Figure 6: The First Expert panel meeting in Brussels

### 3.2.2 Outcome

In terms of BIM & EE skill gaps and training needs, the workshop identified some key issues:

- Challenges were highlighted across all RIBA stages, but particularly at design and construction
- At the briefing stage clients had limited awareness of the benefits of BIM and energy efficiency
- Architects and engineers were hampered by lack of integrated tools and inexperience in using tools at the design phase. There was also a general lack of leadership and team working
- At construction and maintenance blue collar workers had little experience of BIM and tools. Product manufacturers also need training

### 3.3 EASME workshop - Contractors workshop

Collaboration between research projects BIMEET, BIMcert, BIMplement and NetUIEP started during an intensive one-day workshop in June 2018 organised and facilitated by EASME.

Topic of the workshop was “Building Information Modelling skills and qualifications development” and issues were tackled from many viewpoints. Partial solutions, approaches and development steps were drafted in four project teams and presented.

The 4 projects have continued collaboration under a common statements and plan for BIMalliance group (Figure 8).

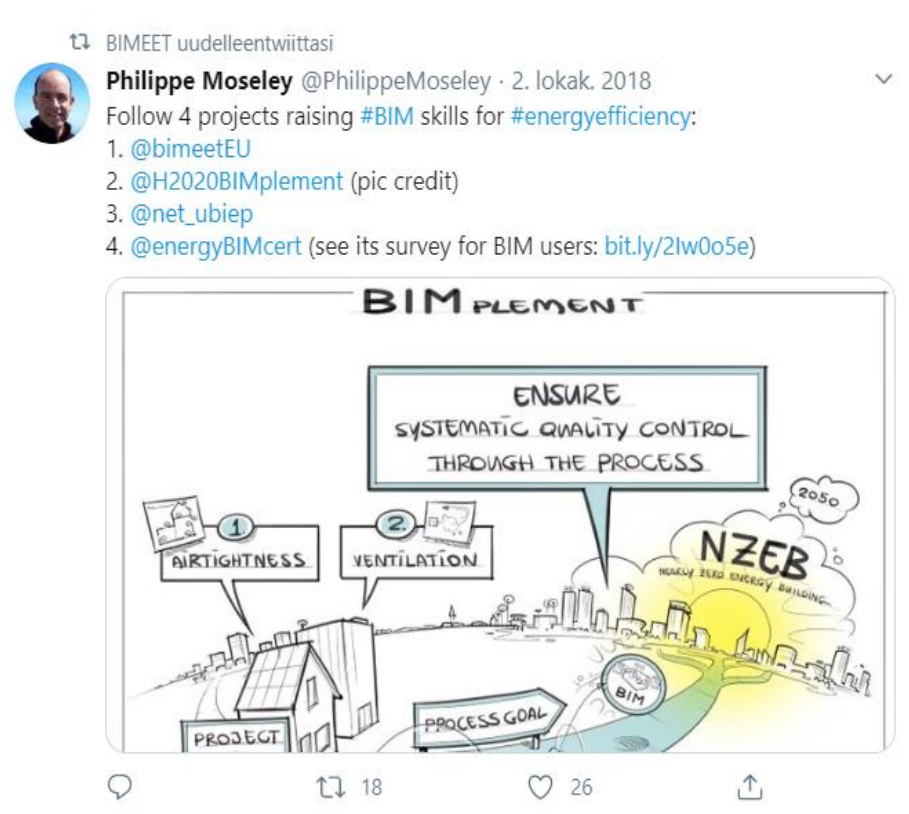


Figure 7: Four project joined development and dissemination forces for building up BIM EE skills



Figure 8: Pictures from project collaboration workshop

### 3.4 BIM Skills for energy knowledge management

#### 2.3.1 Target

The main target of the workshop, in connection of Sustainable Building 19 Finland Conference, was to collect feedback on BIMEET Skills-Knowledge-Competencies defined and on the Learning Outcomes tables drafted. Required knowledge, skills and competences for the different roles in design, building and maintenance processes - with relevant learning outcomes - is an outcome of on-going BIMEET project, BIM-based EU-wide standardized qualification framework for achieving energy efficiency training.

