PRINCIPLES, EXPECTED EFFECTS AND NATIONAL IMPLEMENTATIONS OF EUROPEAN DIRECTIVE 31/2010 AND 27/2012

PRINCIPI, EFFETTI E ATTUAZIONE NAZIONALE DELLE DIRETTIVE 31/2010 E 27/2012

Fiera Milano Rho, 17th March 2016

European Training and Qualification Scheme on nZEB for professionals

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EU initiatives supporting the implementation of EPBD and EED

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EU training and qualification platform

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PROF / TRAC
Open Training and Qualification Platform on NZEB construction and renovation

PROF / TRAC TEAM TRAINING PROVIDERS TRAINING MATERIALS

WHY PROF/TRAC ?

NZEB construction & renovation - a challenge for construction industry:

- nZEB technologies require new skills, integrated design approach and multi-disciplinary teams.
- Collaboration between architects engineers and managers is a key to success.

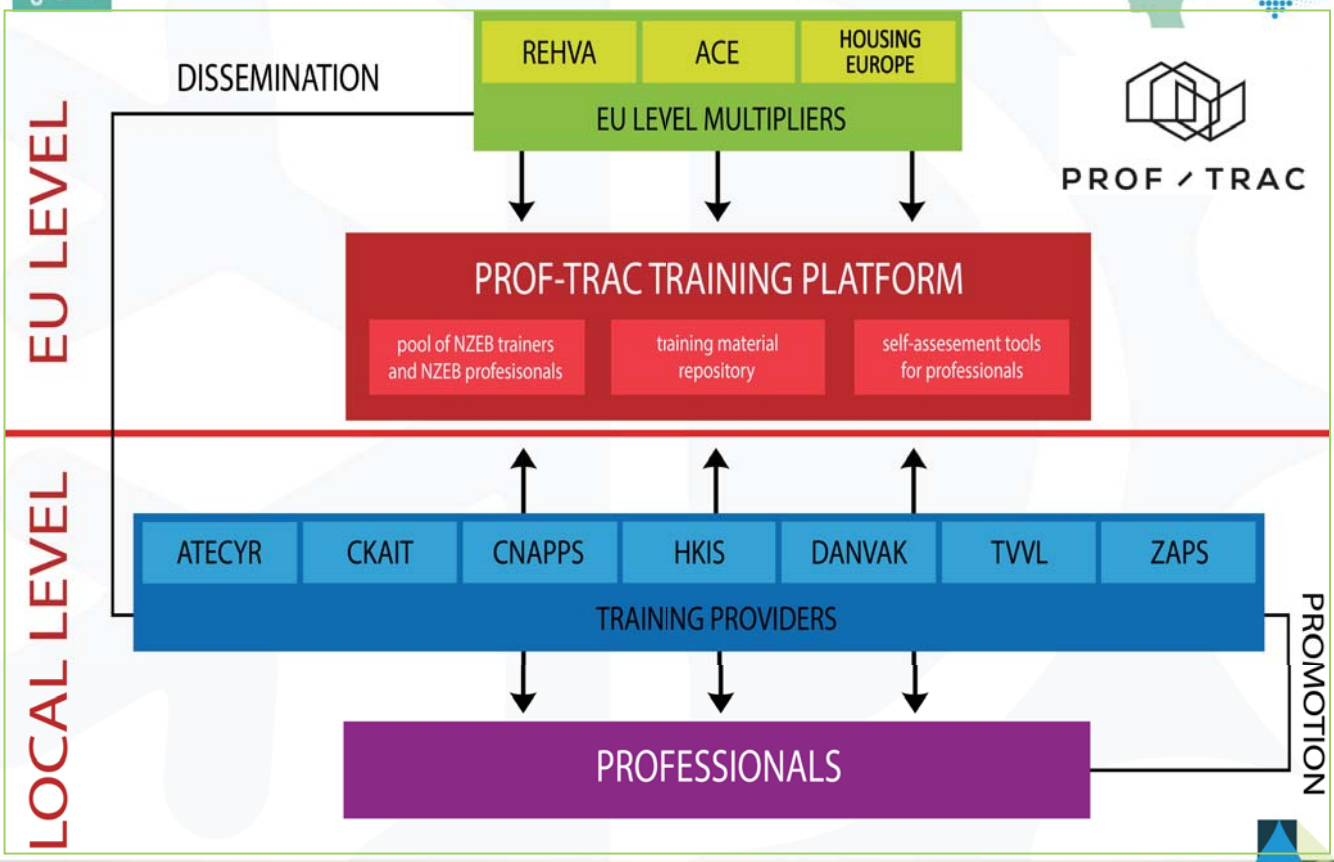
NON-technological barriers:

