

11. Dani pasivne kuće, 9.-11. Studeni 2018

Nove kompetencije za projektiranje i gradnju pasivnih kuća

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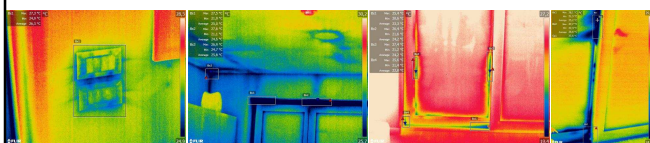
Uvod

- the most **challenging aspect** of reducing energy use in the building sector lies in **increasing the rate, quality and effectiveness of building renovation** since the current rate of renovation is only 1.2 % per year.
- Lack of adequate construction skills**
 - important barrier that hampers the development of NZEBs and effective renovations.
- Improving the skills is of key importance**
 - of middle- and senior-level building professionals,
 - various trade professionals



U praksi

- Događaju se **mnoge greške izvođenja**
 - One znatno utječu na energetsko svojstvo zgrade i pojavu građevinske štete.
 - Naročito kada su u pitanju detalji i spojevi



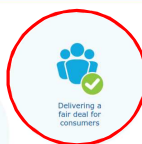
CLEAN ENERGY FOR ALL EUROPEANS

WHAT ARE OUR GOALS?

CREATING JOBS & GROWTH, BRINGING DOWN GREENHOUSE GAS EMISSIONS, SECURING ENERGY SUPPLY



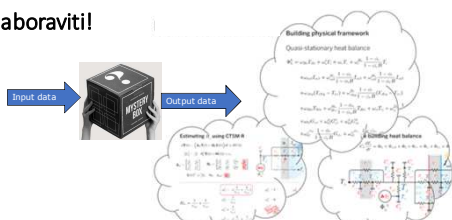
"CONSUMERS BY DEFINITION INCLUDE US ALL. THEY ARE THE LARGEST ECONOMIC GROUP AFFECTING AND AFFECTED BY ALMOST EVERY PUBLIC AND PRIVATE ECONOMIC DECISION. YET THEY ARE THE ONLY IMPORTANT GROUP WHOSE VIEWS ARE OFTEN NOT HEARD."
JOHN F. KENNEDY, 15TH MARCH 1962



2 #EnergyUnion

European Commission

Ne zaboraviti!

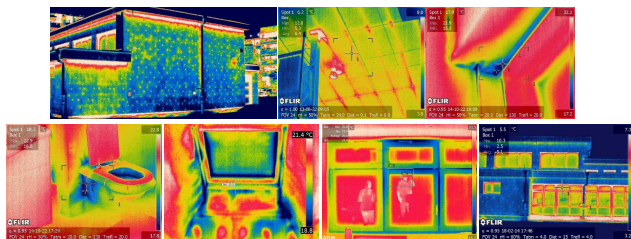


Istinitost proračuna u ovom slučaju ovisi o građenju zgrada.
Utjecaj kvalitete se često zanemaruje!!!

Nekoliko primjera iz Hrvatske



Primjeri otkriveni korištenjem IC termografije



Nedostatak kvalitete je često uzrokovan nedostatkom kompetencija!

- Nova znanja i vještine vezane uz nZEB i pasivnu gradnju.
- Uključuju
 - Nove materijale i proizvode,
 - Integraciju OIE
 - Nove sustave ili procese
 - Korištenje BIM-a
 - Cross craft
 - ...



EU aims to **equip** the next generation of construction sector workers **with the skills and knowledge** needed to ensure building and renovation projects **meet stringent energy efficiency requirements**.

