T3.3 Deployment and mapping of skills to national overlay.

Centre for Renewable Energy Sources and Saving
Training Dept
E. Mavrou – Ch. Malamatenios

BIMEET meeting, Brussels, 25-27 November 2019

CONTEXT

Purpose and content of the survey

The current status of BIM& EE related training in each country

Learning Outcomes for specific roles

E - Learning on BIM & EE

PURPOSE OF THE SURVEY

In the project, a drafting of a new BIM training model is being proposed through the identification of the desired learning outcomes (LO) for energy efficiency-oriented BIM trainings.

In order to achieve that target, the related disciplines have been identified (T3.1) and the required LOs have been registered and mapped (T3.2). In T3.3 the following are researched:

- What is the current status in the participating countries?
- Are the required LOs (as in T3.2) already covered in the existing trainings in the partners' countries?
- Are there good practices that can be duplicated in other countries, resulting to a common training model?
- Are there any specificity in the consortium's countries that should be taken under consideration before the designing and delivering of BIM (BEM) training?

PARTNERS- PARTICIPATED COUNTRIES

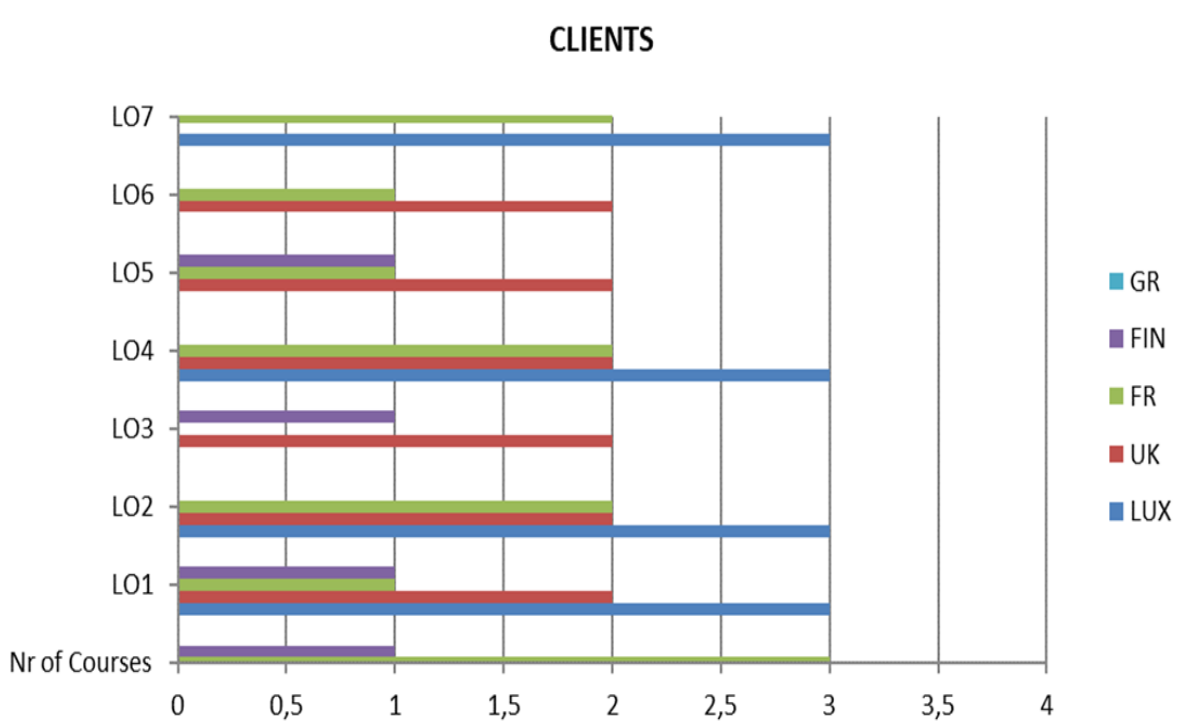
CARDIFF UNIVERSITY	**United Kingdom**
CENTRE SCIENTIFIQUE ET TECHNIQUE DU BATIMENT	**France**
BUILDING RESEARCH ESTABLISHMENT LTD	**United Kingdom**
INES PLATEFORME FORMATION & EVALUATION	**France**
Teknologian tutkimuskeskus VTT Oy	**Finland**
HOUSE OF TRAINING	**Luxembourg**
METROPOLIA AMMATTIKORKEAKOULU OY	**Finland**
CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING	**Greece**