- Limited knowledge and skills in integrated design and nZEB
- Lack of collaboration between the professionals of different sectors.
- Lack of harmonised certification and qualification schemes & mainstreamed training materials

WHAT we want to achieve?

- Creating and sustaining a European Open Training Platform and Qualification scheme on nZEB for continuous professional development in the building sector.
- Targeting engineers, architects and managers involved in nZEB design and construction
- Integration in national professional training schemes, sustaining a life- long-life learning process and up-skilling of professionals. **BASED ON REHVA MEMBERS NETWORK**

PROF/TRAC APPROACH



WHO are the partners ?

15 project partners from 10 EU countries including 4 REHVA members

Organisation name	Short name	Country
Huygen Installatie Adviseurs	HIA	NL
Federation of European Heating and Air conditioning Associations	REHVA	EU (NL)
Architects' Council Europe	ACE	EU (BE)
Housing Europe	HE	EU (BE)
ISSO	ISSO	NL
Valencia Institute of Building	IVE	ES
Czech Technical University Prague	CVUT	CZ
Aalborg University	AAU	DK
Danish Society of Heating, Ventilating and Air Conditioning Engineers	DANVAK	DK
Croatian Chamber of Mechanical Engineers	HKIS	HR
Spanish Technical Association of HVAC and Refrigeration	ATECYR	ES
Dutch Society for Building Services	TVVL	NL
Czech Chamber of Chartered Engineers and Technicians	CKAIT	CZ
Chamber of Architecture and Spatial Planning of Slovenia	ZAPS	SI
Italian Chamber of Architects	CNAPCC	IT

REHVA MEMBERS JOINING THE PLATFORM

9 REHVA members expressed interest so far.

Invitation open to every REHVA Mas and other training providers.

Organisation name	Short name	Country
Associazione Italiana Condizionamento dell`aria, Riscaldamento Refrigerazione	**AiCARR**	**IT**
Romanian Installation Engineers Association Asociația Inginerilor de Instalații din România	**AIIR**	**RO**
Association Royale de la Technique du chauffage, de la ventilation et de la climatisation / Koninklijke vereniging van de verwarmings-, ventilatie- en klimaatbeheersingstechniek	**ATIC**	**BE**
Eesti Kütte- ja Ventilatsiooniinseneride Ühendus The Estonian Society of Heating and Ventilation Engineers	**EKVÜ**	**EE**
Finnish Association of HVAC Societies	**FINVAC**	**FI**
Norsk VVS Energi- og Miljøteknisk Forening Norwegian Society of HVAC Engineers	**NORVAC**	**NO**
Slovenska spolocnost pre techniku prostredia Slovak Society for Environmental Technology	**SSTP**	**SK**
Spolecnost pro techniku prostredi Society of Environmental Engineering	**STP**	**CZ**
Energi- och Miljötekniska Föreningen Swedish HVAC Society - Society of Energy and Environmental Technology	**SWEDVAC**	**SE**

GENERATING IDEAS FOR SUSTAINABLE ENERGY

HOW we will achieve it?

Mapping of the skills and current skill gaps in nZEB

1. **Definitions:**
   - Professions
   - Skills levels
   - Relevant nZEB Technologies on Energy Management / Production / Reduction
   - Interdisciplinary skills, such as communications, economics
2. **Mapping of Current and Needed skills on nZEB is done by national experts in an excel inventory**
3. **Outcome is a skills gap, at a certain skills level**
4. **Based on outcomes a roadmap is developed**

Professions on Prof/Trac:

