Lithuania: Statybos Projektu Sprendimai

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About

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The greening of industries in the EU

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Statybos Projektu Sprendimai (SPS) is a small construction company which specialises in the design, technical supervision, and project management of constructing passive buildings in Lithuania. Passive buildings collect, store and distribute energy (such as solar energy) without the use of electrical or mechanical power. This case study illustrates the implementation and challenges of green change in the construction sector from the perspective of a small company in a new EU member state. It demonstrates the significant impact of climate change on the whole functioning of the business, and exemplifies approaches used by companies to anticipate and manage change, including an increase in the number of employees and the improvement of their skills.

Background

Energy use for housing accounts for 40% of total energy consumption in the EU and therefore is a significant pressure for climate change. However, substantial reductions in energy use can be achieved through increased energy efficiency in buildings.

Joint stock company Statybos Projektu Sprendimai (SPS) is a small company, located in Lithuania, which specialises in residential building design, technical supervision, and project management. It was established in 2006 and employs 14 people.

The company perceived the climate change issue and related regulatory changes as business opportunities creating a demand for energy efficient solutions. Therefore it was one of the first companies in Lithuania to provide building design, technical supervision and project management for passive buildings.

Passive building design brings up to a 90% energy saving compared to the energy use of a current average building in Europe. In Lithuania a passive house meets the requirements for energy performance of an 'A++' building which is the highest type of certified energy performance. The green business practice implemented by SPS directly contributes to climate change mitigation through reduced energy use.

Drivers and motivations

There were two significant motivators for the green business practice within SPS. Firstly, the company wanted to exploit the business opportunity to be among the first passive building designers/technical supervisors in Lithuania and to capitalise on the anticipated growth in demand for these buildings. The SPS representative interviewed commented:

According to the prevailing tendencies in the world's housing sector it was clear to me that passive houses will sooner or later become the prevailing concept of housing.

The company expected to gain competitive advantage through this specialisation and to attract new customers interested in higher energy efficiency.

The second motivator came from regulatory changes. The EU directive 2010/31/EU on energy performance of buildings (861Kb PDF) implies a transition towards 'nearly zero-energy buildings' by the end of 2020, therefore ensuring the market growth for passive houses. In addition, regulatory amendments in Lithuania introduced an A++ certificate for a nearly zero-energy building, which formally distinguishes passive buildings.

Other drivers for the company's new green business practice were:

- increasing economic feasibility of passive buildings projects due to rising energy prices;
- availability of specialised training to address the green skills needs (see section on green business practices).

Green business practices

Steps to implementation

SPS encountered the passive building concept in 2008 at an exhibition in Germany. Their actual change was triggered in October 2010 by the opportunity to participate in a specialised training organised in Lithuania by The National Passive House Association and delivered by the German Passive House Institute (PHI). The acquired skills allowed the firm to create a team for passive building projects. Currently SPS is involved in five such projects.

Specifics of a passive building

There are two main differences between passive and typical buildings. Firstly, a passive building is designed (using special tools) to achieve an agreed target of energy use, while for a typical building energy use targets are not usually set. Secondly, there is greater technical supervision during the construction of a passive building with several checks during construction to ensure that the building meets the agreed targets of energy use.

Challenges for implementation

As with any company introducing a new product, SPS has to combat low awareness of passive buildings among its potential customers. Passive building requires extra investment in energy saving which is not yet common in Lithuania. The SPS interviewee said:

For our customers it is very important to see a built passive house, and to talk to the people living there, and only then do they seriously consider it for themselves.

To counteract the risk-averse customer culture and to increase product demand, SPS works with low margins to build their first demonstration passive houses (see below). According to all interviewees, financial subsidies for promoting passive buildings in Lithuania would be highly effective. Alternatively, public buildings could be renovated or new passive buildings could be built for public purposes. Apart from the benefits already mentioned this could also reduce public spending on energy.

Another major challenge is the quality assurance during the construction process. A good passive house design is worthless if it is not implemented thoroughly. Construction supervisors managing work on site, and technical supervisors checking implementation adherence to a building's design, are key workers in this regard. Low awareness of the passive house concept among construction supervisors results in a failure to adhere to building design and worse energy performance. Therefore there is a need for a change in working culture within the entire value chain. To this end, SPS closely works with its contractors by training them about critical aspects of implementation and tries to use its own technical supervisors to ensure that building design requirements are met.

Impact on employment

Green jobs

Currently five company employees (out of 14) are working in the firm's passive buildings team. The team comprises a project manager, an architect, a building designer, and two technical supervisors. The technical supervisors were hired specifically for the green business practice and trained on the job (thus regarded as new green jobs). The project manager, architect, and building designer had already been working full time for the company on typical house projects and, after acquiring the skills needed for the construction of passive building, started to devote part of their time to such projects (thus regarded as green jobs). There were no jobs eliminated or substituted due to implementation of the green business practice.

SPS expects that, in five years, passive building projects will constitute at least 50% of their business. As a result, the company anticipates an increasing demand for technical supervisors since their role in passive building projects is more intensive. The company expects to hire two more people, and foresees that 10 out of 16 employees will work in passive building projects. Most of the current jobs within the company will be gradually transformed into green jobs by providing necessary skills and time needed for construction of passive buildings. This projection is based on the company's experience so far, anticipated growth in demand and observed trends in EU construction sector.

Green skills

The adopted green business practice of passive building design demands new, mainly job-specific skills, which are related to understanding the principles of passive building design and the skills required for modelling a building's energy performance. Generic skills, such as understanding the need for energy conservation and environmental issues, are thought to be of less importance since energy conservation is approached from a highly technical and job-specific perspective.