METHODOLOGY

- **The current status of BIM& EE related training in each country**
- **The current infrastructures for training on BIM Information on the trainers**
- **Certification**
- **Trainers**
- **Learning outcomes covered for:**
  - **Clients & Clients Advisors**
  - **Architectural Design**
  - **Structural Design**
  - **Building Services Design**
  - **Construction Work**
  - **Maintenance Work**
- **E-Learning on BIM & EE**
  - **General status of e-learning courses on BIM and EE**
  - **E-learning strategy**
  - **Specific requirements for each country**
  - **E-learning platform and delivery**

METHODOLOGY

Training provider	Title of the training course/ seminar	Target Group	Duration	Methodology (in class, e-learning, blended)	Content / training modules	Type / title of the certificate	LOs covered	Level of expertise
IFSB Centre de compétences Génie Technique LIST	Le BIM Pour les Entreprises de Construction (BIM for construction companies)	Construction companies, workers, technicians, installers	*2h*	*In class, Practical works (on-site)*	Pourquoi et comment utiliser le BIM sur mes chantiers / dans mes bureaux ? Quels sont les applications qui seront utiles pour le génie technique, pour le parachèvement, pour le gros-œuvre,… ? Comment former mon personnel (chefs d'équipe, responsables de travaux, ouvriers, dessinateurs,…) ?	*NA*	*LO1, LO2, LO5, LO6,*	

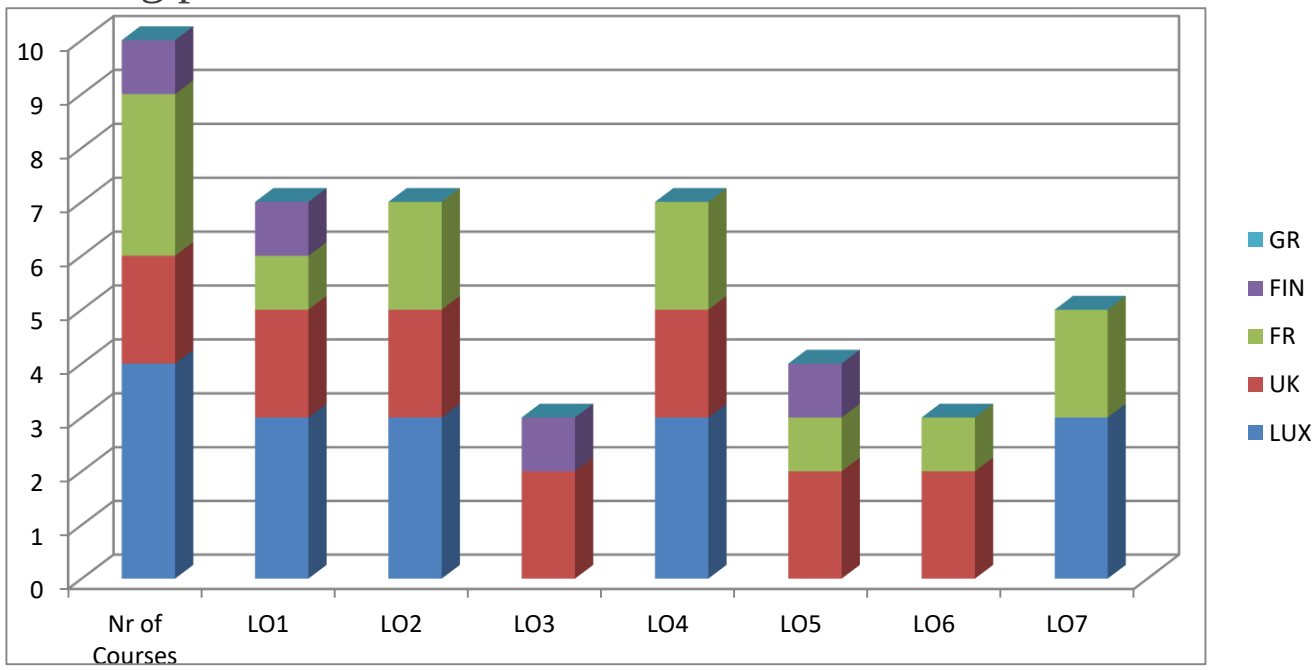


LO1 Learner is able to explain the fundamentals of BIM and the underlying principles of uses with respect to building life-cycle.

LO2 Learner is able to explain the fundamentals of sustainable and energy-efficient buildings and building performance.

LO3 Learner is able to prepare BIM execution plan and explain essential aspects in setting strategic and project targets.

LO4 Learner is able to explain about the procedures and importance of setting targets for energy, sustainability and building performance.