Architect	The designer of buildings for human occupancy or use, who: a) visualises the design and; b) supervises the building construction process
Engineer*	The designer of materials, structures and systems while considering the limitations imposed by practicality, regulation, safety, and cost
	*) The group "Engineer" contains a wide variety of types of engineers, e.g. building, mechanical, electrical, civil. In some pilot country's (NL, CZ) an additional distinction is made, but that is not obligatory.
Project manager	The person responsible for the planning, execution and closing of any (nZEB) building project
Project developer	The project developer takes response for the associated risks involved in the building process for the customer and hands over the project to the tenant / buyer after completion and use of the building
Building manager	The person responsible for quality assurance during on-site construction works in the realization of nZEB buildings
Building owner	The person responsible to maintain the real estate as it was realized at the end of the nZEB building process (including facility management)
Financial manager	The person responsible for all finances involved during planning, execution and closing of any (nZEB) building project
Procurer	The person responsible for facilitating the process of nZEB tenders and (sub)contracts

Defined skills levels

Level	Definition
0	Not applicable / no knowledge and skills required
1	Has little knowledge and skills with respect to the relevant field / technology
2	Understands basic knowledge and has practical skills within the field, is able to solve problems by selecting and applying basic methods, tools, materials and information
3	Has comprehensive, factual and theoretical knowledge, is capable of solving problems within the field
4	Has advanced knowledge involving a critical understanding of theories and principles and skills, required to solve complex and unpredictable problems in the field and is aware of the boundaries
5	Has specialized knowledge and problem-solving skills, partly at the forefront of knowledge in the field, in order to develop new knowledge and procedures and to integrate knowledge from different fields

Results skills mapping

The Netherlands (example)

CODE	TECHNOLOGY, INTERDISCIPLINARY SKILLS AND PROFESSIONS	Mechanical Engineer								Building aut. Engineer							
		current	nZEB	Gap	1	2	3	4	5	current	nZEB	Gap	1	2	3	4	5
M	ENERGY MANAGEMENT																
EM1	Smart grid systems	2	2	0						3	4	1					
EM2	Domotic systems	2	2	0						4	5	1					
EM3	Building management systems	2	3	1						4	5	1					
P	ENERGY PRODUCTION (on-site and nearby																
EP1	Geothermal energy	3	3	0						2	3	1					
EP2	Biomass	2	2	0						1	2	1					
EP3	Biogass	2	2	0						1	2	1					
EP4	District heating and cooling	3	4	1						2	3	1					
EP5	Heatpumps	3	5	2						3	3	0					
EP6	Solar power systems for electricity generation	3	2	0						3	3	0					
EP7	Solar thermal systems for cooling generation	2	4	2						2	2	0					
EP8	Solar thermal systems for domestic hot water	3	4	1						2	2	0					
EP9	Mini wind power	2	1	0						2	2	0					
EP10	Combined Heat and Power (CHP)	3	3	0						3	2	0					

Number of professionals needed

1. **Inventory of available and needed professionals on national level**
2. **Difficult because of failing registration. Mostly only architects are registered**
3. **Current estimations are made of total available professionals (not only nZEB):**

Number of professionals								
Country	Architect	Engineer	Project manager	Project developer	Building manager	Building owner	Financial manager	Procurer
Netherlands	10.812	18.760	unknown	unknown	unknown	8.569.000	300	unknown
Denmark	6.500	4.600	unknown	unknown	unknown	unknown	unknown	unknown
Croatia	2.500	5.700	?	unknown	1.000	200	unknown	unknown
Italy		0						
Slovenia	1.280	3.894	3.302		5.174	552		778
Spain	47.293	44.000	47.293	57.590	50.813	25.208.623	55.000	47.293
Czech Republik	4.570	30.267	12.984	unknown	unknown	unknown	unknown	unknown
Total number	72.955	107.221						

