

DOCUMENTATION FROM INTERNATIONAL WORKSHOP

D5.3

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BUILD UP Skills SWEBUILD
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1. INTRODUCTION

During the 15th to 16th of September 2015, representatives from BUILD UP Skills pillar II projects in Finland, Ireland and Sweden met in Stockholm to discuss project methodology and exchange experiences. The meeting was very successful, many lessons were learned and it was decided that the exchange of experience should continue.

During the BUS exchange meetings in Brussels and Athens the Dutch and the Swedish BUS-projects discussed similarities and decided to plan a further exchange meetings. On the 1th to 2th of February 2017, representatives from BUILD UP Skills pillar II projects in Sweden and the Netherlands met in Amersfoort and Dordrecht to exchange experiences with a focus on discussing challenges and success factors linked to the large-scale roll outs. The meeting also included fruitful study visits to the training locations.

2. DOCUMENTATION FROM MEETING IN SWEDEN 15-16 SEPTEMBER

2.1 Agenda 15-16 September 2015

15 September

1. Presentation of participants
2. Presentation of BEEP, BUILD UP Skills Finland – *Harri Heinaro*
3. Presentation of Qualibuild, BUILD UP Skills Ireland – *Flitan O'Hora*
4. Presentation of SWEBUILD, BUILD UP Skills Sweden – *Åsa Douhan and Eva Pedersen*

16 September

1. Presentation of Swedish ID06 and competence data base – *Peter Andersson*
2. Presentation of the interactive Energibyggare campaign – SWEBUILD – *Per-Johan Wijk and Åsa Douhan*
3. Summing up

2.2 Participants 15-16 September 2015

15 September

- Fintan O'Hora, Limerick Institute of Technology
- Harri Heinaro, Motiva
- Eva Pedersen, Passivhuscenter (Passive house centre)
- Per-Johan Wik, Energikontoret Skåne (Energy Agencies of Sweden)
- Nils Karlsson, Elbranschens Utvecklings- och Utbildningscenter (Association of Swedish Electrical Contractors)
- Åsa Douhan, Sveriges Byggindustrier (Swedish Construction Federation)

16 September

- Fintan O'Hora, Limerick Institute of Technology
- Harri Heinaro, Motiva
- Eva Pedersen, Passivhuscenter (Passive house centre)

- Per-Johan Wik, Energikontoret Skåne (Energy Agencies of Sweden)
- Nils Karlsson, Elbranschens Utvecklings- och Utbildningscenter (Association of Swedish Electrical Contractors)
- Åsa Douhan, Sveriges Byggindustrier (Swedish Construction Federation)
- Robert af Wetterstedt, WSP
- Kia Hultin, WSP
- Peter Andersson, Sveriges Byggindustrier (Swedish Construction Federation)

2.3 Notes from the presentations 15-16 September

Location: WSP Sverige AB, Arenavägen 7, Stockholm

Presentation of BEEP, BUILD UP Skills Finland (presentation attached)

Build Up skills BEEP, Finland 1/10 2013 to 31/3 2016 (presentation attached)

The project aims at increase the skills of constructions workers and improve energy efficiency in buildings. Project website is: <http://www.motiva.fi/buildupskillsfinland>

There are three partners in the project:

- Motiva Services
- Tampere University of Technology
- TTS Work Efficiency Institute

The project contains 7 work packages.

There is a broad reference group containing for example ministries, bound to the project.

Insufficient skills on key issues

- Structural physics, airtightness, heat insulation, moisture control

There is a big problem with attitudes and old mistakes. Earlier, in the 70s and 80s, airtightness meant moisture problems. This is today still true for many craftsmen in Finland.

There are communication problems between craftsmen at the building site, meaning there will be faults since one doesn't know what the other is doing.