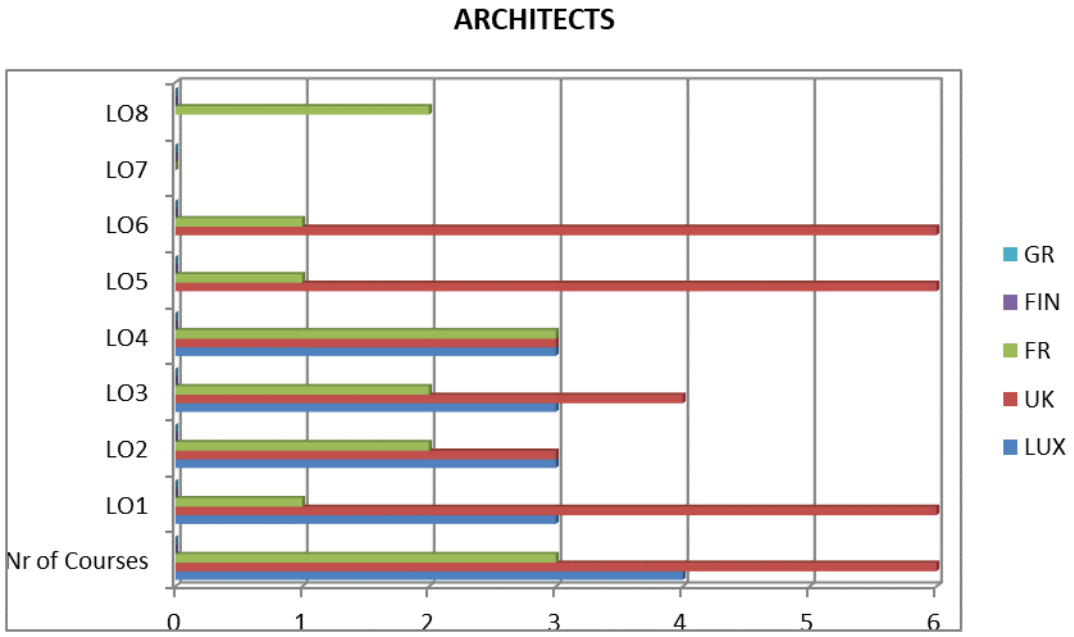


LO5 Learner is able to explain and use BIM based collaboration methods for project management and processes.

LO6 Learner is able to explain, implement and supervise quality management procedures in building project to achieve set targets.

LO7 Learner is able to use different relevant softwares and interfaces between relevant softwares.

EXTRA Specific LO on EPC at LUX



LO1 Learner is able to explain the fundamentals of BIM and the underlying principles of uses with respect to building life-cycle.

LO2 Learner is able to explain the fundamentals of sustainable and energy-efficient buildings and building performance.

LO3 Learner is able to lead design process and support the client and other stakeholders in decision making

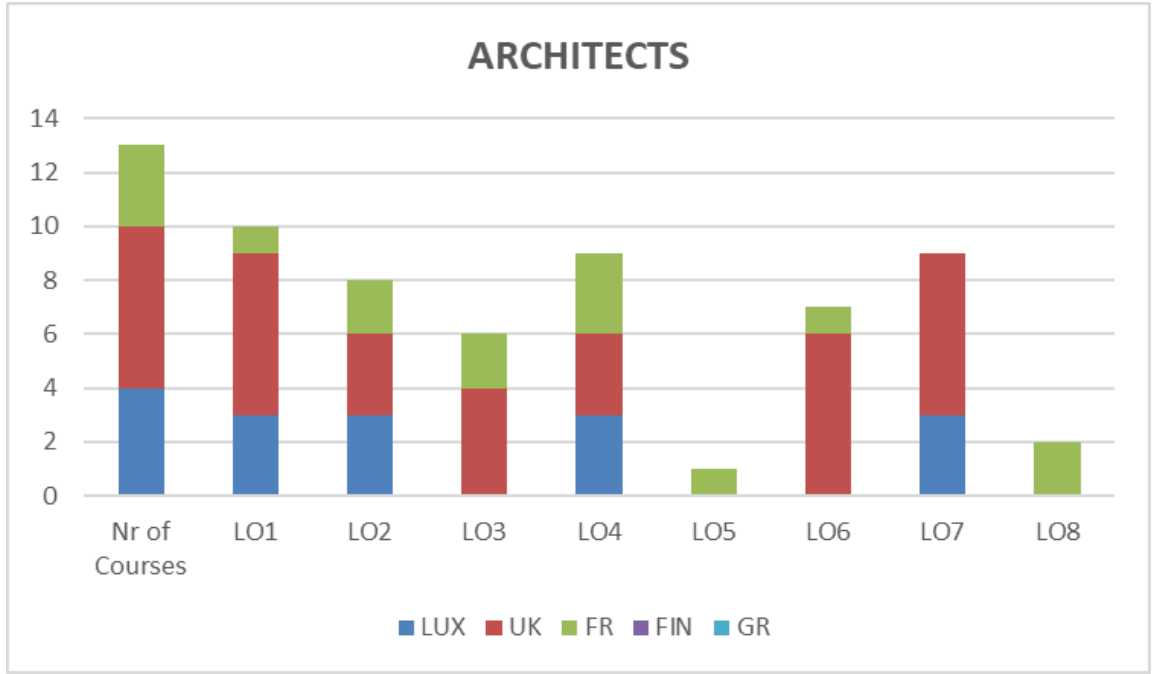
LO4 Learner is able to implement energy performance, building performance and sustainability targets into design process.

