



**SMART SPP**

innovation through sustainable procurement



## Working with the market to procure sustainable solutions

A case study from the  
Eastern Shires Purchasing Organisation (ESPO)

An initiative of:



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A case study from the Eastern Shires Purchasing Organisation (ESPO)

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## Partners:



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## Associate partners:



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# Introduction to the case study

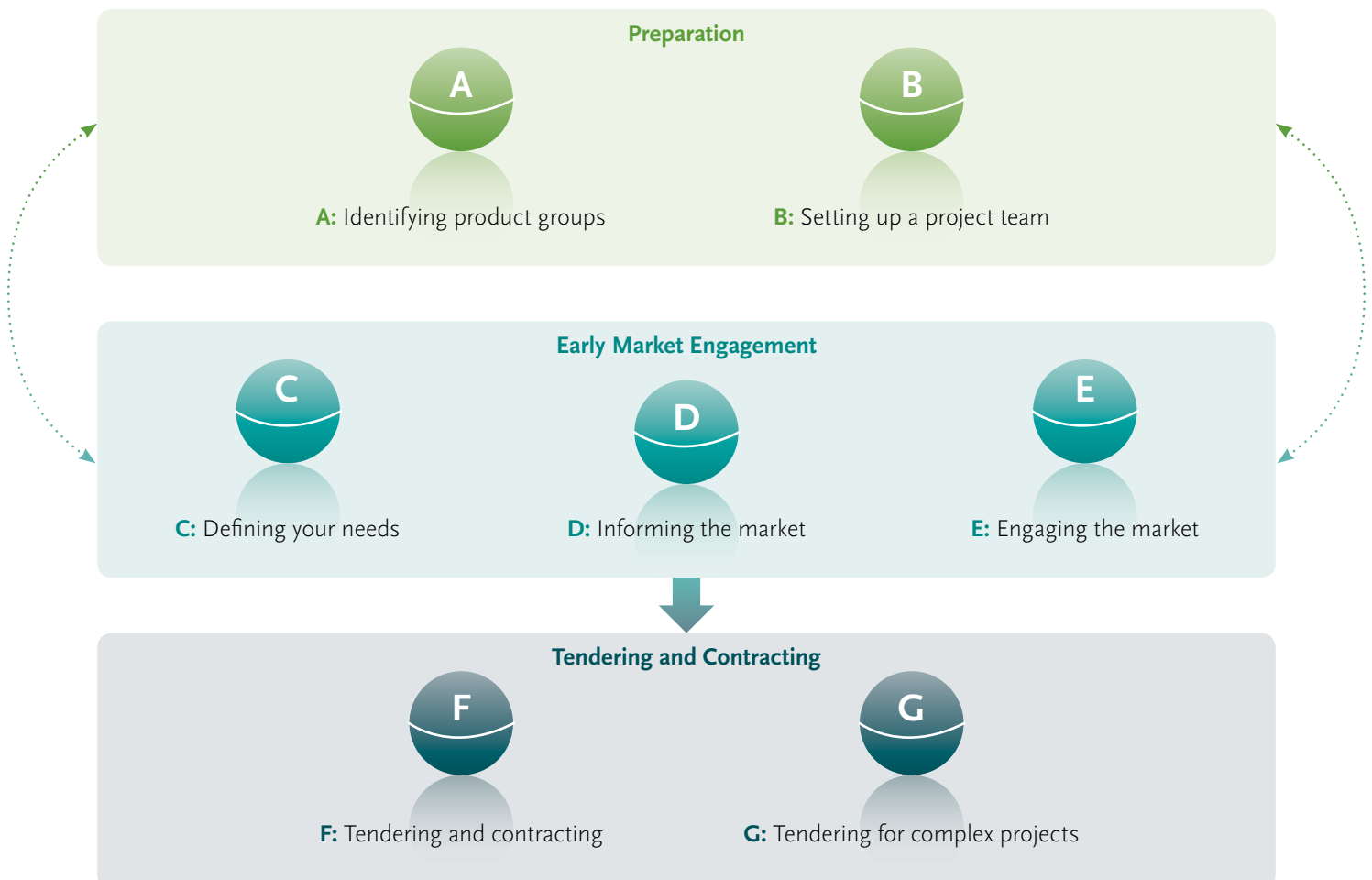
In this case study the Eastern Shires Purchasing Organisation (United Kingdom) shares its experiences, conclusions and lessons learned.