Six main categories of roles was studied (Client & Clients advisors, Architectural design roles, Structural design roles, Building services design roles, Construction work roles, Maintenance work roles) in order to define the European wide learning outcomes related to BIM and energy-efficient for building life cycle processes.

The workshop “BIM skills for energy knowledge management” uses the results of BIMEET project (EU Horizon 2020 project grant agreement No 753994), which emphasizes Energy-efficiency management of buildings with the help of improved BIM skills.



**SBE19-WORKSHOP**  
WEDNESDAY MAY 22, 13.45-15.15

## BIM skills for energy knowledge management

Knowledgeable and skilled professionals are crucial to novel business processes for the digital built environment and asset management from the perspectives of energy efficiency and holistic sustainability. Construction industry and building projects has several roles and stakeholders needing to update their knowledge in changing processes. Professors, teachers and lecturers in universities and schools and within lifelong learning institutes are in key role to provide training based on competence demand.

Building information modelling offers potential benefits for the better management of key performance aspects of buildings (energy performance, low carbon footprint, indoor climate and life cycle costs), more holistic targets (spatial functionality, safety, maintainability, adaptability & flexibility and sustainability in the future) as well as lean aspects (investment cost, time, constructability, fluent collaborative process). Education and training of professionals is one of the most challenging parts of adaptation of digital tools and processes in inter-organizational change. To enable and ensure the utilization of benefits from digital processes there is a need for identification of the required competence and support the definition and creation of learning outcomes.

Required knowledge, skills and competences for the different roles in design, building and maintenance processes with relevant learning outcomes is an outcome of on-going BIMEET project, BIM-based EU-wide standardized qualification framework for achieving energy efficiency training.

Six main categories of roles were studied (Client & Clients advisors, Architectural design roles, Structural design roles, Building services design roles, Construction work roles, Maintenance work roles) in order to define the European wide learning outcomes related to BIM and energy efficient for building life cycle processes.

The workshop “BIM skills for energy knowledge management” uses the results of BIMEET project (EU Horizon 2020 project grant agreement No 753994), which emphasizes Energy efficiency management of buildings with the help of improved BIM skills. Project web site: <https://www.vtt.fi/sites/bimeet>

Action workshop and round tables will discuss and analyze following themes:

- Key learning outcomes for training and education of BIM enabled energy management for each stakeholder (six categories based on main roles)
- Common substances for competence building
- Online Energy BIM portfolio and other knowledge databases: <https://www.energy-bim.com/>

**Moderators and speakers**

Senior scientist Tarja Mäkeläinen, VTT Technical Research Centre of Finland, [tarja.makelainen@vtt.fi](mailto:tarja.makelainen@vtt.fi)

Project engineer, Maarja Laukkanen, Metropolia University of Applied Sciences, [maarja.laukkanen@metropolia.fi](mailto:maarja.laukkanen@metropolia.fi)

Project engineer, Lecturer Sunil Suwal, Metropolia University of Applied Sciences, [sunil.suwal@metropolia.fi](mailto:sunil.suwal@metropolia.fi)

Figure 9: Info sheet of the workshops on BIM Skills for energy knowledge management.

The workshop was organised as three group discussion around BIMEET S-K-C table and LO tables (Figure 10). The groups discussed following themes:

- Key learning outcomes for training and education of BIM enabled energy management for each stakeholders (six categories based on main roles)
- Common substances for competence building
- Online Energy BIM portal <https://www.energy-bim.com/>

### 2.3.2 Questions and Feedback from the group works

#### Q1 First impressions on BIMEET Learning outcome tables

- The participants were positive, some of drilled, the about the learning outcomes and praised the big effort done in BIMEET. The work was said to be a much needed work from the perspective of companies. Back in the days, anyone who had experience of BIM was taken in, today companies need skilled workforce.

#### Q2 Do you find the LOs clear and understandable? Is something missing?

All: YES. Good and generic. Nothing was noticed missing at this short period. (No time to have a closer look at Maintenance work roles. Only Construction work roles were somewhat examined.)

- The Knowledge, Skills and Competences tables was seen as direct “job descriptions” for them. “Very good job”. Wants to use right away.