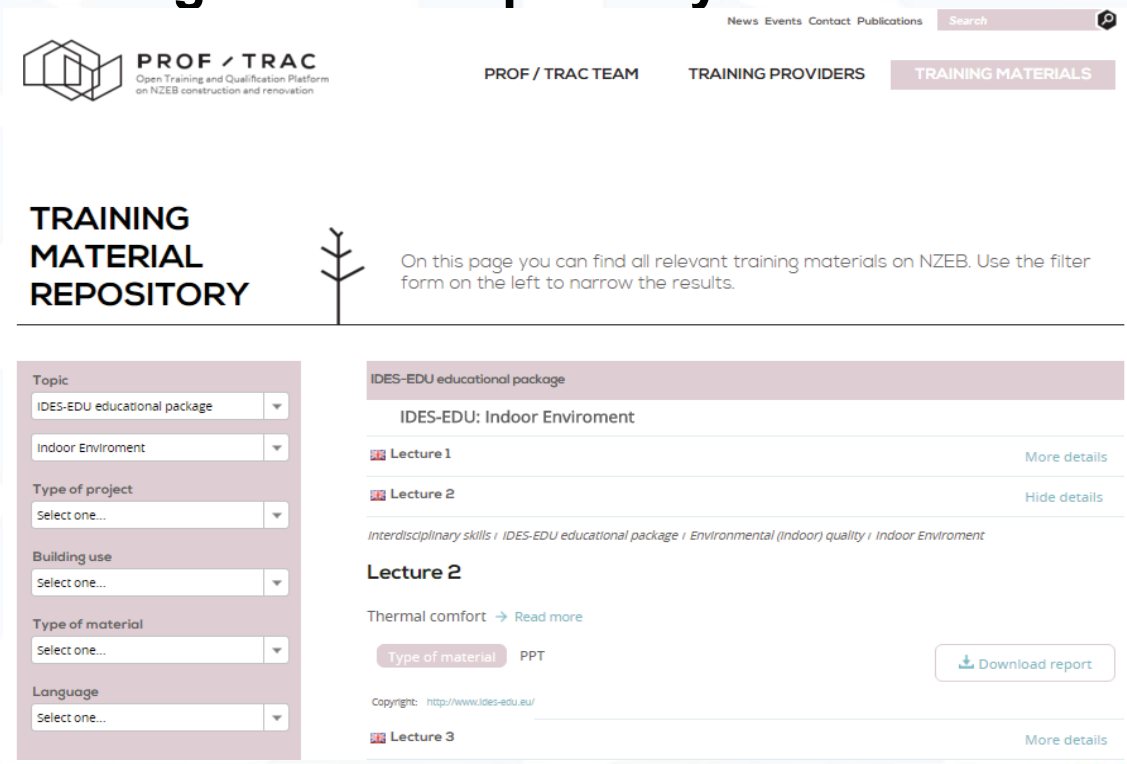
HOW we achieve it?

2. **PROF/TRAC Open Training & Qualification Platform**

- European Mutual Learning Platform on NZEB construction and retrofit for building professional
- Access to EU level training materials for national training providers to adapt to national framework
- Information pool of training providers, certified professionals, news and case studies on nZEB
- On-line self-assessment tool for professionals to evaluate their skills and knowledge gaps in nZEB

PROF / TRAC

Training material repository and database

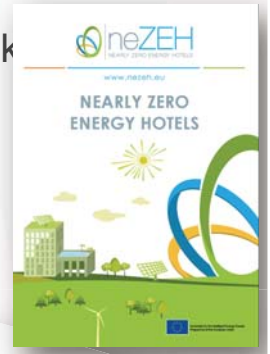


Knowledge from 12 EU projects integrated

Downloads: flip books in PPT format, reports/publications, toolk guidelines, case studies

Highlights

- neZEH Training material for building professionals
- neZEH Brochure for motivating hotel owners
- neZEH Training material for hoteliers
- Information papers on financial tools
- Case studies and good examples



