SPCB(2016)Paper 90
By correspondence

CHAMBER LIGHTING

Executive Summary

1. The lighting installation in the chamber is coming to the end of its useful life. The fittings are in excess of 12 years old and use out dated metal halide technology which is no longer supported by the original manufacturer. Due to an increase in the rate of failure of the fittings over recent times, it was recommended that the existing fittings are replaced to reduce the potential risk of major disruption to parliamentary business.

2. At its meeting of 29 September 2016 the SPCB considered its options and agreed that tenders should be sought for a defined scope of works. It was further agreed that tenders received would be analysed and presented for consideration at its meeting of 8 December 2016. Following these discussions, this paper recaps the background and seeks SPCB approval to proceed.

Issues

3. The current lighting design for the chamber uses technology available at the time of construction and provides multipoint studio style lighting to cover each Member's desk. Additional fittings provide circulation lighting below gallery level and there is limited lighting to the public and press galleries.

4. The debating chamber is the most critical space within the Parliament building and lighting in the chamber is essential for parliamentary business. There are a number of issues with the chamber light fittings but by far the most pressing is the use of unsupported and obsolete equipment.

5. Failures to components of the light fittings have been experienced over a period of time and at an accelerating rate. This is a deteriorating situation which indicates that the current fittings are entering their wear out period.

6. The original supplier of the light fittings no longer manufactures or supports the fittings. Failed components are currently replaced with suitable parts from a very limited number of suppliers and whilst we cannot predict how long these will be available, given the changes that have occurred in the technology of light fittings over the last 12 years, we would predict that at some time in the near future suitable replacements will not be available. This presents a major risk to parliamentary business. In addition, EU legislation in the short to medium term is expected to dictate that the metal halide lamps will no longer meet the required standards and therefore cease to be available from the European sources on which we currently rely.

7. The life expectancy of the current fittings is dependent on the ongoing availability of spare components and there being no damage to existing fittings (casing) which already cannot be replaced.

Options

8. The SPCB considered that the major operational risk of doing nothing was unacceptable as parliamentary business could be disrupted significantly over a prolonged period. It therefore requested all possible options to be explored to inform its decision. The following options emerged.

Option 1 - Retrofit solution

9. This option required modifications to the existing fittings to accommodate LED lights. Following research and discussions with potential suppliers this option was deemed not viable for the following reasons:

    - Lack of availability of replacement parts for the housing and associated mechanisms.
    - Design costs would increase significantly if problems were found in the fittings during re-working.
    - We do not believe that a satisfactory lighting and thermal performance can be achieved in the existing fitting envelope.

Option 2 - Point for point replacement

10. Visually this option would offer the least change from the current installation but offered only limited improvement to the existing quality of lighting for broadcast purposes. Upgrading and remedial works would be required above the existing ceiling to structural supports and electrical cables and fittings. The point for point option would have required significantly more work to be undertaken than would the new design solution. Creating the access platform to undertake this additional work would have also been a further cost. Ultimately, there was no cost benefit in pursuing this option as opposed to Option 3.

Option 3 - New design

11. This solution was prototyped and provided the best opportunity to make use of new technology in a manner most likely to achieve all of the project's aims including addressing operational risk, optimising the use of new technologies and providing a design that meets the requirements of supporting parliamentary business. Visually all of the existing rods and spotlights would be removed and replaced by the new design shaped fittings.

Option 4 – Periphery lighting and daylight control

12. To maximise the benefit of either of the above solutions (options 2 and 3)

it was recommended that daylight control and improvements to periphery lighting are considered as part of the overall scheme.

13. Incorporating daylight control as part of the final solution maximises energy efficiency and overcomes detrimental quality issues experienced by the broadcasting office (uneven light levels and the contrast between natural and artificial lighting). This would involve:

    - Replacing the window blinds on the east elevation with an opaque blind material.
    - Installing translucent louvres on some of the windows on the west elevation.
    - Installing film or blinds on some of the high level roof lights.

Analysis of tenders received

14. The SPCB agreed to invite tenders based on options (3) and (4) above. The overall project cost (design, construction and all related management and other charges) including VAT of the specified works in a single contract placed before the end of 2016 and for completion by 3 September 2017 would be £1,751,044. It is anticipated £706,000 of that total would be expended in the current financial year 2016/17.

15. Major packages of works include the manufacture of light fittings, construction of birdcage scaffolding, electrical installation including alterations to existing cabling and controls, periphery lighting and daylight control measures.

Resource Implications

16. All costs would be met from within existing budgets.

17. The new design system will have a life span of 25 years and would eliminate the need for annual relamping, saving £250k over the lifetime of the system. In addition, it would significantly reduce energy consumption and CO2 emissions, with running costs estimated to be reduced by 50% which equates to a further saving of over £100k over the lifetime of the system.

Governance Issues

18. Should the SPCB agree to proceed, a project board chaired by a Senior Responsible Owner will oversee the implementation phase. The SPCB would receive progress updates and final report on completion.

Publication Scheme

19. This paper can be published.

Next steps

20. Subject to SPCB approval, key dates are:

19 January
Confirm to SPCB that orders are placed and update to financial spend split, if possible, between this and next financial year.

February to June 2017
Further updates as requested will be given at subsequent SPCB meetings.

July and August (summer recess)
Installation of defined works within the Debating Chamber

4 September 2017
Chamber re-opens for parliamentary business.

Decision

21. The SPCB is asked to consider the issues presented and approve the next steps.

KEN HUGHES
12 December 2016