- not sure if the roles picked to the LO-matrix was most optimal (site manager and construction site worker and installer). Also upper management is very important. Project manager (construction site manager ) is very critical due to its position (a glue) between back office and construction site. Also Site Engineer was mentioned as critical person in BIM implementation, as they makes all the schedules etc.
- Workers were not seen as a critical group for the LO's because resources are limited, education is an investment. Workers need to know the specs.

**Q3: Would it help if workers did understand the impact of the quality of work to the energy efficiency and sustainability?**

- For example if workers knew the importance of air-tightness and careful installation of insulation materials compared to rushed outcome. yes was given as answer , especially in the generic level.
- It would be good they workers have the big picture. For example how fitting a window or air-tightness effect the whole.

**Q4: How BIM is used at building site? What is usually the background of workers**

- construction workers are currently using their phones for browsing BIM model. The model acts like a training tool. It educates worker how buildings are build. Worker takes a picture of the job task done and can compare if it is done according to the BIM model or not. Head of the working team usually carry tablet, not everyone need to have it.
- Vocational education, but also certification by working (apprenticeship) is happening.

**Q5 Challenges**

- A lot of discussion about the difficulty to find right roles and their Learning Outcomes.
- Competence requirements by role varies by company to company and especially between countries, according to all group participants.
- Would it help if sub-roles were put aside, and there was only the umbrella role: Construction work roles. Then different parties could pick the LOs relevant in their case or institution or culture. Idea of using tables that way was taken very well.

**Q6: Do you think LOs can support planning of training and education? Do you think LOs can support continuous education in companies and learning by doing in building projects?**

- All: YES. teh whole LO tables system should implement by FISE, as modules for example.
- LOs should be made more concrete, for instance adding examples from in real- life BIM and BIM EE modelling and analysing process, and examples of models and information content

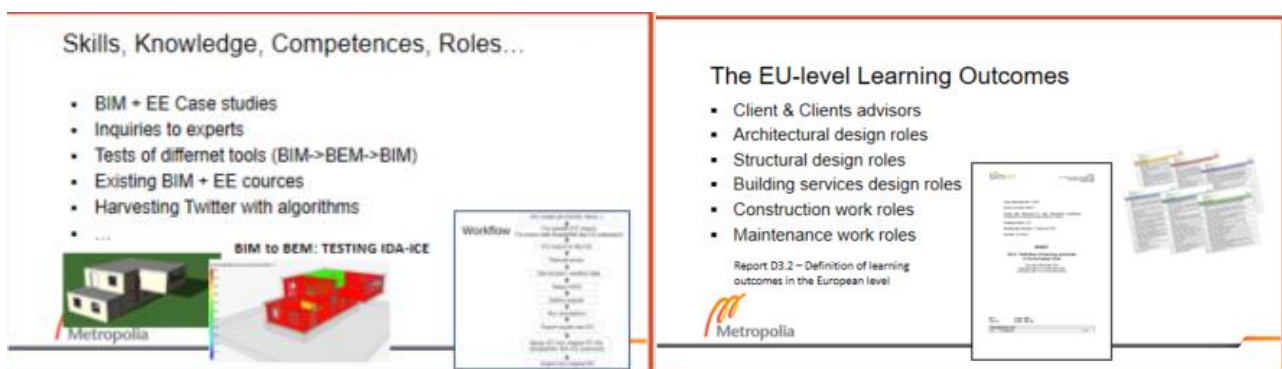


Figure 10: Workshop provided a general picture about Skills, Knowledge and Competences (S-K-C) by roles and developed Learning Outcomes (LOs).

### 3.5 Workshop 2 with External Experts Advisory Board

The second Expert panel workshop was held in November 2019, when most of the project outcomes were ready. Presentations were given by all partners of BIMEET. One of the target of the workshop was to get feedback on BIM EE eLearning schemes under development.

There were 8 Expert Panel members attending the second Expert panel organised in November 2019. As noted above, the purpose of this workshop was to validate the outputs with BIMEET, and to advise on the partners' proposals for the future direction of the project, with a focus on the BIMEET LOs, Knowledge services, BIM & EE trainings developed and ideas for a BIMEET label.



Figure 11: Presentations of the key BIMEET outcomes to expert panel members.

The meeting attendees (Expert Panel members and project partners) were split into 3 groups each with a facilitator.

