



Refurbishment of school buildings in Carnikava

Organisation: Latvian Environmental Investment Found (LEIF) and Carnikava Municipality

- Achieving higher energy efficiency by renovation of buildings and applying principles of green sustainable building during the technical project design for renovation
- **Note: The project is currently in the technical design phase [date: February 2016]**

Picture © Carnikava municipality



- Standard product / conventional tender
- Renovation without considering green solutions
- Energy used for heating 90 kWh/m²/year

GPP (PRIMES) tender
Architectural services for technical project considering sustainable/energy efficient solutions

Expected savings:

- Energy for heating not more than 30 kWh/m² year
- Reduction of CO₂ emissions 46 t/a

Introduction to case

1.1 PITCH-TALK

Carnikava is a small municipality in Latvia. The local government would like to renovate a larger school zone including schools, libraries, sports facilities etc. which could develop as a cultural centre (including Schools of Music and of Arts) attracting inhabitants to choose the municipal school for their children. The aim is to perform high quality renovation incorporating also green building principles, having both: a more energy efficient building and a healthier indoor environment.

1.2 CASE CONTENT AND ISSUE

Carnikava, a small municipality in the neighbourhood of Riga, decided to start a high quality renovation project for local secondary school, including the stadium on the school area, achieving high energy efficiency and healthier indoor environment, are very big and ambitious project for municipality. Regarding the buildings, the most important decisions are made during the design phase, hence the importance of incorporating preconditions for energy efficiency and healthy indoor environment when contracting the architect who will develop the renovation project and also supervise the building process.

The service contract tender with high energy-efficiency criteria was developed following the approval by the mayor in the municipality's council meeting on September 7, 2015 and announced on national web page where all public procurements are published. The tender procedure for the design phase closed on October 30, 2015. The first tender ended without success (only one bidder with very high price) therefore municipality started 2nd tender involving also pre-market consultation.

1.4 SOLUTIONS APPLIED

The contractor (bidder) will be asked to integrate principles of low-energy house into the renovation project to achieve higher energy efficiency. The application of the life cycle costing will enable the municipality to decide on the best environmental and economically feasible solutions. The contract with service provider (architectural services) will require securing compliance with specification and also limits of building costs during building phase.

Tender features

The tender for service contract (reconstruction project of school building and architectural surveillance during the building phase) by the Procurement unit in charge of Carnikava Municipality – Green public procurement “Technical design project for reconstruction of school buildings in Carnikava”. Tender was announced on September 7, 2015 on the national website of the Procurement Bureau <http://pvs.iub.gov.lv/show/418689>. The first tender ended without results, and municipality started the 2nd tender process

Subject matter: Architectural services (reconstruction project development and supervision during construction phase) for "Reconstruction of Carnikava county educational institutions to improve the learning environment"

Total cost: will be known when the tender process will be closed –134 000-200 000 € (excluding VAT)



This tender forms part of the EU supported project Procurement in Municipalities focusing on Energy Efficient Solutions (PRIMES)

- Type of procedure: Open
- Type of contract: direct service contract
- No division in lots

Procurement objectives

Since this is a large municipal building for sensitive target group, municipality would like to achieve high-energy efficiency and healthy indoor environment. The objective is to choose the most economically advantageous service contract for the renovation project and authorship surveillance during building phase. The service provider (architect) shall provide life cycle cost estimates for municipality to choose best options for later construction project. Although in 2015 new construction law has set quite high standards (much higher than in other EU countries and currently revised EU GPP construction guidelines), there is limited experience in the country. Unfortunately no prior market consultation was done, but decisions based on experience of building experts involved in the preparation of tender. After unsuccessful launch of the first tender, the second tender involving pre-market consultation was prepared (on-going).



Procurement approach

Tendering follows the open procedure for renovation project and authorship surveillance during building phase (service contract). The procurement principle is to choose the most economically advantageous offer. Green criteria are integrated in selection criteria (documented experience in passive house building and relevant education of experts involved verified with diploma/ certificate), and in award criteria. The first tender ended without results, and municipality started the 2nd tender process including pre-market consultations.

Selection criteria (must criteria on eligibility of bidders):

The bidders must prove they have 2 references for renovations of educational institutions (at least 1000 m³ volume) during last five years (verification: list, contacts)

The personnel responsible for projecting specific parts shall have corresponding qualification and at least experience with renovation or reconstruction include law energy principles (at least 1000m³ volume, verification: list, contacts, education certificates) incl. energy efficient buildings.

