



European Construction Sector Observatory

Policy fact sheet

Estonia

BUILDEST I & II

Thematic Objective 2

June 2019



In a nutshell

Implementing body	Pillar I: Foundation Kredex Pillar II: Tallinn University of Technology
Key features & objectives	Development of the Estonian Continuing Education and Training Roadmap and Action Plan for the construction sector to 2020. Development of training schemes and materials for non-qualified and qualified construction workers and trainers to enable them to deliver building retrofits to upgrade their energy performance.
Implementation date	Pillar I: Nov 2011 – Apr 2013 Pillar II: Oct 2013 – Sept 2016
Targeted beneficiaries	Construction companies, construction workers, vocational education and training providers
Targeted sub-sectors	Residential, commercial and public / institutional sub-sectors
Budget (EUR)	833,483 (Total budget) 264,902 (Pillar I, 90% EU funded) 568,581 (Pillar II, 75% EU funded)
Good practice	★★★★☆
Transferability	★★★★★

Energy and resource intensity¹ in Estonia is among the highest in the EU. According to data published on Statistics Estonia, Estonian households account for about 35% of the country's total energy consumption, which is 8% higher than the EU average².

The main reason for this high share of energy consumption is that roughly 75% of Estonian households are located in older multi-apartment blocks with poor energy efficiency that were typically constructed between the 1960s and 1980s³. However, this number is significantly

higher in the capital city, Tallinn, where 94% of the population reside in multi-apartment buildings⁴.

Retrofitting the existing residential building stock to improve energy efficiency is therefore a priority focus if Estonia is to meet its objectives in the context of the EU Energy Efficiency Directive (2012/27/EU)⁵. Some building retrofits have already been delivered between 2009 and 2013, with the Estonian government supporting the retrofits of more than 600 multi-apartment buildings⁶. That said there is the potential to achieve energy savings of up to 30% in the majority of apartment blocks in Estonia⁷.

By 2020, the government aims to invest more than EUR 100 million from EU Structural Funds to improve the energy performance of residential buildings. According to estimates, this amount will be sufficient to retrofit approximately 1,000 multi-apartment blocks⁸. To meet these targets, the challenge for the Estonian construction sector is to ensure that it can provide sufficient numbers of contractors and construction workers with the right training, skills and qualifications in disciplines such as energy efficiency and conservation.

The BUILDEST⁹ project was launched in 2011 to address the energy efficiency skills gap in the Estonian construction sector.

Designed as the Estonian component of the strategic European BUILD UP Skills¹⁰ initiative, BUILDEST targeted the achievement of common European objectives in Estonia. It aimed to develop training schemes and learning support materials to increase the number of skilled and qualified Estonian construction contractors and workers to deliver energy saving building retrofits.

BUILDEST training courses and support materials were successfully developed and implemented, and the national qualifications system was revised to provide recognition of energy efficiency skills. Pilot training courses were successfully delivered to 280 construction workers and a 'Train the Trainers' pilot training course was successfully delivered to 89 vocational trainers. The Estonian Occupational Qualifications System was also

reviewed and revised, with a total of 28 occupational qualification standards being upgraded to include and recognise energy efficiency competences¹¹.

The BUILDEST energy efficiency training scheme is the first of its kind in Estonia and it has been integrated into the national vocational education curriculum. This is an important first step in the right direction and should form the basis for continued development of energy efficiency education and skills training.

The success of the project has also played a part in encouraging the government to fund 47 additional construction-related training courses in 2017 (post-project).

Looking forward, a key lesson learned is that government initiatives are needed to incentivise construction sector employers and employees to participate in training schemes.

1. General description

The BUILDEST¹² project was designed in two phases. The first phase (BUILDEST - Pillar I) aimed to provide:

- A comprehensive analysis of the Estonian construction sector;
- A Roadmap and Action Plan on education to encourage relevant national stakeholders to provide training, modify and innovate the existing qualification system requirements of continuing education in the building sector¹³.

The main objective of the Analysis of the National Status Quo Report was to examine the development of the Estonian construction sector over recent decades, with consideration given to legal, political, educational and labour market perspectives¹⁴.

The purpose of the analysis work was to assess:

- The national construction sector;
- National strategies and actions planning in connection with EU 2020 objectives;
- Estonia's building stock, energy consumption and workforce;
- Construction-related education in Estonia (vocational, university and adult education);
- Construction sector skills needs and opportunities; and
- Barriers to change.

