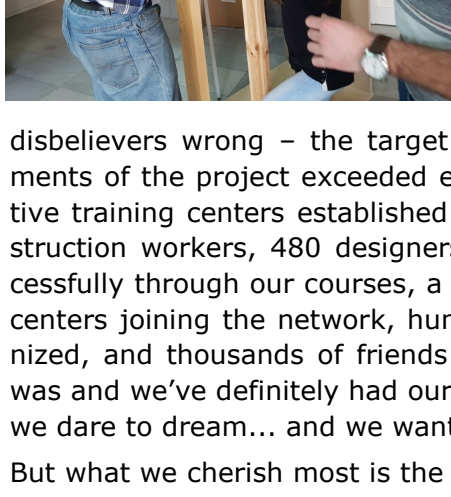


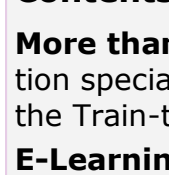
More than 4000 construction specialists trained under the Train-to-NZEB project



Back in 2015, the Train-to-NZEB project started with a goal that seemed too ambitious and unrealistic to many people – to ensure mass roll-out of the programmes developed under the BUILD UP Skills initiative by training at least 2400 people within the value chain of the construction experts – designers, workers and decision-makers included. Well, we proved

disbelievers wrong – the target is reached, and some of the achievements of the project exceeded even our expectations. In a word: 7 active training centers established in the 5 involved countries, 2400 construction workers, 480 designers and 720 non-specialists passing successfully through our courses, a new project started with 4 new training centers joining the network, hundreds of (award-winning) events organized, and thousands of friends won over. No doubt - a tough road it was and we've definitely had our ups and downs along the way, but now we dare to dream... and we want more!

But what we cherish most is the quality of our training courses – a quality 100% proved by people coming back to the Building Knowledge Hubs and asking for more. We will fight to preserve it and keep our brand on the cutting edge of building knowledge and technologies, surely with the help of our partners from Passive House Institute – Darmstadt (Germany), Passive House Academy – Ireland and Limerick Institute of Technology (Ireland), and all the unbelievable support we've found locally. Thanks for all the great moments in these 4 years together and rest assured – we're here to stay!



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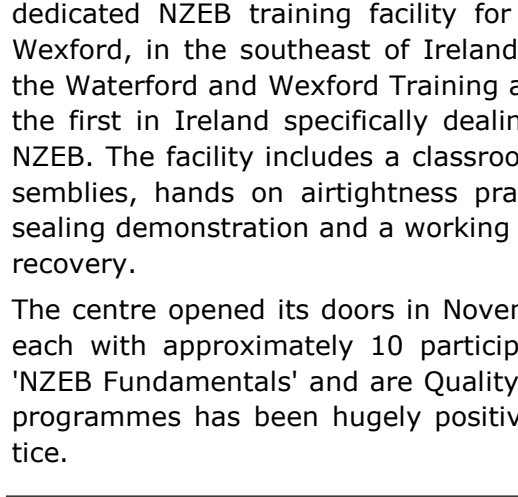
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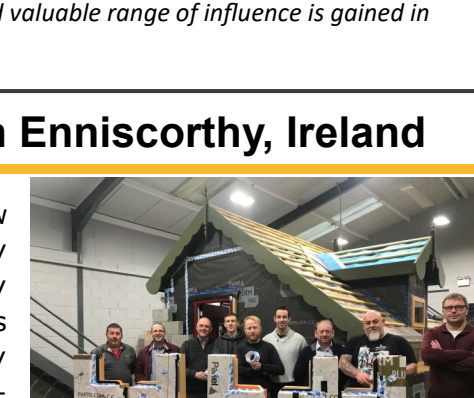
E-Learning for non-specialists: the perfect tool to open up the market

In order to support the local partner's activities and reach beyond the geographic limitations of the consortium, a web-based, publicly accessible e-learning course for non-specialists with decision making capacity was developed by the Passive House Institute. In order to cater for different background and needs the "non-specialist" group of persons was subdivided into three subgroups: End Users, Investors, and Politicians. While sharing some of the contents a dedicated path for each group is offered, adding or leaving out information as relevant for the identified needs. This allows a target-group specific approach and a very concise course in each case. No user should be put off by content that is not immediately relevant. It will also enable executives with tight diaries to use occasional spare time on their NZEB information. Any additional desire for more in-depth information can be answered



by links to websites, wiki-type resources, videos and, last but not least, far more comprehensive e-learning programmes - all available at <https://elearning.passivehouse.com/>.