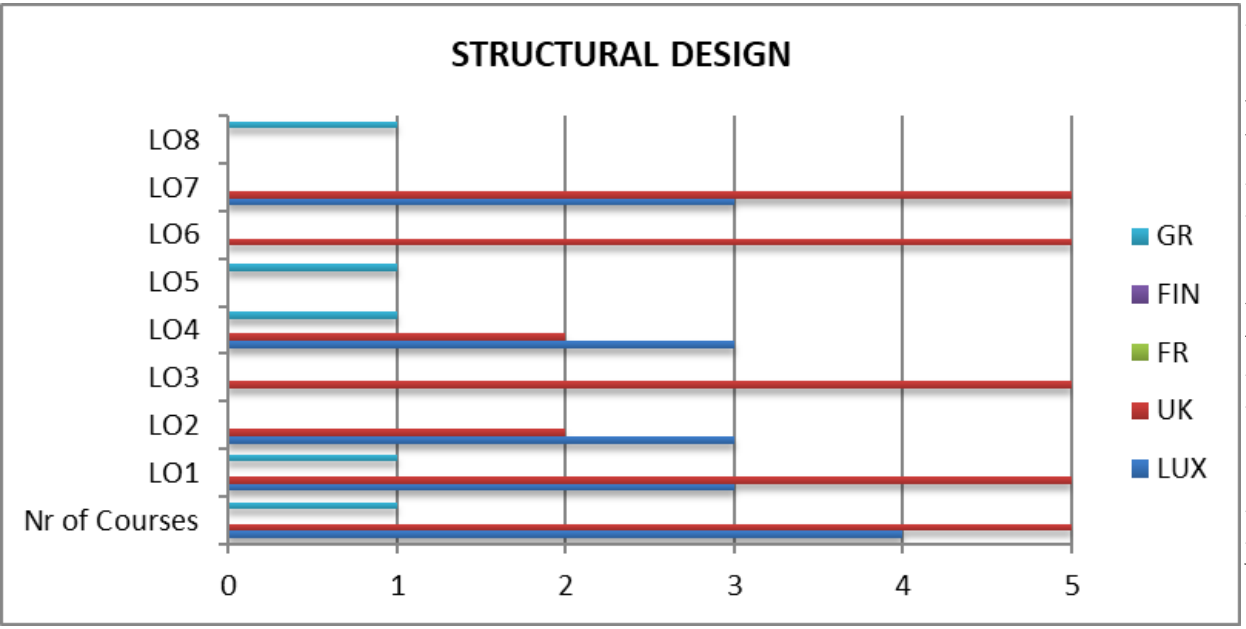
LO5 Learner is able to produce BIM models with accurate and required information content for different uses and phases of a building project.

LO6 Learner is able collaborate and use collaborative approaches to support communication and visualization.

LO7 Learner is able to explain and give examples about implementing target and quality management procedures in the building project.

LO8 Learner is able to use different relevant softwares and interfaces between relevant softwares





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LO3 Learner is able to lead structural design team and support the client and other stakeholders in decision making.

