

Report

Event	1st Train the Trainers event
Project	"From Estonia till Croatia: Intelligent Energy saving measures for municipal housing in Central and Eastern European Countries"(INTENSE)
Time and place	March 23 - 25, 2010, Tallinn, Estonia
Reporter	Sandra Oisalu (Baltic Environmental Forum Estonia)

This report equals to Deliverable 5.4.

Training background and objectives

The 1st Train the Trainers event was organized by Baltic Environmental Forum Estonia in cooperation with German experts from "e.u.z" and "Auraplan" in the frame of the project "From Estonia till Croatia: Intelligent Energy Saving Measures for Municipal housing in Central and Eastern European Countries (INTENSE)", which is financed by Intelligent Energy – Europe program. 28 partners - multiplier organizations, municipalities and project experts, carry out the project in 11 Central and Easter European countries and in Germany. The main objective of the project is to influence building developments at legislative, technical, planning and consumer behavior level.

The training was implemented as a part of the INTENSE work package – Stakeholders' Training Program. The goal of the work package is to train those stakeholder groups who are responsible for implementing the concept or parts of it developed in INTENSE work package related to holistic planning of housing for energy optimized municipalities. This does not only involve the immediate decision-makers on municipal level, but also the executing stakeholders, such as architects, engineers or craftsmen who will need to implement specific measures at site.

In frame of the work package a training program for stakeholders will be elaborated. The training program includes following modules.

1. Legislation
2. Quality control
3. Settlement planning (orientation, density, mixed land use)
4. Energy carriers (efficient techniques, renewable energy sources)
5. Building physics (thermal bridges, diffusion, airflow through leakages, air tightness, inside insulation)
6. Construction elements (windows, walls, roofs,, eco materials, retrofitting)
7. Systems engineering (heating, cooling, ventilation)
8. Design principles (compactness, organization of floor plan, structure)
9. Cost-benefit assessment
10. Best practices

In order to familiarize future national trainers – subcontracted training institutions (for technical modules) and country coordinating organisations (for "soft" modules) from target countries - with the INTENSE training program topics and give input to following national trainings in target countries two Train the Trainers events will be carried out in order to discuss topic to be addressed with the training program.

Objective of the training program is to find out and present to the target groups specific issues about new buildings and refurbishment under the focus of current and prospective standards of the EU and national requirements in an holistic way. Main target groups of the training program are engineers, architects and craftsmen.

Objective of the 1st Train the Trainers event was to have discussions among the future trainers related to training program modules legislation, quality control, building physics and construction elements and come to an agreement of most relevant issues of each topic from the viewpoint of energy efficiency.

On the seminar were participating 34 people including representatives from subcontracted training intuitions and INTENSE country coordinating organizations 11 countries and German experts as trainers.

Proceedings

Ingrida Bremere from Baltic Environmental Forum Latvia opened the 1st Train the Trainers event by welcoming all participants and initiating an introductory round among training participants. Following Ms. Bremere as the project manager of INTENSE gave a short overview of the INTENSE project – aims, consortium and activities.

Sandra Oisalu from Baltic Environmental Forum Estonia as the lead of the work package – Stakeholders’ Training Program - presented the work package – its goal and main actions. In more detail she talked about the training program, training modules and future trainings.

Philipp Engewald from Baltic Environmental Forum Germany aimed to get participants thinking about training needs by introducing briefly some interesting results of the background paper “Increasing the knowledge on energy efficiency issues of construction professionals in Central and Eastern Europe: A training needs assessment report”. The target group assessment, addressing architects, engineers, and construction workers, reveals information about the needs for further training and qualification to ensure, that building according to energy standards is implemented with a sufficient care and quality. The report can be downloaded from INTENSE homepage - http://www.intense-energy.eu/uploads/tx_triedownloads/INTENSE_WP5_TargetGroupAssessment_fullReport.pdf

Working group session

During the following 1,5 days of the training participants were separated into parallel working groups. One working group was consisting of subcontracted training institutions for tackling technical topics and another group was consisting of country coordinating organizations working with “soft” topics.

In both of the groups two modules of the training program were discussed:

- Technical group: building physics and construction elements
- “Soft” group: legislation and quality control

In this report the detailed discussions in the working groups will not be described but the results of both working groups – key slides – will be presented to give a short overview of discussion topics.



Train-the-trainers Course I

Key slides for legislation



Current national legislation

- Legal acts and regulations related to construction and energy performance of buildings
 - 1-2 slides as intro to the topic and then into future requirements

Legislation 1 – building performance

- Definitions - All
 - nearly zero
 - cost optimal
 - building unit
 - major renovation (building + building unit)
- Calculation of the Energy performance of buildings – architects, engineers
 - info about national legal requirements regarding calculation method
- Minimum energy performance requirements – architects, engineers
 - minimum requirements for renovation, added building units, new buildings, cost optimal level, new exemption (e.g. "summer cottage")

Legislation 2 – building performance

- calculation of the cost-optimal levels – architects, engineers
 - info about national legal requirements regarding calculation method
- New buildings – architects, engineers
 - national regulations, alternative systems and controlling
- Existing buildings – all
 - Major renovation
- Technical building systems – engineers, craftsmen
 - National requirements, metering

