

Fit-to-NZEB: Innovative training schemes for retrofitting to NZEB-levels







The Problem Part 1



The nZEB building:

- efficiency first
- minimum primary energy consumption
- use of renewables
- RES production on site
- optimum cost effectiveness in terms of LCA



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The Problem Part 2





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The Result





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The Challenges

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- Deficiencies in the training programmes
- Need for professional training of trainers
- Outdated training facilities
- Monitoring of training demand
- Engagement of stakeholders
- Communication: improving the image of the construction sector
- Broad endorsement campaign for the Roadmaps



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Policy framework

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- Energy Performance of Building Directive
- Energy Efficiency Directive
- RES Directive
- The new ("winter 2016") energy package: EU climate and energy goals to 2030
- Renovation strategies with goals to 2030 and 2050
- The Energy Union
- The Investment Plan for Europe



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The new EPBD

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- "Energy efficiency first" is a key element of the Energy Union
- About 75% of buildings are energy inefficient
- Only 0.4-1.2% of the stock is renovated each year
- The main objective is to accelerate the costeffective renovation of existing building, which is a 'win-win' option for the EU
- Renovation work and energy retrofits add almost twice as much value as the construction of new buildings



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The new EPBD

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- Long-term strategies for renovation of the building stock (Art. 4/EED becomes Art. 2a/EPBD)
- Mobilizing funding for carbon-free buildings: targets for 2030/2050: market signals to investors
- ICT and smart technologies, automation and BIM, e-mobility
- Link between public funding and EPCs; focus on microclimate and health (heating and ventilation)



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Institutional framework

Horizon 2020: Energy Efficiency Call for proposals

Topic EE-04-2014 Construction Skills

Legacy of BUILD UP Skills Initiative (2011-2017)

Other projects under this topic:

Running: BUStoB; ingREeS; MEnS; PROF-TRAC

Starting in 2017: BIMplement; BIMEET; Net-UBIEP; NEWCOM

More info: <u>www.buildup.eu/skills</u>



Horizon 2020: General overview. Video presentation by the EC



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The BUILD UP Skills Initiative



- Pillar I started in 2011 under Intelligent Energy Europe Program
- Similar projects in 30 EU + associated countries
- Resulting in National roadmaps for improving the skills in the construction sector
- Pillar II started in 2013-2014 focusing on training programs on EE & RES in buildings
- Last projects being finalized now
- Continued in H2020 Construction Skills



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BUS EnerPro II: The Programs



- Training frameworks and materials developed on 10 programs:
- Building envelope, Building systems, and Building market and products
- PV installations, Solar thermal, Mini-wind generators, Biomass installation, Heating, ventilation and AC, Thermal pumps, Integrated systems
- Focus on practical trainings
- Broad consortium of training institutions



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Train-to-NZEB: The Building Knowledge Hubs



- Improving the training facilities: new BKHs in Bulgaria, Romania, Czech Republic, Turkey and Ukraine
- ToRs for equipment and services,
- Business plans
- Innovative training programs
- Qualified and attractive trainers
- Trainings for 2400 construction workers, 480 designers and 720 non-specialists



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Fit-to-NZEB

MAIN ACTIVITIES AND EXPECTED RESULTS







F2NZEB: The Basics

Acronym: FIT-TO-NZEB (F2NZEB)

Full name: Innovative training schemes for retrofitting to NZEB-levels

Web address: www.fit-to-nzeb.com

Language: British English

Supporting program: Horizon 2020

Grant Agreement Number: 754059

Duration: 15 June 2017 – 15 June 2019





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H E L L E N I C PASSIVE HOUSE I N S T I T U T E