These SMART SPP public authority partners have used a particular procurement approach (see figure 1) which focuses on engaging the market effectively before tendering (early market engagement). This includes the assessment of the life-cycle costs and related CO<sub>2</sub> emissions of innovative products such as Light Emitting Diodes (LEDs) indoor and street lighting, energy efficient vending machines and electric mobility. This has been done before, during and/or after tendering.

The SMART SPP guidance includes a guide to procuring innovation, describing different ways to engage with the market, and a tool to calculate the life-cycle costs and CO<sub>2</sub> emissions of products. It can be downloaded at: [www.smart-spp.eu/guidance](http://www.smart-spp.eu/guidance).

**Figure 1**

Activities to guide authorities through a flexible approach to drive innovation through sustainable procurement



# Eastern Shires Purchasing Organisation (ESPO)

## 1. Summary



ESPO acting on behalf of Cambridge City Council (CCC) undertook a procurement in spring 2011 for the supply and installation of LED lighting to the Grand Arcade Annex Car Park in Cambridge. CCC's budget for this procurement was £120,000.

The three 'technologies in focus' of Smart SPP are:

1. Lighting systems (e.g. LED lighting, OLED lighting, lighting tubes)
2. Highly energy efficient (electric) vehicles (passengers and duty cars)
3. Construction services (e.g. heating/cooling systems using renewable energy sources)

This procurement has an obvious link to the first technology listed here.

## 2. Background

Cambridge City Council operates several multi-storey car park sites in and around Cambridge including the Grand Arcade car park. The Grand Arcade car park facility is situated in the city centre and adjoins the Grand Arcade shopping complex. The annexed car park element forms part of an overall car park provision and is an existing below ground multi-level facility that consists of four parking areas/levels which are noted -1, -2, -3 and -4, with level -1 being situated at street level. The car park operates 24 hours a day, seven days a week, 365 days a year.

In line with CCC's environmental strategies the annexed car park site was reviewed and it was felt that significant energy efficiencies could be achieved with the implementation of the latest LED lighting technology. The car park was lit via 200+ multiple self contained ceiling mounted luminaires. Each luminaire lamp was of the metal halide type and rated at 150W.

CCC employed the services of an Electrical Design Consultant to review and document the lighting system that was in place and draw up a specification to replace with LED lighting technology.

## 3. Experiences with the SMART SPP approach to driving sustainable innovation

### 3.1 Activity A – identifying appropriate product groups

The CCC's Executive Councillor for Climate Change and Growth investigated other LED street lighting projects in neighbouring councils and requested that CCC install LED lights into one of their car parks. The main rationale behind this decision was to save electricity and help to reduce CCC's carbon footprint.

In the summer of 2008 enquiries were conducted with lighting design engineers in order to trial some LED lights in a separate car park and zebra crossing. These first trial lights were unsuccessful – the amount of light the sample LED lights emitted was not sufficient.

Further research was carried out online and through local trade associations to identify other LED lighting suppliers and installers. Two companies were identified; one that supplied replacement LED lights and one that supplied retrofit LED lights.

The Grand Arcade Annex car park was then identified as the most suitable car park to install LED lights because it had existing bright lights (it is an underground car park, thus little/no natural light) which were expensive to run in both electricity and spare parts. The indicative payback calculation looked very favourable for installing and running LED lights. Due to the favourable figures and councillor support CCC were able to secure the funding needed for the project from the climate change fund run by the City Council. Two sample LED lights – one retrofit and one remove/replace – were installed in this car park. It was felt at the time that either of these two samples could offer a successful and cost effective alternative solution to the existing lighting system.



### 3.2 Activity B – setting up a project team

The team that worked on this project are:

- Project Sponsor, Kevin Willsher, Assistant Director, ESPO
- Kate Shaw, Interim Commercial Manager, ESPO
- Martin Lawson, Buyer, ESPO
- Simon Guy, Electrical Design Consultant, ITserV Design
- Julie Edwards, Administration and Projects Coordinator, Parking Services, Cambridge City Council
- Douglas Streater, Cambridge City Council
- John Bridgwater, Procurement Officer, Cambridge City Council
- Sean Cleary, Operations Manager, Specialist Services, Environmental Department, Cambridge City Council

### 3.3 Activity C – defining your needs

CCC needed to develop a specification that detailed regulations and standards, an outline of the electrical systems required, comprehensive information on the lights that were currently in situ, an overview of two sample LED lights that had already been installed (one retrofit and one replacement), CAD drawing of the existing car park luminaire layout and light levels, design information requirements and health and safety requirements.