Amendment of the EPBD II

- (10) According to the Commission's impact assessment, renovation would be needed at an average rate of 3 % annually to accomplish the Union's energy efficiency ambitions in a cost-effective manner. Considering that every 1 % increase in energy savings reduces gas imports by 2,6 %, clear ambitions for renovation of the existing building stock are of great importance. Thus, efforts to increase the energy performance of buildings would contribute actively to the Union's energy independence and, furthermore, have great potential to create jobs in the Union, in particular in small and medium-sized enterprises. In that context, Member States should take into account the need for a clear link between their long-term renovation strategies and pertinent initiatives to promote skills development and education in the construction and energy efficiency sectors.

Amendment of the EPBD II

- (6) In Article 10, paragraph 6 is replaced by the following:

"6. Member States shall link their financial measures for energy efficiency improvements in the renovation of buildings to the *targeted or achieved* energy savings, as determined by one or more of the following criteria:

- (a) the energy performance of the equipment or material used for the renovation; in which case, the equipment or material used for the renovation is to be installed by an installer with the relevant level of certification or qualification.

Povećanje kompetencija (znanja i vještina) u smislu energetske učinkovitosti i održive gradnje općenito potrebno je provesti u cijelom lancu građevinskog sektora

- (uključujući projektante, arhitekte, inženjere, upravitelje zgradama, instalatere, radnike).



- Upgrading or setting up large-scale qualification and training schemes in these areas **goes hand-in-hand with** initiatives that:
 - increase the demand for skilled building professional,
 - create new job opportunities and
 - boosting Europe's economic competitiveness.

BUILD UP Skills: The Challenges



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

BuildUP Skills



- Imajući na umu sve rečeno, 2011. god. EU je pokrenula inicijativu **BUILD UP Skills**
 - <http://www.buildup.eu/en/skills>
 - razvoj **nacionalnih kvalifikacijskih platformi** te **smjernica** i
 - Provođenje izobrazbe za **radnike** u području energetske učinkovitosti i OIE u zgradarstvu
- Nastavak inicijative se provodi kroz izobrazbu i drugih stručnjaka u građevinarstvu kroz program **Horizon 2020**
 - Projekti uglavnom razvijaju tzv. „multi-country qualification and training schemes“

CROSKILLS

www.croskills.hr



Trening materijali



www.croskills.hr
Priručnici za radnike
• 6 različitih priručnika

Training materials are freely available to help architects, engineers and other professionals better design and build nZEBs.

Priručnici za trenere

- 7 različitih priručnika
- 6 priručnika sa specifičnim temama ovisno o vrstama radnika
- 1 priručnik sa zajedničkim temama

Croskills

- **Pravilnik o sustavu izobrazbe i certificiranja građevinskih radnika koji ugrađuju dijelove zgrade koji utječu na energetska učinkovitost u zgradarstvu**
- (NN 67/2017)



Projekat - Informacije

NACRTI PRAVILNIKA O SUSTAVU IZOBRAZBE I CERTIFICIRANJA GRAĐEVINSKIH RADNIKA KOJI UGRAĐUJU DIJELOVE ZGRADE KOJI UTJEČU NA ENERGETSKU UČINKOVITOST U ZGRADARSTVU NA JAVNOM SAVJETOVANJU

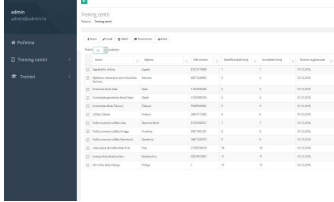
20. veljače 2017. - Ministarstvo graditeljstva i prostornoga uređenja, nadležno je **Nacrti Pravilnika o sustavu izobrazbe i certificiranja građevinskih radnika koji ugrađuju dijelove zgrade koji utječu na energetska učinkovitost u zgradarstvu**, koji se nalazi na javnom savjetovanju. Priručnik se pripisuje sustavu izobrazbe i certificiranja građevinskih radnika koji ugrađuju dijelove zgrade koji utječu na energetska učinkovitost u zgradarstvu.