The map on the left gives an indication of the activity on the Passive House Institute's e-learning platform from 2017 when the non-specialists courses started until the end of the Train-to-NZEB project. Despite not all 19600 visitors focusing on the said course it becomes apparent that an important and valuable range of influence is gained in Europe and beyond.



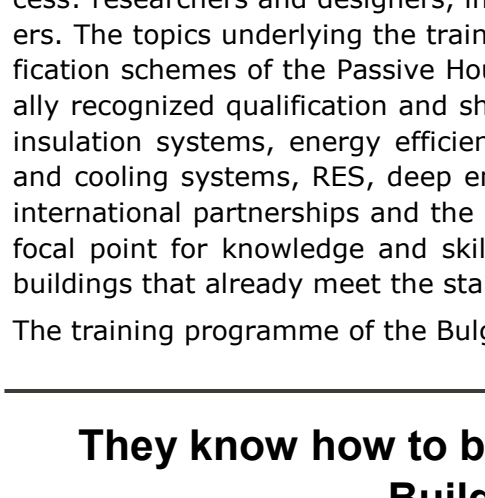
A new Building Knowledge Hub opens doors in Enniscorthy, Ireland

The Train-to-NZEB project has inspired the development of a brand-new dedicated NZEB training facility for contractors in Enniscorthy, County Wexford, in the southeast of Ireland. The training centre is operated by the Waterford and Wexford Training and Education Board (WWETB) and is the first in Ireland specifically dealing with the challenges presented by NZEB. The facility includes a classroom, several different construction assemblies, hands on airtightness practice models, a mini-house for air-sealing demonstration and a working mechanical ventilation unit with heat recovery.



The centre opened its doors in November 2018 and already six courses have been delivered there in 2018, each with approximately 10 participants. The first courses delivered were one-day programmes entitled 'NZEB Fundamentals' and are Quality Assured by the accreditation body City and Guilds. Feedback on these programmes has been hugely positive, with the participants enjoying the combination of theory and practice.

Training courses on energy efficiency and RES in buildings carried out for more than 900 construction workers and specialists in Bulgaria



More than 1000 construction specialists have been trained by the Bulgarian Building Knowledge Hub (BKH), situated in the University of Architecture, Civil Engineering and Geodesy (UACEG) in Sofia. The courses are conducted along more than 20 innovative training programs, addressing topical issues from the Bulgarian and European construction practice. One of the definite highlights of the project in Bulgaria is the new training and demonstration center at UACEG – the Building Knowledge Hub – which demonstrates all the modern technologies, products and materials needed for the construction of nearly zero energy buildings, aiming to create the best possible conditions for specialized practical training of specialists in all areas of the investment process: researchers and designers, investors, site managers and contractors, and of course, construction workers. The topics underlying the training plan are extremely diverse – from the internationally recognized certification schemes of the Passive House Institute (Darmstadt, Germany) to programs for acquisition of nationally recognized qualification and short demonstration courses. All nZEB-related topics are covered, including insulation systems, energy efficient windows, ventilation with heat recovery, airtightness, modern heating and cooling systems, RES, deep energy retrofit of existing buildings, and many others. With the developed international partnerships and the new [Fit-to-NZEB](#) and [CraftEdu](#) projects, the BKH is expected to become a focal point for knowledge and skills sharing for the design, construction and operation of energy efficient buildings that already meet the standards of the coming decades.

The training programme of the Bulgarian BKH is available at www.busenerpro.com/bkhuasg.html

They know how to build NZEBs: More than 820 persons trained by Building Knowledge Hub - Romania

BKH Romania welcomed more than 820 participants within the 45 courses organised in the training centres at NIRD URBAN-INCERC (Bucharest) and FPIIP (Brasov) and other 4 representative cities. The training programs are combining building physics and Passive House principles bringing novelty in the usual practice in Romania (especially when the theoretical presentations were combined with practical exercises and demonstrations). The courses included topics related to the legal framework, technical and practical details and procedures for design and execution of nZEB and their implementation led to updated knowledge and skills for 469 participants with on-site construction related activity, 126 experts and designers and 229 decision-makers (central and local authorities, financing institutions, building owners' associations).