CCC realised very early on in the process that they did not have the specific knowledge of this product area to draw up a specification that detailed all this information. This was the first time CCC had procured this type of technology. Hence the specification that was included in the tender document was produced by an Electrical Design Consultant in December 2010 (an output and performance driven specification).

### 3.4 Activity D – informing the market

As stated in 3.1 initial enquiries were made with a range of electrical companies. Coupled with this online research was also carried out and two companies were identified to fit sample lights in the designated car park. These fittings were made without prejudice.

In order to gauge further interest in this project and to provide the project team with an understanding of the supply market of LED lighting technology CCC placed an advert in February 2010 on the Improvement East website (see below).



### CAMBRIDGE CITY COUNCIL SEEKS PARTNERS FOR INNOVATIVE CAR PARK LIGHTING PROJECT

Cambridge City Council are in the process of producing a specification for the upgrade of all of their existing car parking facilities to LED lighting systems. This solution offers a range of potential benefits, including much lower energy use, lower maintenance and considerably reduced whole life costs. The council are not aware of this system being implemented anywhere else in the region as yet and hope to act as a pilot project, demonstrating both the cost and environmental benefits for others who are considering this type of system.

Cambridge City Council is also seeking potential partners who may be interested in a collaborative procurement exercise for LED lighting systems. If there is sufficient interest, **Improvement East** will consider providing funding support to set up a regional framework, subject to demand. If you are interested in finding out more about this project, or wish to register your interest in collaborating, then please contact colleagues at Cambridge City by e-mail in the first instance.

Operational – Julie Edwards, [Julie.edwards@cambridge.gov.uk](mailto:Julie.edwards@cambridge.gov.uk)

Procurement – John Bridgwater, [John.Bridgwater@cambridge.gov.uk](mailto:John.Bridgwater@cambridge.gov.uk)

In summer 2010 CCC approached ESPO to undertake a procurement exercise. ESPO placed formal adverts on Contracts Finder website, ESPO's website and Contrax Weekly. CCC also used the ESPO advert on their website.

Prior to this ESPO placed a PIN in April 2009 for "Energy efficient products/equipment based on innovative low carbon emission technologies and integrated solutions". This PIN put the three technologies in focus, the first of which provided details on LED's.

### 3.5 Activity E – engaging the market

All companies that responded to ESPO's PIN (April 2009), CCC's first advertisement (February 2010) and the final ESPO advert (April 2011) were logged and each was sent an Invitation to Tender document.

As part of the tender exercise ESPO and CCC agreed it would be beneficial to organise an open day with all potential suppliers/installers. 13 companies attended this open day and it gave them all a good opportunity to explore the car park and analyse the two sample lights that had been installed. It also gave them a good opportunity to ask questions. All questions that were asked at the open day were logged and the questions plus full answers were circulated to all bidders.

### 3.6 Activity F – tendering and contracting

An open tender route was taken. The rationale for this was:

- It allows for the assessment of bidders against selection criteria such as track record, financial stability, policies and procedures, etc. However instead of assessing these factors in advance of inviting tenders, they are assessed as 'qualifying criteria' within the tender evaluation process.
- Holding the open day helped in limiting the number of bids to only those that have a viable solution.
- The number of firms in the market place wishing to bid for this work was unknown and an open tender allowed the Council to receive bids from all organisations with an LED lighting solution – be it retrofit, remove/replace or other.



Tenderers that passed the selection criteria were evaluated against the award criteria, this was Price (60%) and Quality (40%). Price was scored on a sliding scale published in the tender document. Quality was broken down into four key areas: LED lights, Installation, Staff Support and Contract Management.

### 3.1 Activity G – tendering for complex projects

This is incorporated into Activity F for this particular project which, although requiring new technology, is not that complex.

## 4. Life-cycle costing and CO<sub>2</sub> emissions

The complexity of the tool coupled with the requirement for suppliers to provide data on emerging technologies raised questions over whether the tool could be employed in this procurement. If it was employed further questions were raised over the validity of the data it would produce (bad data in/bad data out), specifically the calculation of embedded emissions. ESPO had consulted with the IDeA (Local Government Improvement and Development) about use of the tool in UK procurement exercises and the advice provided was not conclusive. It was decided therefore that the SMART SPP LCC-CO<sub>2</sub> Tool would not be used.

