

## Building a sustainable pre-school using ecolabel standards

Hyvinkää Municipality (Finland)

### Background

Hyvinkää is a small Municipality located in the south of Finland, with a population of around 46,500 people. Finland as a nation places a great deal of emphasis on the importance of quality early-years care, and recently adopted new national legislation - [Early Childhood Education and Care \(ECEC\) 2015 Act](#) - which includes the goal to promote every child's growth, development, health and wellbeing in a holistic way, and ensuring an environment which is healthy, safe and promotes learning and development.

[Hyvinkää Municipality](#) has also set out a range of [Environmental Aims](#) (2013 to 2020) which guide the Municipality's strategy in terms of sustainability. These include goals around eco-efficient construction and maintenance, effective energy use and climate protection, and public procurement.

### Procurement objectives

In 2015, when Hyvinkää Municipality set out to procure a new pre-school it was clear that this should reflect wider environmental and social ambitions, while also providing a healthy, comfortable and flexible space for learning and play. The school is for around 200 children under the age of seven.

In order to guide this ambition, Hyvinkää Municipality wanted this pre-school to be the first in Finland to be awarded the [Nordic Swan Ecolabel](#) for 'small houses, apartment buildings and buildings for schools and pre-schools'. This particular set of standards was chosen due to its ability to support municipal environmental guidelines and cover health issues; save costs from long term reductions in energy consumption and building repairs; and contribute to Hyvinkää's positive image, as well as provide construction contractors with an opportunity to innovate in their use of energy sources, construction methods and materials.

The Nordic Swan Ecolabel is an [ISO 14024](#) type 1 Ecolabelling system.

### Preparatory steps and market dialogue

Hyvinkää Municipality was keen to encourage the market to offer its best solutions in terms of energy, materials and building techniques. Before going to tender, the Municipality published a Request for Information (RFI) on the Finnish national electronic tender site in July 2015.

The RFI set out the Municipality's intentions to build a pre-school to the standards of the Nordic Swan Ecolabel, with the aim for the completed building to be awarded the label. It outlined the following goals: cost effectiveness in energy



consumption, reductions in use of water and electricity; alternative sustainable energy sources; and a safe, emission-free and healthy building. Hyvinkää requested feedback on these goals, including suggestions on methods for saving energy (particularly regarding lighting, heating, cooling, use of water, efficiency on energy consumption and air ventilation). They also requested information on new and innovative building materials, techniques and building methods. Finally, they consulted the market to see if there was any interest in forming a partnership to build the first Nordic Swan Ecolabelled pre-school building in Finland.

The first RFI process received four responses with some encouraging feedback, including preliminary calculations on overall energy consumption, thoughts on the use of new materials, and suggested solutions to energy issues. However, this information was still fairly general. To collect more detailed information, a second round was carried out in October 2015, where all respondents were invited to one-to-one meetings in order to clarify answers and have an opportunity to raise specific questions.

To aid this process, respondents were sent a detailed questionnaire and a discussion guide in advance, which gave all participants time to prepare. The questionnaire included questions on:

- the benefit of building a Nordic Swan Ecolabelled building;
- where potential problems exist in meeting the requirements of the ecolabel and how these may be resolved; and
- about the company's willingness of committing to such a project.

The market dialogue process demonstrated that the market was able and willing to build a school building that would have the potential to be awarded the Ecolabel, and a call for tenders was published in [Tenders Electronic Daily](#) in December 2016.

## Criteria used

### Subject matter of the contract:

Kenttäkatu Kindergarten - New Building

### Selection criteria:

The selection criteria noted that the construction of a kindergarten that could meet the criteria for the Nordic Ecolabel requires more staff time than a normal construction contract, particularly because of the approval process required to achieve the award of the ecolabel. Thus, the existence of a reserved member of staff who would manage these approval processes was set as selection criteria.

Bidders also had to present a plan on how they would ensure that the building was implemented in accordance with the Nordic Ecolabel requirements, including how it would manage this process among subcontractors, by providing an example approval process for acquiring an ecolabel for a chosen material or process.

In addition, bidders were required to include proposals on how they would ensure low energy consumption in accordance with the Nordic Swan Ecolabel, and proposals on how to ensure the building elements and materials will be weather-protected during the building process.

### Technical specifications:

Sustainability requirements included:

- Overall energy consumption to be a maximum of 75% of the national upper standard level. The national upper limit is 170 kWh / m<sup>2</sup> per year, so this limit was reduced by 25% to 127 kWh / m<sup>2</sup> per year. This accounted for heating (including energy options additional to district heating), cooling, lighting and electrical equipment,

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control and automation, thermal insulation and heat recovery, windows and minimising hot water consumption.

- A proposal on how to achieve ecolabel requirements for energy consumption with regards to heating, ventilation and air conditioning (HVAC) systems, and how the controls of these systems can be adjusted.
- A proposal on how the energy consumption will be measured and data collected.