Knowledge from 12 EU projects integrated

IDES-EDU

MaTrID - Market Transformation Towards Nearly Zero Energy

sHELTER
Promoting Energy Renovation

POWER HOUSE NEARLY ZERO ENERGY CHALLENGE

educate

TRAINREBUILD
Training for Rebuilding Europe

Streamer
European research on energy-efficient healthcare districts

strategic research centre for ZERO ENERGY BUILDINGS

COHERENO
Collaboration for housing nZEB renovation

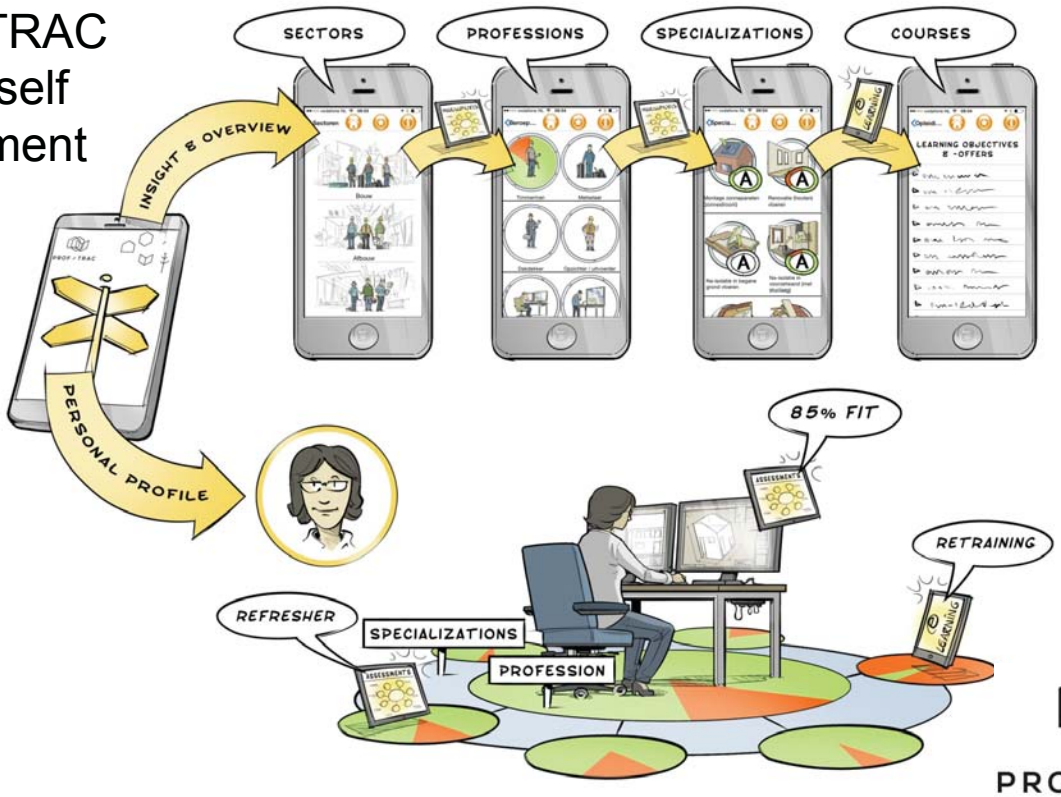
Integrated Energy Design in Public Buildings

afterPROJECT

MOOCs
Massive open online courses

THE FUTURE OF ENERGY EFFICIENCY STARTS HERE

PROF/TRAC app for self assessment



PROF / TRAC

HOW we achieve it?

European “Train the Trainers”programme

- 5 international TtT sessions for ACE & REHVA member associations, and training providers joining PROF/TRAC
- The ‘trained trainers’ will act as ambassadors for the developed nZEB qualification scheme ensure that the materials are adapted in their national training portfolio and courses will be organised
- 1st round TtT session organised in February 2016, 20+ trainers from 6 countires trained.

Progressive trainings methods and tools for professionals

Roll-out of the scheme

PROF-TRAC training scheme and impact					WP4		WP5	WP6		
								further exploitation		
					Trainers		Professionals	other REHVA/ACE		
Year	Quarter	Activity			TtT		PROF-TRAC pilots	countries		
2015	1	mapping of skills								
	2	preparation								
	3	TtT training #1: 7 * 3 experts for pilots			21	face-to-face				
	4	preparation pilot 1								
2016	1	national pilots 1	7 * 30				210			
	2	TtT training #2: 4 * 3 experts for 4 new locations			12	face-to-face				
	3	TtT training #3: 4 * 3 experts			12	face-to-face				
	4	preparation for 8 new locations	8 * 35							
2017	1	national pilots 2	7*30				210	year 2	280 year 1	
	2	TtT training #4: 4 * 5 experts by webinar			20	TtT webinar				
	3	TtT training #5: 4 * 5 experts by webinar			20	TtT webinar				
	4	preparation for 8 new locations								
Impact during the project					85		420	280		785
2018	1	national pilots 3					210	year 3	280 year 2	280 year 1
	2	TtTtraining # 6			12					
	3	TtT training #7								
	4	preparation for 8 new locations								
Impact of the project one year after project duration					97		630	560	280	1567