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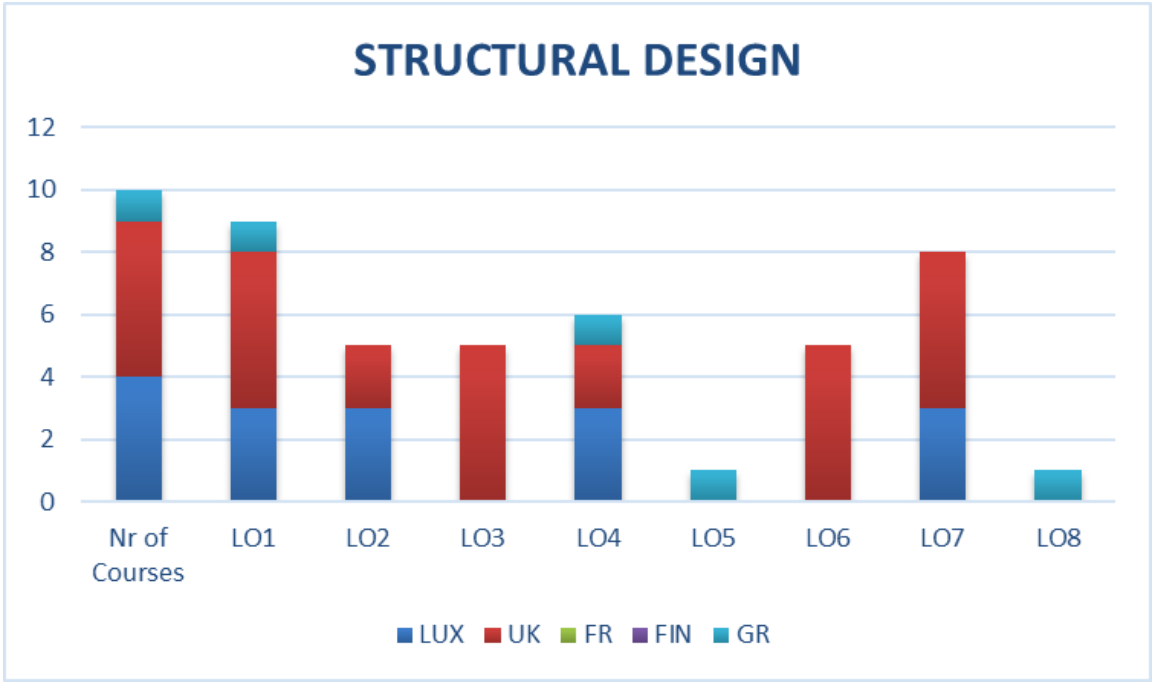