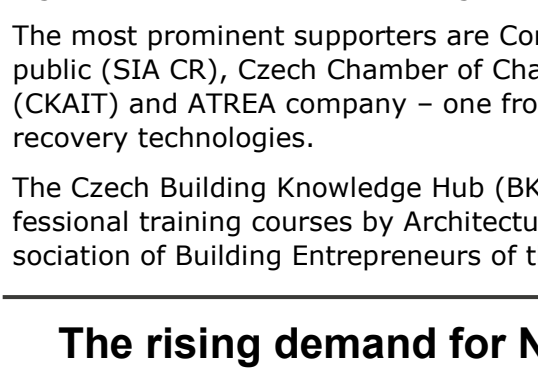


The most 'sold' training programs were the 'Passive House Tradespersons' (with 182 seats taken in 8 training sessions), the 'PV systems installer' (with 103 participants in 5 qualification courses) and the 'Legal Framework and Concepts for nZEB' for decision makers (with 229 participants in 11 training workshops). More than 100 Certified Passive House Tradespersons were put on Romanian map together with other 27 Passive House Designers and Consultants (from 74 participants in the training courses organised by the Chamber of Architects in partnership with NIRD URBAN-INCERC), while 90 certified installers of PV systems are ready now to participate in the implementation of the new financing program for prosumers (PV in buildings).

As a general feedback, the trainings were appreciated as very good, but more examples tailored on the specific of Romanian construction practice and Passive House / nZEB concrete examples were considered necessary for a future content update. People are attracted to nZEB buildings, but the current legislation seems puzzled and the bureaucracy is big, which discourage them to pursue this direction. The BKH-RO represents a very good support for the development of competences and awareness raising that will facilitate the actual up-taking of the nZEB concept in Romania.

The training programme of the Romanian BKH is continuously updating at www.train-to-nzeb.com/trainingdates.html and <https://www.facebook.com/BKHTrain2nZEBRomania/>.

Almost 750 participants were trained on nearly Zero Energy Buildings (nZEB) courses in Prague



In total, 747 participants attended the training courses on nearly Zero Energy Buildings (nZEB) and renewable energy sources (RES) during the Train-to-NZEB project in the Czech Republic. The Czech Building Knowledge Hub (BKH) is situated directly in the centre of Prague. There were conducted 35 training courses for construction workers, designers, architects and for non-specialists. For the largest target group counting 485 trained construction workers, 19 courses including two pilot courses were organised. The second largest group were the non-specialists. The 153 participants within this group were trained during seven courses. There were organised nine training courses for 109 trained designers and architects. One from those training courses was special, because it was dedicated to

airtightness of buildings and was led by expert on blowerdoor testing of buildings. This special course was the best selling from all organised courses in Czech BKH.

We received 311 feedback questionnaires in total from all our courses. The questionnaire contained five short questions. The courses met expectations of participants in almost 82%, newly acquired knowledge will use almost 79% of participants and more than 97% of participants were satisfied or absolutely satisfied with the indoor spaces for the course. Only 1.5% of participants answered that the total duration of the training was too short, for the 30% duration of the course was too long and for remaining 68.5% duration of the training was satisfactory.

The most prominent supporters are Construction Council of the Czech Republic (SIA CR), Czech Chamber of Chartered Engineers and Technicians (CKAIT) and ATREA company – one from leaders in ventilation and heat recovery technologies.

The Czech Building Knowledge Hub (BKH) will continue to be used for professional training courses by Architecture and Building Foundation and Association of Building Entrepreneurs of the Czech Republic.



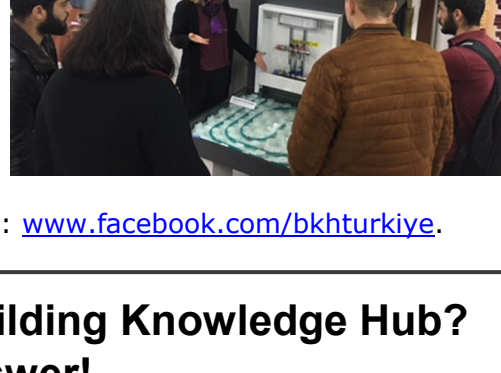
The rising demand for NZEB training in Turkey materializes in a new Building Knowledge Hub