The first and most important set of green skills required for passive building projects is the understanding of the principles of passive house design. These include:

- the most energy efficient window placement techniques for solar insulation;
- techniques for protecting from wind;
- understanding of the role of thermal mass.

The major green skills gap results from the fact that the concept of passive house is new in Lithuania. To acquire the necessary knowledge one SPS project manager has attended a six-month training course conducted by the Passive House Institute and has been certified as a passive house designer. The SPS team for passive building projects was then formed and trained by this project manager. Internal training was the most affordable option for SPS due to the high fees for the external training course (about €3,000 per person). The company had no

information as to whether there were alternative training courses in Lithuania or elsewhere in the region at lower cost.

The second most important set of green skills is the modelling of a building's energy performance with respect to its local environment (such as temperatures, wind, sun) and the consequent design of technical building solutions. According to the SPS representative,

A 'typical' passive house project does not exist, since every local environment is different and a building design needs to be adjusted accordingly.

For this purpose a special IT modelling tool was obtained from the Passive House Institute as part of the project manager's training package. This tool is used by the building designer and technical supervisors at all stages of a building project – from design to completion. Other SPS employees are now learning to use this tool on the job.

Collaboration on green skills

The company regards itself as too small to initiate collaboration with public authorities or educational institutions to anticipate the green skills that will be needed, or to manage current green skills gaps in passive house design.

The predominant view of SPS is that the market for the passive house in Lithuania is in its infancy, where the key challenge is to prove the feasibility of such houses in Lithuania and to test their potential demand. Therefore, according to SPS, it is too early to engage in formal intensive collaborative efforts to anticipate or manage green skills needs. Instead SPS observes foreign practices of passive house design, studies related market trends and carries out informal discussions with local business partners.

Since September 2010 SPS has been a member of the Lithuanian National Passive House Association which is working with green skills anticipation and management issues. The association collaborates with two Lithuanian universities to incorporate the concept of passive houses into their curriculum. The association is also organising information sessions for building designers and construction workers to raise their awareness of the passive house concept. There have also been attempts to obtain public financial support for training people in passive house design. However no tangible results have been achieved. The association is willing to participate in strategic discussions with national public authorities to facilitate passive house development in Lithuania. However, their attempts are hindered by the lack of importance of the passive house concept in national public policy and thus, the lack of active collaboration of public authorities with relevant stakeholders in promoting this concept.

Other working and financial conditions

Due to the higher costs of training related to passive building design the company currently invests more in green job positions than in other ones. Most of the investment goes to the training of the passive building designer and technical supervisors. There are no other differences, either in working conditions or pay between green jobs and other jobs in the company. However, considering the likely increase of future demand for passive houses, the need for related green skills will also rise. This may also result in higher premiums and better career opportunities for employees possessing these skills.

Other collaborative approaches

To manage green change SPS and another company supplying services for passive buildings have jointly established an NGO 'Ecovizija'.

The NGO has invited a number of business partners to collaborate for mutually beneficial aims:

- promoting energy efficiency in buildings;
- accelerating the use of renewable energy sources;
- educating society about responsible and rational energy use.

With their sponsorship, 'Ecovizija' attracts potential customers by organising seminars and disseminating information on passive houses and energy use. Furthermore, the NGO and partners are currently building the first passive house district in Lithuania. Two houses in the district will be used solely for demonstration purposes. 'Ecovizija' is applying for financial support for these two demonstration buildings from the EU fund LIFE+, which supports environmental and nature conservation projects throughout the EU.

SPS is actively participating in all activities of 'Ecovizija' including design services for the passive house district. This collaboration creates tangible synergies as a single company could not afford such promotion measures. Furthermore, collaborators benefit from knowledge spill-overs since work on a common project allows learning about different technologies, their compatibility and possible improvements.

Overall benefits for the company

SPS is confident about its decision to enter the passive house market. Firstly, the company is increasing its competitive advantage and expects to earn significant profits by exploiting the anticipated demand of passive houses. Secondly, the benefits from collaboration throughout the value chain contribute to better compatibility and higher quality of SPS products. Finally, the knowledge of passive building construction is also beneficial for typical building projects, as energy saving solutions can be applied here too, at the customer's request.

The company has not used any specific approaches to anticipate green change due to its small size and limited funds. Instead, it:

- reacted to the implemented regulations ad-hoc;
- followed construction sector tendencies within the EU;
- participated in various exhibitions;
- relied on informal dialogue with its business partners.

Conclusions and recommendations

The main drivers of a green business change relate to the exploitation of business opportunities and regulatory changes. The aim of constructing 'nearly zero-energy buildings' by the end of 2020 signalled by the government encouraged the company to exploit the opportunity to build passive houses.

The example of common business efforts in building the first passive house district in Lithuania illustrates that collaboration between companies, social partners, government and other stakeholders along the entire value chain is imperative to effective promotion and successful adoption of a new product.

Support from public authorities in terms of financial resources or more active engagement in discussions with relevant stakeholders is very much needed in promoting green products or services (such as passive houses) and, as a result, encouraging green change.

The number of green and greening jobs needed in the passive house subsector is expected to increase progressively. This is because the target, set by the EU Directive on Energy Performance of Buildings (EPBD) of all new buildings to be nearly zero energy, is December 2020.

The current green skills gaps in the passive building subsector pose a need for specialised training that is not yet integrated into the existing curricula of educational institutions, or delivered within new programmes in Lithuania. Collaboration between education and training institutions, business and public authorities is needed to address this need;

Due to a limited availability of funds, a small company is likely to take a subsidiary role in respect to the anticipation and management of green business change and related collaboration activities.

Bibliography:

SPS division for passive house design: http://www.efektyvusnamai.lt/ (in Lithuanian)

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