Building on this analytical work, the BUILDEST Roadmap and Action Plan proposed measures and specific activities designed to improve construction

quality (energy efficiency) and increase the share of qualified construction workers in Estonia. Quality improvement measures included energy efficiency research and analysis, supplements to the legislative framework, planning and coordination of related activities, capacity building and the strengthening of social partnerships. Measures were also proposed to increase the share of qualified workers. They focused on the development of specialised vocational training and continuing education courses on energy efficiency for both trainers and trainees, as well as the provision of a range of support materials to aid learning and promotional/awareness raising activities. This work was done in cooperation with vocational education institutions, professional construction associations and training providers¹⁵.

The second phase (BUILDEST – Pillar II) aimed to implement the Roadmap and Action plan on education.

In order to increase the share of qualified workers, the Action plan proposed the revision of national vocation education curriculum by including energy efficiency competences for training schemes for qualified and non-qualified workers. Other activities were foreseen as part of the project such as training for trainers and communication strategy related to new qualifications requirements and available opportunities for new and updated training schemes¹⁶.

2. Achieved or expected results

The first phase of the BUILDEST project (Pillar I) produced two major outputs. The first output was the 'Analysis of the National Status Quo Report'¹⁷, which was published in 2012 and provided an assessment of the Estonian construction sector labour market and market trends. The report focused on national construction sector policies and strategies, evolution of the construction sector workforce, the existing vocational education and training system, the importance of new skills to be covered in the vocational education curriculum, and obstacles to achieving the 2020 energy efficiency targets. This analysis then served as the basis for broader cooperation between public and private stakeholders about current gaps, future needs and priorities in the preparation of the Roadmap and Action plan¹⁸.

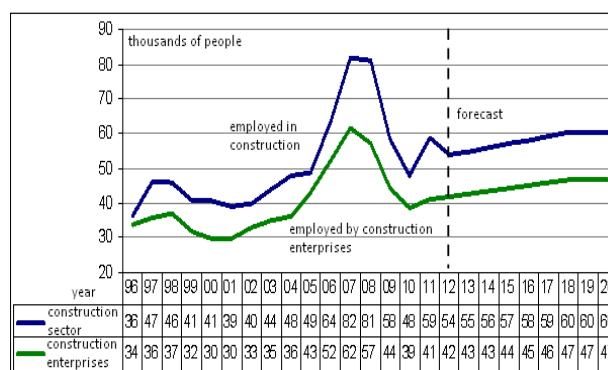
The report highlighted the extensive fragmentation of the Estonian construction sector using a scenario development methodology to identify possible educational shortcomings and needs which the sector has to address to meet its 2020 energy efficiency targets¹⁹.

The majority of Estonian construction companies are small or micro enterprises, which are limited in their capacity to provide training for their own personnel²⁰.

The report demonstrated that 50% of workers employed by construction companies in Estonia do not have sufficient qualifications or training, although 48% of surveyed companies indicated that they need one or more employees immediately²¹.

On average, 600 new construction workers are employed per year; however, based on market estimates, the Estonian construction sector needs at least 900-1,200 new skilled workers per year²². The report also estimated that the demand for construction workers would continue to rise to a total of 45,000-50,000 new skilled workers by 2020, as shown in Figure 1²³.

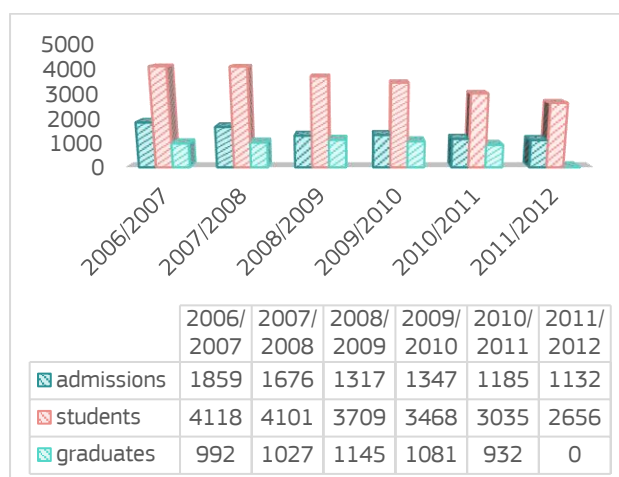
Figure 1: Number of construction sector employees 2012-2020 (thousands)



Source: BUILD UP Skills Estonia, Analysis of the National Status Quo Report, Sept 2012²⁴

The report found that the proportion of the workforce with relevant education in construction is decreasing as the number of young people entering the labour market has tended to be smaller every year²⁵. As shown in Figure 2, a declining number of students are attending vocational colleges and the drop-out rate remains high. In 2013, the number of construction graduates from vocational colleges was expected to be as low as 800, with only 64% of those graduates intending to continue working in the construction sector²⁶.