#### **Award criteria:**

The most economically advantageous tender was awarded the contract, with criteria weighted as follows:

- Price (50%): the lowest priced offer receiving a maximum 50 points, with other offers being calculated in proportion to this.
- Qualitative measures (50%) split between:
  - Layout/functional characteristics (50%) - plans presented in the offer are reviewed, with the best functional design receiving 10 points, and others calculated proportionally.
  - Facade (15%) – which includes situation of the building on the plot and how the facade fits the surroundings, with the most preferred receiving 10 points, and others calculated proportionally.
  - Traffic arrangement (15%) - suggestions on delivery routes and parking for staff and visitors, and the position of these routes, with the best receiving 10 points and the others being calculated proportionally.
  - Personnel allocated to project (10%) - full-time member of staff with appropriate work experience and references to attend to the ecolabel process, with the highest score receiving 10 points and others calculated proportionally.
  - Plan on how the materials and construction is kept dry at all times (10%) - materials and components of the building protected during transportation and installation/construction, with the highest score receiving 10 points and others calculated proportionally.

#### **Contract performance clauses:**

Bidders had to provide both:

- Plans for quality management in the production process and management of the production process, which includes work safety and environmental policy of the company; and
- Project plan, which includes planning, management and quality assurance of building work.

#### **Results**

Five bidders submitted tenders – four of which had taken part in the pre-procurement market dialogue. All bids met the compulsory requirements and the specified standards.

It was felt that the market dialogue process undoubtedly increased the quality of the bids, which were well thought through and demonstrated careful consideration of the sustainability criteria and requirements. Energy consumption calculations and plans for achieving the Nordic Swan Ecolabel standard were convincingly presented. Bidders showed an understanding of the work involved in obtaining an ecolabel, and set out realistic processes and management strategies.

Unexpectedly, the bids were much lower than anticipated: while it was estimated that this building would cost around €7 million, the winning bid was €4,850,000 (and the highest bid was €6,595,000). It is believed that bidders were prepared to be very competitive in their bidding due to the attractiveness of the contract, which had the potential to result in the pre-school being awarded the ecolabel. This can be considered a valuable asset for a company given its potential to demonstrate good practice, and perhaps give that company an advantage in future contracts.

The final price was around €6 million, when including all final modifications that were executed during the building process. Building works began in Autumn 2016 and were completed in August 2017. The pre-school was awarded the Nordic Swan Ecolabel on 7 August 2017. Hyvinkää Municipality also are a finalist in the [2017 Procura+ Awards](#) on sustainable and innovation procurement.

## Environmental impacts

A building's energy use during occupation is one of the most significant sources of its environmental impacts, in particular lighting, heating, cooling and ventilation. Thus designing in energy efficient performance, and taking advantage of opportunities to generate clean energy is an essential early step in procuring any building.<sup>1</sup>

In realising higher energy efficiency of a building, however, it is important not to forget the environmental impacts of construction and material choice, for example, by considering the 'embodied energy' or CO<sub>2</sub> in construction materials and processes. Wood and wood-based products were used, which offered a low CO<sub>2</sub> footprint. The building was manufactured in an indoor factory using pre-cut parts and modules, with this construction method resulting in a reduction of up to 10% material waste.

Hyvinkää Municipality recognised that by emphasising environmental sustainability, it was also possible to meet municipal environmental guidelines, protect the health of workers and users, as well as save costs over the long-run via energy consumption and building repairs.

## Lessons learned

Three main lessons were learned during this process: focus on function at all times; be active in market sourcing; and use standards or strict criteria.

On reflecting on the achievements of this procurement, it was clear that the market dialogue was of central importance. The dialogue helped the Municipality to determine that it was feasible to build a pre-school meeting stringent environmental (and ecolabel) requirements, raising confidence in their ambition, and providing reassurance that any obstacles which were likely to arise could nevertheless be overcome.

The expertise of ambitious procurement staff is also essential for setting initial ambitious aims and providing direction. By harnessing the knowledge of procurers in combination with the expertise from the market, it was possible for both to reach new levels of ambition through this project.

Hyvinkää Municipality gives the following advice to procurers considering similar projects:

- Set yourself a target and be clear about what you wish to achieve with your end result.
- Take advantage of the RFI approach - take the time to meet with potential tenderers/contractors, and allow enough lead-in time to the procurement process to engage market.
- Use standards (ISO/EU) or certificates, or build your Invitation to Tender to criteria such as the [EU GPP Criteria](#) or other ambitious ecolabels.
- Accept that costs may be slightly higher, but that, if implemented correctly, these will be offset by later savings such as heating and cooling cost savings from the building energy efficiency.

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For related information, please see [European GPP criteria for Office Building Design, Construction and Management](#), the [Technical Background Report](#) and the [Procurement Practice Guidance Document](#).

<sup>1</sup> [http://ec.europa.eu/environment/gpp/pdf/report\\_gpp\\_office\\_buildings.pdf](http://ec.europa.eu/environment/gpp/pdf/report_gpp_office_buildings.pdf)