- 1st Brainstorm – New use cases and BIMEET's Learning Outcomes framework

Following the presentations each group was asked to address two issues:

- a) Suggest ways in which the use cases repository could be boosted by new projects and the evidence of savings related to the integration of BIM & EE
- b) Provide feedback on the project's BIM & EE LOs and give any insight from countries' national strategies.

• 2nd Brainstorm – BIMEET label and feedback on BIM & EE training

Following the presentations each group was asked to address two issues:

- Provide feedback on the BIMEET labelling approach, including: criteria, process, tools (database, energy-bim.com portal, tangible application), owner, willingness to pay, marketplace (EU vs. national level)
- Feedback and advice on training schemes TS1 (BIM & EE basics), TS2 (BIM to EPC) and TS3 (BIM for blue collar workers), including: audience (disciplines, transversal vs. organization focused), method of delivery, content vs. country-specific needs, assessment of learners and of compliance to the label



 	
<b>4. Agenda – Workshop November 26<sup>th</sup></b> <small>Note that some minor modifications were made</small> Meeting starts at 10.00am CET	
10.00am	Meeting opening, welcome (GoToMeeting) Welcome by LIST (BIMEET Project Coordinator) Overview of BIMEET project P1
10.15am	Review of agenda (GoToMeeting) Aims of the workshop
10.20am	Introduction and presentation of each expert (GoToMeeting) Type of activity, Level of BIM maturity in expert's country Support Slide: Map / Country/institution / role / <del>What</del> focus on BIM & Energy Efficiency activities / Expectations with regards BIMEET actions
10.40am	Review of BIM & Energy Efficiency requirements and use cases (by CU) (GoToMeeting) Presentation of use cases: European projects, real construction projects Call for new use cases P2
10.55am	BIMEET Outputs presentations • Status of BIMEET training (BRE) • Defining BIMEET LOs (VTT) • Deployment and mapping of skills to national overlay (CRES) P3 P4 P5
11.30am	Comments, discussions and classification with the experts (animated by BRE) Grouped in 3 small teams, with a BIMEET facilitator • Aim: augment the use cases repository (identify new projects / Evidence of BIMEET in the savings...) – 15' • Aim: Feedback on BIMEET LOs and national strategies – 15' (Offline work for remote experts (new use cases based on BIMEET template))
12.00am	Feedbacks to the whole group by the 3 facilitators
12.30	Lunch break
01.30pm	Wrap-up and discussion (led by LIST) (GoToMeeting)
01.45pm	BIMEET Outputs presentations (#2) (GoToMeeting) • BIMEET labelling approach (CSTB) • Presentation of energy-bim.com, the BIMEET portal (CU) • Presentation of BIMEET tangible application (LIST) P6 P7 P7B
02.15pm	Towards BIM&EE Training (GoToMeeting) TS1: BIMEET Basics training scheme (INES) TS2: BIMtoEPC training scheme (Extergia) TS3: BIMEET for blue collar workers (LIST) P8 P9 P10
02.55pm	Brainstorming BIM&EE tools and training (animated by BRE)
3 groups of 6 people / one BIMEET partner moderating each group • Question 1: feedback on labelling approach o Criteria o Process o Tools o Owner o Willingness to pay o Marketplace: EU vs. <del>national level</del> • Question 2: feedback and advice on training schemes TS1, TS2, TS3 o Audience (disciplines, transversal vs. <del>country specific needs</del> ) o Method of delivery o Content / vs. country specific needs o Assessment of learners / of compliance to the label	
04.00pm	Wrap-up of group discussions
04.30pm	Conclusion (LIST)
05.00pm	Meeting closing

Figure 12: Agenda of second Expert panel meeting



Figure 13: Group work during the second Expert Panel meeting.

### 3.5.1 Outcome


Examples of new use cases suggested by the Experts were collected including those from EU and other funded research projects; specific flagship projects and examples from countries' national initiatives, schemes and programmes. In terms of the LO framework, the Panel's feedback focussed on limitations on development of BIM models, e.g. providing tailored information to stakeholders, encouraging greater collaboration, performing thermal bridge calculations and monitoring of buildings. Panel members also suggested new technical areas to extend the LO framework to including resilience and offsite construction.