Zainteresirani i stručna javnost svoje prijedloge, primjedbe i mišljenja na **Nacrt Pravilnika** može se prethodno, najprije dostaviti putem **e-savjetovanja** najkasnije do 22. ožujka 2017. godine. Ovim putem javno se poziva da se mišljenje o **Nacrtu i Nacrtu Certificiranja** mogu vidjeti u rubrici **Datati dokumenti**.

Registar

- Online registar
 - Registar of trening centara
 - Registar of trenera
 - Registar of certificiranih radnika
- Službeni registar Ministarstva graditeljstva i prostornog uređenja

<http://seminar.croskills.hr>



11. DANI PASIVNE KUĆE U HRVATSKOJ

Kraj projekta...

- Kako se približio kraj projekta, suočili smo se s privlačenjem poslodavaca i zaposlenika da pohađaju izobrazbu
 - Jedna je stvar podizanje svijesti, a druga je priča prevesti svijest u promjenu ponašanja
 - Potrošači su zapravo pokretači promjena u ovom procesu – ukoliko nema potražnje na tržištu, tada neće biti niti potražnje za izobrazbom
- Problemi
 - Nedostatak svijesti o potrebi stalnog stručnog usavršavanja i izobrazbe među obrtnicima i radnicima
 - Nedostatak prikladnog programa cjeloživotnog obrazovanja o principima pasivne gradnje i nZEB-u među inženjerima građevinarstva, bolja je situacija (ali ne i odlična) među arhitektima.

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Nastavak napora

- Razvoj novih kompetencija se nastavlja kroz Horizon 2020 projekte
- Razvoj kvalifikacija i programa izobrazbe priznatih u više zemalja (multi-country recognition)

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Fit-to-NZEB

Innovative training schemes for retrofitting to nZEB-levels

- Web: www.fit-to-nzeb.com
- Facebook: <https://www.facebook.com/fit2nzeb>
- Twitter: <https://twitter.com/fit2nzeb>



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FIT-TO-NZEB project aims to increasing competence and skills of the building professionals in the field of retrofitting to nZEB-levels in the target countries through the unique educational programmes developed by the consortium, which will contribute to both the quality and the scale of the deep energy building renovations.

EXPECTED IMPACTS



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The logic behind it

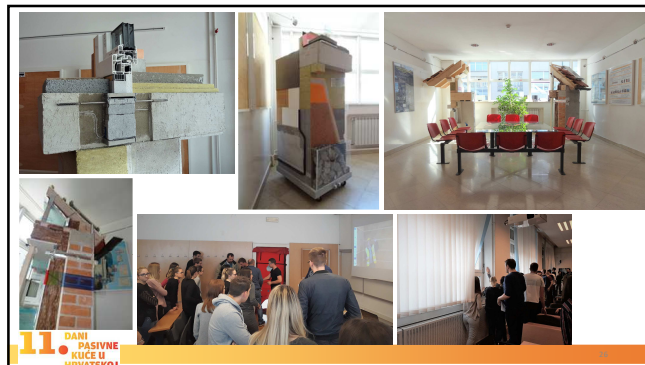
- Covering the full scale of the academic & VET system (EQF levels 2-7)
- Complementing and providing sustainability of BUILD UP Skills projects
- Local capacity for trainings on deep energy retrofit (DER)
- Broadening of the geographical scope and large-scale networking



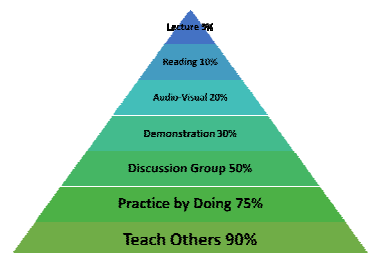
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Achieved so far

- Elaborate a set of required technological competences related to DER;
- Develop new training programmes employing the newly elaborated technical competences;
- Review the national educational plans for the relevant professions and introduce changes;
- Develop demonstration and practical training models
- Train and certify a sufficient number of trainers.