Figure 2: Number of VET admissions, students and graduates



Source: BUILD UP Skills Estonia, Analysis of the National Status Quo Report, Sept 2012²⁷

The report also found that there was minimal involvement of construction specialists in the study process at vocational colleges in Estonia. Additionally, there was a low number of competent experts for training trainers and construction workers.

The second major output from Pillar I of BUILDEST – the Action Plan for Training Workforce in the Estonian Construction Sector²⁸ – was developed using the findings of the Analysis of the National Status Quo Report. The Action Plan defined a strategy to further develop the training programmes and qualification system of the building sector in cooperation with vocational educational institutions, professional associations and training providers in the construction sector and construction companies²⁹.

The Action Plan proposed to: (1) improve the quality of specialised training in the construction sector by updating the content of the vocational education curriculum; (2) develop 14 different courses and a pilot training programme for trainers; and (3) develop publicly available study materials to support the development of energy efficient construction competences of trainees/students and improve the specialised competences of vocational teachers³⁰.

During the second phase (Pillar II) of the BUILDEST project, a range of activities were run to implement the Roadmap and Action Plan developed during Pillar 1 of BUILDEST.

Energy efficiency competences were successfully integrated into the Estonian Occupational Qualifications System. These new standards were established in a collaboration with field experts, managers and training providers. For the non-qualified workforce, energy efficiency related competences were introduced into 5 vocational education output-based curricula and 15 initial vocational training output-based curricula³¹. For the qualified workforce, energy efficiency related competences were introduced into 3 different continuing education curricula. A continuing education programme for master-foremen and on-site training programmes for workers were also devised. In total, 28 occupational qualification standards in construction have been examined and upgraded³².

A ‘Train the Trainers’ Course was developed and piloted to support the delivery of the BUILDEST training schemes. In total, training was provided for 89 vocational trainers.

The course consisted of 4 modules on energy efficiency and construction process quality. Additional training (8-16 hours in duration) was also provided to help the vocational trainers to prepare the BUILDEST pilot training sessions for construction workers³³.

BUILDEST pilot training sessions were provided for 280 construction workers (qualified and non-qualified) to introduce them to energy efficient construction. Training sessions lasted for 16 hours, with 4-8 hours of practical work. The learning outcomes achieved by the participants were evaluated by a test at the end of the training session. Broadly speaking, the participants learnt how to identify, assess energy saving requirements in the workplace and how to prepare their work. They learnt the importance of applying basic knowledge of energy efficiency in all of their professional activities, as well as the need to consider efficient energy consumption and energy sources (electricity, water, lighting, heat pumps, etc.) in all tasks. They learnt how to select suitable materials (building materials, fasteners, other work tools, etc.) and energy saving technologies and techniques. They also learnt how to apply, where possible, modular systems (dimensions of materials, frame stage, etc.)³⁴.

Instruction support materials (250 pages) and 10 training videos were prepared for construction sector workers³⁵. The training videos appeared to be the most effective way of delivering training sessions on topics which require very specific occupational knowledge, e.g.: insulation of cold-water piping with flexible foam coverings; insulation of ventilation flume with strengthened aluminium paper covered flexible mat wool; and insulation of the heating piping with foil covered wool.

Finally, in order to increase awareness of energy efficiency competences among existing and future construction workers, promotional materials were prepared for every relevant VET school, vocational consulting centres, Unemployment Insurance Fund

offices, project partners and supporting organisations³⁶.

Looking forward, it is important to note that the long-term success of BUILDEST and future energy efficiency schemes are dependent on awareness raising and appropriate incentives in order to generate consumer demand for energy efficiency.

Growth in consumer demand is needed to help motivate construction companies and contractors to upskill in this field. Currently, energy efficient construction and renovation is a relatively new concept in Estonia. As a result, demand for training in this area is relatively low.

3.

Perspectives and lessons learned

The first lesson learned was that the BUILDEST project was an important step forward for the Estonian construction sector in energy efficiency, largely because energy efficiency training courses did not previously exist, nor were any efforts made to analyse the need for such skills or to bring the relevant stakeholders together³⁷.

The project laid the basis for the education of construction workers as proposed trainings schemes became part of the national vocational education curriculum. Training programmes were included in the training list financed by the Estonian Ministry of Education and Research.

The Head of Construction and Housing Department of the Ministry of Economic Affairs and Communications acknowledged that from a **government perspective**, the BUILDEST project was implemented successfully and on time. The outcomes of the BUILDEST project have contributed significantly to the fulfilment of tasks that the Ministry is putting in place to improve energy efficiency in new building developments and building renovations³⁸.