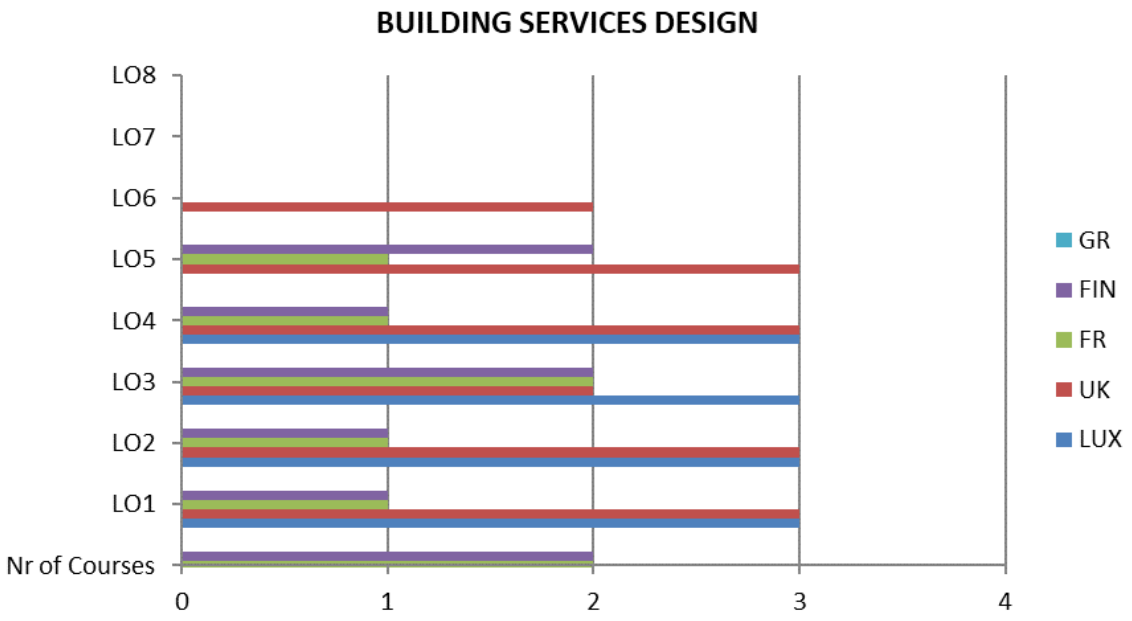

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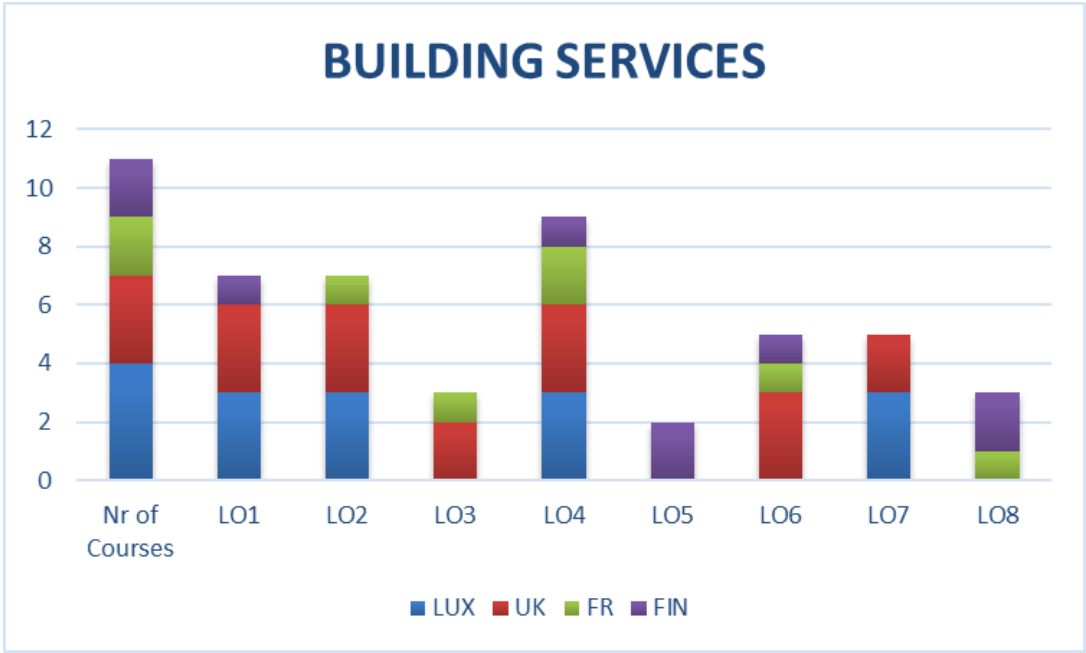

