

CITY OF JYVÄSKYLÄ, FINLAND

Procurement objectives

The “Jyväskylän Optimi” project set out to develop new, innovative goal-setting as regards the procurement procedure for the lifetime duration of a new facility: a local school and day-care centre campus. It was decided to tender for a single contractor to design, build and also operate the facilities to enhance efficiency.

Project-level goals were established and included within various phases of the procurement procedure. These included objectives for monitoring and reporting about the functionality of different spaces and facilities; utilisation of new technologies; enhancing sustainable development and energy efficiency; and developing the competitiveness and legal aspects of the life-cycle funding model.

A detailed risk assessment was carried out by Jyväskylä. The risks identified were dealt with in an innovative way, enhancing outcomes by sharing responsibilities and benefits between the contractor and the City.

Criteria used

Project planning began in 2009 and tendering for the procurement consultants was undertaken at the start of 2010. This was followed by a negotiated procurement procedure, which ran until mid-2011, with contracts for design, build and operation finally signed in August 2011. Construction is taking place between March 2012 and July 2015, and maintenance, management and refurbishment services will be provided by the contractor until 2033.

The essential new element in life-cycle procurement was to transfer the risk of exceeding the agreed limits of energy consumption from the customer to the service provider. The limits for heating energy, water consumption and electricity (excluding user demand for lighting and other appliances), were established as part of the operation contract. Also detailed were the penalties for service providers if the thresholds are exceeded, the transferral of the price risk from customer to supplier when usage is above these established values and the shared profits between the service provider and the City if consumption falls below the set limits.

For example, if the energy consumed for heating the buildings exceeds the established limit, the service provider pays the extra energy used, and also carries the price risk. On the other hand, the customer carries the risk of increasing energy unit prices for the energy consumed below the limit set in the contract. Every calendar year, in January, the customer and the service provider balance out the previous year’s actual energy unit cost against the corresponding amount of energy according to the risk-sharing mechanism described.

Energy efficiency

The energy consumption requirements were maximum 60 kWh/year for the school and 69 kWh/year for the day care centre, corresponding to a [class C energy efficient building](#) as a minimum, but the result will be class B or even A class.

Furthermore, the buildings had to fulfill the Finnish “[healthy house” criteria](#) (voluntary Finnish system), which set requirements and target levels for indoor climate conditions, design solutions, construction and control, as well as operational aspects and servicing.

Background

The City of Jyväskylä, one of Finland’s centres of population increase with over 130,000 inhabitants, signed a [growth agreement](#) with the Finnish state in February 2013 for the years 2013–2015. The agreement recognises the role of the largest cities as the key drivers of growth and competitiveness, highlighting themes important for urban region expansion and development. Innovative public procurement is one of the cross-cutting topics of the agreement.

City of Jyväskylä has been recognised in Finland for its consistent work on implementing GPP policies. In 2012 75% of the contracts made by the City took environmental considerations into account.



Promoting life-cycle thinking in construction

Results

Once construction has been completed, the new facility will accommodate 1,000 children and 180 staff members, and will cover an area of 16,000m². Total construction costs are set at €35 million and maintenance is based on a life-span of 20-23 years.

The risk sharing mechanism has proven its role as an incentive to design and implement highly energy efficient buildings. In addition, the contract encourages the use of the property as energy efficiently as possible due to the 50/50 division of savings.

Risk assessment: Over 100 risks were identified. As a result of the risk management model used, the facility and related services are better insured than in typical construction cases.

The risk sharing mechanism influenced mainly the tendering and contracting phase, whilst the other criteria (such as energy efficiency) influenced to more of an extent the planning phase.

Environmental impacts

Around 40% of final energy consumption in the European Community takes place in the building sector, including the energy used for the extraction, processing, transport and disposal of building materials, the energy used during the construction deconstruction phases, and the energy consumed during the lifetime/lifespan of the building.

The main areas of energy consumption within buildings are for heating, cooling, ventilation, hot water supply and electricity. In terms of life-cycle costs, 15% fall within the construction phase, whilst 85% are from the maintenance and deconstruction of the building. This highlights the potential benefit of linking construction with maintenance as part of a service contract, i.e. to make it in the interest of service providers to make buildings easy to maintain and repair. It also illustrates the importance of incentivising low energy consumption during the use phase of a building.

Lessons learned

- Innovation was limited by the fact that many requirements had to be specific in order to allow for quantitative comparison between tenders.
- Setting up a contract to cover the lifespan of a facility allows scope for further improvements during later phases of the project.
- Energy and water contracting mechanism worked well.
- The reporting processes and usability and functionality assessment mechanisms have the potential to be more innovative than they were in this case.
- The target levels for energy consumption could have been more ambitious. This has been demonstrated by the fact that in similar projects carried out after this one in other cities, targets set were stricter and bids committing to lower energy use thresholds were made.