List of project partners

- 1. Center for Energy Efficiency EnEffect Bulgaria (coordinator), <u>www.eneffect.bg</u>
- 2. University of Architecture, Civil Engineering and Geodesy Sofia, Bulgaria, <u>www.uacg.bg</u>
- 3. SEVEn, the Energy Efficiency Center Prague, Czech Republic, <u>www.svn.cz</u>
- 4. Czech Technical University in Prague, Czech Republic, <u>www.cvut.cz/en</u>
- 5. Association Cluster for Promoting Nearly Zero Energy Buildings (Pro-nZEB), Romania, <u>www.pro-nzeb.ro</u>
- 6. Technical College for Architecture and Public Works, Bucharest, Romania, <u>www.colegiulionsocolescu.ro</u>
- 7. Passive House Academy / MosArt Landscape Architecure Research, Ireland, <u>www.passivehouseacademy.com</u>
- 8. University of Zagreb, Faculty of Civil Engineering , Croatia, www.grad.unizg.hr/en
- 9. Zero Energy and Passivhaus Institute for Research (ZEPHIR), Italy, <u>www.zephir.ph</u>
- 10. Hellenic Passive House Institute, Greece, <u>www.eipak.org</u>
- 11. Technical University Vienna, Austria, <u>www.tuwien.ac.at/en</u>



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Geographic scope

Involved countries:

Bulgaria, Romania, Czech Republic, Italy, Greece, Croatia, Ireland, Austria

Partners from Train-to-NZEB: Turkey, Ukraine





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H E L L E N I C PASSIVE HOUSE I N S T I T U T E



Composition of the consortium



Type of involved partners:

- Technical and architecture universities
- Professional high schools / colleges
- Active vocational training centers
- Energy and building experts
- Highlights: transfer of experience from PHA, transfer of experience and further expansion of the BKHs' network under T2NZEB, enhancing the regional scope, involving the Passive House community



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Logic of the project



The logic behind:

- Tackling the most pressing issue around
- Covering the full scale of the academic & VET system (EQF levels 2-7)
- Complementing and providing sustainability of T2NZEB, resp. BUILD UP Skills
- Local capacity for trainings on deep energy retrofit
- Broadening of the geographical scope and large-scale networking



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Fit-to-NZEB Goals



- Elaborate a set of required technological competences related to DER;
- Develop new training programs employing the newly elaborated technical competences;
- Review the national educational plans for the relevant professions and introduce changes;
- Train and certify a sufficient number of trainers.
- Support and monitor the first courses on the new programs at all levels.



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Fit-to-NZEB Objectives



1) Compendium of the knowledge, skills and competences required for DER 2) Design-focused training programs for higher education establishments (EQF 6-7) 3) DER training program for the professional high schools (EQF level 3-5) 4) Training content to be included in the RES training plans and programs in the professional high schools (EQF level 3-5)



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Fit-to-NZEB Milestones



- 1. Internal communications set-up
- 2. Communications strategies
- 3. Visual identity
- 4. Web-based networking platform and website launched
- 5. Catalogue of existing and available resources on DER,
- 6. Catalogue of learning outcomes, M6
- 7. Design of 2 training and demo models
- 8. National training of trainers
- 9. Training program for EQF level 6-7
- **10**. Training program for EQF level 3-5



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Fit-to-NZEB Milestones (cont.)



- 11. Training programs for vocational training centers (EQF 3-4)
- **12**. Training materials for EQF level 6-7
- **13**. Training materials for EQF level 3-5
- **14**. Training materials for VTCs (EQF 3-4)
- **15.** Interim evaluation of the communication strategy
- **16.** Interim report on management and risk mitigation
- 17. Conduction of pilot courses for EQF levels6-7, 3-5 and short courses for VTCs
- **18**. Monitoring and evaluation reports on the training courses



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Fit-to-NZEB main results



- Unique educational and training programs on deep energy retrofit
- 2) Design drawings of innovative training and demonstration models
- 3) Building local capacity: training of sufficient number of trainers
- 4) Monitoring and evaluation of pilot courses
- Increased awareness on the benefits of deep energy retrofit



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Next step



BKH IN ATHENS

- One-stop-shop for energy efficiency
- Education and Certification center
- Permanent materials and services exhibition
- Co-working space for young architects and engineers



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Communication



OBJECTIVES ABOUT HOME CONTAC



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Contact Information

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COORDINATOR OF THE PROJECT

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Sustainable future : the red pill



Thank You

This is your last chance. After this, there is no turning back. You take the blue pill—the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill you stay in Wonderland, and I show you how deep the rabbit hole goes. Remember: all I'm offering is the truth, nothing more.



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