The learning material contains:

-
- A textbook in Finnish
 - A multilingual material package in FI, EN EE, SE, RU languages:
 - o Training package of PPT slides, 10 themes, altogether 238 slides that are designed to be used in educational use
 - Instruction manual cards:
 - o 10 thematic cards for craftsmen with 12 descriptive illustrations
 - o For professionals but also for do-it-yourself builders
 - o For use at the building sites
 - Educational videos – 7 silent short films (altogether 30 minutes) with subtitles in FI, EN EE, SE, RU languages:
 1. Introduction, planning of renovation
 2. Ventilation
 3. Insulation
 4. Air heat pump
 5. Adjustment of hybrid system
 6. Energy efficiency tips
 7. Monitoring

All material is published through Finnish BUILD UP Skills internet site and can be used free of charge for any private person.

There are two training schemes:

Teacher training themes

- Pilot trainings, two separate two day training sessions for the trainers, new training methods applied, 20-25 pilot trainers are educated each time. Many of the pilot trainers are teachers and will educate pupils at their schools. No certain criteria for the trainers have been established. The training will also include information about new regulations and nZEB.
- One session for discussion will follow afterwards

On-site training

- Experienced , trusted workers will be educated to “Change Agents”
- The educated workers/Change Agents should then train the others workers in classroom training and hands-on training
- It has been difficult to get experienced and trusted workers to apply for pilot training to become Change Agents

One pilot on-site training has been done. At this occasion a bit too many “higher level people” participated, instead of blue collar workers. This needs to be changed in the second pilot in October 2015.

The BEEP project has an on-site Training Ambassador, Risto Tenhunen

He is a motivator and messenger towards:

- Construction companies
- Workforce
- Stakeholder network

Risto gives a face to the BUILD UP Skills training scheme

Lessons learned so far:

- Filter essence from volume of information
- Theory is the basis – discussion on practical construction is essential
- The training material is a toolkit – use it in a personal way
- Pedagogical methods needs to be modernised
- Workers prefer descriptive materials, not too much text
- BUILD UP Skills scheme and awareness should be integrated in quality and human resource management
- LESS IS MORE

Presentation of Qualibuild, BUILD UP Skills Ireland (presentation attached)

The homepage for the Qualibuild project is: <http://www.qualibuild.ie/>

Partnership contains of five organisations:

- Limerick Institute (coordinator)
- Institute of Technology Blanchardstown
- Dublin Institute of Technology
- Irish Green Building Council
- Construction Industry Federation

There are 70 000 construction workers in Ireland. About 60 000 need to be upskilled

The BUS1 roadmap identified the knowledge gap. Qualibuild is geared to upskill the construction workers. The project has a partnership approach and building sector participate. A real impact from a national roll-out of the education campaign is needed.

The project has a train the trainers concept and a communication concept to create and implement an innovative communication campaign focused on Quality Building via events, SM, website and media.

Another key objective is to develop and implement a Quality Building Registration System and a CPD programme nationally.

Finance and sustainability – Mobilise €1m additional funding by the project end. Transfer project outcomes to relevant agencies for National Roll Out. A main objective is to get the project to continue after EU project time frame.

The project have 8 work packages.

The idea is to introduce Short Foundation Energy Training (FES) for all Building Construction workers:

- Review apprentice curricula for construction crafts to incorporate knowledge and new skills related to low energy buildings.
- Develop specialist training for each relevant craft
- Develop specialist training for arising technician roles
- Review, update and develop if needed new programmes for construction managers and site supervisors that will equip them with the necessary skills to manage

And to train the trainers:

- Train 100 pilot trainers in 4 modules
 - Building for Energy Performance
 - Building Fabric
 - Building Services
 - Pedagogical Approach

First phase of training of trainers, 48 trainers attended the course and 25 passed. Objective is 100 trained trainers. The attendees where former craftsmen that now are in the training business. Each module has a handbook for about 150 pages for the trainers.

The course is performed in 4 occasions, each module will take a 2-day education, which means a total length of 8 days of education for the trainers.

3 Modules (not pedagogical approach) will be used for the craftsmen, who receive a summary handbook for those modules. There are different "time-options" for craftsmen to take the course, for example two days and a demo day or five evenings and a demo day.

There are three movies for the construction workers.