ESPO included in the tender award criteria:

- Price
- Recycling and re-use
- Energy savings (including energy usage in watts and energy savings (%) compared with the traditional style lights)
- Robustness
- Warranty period

## 5. Conclusions and lessons learned

Strengths of the approach taken:

- The six/seven steps provide a structured and logical path to follow.
- Early market engagement provides a better knowledge for the procurement team of what is available on the market.
- Not disclosing the final budget for the project. A sliding scale was used in the tender document for the price scoring.
- The hiring of a consultant to draft the specification. The LED lighting procured in this project was very new and innovative. The consultant was the only person in the procurement team with the technical knowledge to draft a specification.
- Using the open tender route. The contracting authority required a solution as quickly as possible and the open route reduced procurement timescales more than a restrictive approach would have.
- Interviewing the shortlisted bidders. This provided a good opportunity to see, handle and test the LED lights. It was also a useful process to moderate each bidder's scores and decide the contractor CCC would use for this project.

Weaknesses of the approach taken:

- The selection criteria used in the contract was too restrictive. In particular the robust financial checks used by CCC ruled out two very competitive bids.



- Too much weighting was put on price (60%). CCC was very worried about bids coming in over budget and/or very close to their budget thus it was decided to put more emphasis on the price score. Only one of the eight bids submitted came in over budget thus this did not turn out to be a major issue.

Overall the approach and tendering used was the correct route. The company awarded the contract supply a good quality LED lighting solution, a credible installation service and a competitive price. This price (£77,100) offers CCC a significant saving in relation to the budget they had for this project (£120,000) and a tentative quote they had requested very early on in the process (£110,000).

## 6. Outlook

Dependent upon the success of this installation and funding available for future projects CCC may consider looking at replacing other city centre car parks with an LED lighting solution.

ESPO working in partnership with Pro5 and other UK procurement bodies will establish a new Framework Contract that will be available for the entire UK public sector to use. We will also consult with the other UK Partners, Bromley and Global to Local, to ensure a joined up approach.

## 7. Contact

*Kevin Willsher*, Assistant Director, ESPO, [k.willsher@espo.org](mailto:k.willsher@espo.org)

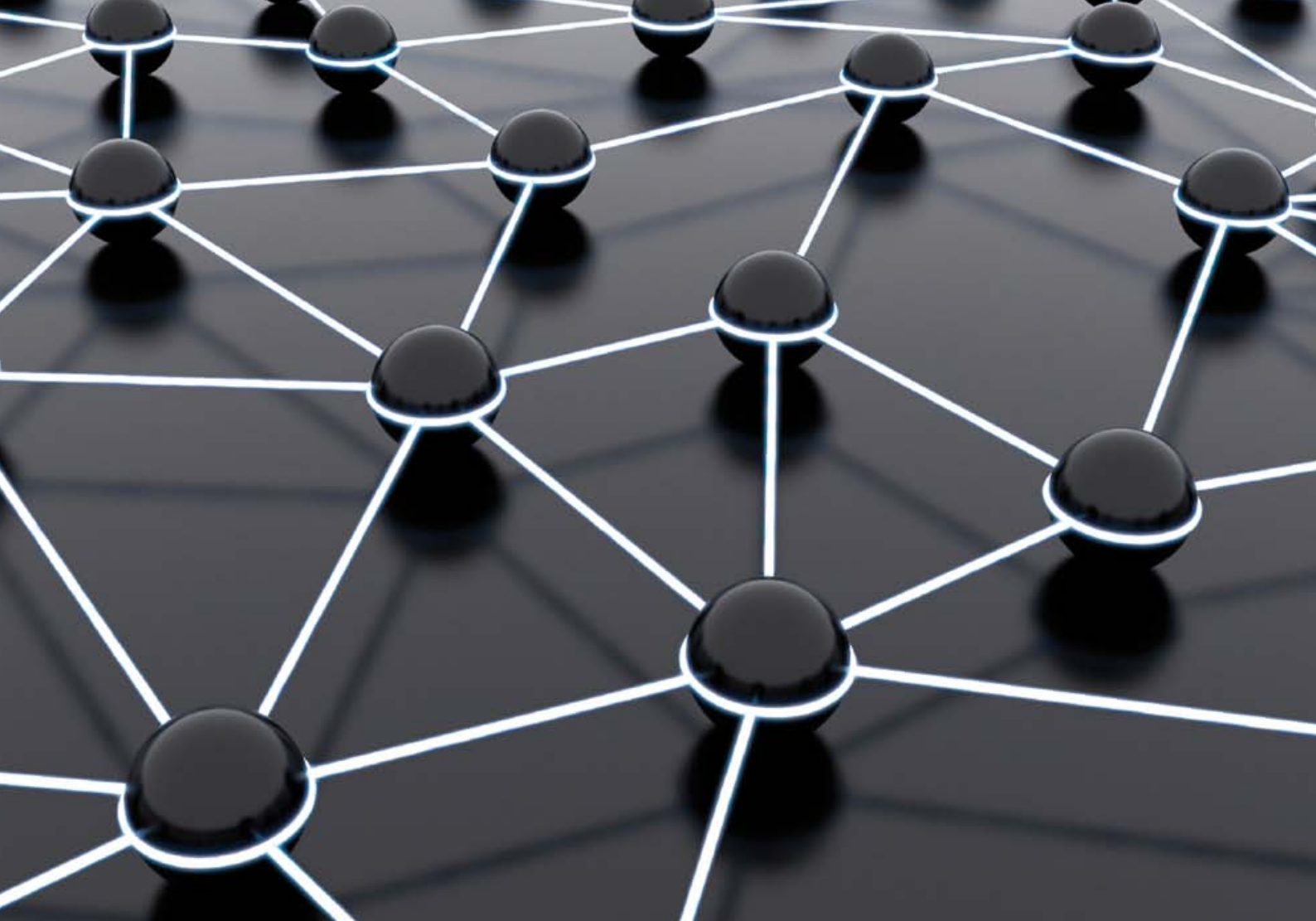
*Martin Lawson*, ESPO, [m.lawson@espo.org](mailto:m.lawson@espo.org)