Legislation 3 – building performance

- Nearly zero energy buildings – all + municipality
 - Definition and number
- Energy performance certificates – architects, engineers
 - Building unit, non-residential building
- Issuing of energy performance certificates – architects, engineers
 - Who can issue, where you can find lists of auditors?, how to become certified energy auditor?
- Inspection of heating systems and of air-conditioning system – engineers and craftsmen
 - they will be inspected, system accessible
- Reports from inspection – engineers and craftsmen
 - Recommendations for improvements
- Penalties - all
 - Liabilities for different target groups

Legislation 4 – Energy end-use efficiency and energy services

- How municipality can play exemplary role and why they should do that? What there is in for them?
- Municipalities have to be informed about possible measures
- Energy efficiency monitoring for renovated and new houses – for engineers
- Keep in mind additional requirements from national legislation if there are any!!

Legislation 5 – renewable energy

- Definitions - all
 - Biomass and biofuels
- Mandatory national overall targets - architects
 - To check if there are available support schemes!
- National renewable energy action plans - ?
 - To check is there anything related to constructions (targets, measures)!
- Administrative procedures, regulations and codes – architects, engineers, craftsmen
 - municipal planning, building regulations and codes, public buildings, ecolabels

Legislation 6 – renewable energy

- Information and training - all
 - support measures, lists of installers, guidance
- Access to and operation of the grids – all?
 - Requirements from national legislation for selling from RES to grid
- Certification of installers – engineers, craftsmen
 - need to know about certificates and requirements



Train-the-trainers Course I

Key slides for quality control



National requirements for control

- Building permission process
- Energy certification
- Requirements in land sale contracts
- Voluntary - passive house certification
- Special technical conditions (i.e. air flow)
- Enforcement procedures

*Latvian example

Timeline of building process

- Role of the quality/confirmaty control in the building process
 - Obligatory
 - voluntary

*based on WG timeline results
- From where to get support/ experts?

What has to be done for having quality control?

- Why so many things can go wrong?
 - Contract
 - Permitting
 - control on building site
 - control of tendering)
- Examples for illustration

Municipalities

- Gains for municipality for going for passive house or low energy house (WP 3 and 6)
 - How to get passive house certificate? Indicate examples (national and international)
 - Contract template
- How to address obstacles?
 - Landsale contracts
 - Tendering
 - Contracting obligations
- Best examples of tendering
 - How to include maintenance and energy costs? (Input from one of the miniprojects? Konrad)



Train-the-trainers Course I Key slides for technical topics

Thermal bridges
Diffusion/Mass transfer of water vapor
through leakages
Air tightness

Tallinn, 25/03/2010



Intelligent Energy



Europe



Thermal bridges

- Why are we dealing with thermal bridges
 - Normative background
 - Reaching low (very low) standard (their impact on energy use)
 - Indoor environment quality: Health / Comfort
 - Economic savings
- What are thermal bridges (Definitions)
 - Types
- Calculation
 - Of thermal bridges / values / heat losses
 - Economic benefit
 - Software / Literature



Thermal bridges (cont.)

- Visualisation of thermal bridges
 - 2D and 3D models
 - Thermal images
- Practical solutions / mitigation / avoidance
 - Measures to avoid moisture
- Information sources / Regulation sources



Diffusion of vapor & mass transfer through leakages

- Definition & Justification
 - What is diffusion
 - What is leakage of vapor
- Why do we deal with these problems?
 - Differences between water amount transported
- Causes of both phenomena
- Construction materials and diffusion
 - Properties of materials / Comparison of materials
- Practical consequences: comparing diffusion & leakage of vapor
- Calculation & presentation of WUFI or similar program
- Information resources



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Air tightness

- Definitions
- 7 Reasons for airtightness
- Measurement
 - Test, Video
 - Examples of bad cases
- Solutions for achieving air tightness
 - Practical demonstrations
- Reference sources



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Market

During the training 2 sessions for “market” were carried out where for the participants following products related to energy efficiency and construction were presented:

- a box with different insulation materials
- a box with different types of tapes and sealing tools
- a blower door with demo CD
- a laptop introducing program THERM
- a laptop introducing program WUFI
- a laptop introducing program Amortization Trainer

All participants had a chance to look at the products, try out the programs and ask specific questions.

Summary of the training

During the last day of the training the event was summarized and next steps agreed.

Before the reflection of the previous 1,5 days started, an IEE project PASSNET (www.pass-net.net) was shortly introduced by one of the participants. The project includes 10 countries and tries to elaborate the net of passive houses.

Sandra Oisalu presented the results – key slides – from the working group addressing the topics legislation and quality control. She brought out that the legislation key slides are based on the recast of EPBD and RES directive. The key slides of “soft” topics are structured in a way to give indication to country coordinators on what to search for from their respective national legislation.

Philipp Engewald introduced the key slides produced during the working group session by technical group. These key slides - in contrary to “soft” key slides that are indication for further national search - are structuring the technical modules of building physics and construction elements for the training manual to be elaborated in frame of INTENSE project.