One education method is to give the participants an issue to solve and then the different suggestions are discussed and verified in the whole group.

There is a manual for the trainers for the FES. The manual is given to the trainer when he/she is ready to teach. There is also a learner handbook for the craftsmen, approximately 150 pages. The handbook includes a summary from the 3 technical modules from the trainer's material. The Learner handbook is in a simplified language.

The training material for FES will also be accessible at FAS, a school for elderly apprentice.

A variety of real training models that could be used at actual construction sites have been made.

Communication objective is to reach out to more than 10000 people.

Registration System:

A model for Individual registration of building construction workers is wanted. There are already existing systems but it is not compatible with acknowledging educations developed in Qualibuild. It cannot be an expensive system. Existing system is for example 600€, 100€ would be ok.

Difficulties:

- Difficulties in developing an effective training program for the target group
- Some difficulties in achieving accreditation
- Some difficulties in recruitment of course participants
- Complications of integrating the registration system with existing systems
- Difficulty in identifying the mechanisms and systems for sustainability

Presentation of SWEBUILD, BUILD UP Skills Sweden (presentation attached)

SWEBUILD has 9 partner organisations:

- Energy Agencies of Sweden (coordinator)
- Swedish Construction Federation
- Swedish Association of Plumbing and HVAC Contractors,
- Association of Swedish Electrical Contractors
- Technological Institute Sweden
- Technical Research Institute of Sweden, SP
- WSP Sverige
- Passive House Centre,
- NCC AB

Main objective for SWEBUILD is to educate 500 trainers (instructors) that in turn will educate 18 000 craftsmen to 2017 and 100 000 craftsmen to 2020.

The SWEBUILD project has decided to go for an all web based education with the 500 trainers be educated to be instructors for colleagues and craftsmen to be educated. The SWEBUILD project has chosen a name for the education campaign, Energibyggare (Energy builders), that will have a national role out. The home page for the SWEBUILD project is: www.energibyggare.se We will try 4 of 7 learning modules at pilot sites during autumn 2015. The plan is to start the full-developed education in spring 2016.

The project contains of seven work packages.

Åsa Douhan, Swedish Construction Federation, presented the work with awareness raising and the action-plan for implementation of large-scale on-site vocational training:

- Analyses about expectations of already gained experiences regarding training for energy efficient building techniques.
- Awareness raising – organisations and members.
- Development of structures for the establishment of life long learning.
- Prepare and support the implementation of life long learning.

Eva Pedersen, Passive house centre, presented development of training courses and training materials:

- Analyses of existing training material, for example Bygga-Bo-Dialogen, Passive house builders- Energy efficient buildings
- Development of course design and curricula for on-site training based on learning objectives and from experience made in previous courses
- The course design for the on-site training combines different methods for learning:
 - Video clip
 - Traditional lecture presentation
 - Animation
 - Practical exercises
- An important objective based on previous experience of training courses: to develop an easy and intuitive training material
- Training material is web-based and all training is carried out online
- Training activities are self-explanatory as the trainer will act as a guide more than a teacher
- Training-of trainers: the training material also includes pedagogical advices and instructions
- Group discussions are recommended
- Practical exercises will be optional
- Procedures for updating the training material and training course design remains to form
- Develop structure of feedback from performed training courses remains to form

Presentation Swedish ID06 and competence data base (presentation attached)

Peter Andersson, Swedish Construction Federation, did during 40 minutes in a very thorough way present the Swedish ID06 and competence data base system. Best way to summarise the subject is to look at Peters presentation. Finland and Ireland had several questions that Peter answered.

Presentation of the interactive Energibyggar campaign – SWEBUILD

Per-Johan Wik, Energy Agencies of Sweden, presented the features of the www.energibyggar.se homepage.

Åsa Douhan, Swedish Construction Federation, presented some of the interactive learning modules in the Energibyggar education campaign.

Summing up questions

After two days pact with information and discussions, the participants had a summing up discussion about:

Awareness-raising among construction clients and contractors:

Finland – Risto is the ambassador and he has a great impact. We use newsletters and have a big database for contacting right persons. We produce articles in magazines. We had a seminar last year where a leading building physics person participated, which was very successful and appreciated.