# Annex

## List of performance-based specifications used in the Cambridge City Council Car Park Lighting Project

Regulations and Standards	
<ul style="list-style-type: none"> <li>• BS7671 (2008) IEE Regulations including all Guidance Notes</li> <li>• BS5266 Emergency Lighting</li> <li>• CIBSE (SLL) Lighting Guide</li> <li>• The Electricity Supply Regulations.</li> <li>• Health &amp; Safety at Work Act</li> <li>• Health and Safety at Work Executive Recommendations</li> <li>• CDM Regulations</li> <li>• COSHH Regulations</li> <li>• Building Regulations (as applicable)</li> <li>• Local Bye-Laws and Regulations</li> <li>• Local Authority Regulations and Approvals</li> <li>• BS EN Product Specifications</li> <li>• British Standard Codes of Practice</li> <li>• CE Conformity</li> </ul>	
Design Information Requirements	
<ul style="list-style-type: none"> <li>• Input Voltage</li> <li>• Input Frequency</li> <li>• IP Rating</li> <li>• Operating Temperature</li> <li>• Total Unit Power Consumption</li> <li>• Lumen Output</li> <li>• LED Colour Temperature</li> <li>• LED Useable Lifespan</li> <li>• General Product Warranty</li> </ul>	<ul style="list-style-type: none"> <li>110V to 230V AC (+/- 10%)</li> <li>50Hz</li> <li>Minimum IP54</li> <li>Minimum -20°C to +50°C</li> <li>Max. 60w</li> <li>Min. 3500 Lm</li> <li>4000 to 4500 Kelvin (Neutral or Cool White)</li> <li>Min. 50,000hrs or 5.7yrs (Based upon max. 30% lumen depreciation)</li> <li>Min. 2yrs, 5 years expected</li> </ul>



**SMART SPP – innovation through sustainable procurement**

Running from September 2008 until August 2011 “SMART SPP – innovation through sustainable procurement” is a three year project which promotes the introduction of new, innovative low carbon emission technologies and integrated solutions onto the European market. This is being done through encouraging early market engagement between public authority procurers and suppliers and developers of new innovative products and services in the pre-procurement phase of public tendering.

SMART SPP is an initiative of the Procura+ Campaign, run by ICLEI – Local Governments for Sustainability and designed to help support public authorities across Europe in implementing Sustainable Procurement and help promote their achievements.

For more information visit [www.procuraplus.org](http://www.procuraplus.org)

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