Experiences from UP-RES pilot courses

Christoph Peters, Sabaté associats
PATRES workshop, Brussels, 23-10-2012

The UP-RES Project Consortium

IEE - September 2010 – February 2013 / Overall budget: 985 k€

Finland: Aalto University School of science and technology

Spain : SaAS Sabaté associats Arquitectura i Sostenibilitat

UK: BRE Building Research Establishment Ltd.

Germany:
• AGWF Arbeitsgemeinschaft Fernwärme
• UA Universität Augsburg
• TUM - Technische Universität München

Hungary : UD University of Debrecen

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General objectives and measures to its achievement

Urban level: High quality multifunctional urban spaces

Building level: High thermal comfort with minimum ecological footprint, security in supply, easy maintenance at competitive prices

• Demand reduction: Energy efficient building design
• Low carbon resources: RE and waste energy
• Optimum supply in most cases: DHC

Demand reduction: Energy efficient building design

95 Social housing apartment block
First EPBD “A” Classification in Barcelona: 3.8 kgCO2/m²·a
Low U-values
Ventilated façade
Movable wooden blinds
Natural cross ventilation
Connected to DHC 22@
Invoicing by building administrator

Demand reduction: Energy efficient building design

95 Social housing apartment block
Heating demand: 9.8 kWh/m²·a
Cooling demand: 4.7 kWh/m²·a

Winner ENDESA Award 2012 for the most sustainable development.
Specific objectives: Energy efficient urban development

Status quo: Energy is often no issue in urban planning

The UP-RES Project addresses the need to introduce energy issues into town planning through implementing pilot training of urban planners in energy efficiency and RES integration.

Need for promotion and implementation of local energy concepts
- Interaction of various stakeholders, and with urban planners in particular
- Integration of available local resources management (geothermal, solar, bio fuels, various waste sources (heat and cold) into regional and urban development plans
- Integration of cadastral and energy performance data
- Application of energy demand mapping tools in urban planning

Task: Training Needs Analysis

Questionnaire design
Evalsys on-line survey
313 questionnaires returned
Task: Training Needs Analysis

Questionnaire design

PART I - General Information
- Field of degree
- Scale + frequency of planning
- Tasks + responsibilities
- Environmental issues in practice / needs
- Energy issues in degree, training and information sources
- Knowledge of Energy Efficient Supply
- Knowledge of RES and DHC
- Obstacles for the establishment of RES
- Suggestions on training

Dec 2010 - Feb 2011

CHRISTOPH PETERS
ARCHITECT

PART II - Energy and urban planning information
- Energy issues in degree, training and information sources
- Knowledge of Energy Efficient Supply
- Knowledge of RES and DHC
- Obstacles for the establishment of RES
- Suggestions on training

Spanish Results

44% architects (including arquitecto-urbanistas)
37.3% urban planners
8.8% engineering - not only Civil, but technical industrial
5.3% Law
1.8% environmental planning
1.8% social sciences

Task: Training Needs Analysis

• Planning issues included in planning ± 50% are: Passive aspects, Preservation of soils and ecosystems, Transport
• Need of software (IT tools) < 7%
• Need of training ± 10%
• Need of experts 20 - 30% (except for passive aspects 7.2%)

Task: Training Needs Analysis

II.5 OBSTACLES
Cost and taxes : 35%
Lack of knowledge : 27% - 41.4% in Spain

Other obstacles mentioned in free entries :
- Lack of political support
- Unreliability and non viability of systems (UK)
- Conflicts with heritage, image (German example: problematic exterior insulation integration)

Task: Training Needs Analysis

Different training levels
- Lots - especially from public bodies (prescribers) - to get general knowledge, some private urban planners to attend public tenders prescribed by public bodies, a few private urban specialists to give support to urban generalists

Implementation
- Spain, Finland, Germany: long term professional training
- UK: short courses tour to cities all over the country for professional training

Awareness - Knowledge - Competence - Practice

* classification just exemplary
Spanish implementation – an example

10 Modules with a total of 150 hours face to face – october 2011- juny 2012

M1 An integrated vision. Sustainability in regional and urban planning
M2 Energy. The existing energy model and market outlook
M3 Buildings. Energy demand reduction strategies in new buildings and refurbishment
M4 Mobility. Energy consumption reduction strategies in urban and interurban mobility
M5 Urban planning. Energy demand reduction strategies in the urban metabolism
M6 Energy resources. Renewable energy technologies in the urban scale
M7 Energy distribution: District heating and cooling
M8 New management concepts in the energy market
M9 Energy management. New models in contracting and management
M10 Workshop. the right scale for every energy concept

Experiences of the first edition 2011-2012

27 students for the whole programme and an average of 5 additional students by modules

High evaluation scores for nearly all modules
High satisfaction with the on-line tool
Excellent participation of the students
Importance of real cases supported by the students!

We encourage you to use the training material and design your own course!

UP-RES training material
30 slides / module in 10 languages
http://aaltopro2.aalto.fi/projects/up-res/

Thank you for your attention!

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