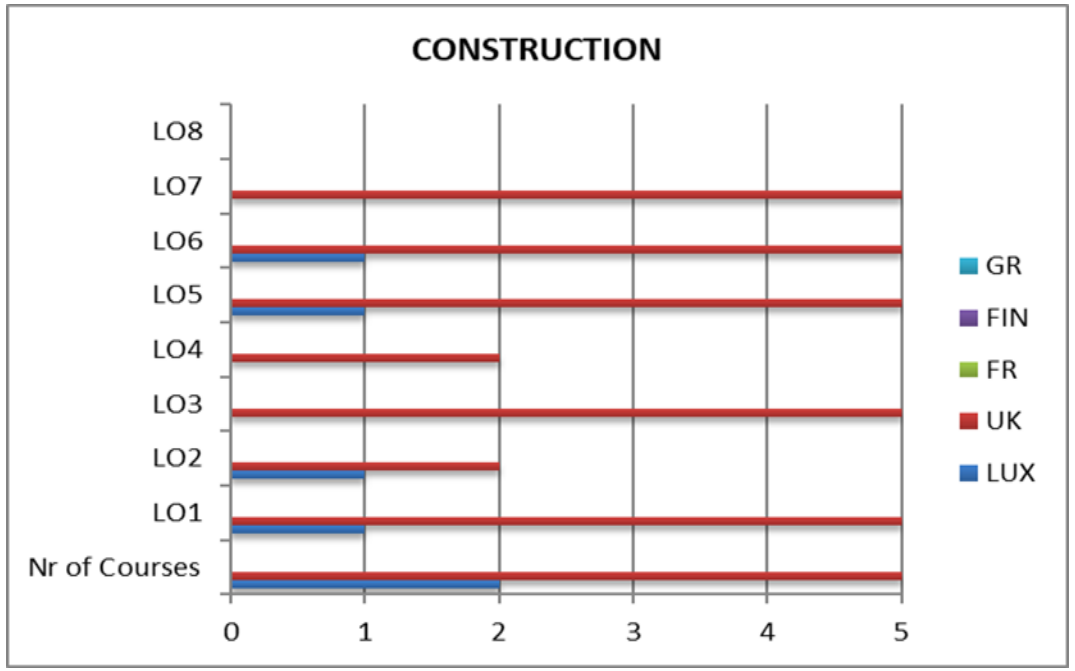

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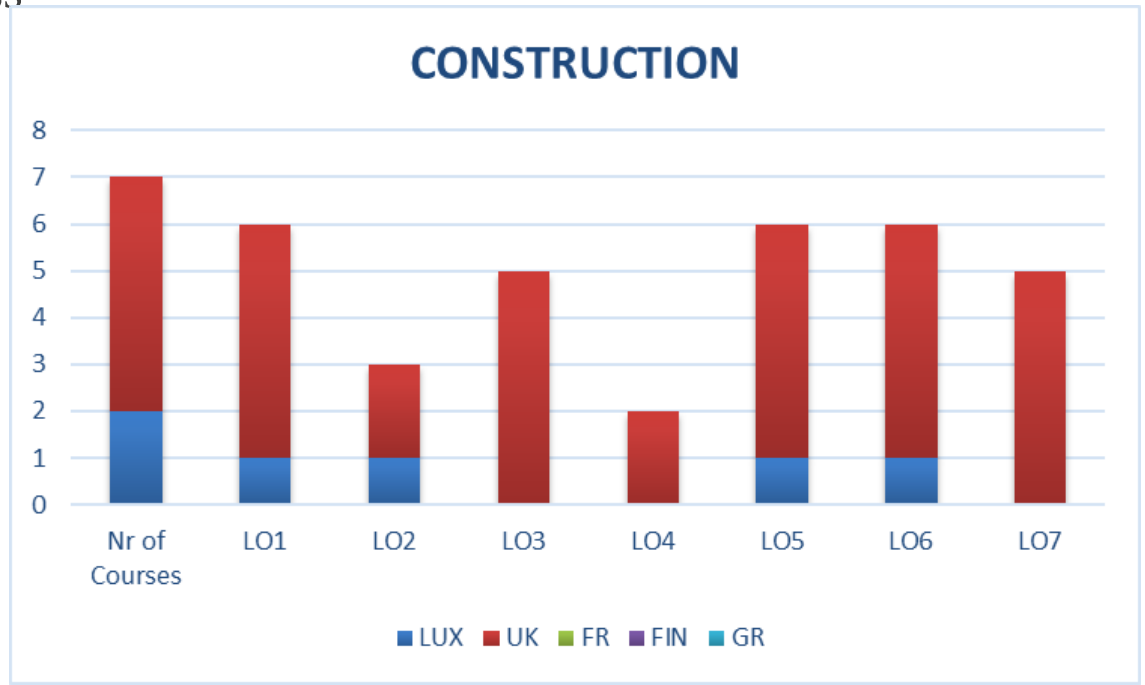