Sweden – We focus on right level communication with the right contacts. The communication need be organised in the right way with a top down perspective. Using the builders and installer's local organisations, channels and member organisation we reach many in the target group. Maybe we could use XL-bygg as another channel?

Ireland – We are targeting the construction worker directly by email and have a great data base. We use leaflets that we drop in strategic places. We organise breakfast meetings and are developing an e-book – if an email address is picked up, it will be registered in an e-book to widen our register.

How to best recruit on-site training ambassadors:

In Finland so far it has been hard to recruit training ambassadors but we continue the work.

Since the training length differs in the projects between 8 days to 4 hours, recruit training ambassadors also differs a lot.

In Sweden the bosses in the Construction Federation and people working in strategic places in the partner organisations are the ambassadors. Pretty much the same in Ireland. Ireland has used a photo competition to gain extra interest. Ireland will organise a conference for BUS members pretty soon which we hope could gain extra interest.

Evaluation of training concept:

Ireland has a ready survey for the construction workers. A self-judgement survey. To complete the survey a percentage mark is attached.

Finland evaluate how many pupils that will be trained. Have had a short survey with 6 question.

Sweden, both quantity and quality is needed and we are currently developing an evaluation strategy for the pilot cases.

3. DOCUMENTATION FROM MEETING IN THE NETHERLANDS 1-2 FEBRUARY

3.1 Agenda 1-2 February 2017

1 February

11:30 – 12:30 Welcome and lunch at the Building Campus in Amersfoort

12:30 – 13:00 Presentation of the Building Campus

13:00 – 14:30 Presentations of the Swedish and Dutch BUS projects

- Introduction
- Training material and methods
- The consortium
- Success factors and challenges
- Future

14:30 – 15:00 Short break

15:00 – 17:00 Exchange of experiences with online training and related business models to stimulate demand: how do the two projects attract builders and installers to training, what is done with incentives and marketing?

17:00 – 17:30 Transport to accommodation

18:30 – 20:30 Complimentary dinner

2 February

9:00 – 10:00 Transport to the Sustainability Factory in Dordrecht

10:00 – 10:15 Welcome by the director

10:15 – 11:30 Presentation and demonstrations in the Sustainability Factory

11:30 – 12:30 Exchange of Experiences: what is done by both projects for the verification of knowledge – what are the possibilities of training locations?

12:30 – 13:15 Lunch

13:15 – 14:30 Exchange of Experiences: working with the Business Model Canvas to address the key customer relationships, channels and value proposition for successful upscaling

14:30 – 15.00 Wrap up

15:00 – 16:00 Transport to Amsterdam Airport

3.2 Participants 1-2 February 2017

1 February 2017

- Pim van de Veerdonk, Kenteq
- Marcel Wiggers, MBO-Raad ROC van Twente
- Dorien Butter-de Wit, MBO-Raad ROC Midden Nederland
- Rob de Vrind, MBO-Raad Koning Willem I College
- Peter Smulders, OTIB
- Theo Ockhuijsen, OTIB
- Perica Savanovic, SBRCURnet
- Liesbeth Boef, OTIB
- Nils Karlsson, EUU
- Per-Johan Wik, Skåne Energy Agency

2 February 2017

- Pim van de Veerdonk, Kenteq
- Jan Cromwijk, ISSO
- Perica Savanovic, SBRCURnet
- Nils Karlsson, EUU
- Per-Johan Wik, Skåne Energy Agency
- Rein Meester, Sustainability Factory

3.3 Notes from the presentations 1-2 February 2017

Day 1 – location: Building Campus in Amersfoort

Presentations of the Dutch BUS project (presentation attached)

Peter Smulders presented the Dutch BUS project.

Guided tour Building Campus in Nieuwegein

Dorien Butter-de Wit gave us a guided tour in different building technologies class rooms at campus in Nieuwegein and letting us talk with students in different work sectors.



