

SUSTAINABLE TIMBER ACTION IN EUROPE

Sustainable timber bus shelters in Cornwall

Context – Cornwall Council has developed a new [Responsible Procurement Policy](#) which outlines its commitments to ethical sourcing, environmental sustainability and carbon management. Commissioning the design and manufacture of sustainable bus shelters is also part of the Council's ambition to raise the profile of public transport. It has been supported through '[Eco Communities](#)', a UK Government backed scheme to develop and demonstrate low carbon living. There are currently around 6,000 bus stops in Cornwall with a wide range of associated shelters and signs. A programme of improvements to the quality and sustainability of this transport infrastructure, based on need and capacity, is now underway.

Subject-matter

Design of sustainable bus shelters.

The procurement of the bus shelters was done in three phases: design, prototype and large scale production. This tender is about the design phase.

Timber products involved:

Structure and roof made of engineered wood.

The structure is made from [Accoya](#) timber and the roof from [Tricoya](#) timber. Both products are made using [acetylation](#). Acetylation increases the form stability of the timber and makes it more durable because it is no longer digestible by micro-organisms.

Contract period

The contract was advertised in February 2011 as part of an open procurement procedure. Those who expressed an interest were invited to a Supplier Information Day (SID). Later that month a Request for Quotations (RFQ) was released, accompanied by a brief, which elaborated on some of the issues raised during the SID.

Type of contract

The tender was for the design and the development of a prototype bus shelter complying with certain sustainability criteria.

Technical specifications & requirements

Timber was not specified as a construction material but the timber design eventually won the contest due to the sustainability and construction properties of the engineered timber.



As well as submitting quotes, bidders were asked to prepare method statements to address five different priority aspects of bus shelter design. The quality of the responses to the two questions related to sustainability was marked according to the extent to which bidders considered at least the following aspects:

1) How would you define “sustainable” in the context of the design of these shelters?

Materials sourcing (renewable/ abundant materials), low mileage, ethical sourcing, readily transportable (reduced bulk), durability, adaptability to new technologies, ease of maintenance, reducing waste sent to landfill and possibility of developing local skills in manufacture, erection and maintenance

2) Outline how you would set about designing a sustainable bus shelter with zero carbon credentials. What features might it include? How would you demonstrate these credentials?

Materials source locations, manufacturing processes, simple incorporation of the equipment it will house, low power lighting with switch off, simple erection, vandal resistance, ease of maintenance and preferred third party accreditation & name of likely accreditor.

Technical specifications:

- Bus shelters should seek to be zero carbon in sourcing, manufacture and operation. The prototype design will provide at least a zero carbon design, endeavouring to provide carbon capture in sourcing and fabrication/manufacture but excluding installation.
- They should have a very low carbon demand in operation.
- Design information should demonstrate the sustainability of each shelter in manufacture, construction, use and decommissioning. This should be achieved through considering the following issues associated with materials; sourcing, transportation, production methods, energy use in sourcing, production and operation, and reuse/ recycling/ disposal to landfill upon decommissioning.

Verification

Bidders had to provide proof of certification for their timber products which were checked using the respective databases. Cornwall Council also cooperated with the WWF as part of their [‘What Wood Would You Choose?’](#) campaign to verify the chain of custody certification of the timber.

Verifying whether shelters can be deemed “zero carbon” proved to be a complex issue, which the Council is still looking into, but they are satisfied that these wooden shelters have a very low carbon footprint compared to conventional metal shelters.

Award/evaluation criteria

The ratio for assessment was price 30%/quality 70%. The winning designer was commissioned to deliver a prototype and a pattern book (containing information to enable efficient and cost effective manufacture, assembly and installation) for a range of bus shelters according to the technical specifications.

Problems encountered

The project fell behind schedule and there was pressure to keep within budget, but the Council’s Strategic Transport team emphasised that this type of project should not be rushed as the product must be right to take to the market place.

Lastly, it was commented that requesting “low carbon” as opposed to “zero carbon” credentials may avoid inefficient time and cost issues, as parameters can vary widely and verification is very complex.

Results achieved

Request for quotations: There were 15 expressions of interest in the original contract from a variety of organisations. 14 of these sent representatives to the supplier information event and 10 responded to the request for quotation.

Sustainable design: The successful bidder has delivered a full pattern book and six bus shelter designs for use by Cornwall Council. These designs are comprised of engineered wood, toughened glass, stainless steel and mechanical fixings all with a projected 50 year service life or more.

Three prototypes based on these designs have subsequently been produced, installed and fully tested. The manufacture of the pattern book for Cornwall Council will be let as a 3-year framework contract.

Sustainable timber: The brand of engineered wood detailed by the designer for the main structure is certified with PEFC, FSC and Cradle to Cradle Gold. The modified wood for the roofs, which is sourced from sustainable resources such as certified, reclaimed or recycled timber, has a 100% non-toxic production process. The anti-graffiti wood coating specified allows paints to be removed with a water jet washer, meaning that chemicals can be avoided.

Costs: The goal was to not have any additional costs for the sustainable shelters than regular metal shelters would have cost. So far this goal has been reached, the full process is however not finalised yet.

Lessons learned

Leading Councillors and Corporate Directors need to be fully supportive of this type of project going forward at every stage, as do the public, who should be consulted during the design stage before any infrastructure is installed.

The supplier information day, where Council staff explained the background, design requirements and associated procurement process, proved to be fundamental to informing the project specifications. Stakeholders at the Council had the opportunity to see what the market potential was in a short period of time. Outcomes from this event were also fed into the brief which accompanied the request for quotations and helped define the needs, expectations and ambitions for the designs.

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For more information on the Sustainable Timber Action (STA) project please visit
www.sustainable-timber-action.org



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