

Committees: Streets and Walkways Sub Committee <i>[for decision]</i> Projects and Procurement Sub <i>Committee [for information]</i>	Dates: 26 September 2023 16 October 2023
Subject: St Paul's Cathedral External Re-lighting Unique Project Identifier: 9672	Gateway 4: Detailed Options Appraisal (Complex)
Report of: Interim Executive Director Environment Report Author: Andrea Moravicova and Clarisse Tavin	For Decision
<h1>PUBLIC</h1>	

1. Status update	<p>Project Description: The project proposes to replace the ageing external lighting system at St Paul's Cathedral with a new innovative and energy efficient system. Since 1966 the City of London Corporation has taken responsibility for the installation and maintenance associated with the external lighting of the Cathedral. A recent inspection has determined many of the light fittings and cabling needs replacement. The project aims to bring St Paul's Cathedral back into the City and London's skyline after dark, enhancing the quality of the evening environment in the local area and reinforcing the views of St. Paul's Cathedral across London. This is to be achieved using the latest technology which will allow substantial savings in running and maintenance costs. This aligns with the objectives of the City Lighting Strategy, the Lighting Supplementary Planning Document and the Climate Action Strategy.</p> <p><u>Project objectives:</u></p> <ul style="list-style-type: none"> • Replace the current ageing lighting equipment with a new more effective and efficient system that aligns to the current The Institute of Engineering and Technology (IET) regulations and meets the criteria of the City Lighting Strategy. • Deliver annual savings of approximately 50% of running costs (electrical and maintenance). • Hand over the management and maintenance of the new lighting system to St Paul's Cathedral, in line with the Cathedral's acceptance of financial responsibility. • Reduce light pollution and energy use in line with the City Corporation's commitment to sustainability and contribute towards achieving its net zero carbon emission by 2040.
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	<ul style="list-style-type: none"> • Improve the quality of the evening environment in the local area and reinforce the views of St Paul’s Cathedral across London. <p>RAG Status: Green (Red at last report to Committee – Projects Sub 2022)</p> <p>Risk Status: Medium (High at last report to Committee – Projects Sub 2022)</p> <p>Total Estimated Cost of Project (excluding risk): £2.075M</p> <p>Change in Total Estimated Cost of Project (excluding risk): Increase/Decrease of £0 since last report to Committee (Projects Sub 2022)</p> <p>Spend to Date: £202,012</p> <p>Funding Source: City of London Capital Bid (City Fund), Finance Committee Contingency fund, External sponsorship, S106s</p> <p>Costed Risk Provision Utilised: N/A</p> <p>Slippage: The project programme has been revised to include lighting tests in October 2023 and demonstrations in January 2024. These aim to test key elements of the design and enable engagement with key City, Cathedral, and external stakeholders to validate the concept design. This stage will also be instrumental in securing further external sponsorship, if required. It is then proposed to progress with the detailed design and submission of a Gateway 4c report in Q3 2024, and a Gateway 5 report in Q1 2025. Subject to all required legal approvals with St Paul’s Cathedral being in place, it is anticipated that implementation starts in Q1 2026, nine months later than previously scheduled to accommodate the lighting tests and demonstrations.</p>
<p>2. Next steps and requested decisions</p>	<p>Next Gateway: Gateway 4c</p> <p>Next Steps:</p> <p><u>2.1 Lighting tests and trials</u></p> <ul style="list-style-type: none"> • Preparation and coordination of lighting tests (October 2023) and demonstration trials (January 2024) to try different technical kits in several locations on St Paul’s Cathedral, existing street furniture and surrounding buildings. These will illuminate part of the West Portico and the Peristyle, one of the Bell Tower, and the Southern section of the Dome. • The trials and demonstrations will involve temporary installation of lighting equipment, including its wiring, cabling, and control equipment. The lighting will be focussed and programmed before being observed for several consecutive nights from multiple close-by and distance locations. This will allow assessment of visual brightness from close to mid to far distances, to validate the concept design and provide the basis for the development of the detailed design (see more details in Appendix 2).