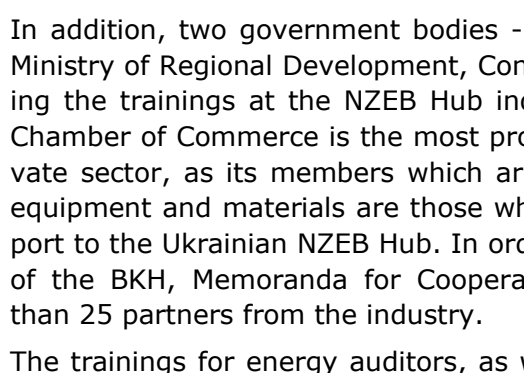
Being largely unknown territory for NZEB in previous years, Turkey is now definitely one of the stars in the Train-to-NZEB: As of 2017, we were already confident that the first Building Knowledge Hub in Izmir is already functioning well and attracting interest. Two years later, it was just no enough - a new one was needed to meet the demand. With the help of a number of project supporters and partners, Balikesir-BKH went into service by autumn of 2018, situated in the Faculty of Architecture of Balikesir University. And now we want more....

Over 900 people working in the construction industry were trained in EGE-BKH (Izmir). Innovative approaches in Energy Efficient Design was instructed using 22 training programs, in which the curricula citing European and Turkish practice was properly designed for workers, designers and non-specialists. Training centers established in Izmir/Ege and Balikesir Universities enhanced the practical trainings, and provided a model and material based technical basis for nZEB trainings. Many nZEB-related topics are covered, including insulation systems, energy efficient windows, ventilation with heat recovery, airtightness, modern heating and cooling systems, RES, deep energy retrofit of existing buildings. Increasing energy efficiency demand & investment, particularly from Turkish government is considered to brighten the stars of these two Turkish flagships for nZEB trainings.

The training program of Turkish BKHs are available at our facebook page: www.facebook.com/bkhturkiye.



How to attract a deputy prime minister to a Building Knowledge Hub? In Ukraine, we know the answer!

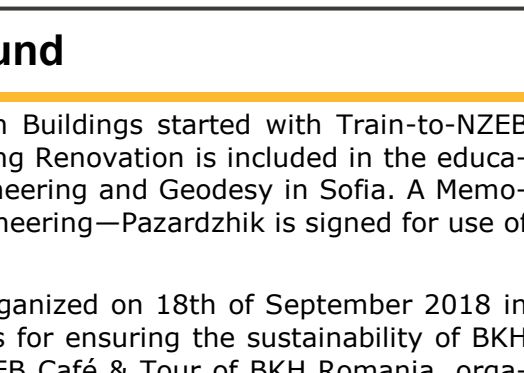


Even without dedicated resources for equipment, since its setup in 2016, the Ukrainian BKH trained 402 persons: 275 on-site personnel (workers), including 73 specialists in certification of energy performance of buildings and energy examination of engineering systems (36 persons and 37 persons respectively); 45 designers; and 82 non-specialist decision makers.

The best performing course is the brand new training for energy auditors. According to the recently adopted Law on Energy Efficiency in Buildings, energy auditors should be certified for performing energy audit. Vice Prime Minister and Minister of Regional Development, Construction and Housing and Municipal Economy of Ukraine Gennadiy Zubko awarded qualification certificates to energy auditors trained in the Ukrainian Building Knowledge Hub, proving the direct relation between well-designed national policies and demand for specialized training.

In addition, two government bodies – State Energy for Energy Efficiency and Energy Saving of Ukraine and Ministry of Regional Development, Construction and Housing and Municipal Economy of Ukraine – are promoting the trainings at the NZEB Hub indirectly. The German-Ukrainian Chamber of Commerce is the most prominent supporter from the private sector, as its members which are manufacturers/vendors of EE equipment and materials are those who supported and continue support to the Ukrainian NZEB Hub. In order to finance the establishment of the BKH, Memoranda of Cooperation were signed with no less than 25 partners from the industry.

The trainings for energy auditors, as well as for other target groups, will continue in the future and schedule of the training courses will be available on the NZEB Hub (www.nzeb.com.ua/ua/main/news/news.html) and MDI (www.mdi.org.ua/ua/) websites. The first course this year is scheduled on January 21 through February 8.