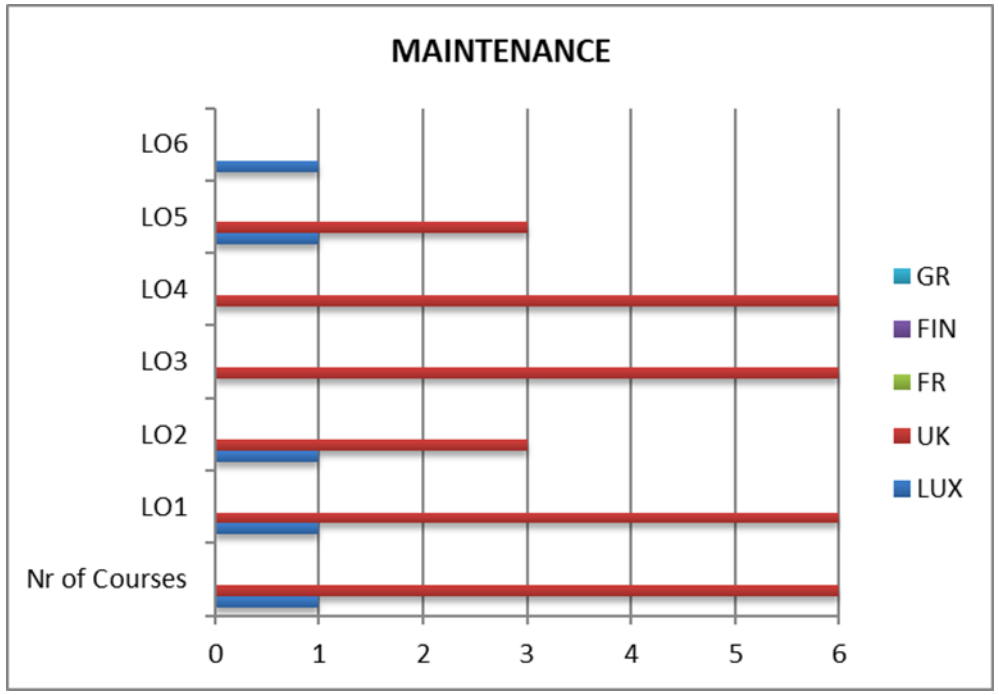

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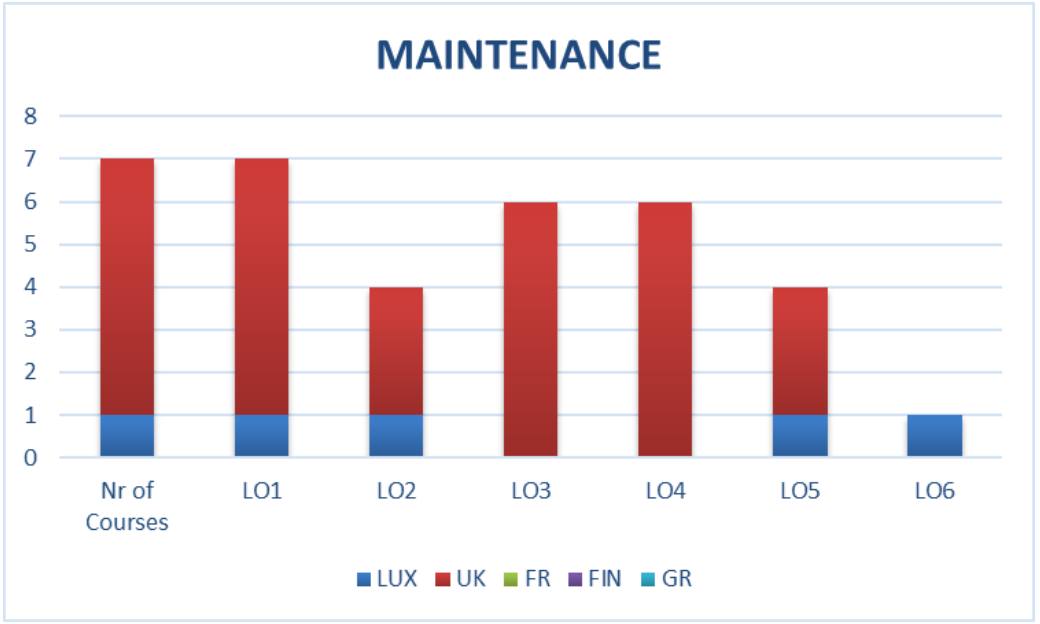

E-Learning on BIM & EE

General status of e-learning courses on BIM and EE

In none of the consortium's country are e-learning courses delivered in relation with construction / energy efficient buildings so far. In all consortium countries there are e-learning courses, and in the UK and Finland in BIM as well, but there is not on BIM & EE. In France a relative course is being prepared.

eksergia.fi – an open web school of energy efficient buildings that provides different education materials focusing towards energy efficient buildings. The filtering of the portal with BIM keyword shows the current focus of eksergia.fi with following themes marked to be developed in near future:
BIM benefits for energy efficient projects;
BIM basics;
Setting out of energy targets;
Energy targets and its fulfilment during the project;
Performance based building design process;
BIM benefits for building performance analysis;
BIM in energy efficient operation;
BIM benefits in energy renovation

E-Learning on BIM & EE

E-learning strategy

House of Training in Luxembourg has started offering e-learning content in other domain, with construction also considered. In relation with BIM and energy efficiency, fundamental knowledge on BIM (History, Standards, Status of implementation in EU, National regulations, Local maturity of stakeholders), as well as the basics of building energy engineering are two topics that may be covered by e-learning content that would be delivered prior to actual BIM/EE training sessions.

The House of Training (HoT) wishes to offer online training to enrich learning, upgrade knowledge before joining a face-to-face training course, complete a short face-to-face training course or even substitute part of a face-to-face training course to allow more room for exchange and practical application.

The main objective of HoT is to offer individualized and personalized blended-learning training courses. As the rise in learners' skills and their employability are at the heart of HoT's concerns, the training offer must meet the needs and expectations of the field and the Luxembourg market.
In addition, the freedom of a consumption mode adapted to the rhythm of each individual and at a distance must be coupled with the interactivity of the classroom.

E-Learning on BIM & EE

E-learning strategy

The House of Training has teamed up with a renowned partner in the world of digital learning, namely FUN-MOOC, operator of the FUN platform (France Université Numérique) in France. With more than 100 partners in France and around the world, including higher education institutions, sectoral training institutions and French public institutions, FUN is the largest French-speaking e-learning platform and is now enjoying growing success, already approaching 4 million registrations.

In addition, the House of Training also works closely with Digital University to meet the demand for tailor-made digital learning courses.

The training courses are referenced on the website of the House of Training, which also operates the LOOC.lu platform (Luxembourg Open Online Courses)

All the educational organizations have their own e-learning strategies in Finland and support lifelong learning principles and activities. Inclusive e-learning in higher education is promoted and supported by the government.

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PURPOSE OF THE SURVEY

- ✓ What is the current status in the participating countries
- ✓ The required LOs (as in T3.2) are not totally already covered in the existing trainings in the partners' countries.
- Are there good practices that can be duplicated in other countries, resulting to a common training model?
- Are there any specificity in the consortium's countries that should be taken under consideration before the designing and delivering of BIM (BEM) training?

Comments- further input