The proposals for a BIMEET label generated a lot of discussion and two headline issues were raised: certification and finance. Although the intention is for a label and not formal certification, the Panel stressed the need to manage customers' expectations but also the importance of exercising due diligence to ensure the label was not diluted. A 'light touch' labelling approach was agreed to help promote e-learning courses in particular. There was also discussion around the need to develop a robust finance model where training organisations would pay to have their courses labelled and could see the value of it. This information was used in the development of the business plan for the BIMEET label.

## 3.6 BIMEET info material used in workshops

### 3.6.1 BIMEET Leaflet and Roll up

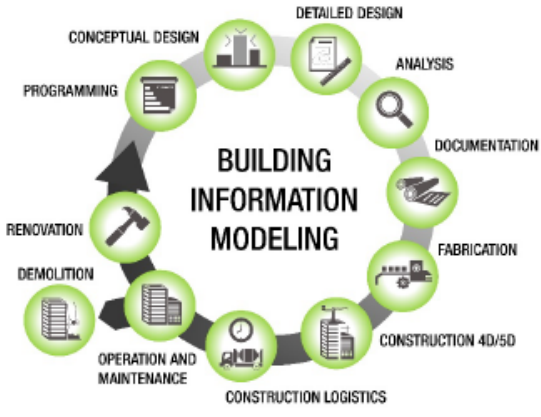
Main material used for distributing general information on BIMEET project have been the leaflet and BIMEET roll up



## BIMEET - BIM-based EU-wide Standardized Qualification Framework for achieving Energy Efficiency Training

**Opportunity to optimize energy efficiency related decisions across the entire life cycle and supply chain.**

**BIMEET** promotes Building Information Modelling (BIM) training to enhance energy efficiency of buildings. BIM is paving the way to more effective multi-disciplinary collaborations through the entire lifecycle and through the overall supply chain. As defined by buildingSMART alliance *Building Information Modeling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life cycle; defined as existing from earliest conception to demolition.*




**BIM** holds the critical key to revolutionize the construction industry, which is forecasted to reach over \$11 trillion global yearly spending by 2020. BIM is helping the sustainability agenda as the digitalisation of product and process information provides a unique

The Luxembourg Institute of Science and Technology (LIST) is coordinating **BIMEET**, new European project bringing together 9 partners around BIM technology as a key digital support for the energy efficiency of the built environment. The partners are LIST, Cardiff University, CSTB, BRE, La plateforme Formation & Évaluation de l'INES, VTT, House of Training, Metropolia University of Applied Sciences and CRES.

On 13-14 September 2017, the official launch of the **BIMEET "BIM-based EU-wide Standardized Qualification Framework for achieving Energy Efficiency Training"** project was held at the LIST. The project focuses on creation and implementation qualification and training schemes for building professionals and blue collar workers. Running for two years, this initiative brings together partners from the UK, France, Finland, Greece and Luxembourg, and numerous European experts.


**BIMEET** aims to broaden the BIM training agenda to support the European Union building energy efficiency agenda. This requires broad awareness and expertise in BIM practice across different asset types and across different roles in the industry.


The **BIMEET** consortium is drawing on 1) the engagement of internationally leading industry best practice, as well as vocational training, delivered by CPD through an established training value chain, 2) the educational excellence of leading institutions in Europe, 3) the robust experience of accrediting bodies in the construction domain, and the breadth of required industry-led research excellence.







The **BIMEET** consortium argues that this approach of engaging providers in the development and delivery of the material and standards will not only accelerate competency and adoption, but also will align the level and calibration of existing workforce and future industry professionals, thus providing a structure for lifelong development learning around BIM for energy efficiency.




Website of the project: [www.vtt.fi/sites/bimeet](http://www.vtt.fi/sites/bimeet)




 <https://twitter.com/bimeetEU>


 [www.linkedin.com/company/bimeet.eu](http://www.linkedin.com/company/bimeet.eu)

 [www.fb.me/bimeet.eu](http://www.fb.me/bimeet.eu)



BIMEET has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 753994.