	<ul style="list-style-type: none"> • The tests will inform the demonstration trials, which will provide the opportunity to engage with key stakeholders including decision makers at the City of London and St Paul Cathedral, as well as statutory bodies and external sponsors. • The necessary equipment and services will be procured by the City as per the design specification. These include the appointment of the Surveyor to the Fabric and Clerk of Works, City and Cathedral contractors, Heritage specialist, Sustainability consultant and Quantity Surveyor, System Integrator and Lighting designer. • A lighting trial report, including stakeholders’ feedback and photographic recording will be prepared to ensure that the project meets its objectives. <p><u>2.2 Detailed Design</u></p> <ul style="list-style-type: none"> • Develop the detailed design based on the lighting trial’s outcomes. • Secure relevant consents and approvals from the City and St Paul’s Cathedral, and other statutory bodies and interested parties as required. • Secure additional external funding if required. • Prepare a Letter of Understanding to formalise the future maintenance and management of the lighting to be undertaken by St Paul’s Cathedral. • Prepare the Gateway 4c to provide progress on design in Q3 2024. • It is anticipated that the Gateway 5 - Authority to start work report be submitted in Q1 2025 subject to all required approval and legal agreements being in place. <p>Requested Decisions:</p> <ul style="list-style-type: none"> • Note the updated concept design; • Approve the budget of an additional £350,000 to undertake the lighting tests and demonstration trials, progress the detailed design, and reach the next Gateway; funded from the £1.16m capital bid previously approved in 2021; • Authorise transfer of any underspend from the previous Gateway to this Gateway budget. • Note the revised budget of £675k; • Approve the revised project programme; and • Approve that officers enter into the required legal agreement with St Paul’s Cathedral regarding the future maintenance and management of the lighting system.
<p>3. Resource requirements to reach next Gateway</p>	<p>3.1 Expenditure to date is £202,012 funded from the approved capital bid of £1.16m (please see details in Finance Tables in Appendix 3).</p>

- 3.2 Activities completed to date include appointments of the lighting designer to review and update the 2013 lighting concept design, the appointment of a Technical Project Manager to assist with project management activities and provide technical expertise to deal with complex lighting project on listed buildings, and the preparation of the lighting tests and demonstrations.
- 3.3 The current expenditure is £202k funded from the previous £325k budget approved at Gateway 3 Issue report in February 2022, leaving a balance of £123k to carry over for the next stage of the project.

Table 1: resource requirements			
Description	Approved budget (£)	Resources required (£)	Revised budget (£)
PreEv staff costs	15,000	-	15,000
PreEv P&T fees	35,000	-	35,000
Marketing fees	1,900	-	6,900
Sponsorship consultants	7,775	-	7,775
Staff costs	63,325	71,000	134,325
P&T fees	200,000	105,000	300,000
Legal staff cost	2,000	4,000	6,000
Works (including lighting tests and demonstrations)	-	170,000	170,000
Total	325,000	350,000	675,000

- 3.4 Additional staff cost and fees are required to prepare and implement the test and demonstrations, undertake stakeholder and sponsorship engagement, report writing, legal agreements' negotiations, design development, and appointment of specialists' consultants. This includes the Surveyor to the Fabric and Clerk of Works, City and Cathedral contractors, Heritage specialist, Sustainability consultant and Quantity Surveyor, System Integrator and Lighting designer to progress the detailed design. The staff cost is estimated based on approximately 45 hours a month over period of 10 months for a Group Manager, Project Manager and Highway Engineer.
- 3.5 To reduce budget costs, it is proposed that following the tests and demonstrations, the lighting equipment unsuitable for permanent installation is returned to the suppliers at a fair market value. Any suitable fixtures and fittings from the trials are proposed to be used in the permanent design to ensure cost efficiencies and sustainability. The total estimated cost of the lighting equipment for the trials is between £115k and £130k.
- 3.6 In the last months, officers have successfully secured various contributions towards the project through S106s agreements, securing the total current project cost estimate of £2.075M.

Table 2: Estimated Funding sources	
Source of funding	Amount (£)
City of London Capital Bid (City Fund)	1.16M
S106s	0.840M
Finance Committee Contingency fund	0.075M
TOTAL	2.075M

- 3.7 The total project cost estimate will be further refined following the tests and demonstrations and appointment of a Quantity Surveyor and reported at the next Gateway. Positive conversations with City Bids and external high-profile partners have already taken place, and it is anticipated that if any further funding is required for the project, this will be secured through external sources. If any additional external funding is secured in excess of the project cost, the City Fund contribution could be reduced accordingly.
- 3.8 The full project budget will be confirmed in the next Gateway and secured before the Gateway 5 report is submitted.