Christiane von Knorre from architecture bureau Auraplan gave an overview of the topics to be covered during the 2nd Train the Trainers event. The 2nd training will focus on 5 topics - settlement planning and energy carriers for “soft” working group, systems engineering and design principles for technical working group and cost-benefit assessment for whole group.

Following agreements connected to the training materials and coming trainings were discussed:

- Slides and materials - main aspect is to have on slides INTENSE and IEE logos (during the project, after project end – reference)
- Slides in national language should be sent to WP5 lead/project
- 2nd Train the Trainers event will be held 24.-26.08.2010 in Tallinn, Estonia
- Proposal for 3 international test training (3 locations) dates will be sent to all participants in April-May

Michal Tvrdoň from REC Slovakia and **Jörg Faltin** from Auraplan finalized the event by giving an informative presentation about best practice examples. They introduced shortly the work package of INTENSE dealing with best practice examples, in more detail they talked about the background paper “Experience and lessons learned from Western Europe and from CEE countries on best practice examples of energy savings in buildings” (can be downloaded from INTENSE homepage - http://www.intense-energy.eu/uploads/tx_triedownloads/INTENSE_WP3_D3_1_06.pdf) and presented concrete examples from Sweden, Austria and Germany.

The report incorporates 2 annexes:

- Annex 1. Agenda
- Annex 2. Signature list

INTENSE - WP5: Stakeholders' Training Program
1st Train the Trainers event
March 23-25, 2010, Tallinn, Estonia

AGENDA

Monday, February 22, 2010

- Arrival of participants in the afternoon/evening
- Individual dinner

Day 1 - Tuesday, March 23, 2010

CC-country coordinators of INTENSE project
 TI- training institutions

Chair: Ingrida Bremere, project manager, BEF Latvia

<i>TIME</i>	<i>TOPIC</i>	<i>PRESENTER/FACILITATOR</i>
08:30 - 09:00	- Registration of participants	Venue: Unique Hotel Mihkli

WELCOME & INTRODUCTION

09:00 - 10:30	- Welcome and opening - Introduction round of participants - Introduction to INTENSE - Introduction to WP5	Ingrida Bremere, BEF Latvia Sandra Oisalu, BEF Estonia
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10:30-11:00 Coffee break

PLENARY – SETTING THE SCENE

11:00 - 12:30	- Introduction of D5.1 - Introduction to parallel working groups	Philipp Engewald, BEF Germany
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12:30-13:30 Lunch

WORKING GROUP SESSION 1

13:30 - 16:00	- Group 1 (CC): legislation - Group 2 (TI): building physics	Kai Klein, BEF Estonia Ingrida Bremere, BEF Latvia
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16.00- 16:30 Coffee break

WORKING GROUP SESSION 1 continues

16:30 – 18:00	- Group 1 (CC): legislation - Group 2 (TI): building physics	Kai Klein, BEF Estonia Ingrida Bremere, BEF Latvia
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18.00-19:00	- Market (to give an overview about i.e. tools, materials, calculation programs) - Close of Day 1, introduction to Day 2 Ingrida Bremere, BEF Latvia	
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19.00 -	Joint dinner	Place: Unique Hotel Mihkli
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Day 2 - Wednesday, March 24, 2010

<i>TIME</i>	<i>TOPIC</i>	<i>FACILITATOR</i>
WORKING GROUP SESSION 2		
09:00 – 10:30	- Group 1 (CC): quality control - Group 2 (TI): Construction elements	Christiane von Knorre, Auraplan Ingrida Bremere, BEF Latvia
10:30-11:00	Coffee break	
WORKING GROUP SESSION 2 continues		
11:00 - 12:30	- Group 1 (CC): quality control - Group 2 (TI): Construction elements	Christiane von Knorre, Auraplan Ingrida Bremere, BEF Latvia
12:30 - 13:30	Lunch	
WORKING GROUP SESSION 2 continues		
13:30 - 16:00	- Group 1 (CC): quality control - Group 2 (TI): Construction elements	Christiane von Knorre, Auraplan Ingrida Bremere, BEF Latvia
16.00- 16:30	Coffee break	
WORKING GROUP SESSION 2 continues		
16.30-18:00	- Market (to give an overview about i.e. tools, materials, calculation programs) - Close of Day 2, introduction to Day 3	Ingrida Bremere, BEF
18.00 -	Guided tour in Tallinn old town and individual dinner	

Day 3 - Thursday, March 25, 2010

<i>TIME</i>	<i>TOPIC</i>	<i>PRESENTER/FACILITATOR</i>
PLENARY SESSION		
09:00 – 10:30	- Reflection from the working groups - Feedback from participants - Introduction to the 2 nd TTT event and closing of the training	Sandra Oisalu, BEF Estonia Philipp Engewald, BEF Germany Ingrida Bremere, BEF Latvia
10:30-11:00	Coffee break	
PLENARY SESSION continues		
11:00 - 12:00	Best practice examples	Michal Tvrdon, Jörg Faltin
12:00 -	Lunch	

Close of workshop and departure of participants