Due to the successful implementation of the project, additional funding from the Ministry of Education and Research and the European Social Fund has allowed for the continuation of some project activities. As a result, 47 training construction-related courses for non-qualified workers were conducted in 2017: 30 field specific courses in construction; 10 courses in HVAC

installation; and 7 courses in installation of renewable energy systems³⁹.

The second lesson learnt was that flexibility is essential for the delivery of training for construction workers.

Employees require comprehensive counselling and a wider recognition of their previous work experience, both of which would help to improve the accreditation process, in terms of time and effort⁴⁰. A Senior Specialist of VET Curricula at Foundation Innove supports this view from a **training provider's perspective**. Since a high proportion of construction workers continue to be employed without relevant qualifications (as it was found in the report), the most effective method of training the non-qualified workforce is the flexible integration of these participants into the existing vocational education system.

The Manager of OÜ Viljandi Õhumeister, study cooperation partner of Viljandi Vocational Training Centre, also supports this view from an **industry perspective**, arguing that visual guidance for learning skills should be the first choice in future learning materials⁴¹. The feedback provided by other entrepreneurs and on-site trainers indicates that video trainings allow workers to increase the amount of practical learning by 10-20%, because it is possible to provide study materials for homework and use the saved hours for laboratory or discussion-based learning⁴².

4.

Conclusions and recommendations

The main strength of BUILDEST was the involvement of all relevant stakeholders in the project, including public and private building owners, construction material producers, state institutions, construction industry representatives and NGOs active in the sector⁴³.

BUILDEST has brought together relevant stakeholders to create an Estonian energy efficiency competence network. It has improved the exchange of information between state institutions, energy institutions and organisations, construction enterprises and the education sector. It has helped to raise the profile and value of energy efficiency competences as part of national vocation education curriculum. It has improved research and policy-making, especially with regard to vocational and continuing education⁴⁴.

The main weakness of BUILDEST and the main barrier to this type of training scheme is that the non-qualified construction workers are not sufficiently motivated to participate in counselling or training activities. It is important that employers recognise the value of workforce training and development to their businesses, and encourage their personnel to participate⁴⁵.

Government should prioritise skills training, both in terms of awareness and legislation. Employers and employees should be more aware of the importance of energy efficiency skills development, as it is vital to the future of the Estonian construction sector. Legislation could help improve the quality of work in the sector by tightening the rules around subcontracting to reduce the use of very low paid unskilled subcontractors on construction sites. At a local level, greater effort is also required to inform people about the availability and potential value of

skills training to people of all ages and backgrounds⁴⁶.

The main recommendation for any similar type of initiative in the future, both within Estonia and beyond, is to ensure the involvement of all relevant stakeholders throughout the entire design, implementation and evaluation process.

In the case of a skills training scheme, this requires the involvement of education providers at all relevant learning stages or levels, e.g.: vocational education, higher education, adult training, etc. This type of collaboration is the best way to create effective, cost-efficient and sustainable solutions⁴⁷.

Overall, BUILDEST is rated as a '4 star' 'good practice' measure, using a scale of 1 (low) to 5 (high). This scoring is based on a number of reasons. BUILDEST has successfully developed a vocational energy efficiency training and qualification system, as well as a range of support materials. The training programme has been piloted during the implementation phase and it provides the foundation for training delivery at scale to Estonian construction workers in the future. Indeed, extra government funding has already enabled the continuation of some programme activities. On the other hand, however, BUILDEST is the first measure of its kind in Estonia. It is the first step in the right direction but more time will be needed to learn from and improve the training programme.

BUILDEST serves as an example of how to develop a vocational energy efficiency training and qualification system from scratch and therefore provides an interesting case-study for other countries that are interested in developing their own system. The BUILDEST concept and programme are considered to be highly

transferable, with a score of 5 stars, to countries and regions that are facing similar issues to those experienced in Estonia. Those issues include a high number of low skilled workers in the domestic construction industry and a lack of energy efficiency skills training schemes. BUILDEST is structured in clearly defined and inter-related phases that provide a logical workflow, from analytical work to assess the energy efficiency training needs of the industry and workers and to scope the appropriate training solutions, to the creation and implementation of a training and qualification roadmap, framework and programme.

BUILDEST is also part of the broader European BUILD UP Skills (BUS) Initiative which has helped to support the creation of upskilling programmes in a range of EU countries. The sharing of knowledge and learned experiences across countries and between initiatives is a central element of BUS. The BUILDEST experience and the lessons learned during implementation are therefore part of a broad portfolio of experiences that other countries can take advantage of when exploring upskilling solutions for their own domestic workforces.

Endnotes

- 1 Resource Intensity:
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- 4 Retrofit cost-effectiveness: Estonian apartment buildings:
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- 14 BUILD UP Skills Estonia, Analysis of the National Status Quo Report, Sept 2012:
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