Technical specification:

- The project designer must apply life cycle costing to demonstrate potential savings of more environmentally preferable (e.g. energy efficiency) solutions according to Regulation Nr. 244/2012;
- The energy consumption for heating purposes no more than 30 kWh / m² per year, while providing indoor climate complying with legal requirements regarding construction, hygiene and protection;
- Total primary energy consumption for heating, hot water supply, mechanical ventilation, cooling, lighting no more than 95 kWh / m² per year;
- The building shall use high-efficiency systems that deliver:

- no less than 75% of the ventilation heat loss recovery during the heating season;
- No use of low efficiency fossil fuel heating systems;
- Application of building practice of low energy houses (according to standard);
- Restriction of hazardous substances (only exceptional presence of SVHC or candidate substances in materials, restrictions of VOC, no SF₆);
- Preference to environmentally friendly materials (5% recycled, wood compliant with FSC or PEFC standard, EU Eco-label or Nordic Swan or any equivalent);
- No PVC floor covering;
- Monitoring options for heating and energy use;
- Energy efficient lightening ($= < 75 \text{ lm/W}$, $< 8 \text{ W/m}^2$), automatic control system (at a minimum: common areas, classrooms and recommended other regularly congested areas).
- Consider integration and preservation of trees in the area
- The project to provide water-saving equipment (eg, water aerators);
 - Consider reuse of waste water (grey water) may be used after purification or use of rainwater;
 - Water metering and control;
 - Training for pupils and school personnel about the economic use of water;
 - Water drinking spots
 - Consider the use of heat recovery from the outgoing wastewater - kitchen, shower and basin;
- Utilities for municipal waste sorting in classes

Award criteria:

- Architect warrants high level of energy efficiency for heating, lightening, ventilation etc at maximum 95 kWh/m² (additional points for lower energy use. 10% of total result)
- Architectural qualities of proposal (more precise description included) (15%)
- Price of architectural service (60%)
- Estimated building costs (15%)

Criteria development

The criteria were developed by the “PRIMES” expert following principles of low-energy house (<http://pasivamaja.lv/>), Regulation Nr. 244/2012 for new buildings and various Latvian guidelines for sustainable building (<http://lpmc.lv/projekti/nordplus-green-icon/rezultati.html>), as well as EU GPP criteria for buildings, which are under revision now. Most of requirements addressed energy efficiency, as well as restricting hazardous substances in building materials.



Results

The results and deeper analysis will be made after the tender procedure is closed and results analysed. The first tender was stopped due to very high price, and now the second tender will be published.

	Estimated CO ₂ e emissions	Estimated Energy consumption
Low Carbon Solution (achieving no more than 30 kWh/m ²)	23,4 CO ₂ /year	10,0 toe/year
Cosmetic renovation without energy efficiency measures	69,7 t CO ₂ /year	29,7 toe/year
Total savings	46,3 t/year	19,7 toe /year

The calculation are based on energy efficiency audit, applying emission factors for heating used by energy auditor (0,202 kgCO₂/kWh).



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The contract with the bidder will be made, when State treasury has approved the loan for this procurement and project to Carnikava municipality.

Lessons learned at this stage of the procurement

- If the municipality and its procurers/staff have strong political support from the mayor and other parliamentary members, then the tender development process is proceeding quickly.
- The preparation of the rest of the documentation – legal part etc., takes a long time. In small municipalities the procurers and lawyers are working only part time jobs. Even if the technical specifications are developed by PRIMES project experts, there will still be more months until all necessary documentation is prepared and the tender is ready to announce.
- The procurement is very challenging for suppliers since there are not many projects in Latvia addressing passive house principles and following life cycle approach, including life cycle costing.
- The pre-marketing consultation might be essential for new kind of tenders without large experience in country
- The GPP task force support for tendering architectural services is essential for achieving best energy efficiency results in the renewed building however this does not sufficiently describe the CO₂ savings since the time period until the project is realized is very long.

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About PRIMES



Across six countries in Europe; Denmark, Sweden, Latvia, Croatia, France and Italy, PRIMES project seeks to help municipalities overcome barriers in GPP processes, many of which lack capacity and knowledge.

PRIMES aims to develop basic skills and provide hands-on support for public purchasing organisations in order to overcome barriers and implement Green Public Purchasing. This will consequently result in energy savings and CO₂ reductions. – www.primes-eu.net

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About GPP 2020



GPP 2020 aims to mainstream low-carbon procurement across Europe in support of the EU's goals to achieve a 20% reduction in greenhouse gas emissions, a 20% increase in the share of renewable energy and a 20% increase in energy efficiency by 2020.

To this end, GPP 2020 will implement more than 100 low-carbon tenders, which will directly result in substantial CO₂ savings. Moreover, GPP 2020 is running a capacity building programme that includes trainings and exchange. – www.gpp2020.eu



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