Highlights from the ground

After the Masters' programme on Energy Efficiency in Buildings started with Train-to-NZEB support, a dedicated subject on Energy Efficient Building Renovation is included in the educational plan of the University of Architecture, Civil Engineering and Geodesy in Sofia. A Memorandum with High School of Architecture and Civil Engineering—Pazardzhik is signed for use of Train-to-NZEB and Fit-to-NZEB training content.

The T2NZEB Final National Conference in Romania, organized on 18th of September 2018 in Bucharest, was a big success in terms of consultations for ensuring the sustainability of BKH Romania. It was followed by an equally successful nZEB Café & Tour of BKH Romania, organized on the occasion of International Passive House Days on 10th of November 2018 and attended by 30 interested participants.

The final conference of the Train-to-NZEB project on Energy efficiency policies toward 2030 – opportunities and challenges for Central Europe was held on 26th of November 2018. There were actively participating seven ministries from three countries and Austrian and Slovak Energy Agency, and Embassy of the Republic of Austria in Prague.

The second national training center opened in Balikesir University (28 November 2018) is offering customized training programmes geared to NZEBs' needs. On 16-17 November 2018, a presentation was made at the Izmir Energy Forum. It focused on the training content for the target groups and available outcomes.

In September 2018, Vice Prime Minister – Minister of Regional Development, Construction and Housing and Municipal Economy of Ukraine Gennadiy Zubko awarded qualification certificates to energy auditors trained by the Ukrainian NZEB Hub and to the members of the team who prepared first energy certificates (passports) of buildings.

News from us and our partners

⇒ The Czech Building Knowledge Hub (BKH) will continue to be used and further developed for professional training courses by Fit-to-NZEB and CraftEdu projects, Architecture and Building Foundation and Association of Building Entrepreneurs of the Czech Republic. The Czech BKH is determined for all construction workers, craftsmen, energy specialists and chartered engineers. Everybody can visit exhibition and see the unique mock-ups of constructions and modern constructing materials in the Czech BKH for free in opening hours.

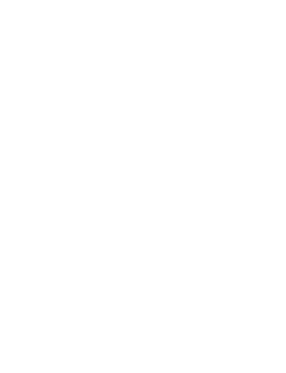
⇒ Visit of participants to the International Conference "Energy poverty, clean energy, and the European energy divide" is planned for 24th of January 2019 @ BKH Romania as one of the field trips aimed at exposing the participants to visible dimensions of energy poverty in Bucharest. The practical facility of the training centre will be visited by national and international representatives of public institutions, the civil society, education and private sector.

⇒ EnEffect and its partners will organize a series of events in 2019 with relevance to capacity building efforts in the construction sector. The most notable of them are the EcoEnergy conference, planned for the end of April, and the 2nd National NZEB conference in the beginning of June. The latest will be coupled with a project meeting under the latest EnEffect project under Horizon 2020 CraftEdu (www.craftedue.eu) and a closing event under Fit-to-NZEB (www.fit-to-nzeb.com).

⇒ The Faculty of Architecture at Balikesir University is already linking the content of the BKH programmes targeted to highly qualified building professionals to the academic curricula. Additionally, new specialized training courses for designers are already planned in 2019.

⇒ In Ukraine, NZEB Hub established under the Train-To-NZEB Project at Kyiv National University of Construction and Architecture (KNUCA), is now training and KNUCA is carrying out professional certification for energy auditors. 73 energy auditors have been trained and certified in 2018. The Law of Ukraine "On Energy Efficiency of Buildings" adopted in 2018 makes certification of energy auditors mandatory. As per the Agreement with the State Agency for Energy Efficiency and Energy Saving of Ukraine, a special Attestation Committee was created at KNUCA for certification of energy auditors.

⇒ In 2018, the Design Innovations Hub (or DI-Hub) was established at KNUCA as part of the Ukrainian NZEB Hub. The idea to mobilize best students to contribute to generation of EE ideas and development of EE solutions was discussed with KNUCA's management and Mayor of Kyiv Vitali Klitschko during his visit to KNUCA. DI-Hub will have two arms: 3D Technology Center (3D-Hub) and IT Technology Center (IT-Hub).



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The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission is responsible for any use that may be made of the information contained therein.

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