Picture: Guided tour Building Campus Nieuwegein

Presentation of the Swedish BUS project (presentation attached)

Per-Johan Wik presented the Swedish BUS project SWEBUILD (Energibyggar).

Presentation and discussion of integration of females in the construction sector

A female student at Building Campus in Nieuwegein presented a survey done about why females do not stay on their education in the construction sector at Building Campus in Nieuwegein.

Today girls come to study construction and civil engineering at the building campus. This is good, since a few years back this was not the case. But one problem is that many females quit the education before exam. One conclusion from the survey was that teachers treated female students differently, in an exclusive manner not letting them work as expected. Female students don't want to be treated differently but want to be part of the group as male students. More female teachers in the construction education programs might be a solution and a step in the right direction.

Day 2 – location Dordrecht



Picture: Sustainability Factory, Dordrecht

Presentation of Sustainability Factory in Dordrecht (presentation attached)

In Dordrecht, a very interesting learning concept has been implemented called the Sustainability Factory. Very brief, it is a collaboration between industry, education sector and the local/regional government in Dordrecht where these actors work together in symbiosis for providing sustainable education focusing on energy and technology. The concept is very interesting and has great potential to inspire other regions in Europe to start similar collaboration and training concepts.

Rein Meester, director, presented the Sustainability Factory.

Exchange of experience of both projects

We discussed:

- How to maintain the website and the app of our educations after EC funding end. Conclusion: SWEBUILD is working with partner trade organisations and the national Swedish Energy Agency to secure future funding and management of the website and education. Dutch BUS project is looking into different business models on how to secure funding for future management of the app and education.
- How to get trainers (instructors) to train the target group after education by project? Conclusion: Both SWEBUILD and the Dutch BUS project have experienced the same problem to get, by the project educated, trainers in their turn to educate craftsmen or students. There was no other conclusion made other that we need to keep up the work to communicate with the trainers not to forget to educate craftsmen.
- Does a craftsman or a student need to undertake all modules in our respective education to become an approved educated craftsman? Conclusion: In this aspect, the projects have different approaches. In the Dutch BUS project the craftsman can choose from several different modules and he/she will be approved for the module in question. In the SWEBUILD project, the idea is that the craftsman undertakes all six modules to become an approved “Energibygare”. SWEBUILD put a lot of emphasis on cross-craft understanding, which the Dutch project thought was good thing but it might be a restriction that one cannot undertake only one or two modules of interest. One suggestion from the Dutch was to develop “an approved stamp” for each module so it still could be visible even if a craftsman only have one or two modules approved. Compared to the SWEBUILD education the Dutch education is more advanced and detailed and you can get approved for certain modules only but the Dutch liked the Swedish idea with emphasis on cross-craft understanding where every craftsman needs to undergo every module, also the ones he/she normally do not work with. It is a challenge to combine both aspects of individual choice and cross-craft understanding.
- Is it possible to use the training for the purpose to verify the knowledge of immigrants that have a profession in the building or installation sector? Conclusion: Yes, both educations certainly contain theoretical features appropriate for this purpose but it needs to be tested and investigated further. When it comes to practical training both projects believed they probably not were detailed enough for this verification purpose.

Presenting the app of the Dutch BUS project and business model (presentation attached)

Jan Cromwijk presented how the app works.

We discussed the Dutch business model and the possibilities to use/implement the app in Sweden. Conclusion: Further discussions are needed between the future management of the Energibyggare education and the Dutch BUS project.

4 LIST OF ATTACHED PRESENTATIONS

2015 09 15 BEEP BUILD UP Skills Finland.pdf

2015 09 15 Qualibuild BUILD UP Skills Ireland.pdf

2015 09 15 SWEBUILD BUILD UP Skills Sweden.pdf

2015 09 16 Swedish ID06 and competence data base.pdf

2017 02 01 Swedish BUS project.pdf

2017 02 01 The Dutch BUS projet.pdf

2017 02 02 Sustainability Factory in Dordrecht.pdf

2017 02 02 The app of the Dutch BUS projett and business model.pdf