Figure 14: BIMEET leaflet for general information (version 1)



[www.bimeet.eu](http://www.bimeet.eu)

**BIM-based EU-wide Standardized  
Qualification Framework for  
achieving Energy Efficiency Training**



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#### Expected results

1. Requirements and use cases for achieving EE through BIM
2. A skills matrix related to BIM and energy efficiency
3. Benchmark of existing training and schemes for developing new modules
4. A training platform contributing to widely disseminate the BIMEET results



[www.energy-bim.com](http://www.energy-bim.com)

#### Check out the BIMEET platform

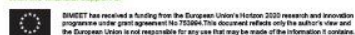
The BIMEET platform is a web-based platform that provides integrated access to BIM and EE resources:

- Use cases demonstrating the use of BIM for achieving energy efficiency
- Training modules
- Events etc.

#### Partners



#### With the financial support of



#### BIMEET in figures

Website [www.bimeet.eu](http://www.bimeet.eu)  
Duration 24 months (2017-2019)  
EU Grant EUR 1 MILLION  
Program Secure, Clean and Efficient Energy  
Call Energy Efficiency / Construction Skills

Figure 15: BIMEET roll-up.

### 3.7 Plan for further workshops

The workshops in near future are going to be virtual workshops. The workshops could be organised for members of BIMEET platform, for the existing registers users and new users to come. This could activate the Community of Knowledge. Another plan is to invite BIM EE software vendors, with their trainings about the applications, to join the platform and share training offerings. Draft for invitation in Figure 16.

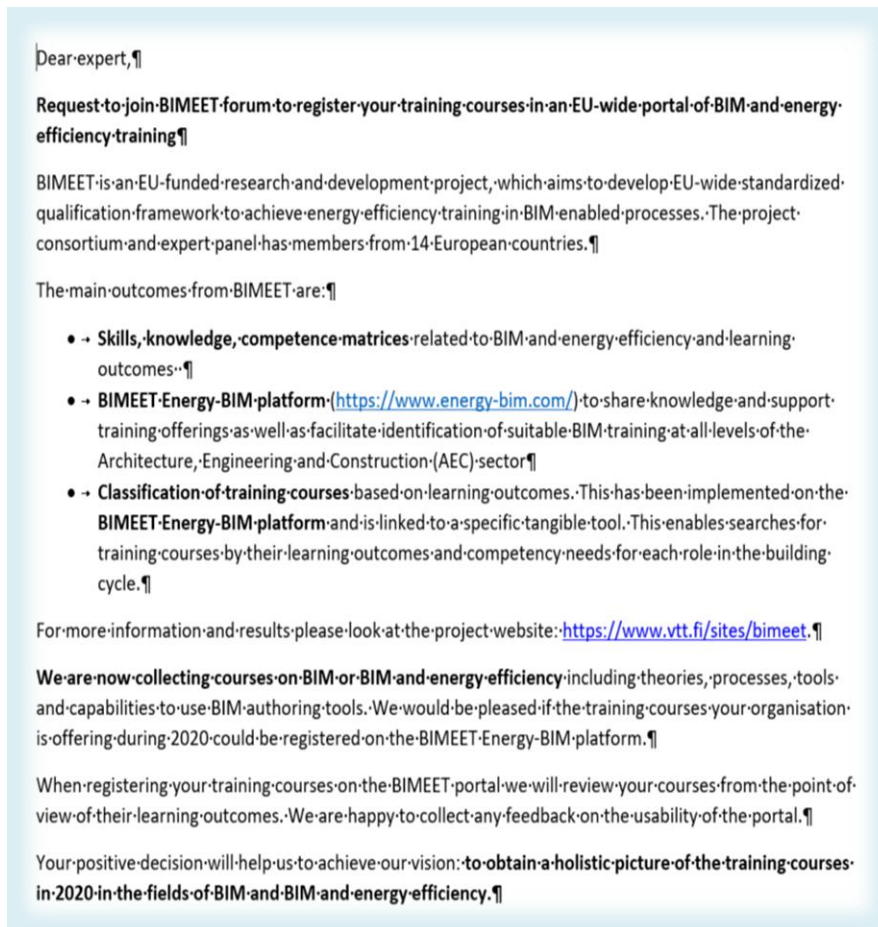


Figure 16: Draft of invitation for BIM EE software developers.