Razine pamćenja (zadržavanja stečenog znanja)



Network for Using BIM to Increase Energy Performance
www.net-ubiep.eu



Project goals

- Defining competences required and develop appropriate training materials
 - to properly introduce BIM for energy performance evaluations to ALL professionals and technicians which participate in the building process

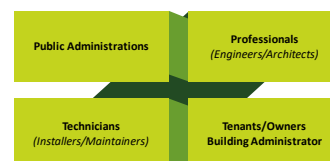


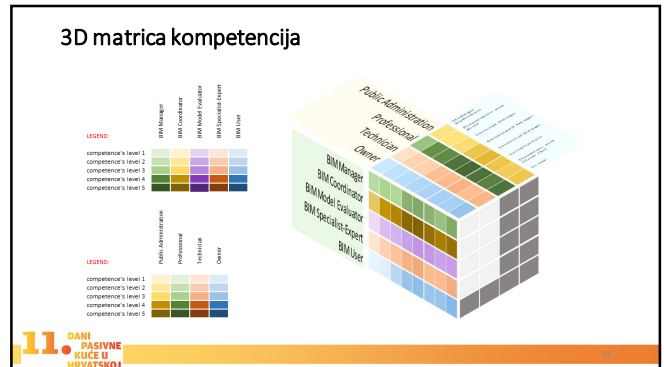
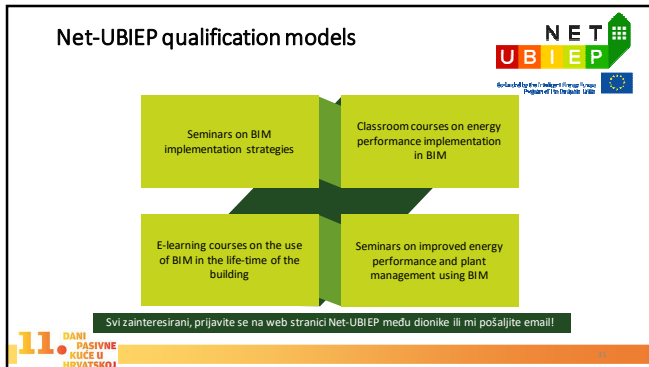
BIM – building information management

Better management of the information during the whole life cycle of the building is absolutely necessary in order to avoid mistakes and have trustful information at any time / when an intervention is necessary.

Net-UBIEP: Target groups

- Four target groups have been selected according to their role in current building processes:





Dostupni na: www.net-ubiep.eu/hr/home-hr/

NET-UBIEP logo: **NET-UBIEP** - Network for Using BIM to Increase the Energy Performance of Buildings

TRENING MATERIALI za instalatere (obrotnike)

INFORMATIVNI MATERIALI za vlasnike / upravitelje zgradama

INFORMATIVNI MATERIALI za djelatnike javne uprave

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Pridružite nam se...

- University of Zagreb Faculty of Civil Engineering
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- Anna Moreno Net-UBIEP coordinator netubiep-project@enea.it
- Facebook: [@netubiephr](https://www.facebook.com/netubiephr)
- Register as a stakeholder at www.net-ubiep.eu

NET-UBIEP logo: **NET-UBIEP** - Network for Using BIM to Increase the Energy Performance of Buildings

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Zaključci

- U području energetske učinkovitosti **nužno je povećati kontrolu i osiguranje kvalitete** kako bi se poboljšala kvaliteta izvođenja.
- Praktično iskustvo** je vrlo važno u procesu učenja.
- Uključivanje što više zainteresiranih dionika moguće je uspostaviti održivi model.
- Potrebno je stvoriti snažniju potrebu za kvalificiranim radnicima (s potrebnim znanjem i vještinama).

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Od ideje do realizacije

Divjak: Za uspostavu regionalnih centara kompetentnosti **oko milijardu kuna** iz fondova EU-a

11. DANI PASIVNE KUĆE U HRVATSKOJ

Hvala na pažnji!



Bojan Milovanović
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