Costed Risk Provision requested for this Gateway: None

4. Project Update

Latest progress:

4.1 Following the approval of the Gateway 3 Issues report in February 2022 the following activities have taken place:

- Engagement with external sponsors to secure the total project cost estimate.
- A lighting designer was appointed to review and update the 2013 Concept Design and contribute to the development of the lighting tests and demonstrations. The Concept Design was reviewed and further developed, with light modelling undertaken on the main facades.
- A Technical Project Manager was appointed to assist the project team with the project management activities, support the preparation of the lighting tests and trials, and provide technical expertise to deal complex lighting project on listed buildings.
- The scope of the lighting tests and trials was defined, and the required equipment schedule prepared and costed.
- Appointments of specialist consultants and contractors, including the Surveyor to the Fabric, Heritage Architect and Quantity Surveyor are underway.

4.2 Project background:

- Since 1966, the City Corporation and Cathedral have continued an informal arrangement whereby the responsibility for the maintenance of the external lighting system, the associated maintenance costs and the running costs have been borne by the Corporation. In so doing, the Corporation have assumed responsibility for ensuring compliance with The Institute of

Engineering and Technology (IET) regulations and British Standard 7671. Duty-holders are required by law to consider the risks associated with the use of electrical equipment.

- The annual costs of this informal arrangement are in the region of £25k per annum. The specific responsibility currently sits within the Environment Department
- In 2008, Members approved a feasibility study, to progress the Cathedral relighting project, which was led by the Dean and Chapter of St Paul's Cathedral.
- In September 2010, Members approved a budget of £100,000 from the City of London Finance Committee Contingency fund. Only £75k was spent of this approved budget and £25k was returned.
- An evaluation of the external lighting was carried out with input from the Cathedral's Dean and Chapter. This led to a Gateway 3 report being approved in May 2013 with the preferred option agreed to implement a new design using Light-Emitting Diodes (LED) technology. The programme for the project was dependent on securing external funding. This option included a flexible lighting system that highlights the architecture of the building whilst continually adapting to the level of lighting needed (i.e., for special events, at different times of the night etc). This scheme anticipated 60% annual savings on running costs, 66% reduction on carbon emission and improvements to the quality of the evening environment, making the area feel safer.
- In May 2013, Members also approved the development of a sponsorship strategy, giving consent to engaging a sponsorship specialist to support the City and the Cathedral in developing a clear plan to identify opportunities and prepare a sponsorship package for the project. The officers worked closely with St Paul's and potential external funders to progress the project; however, several external factors impacted the availability of funds and the project's progress.
- In September 2021, a comprehensive audit of the existing external lighting system was conducted. The findings of the audit highlighted the need to replace the aging lighting system and bring it up to the latest IET regulations.
- In January 2022, the Resource Allocation Sub-Committee approved a project capital funding bid of £1.16M, with further approvals of all capital funds for 2022/23 obtained from Finance Committee and Court of Common Council in February and March 2022, respectively.
- In February 2022, Members approved the overall estimated budget of £2,075M and an updated programme for the delivery of the project within a Gateway 3 Issues report.
- In the first half of 2023, the review and further development of the lighting design concept was undertaken.

	<ul style="list-style-type: none"> • To prove and validate the concept design officers are proposing to undertake the lighting tests and demonstrations before the end of January 2024. This will allow the design team and key decision makers to review the proposed positions of the key lighting components, the effect of light created to test areas and performance of luminaires, and understand the optimal colour temperature, brightness, and visibility of lighting units in test locations. • The lighting demonstrations will also provide an opportunity to demonstrate the concept designs to key City and Cathedral stakeholders and decision makers, as well as potential sponsors.
<p>5. Policy implications</p>	<p>Climate Action Strategy:</p> <ul style="list-style-type: none"> • Aim: To support the achievement of net zero • Goal: The Square Mile’s scope 1, 2 and 3 emissions (BASIC+ definition) are net zero by 2040 <p>City Lighting Strategy and City Lighting SPD objectives:</p> <ul style="list-style-type: none"> • Improve the quality and balance of light and darkness; • Address a series of design criteria; • Examine opportunities for improving public lighting in a coordinated manner throughout the City.
<p>6. Sustainability and energy implications</p>	<p>6.1 The new design will use LED technology which is anticipated to deliver a minimum of 65% in energy and maintenance costs. The new scheme will include a Control Management System to continually adapt the level of lighting to the needs (i.e.: lighting levels could be changed for special events, at peak hours or at different times of the night). This will help enhance and preserve the architectural heritage as required and minimise obtrusive light that may adversely impact biodiversity.</p> <p>6.2 The Cathedral has agreed in principle to pay the revenue costs associated with its external lighting, which includes maintenance costs and electricity costs once the new lighting system has been installed. This will reduce the current City maintenance costs estimated at £25,000 to zero.</p> <p>6.3 The carbon emissions of the existing external lighting system are expected to be reduced by approximately 66% through the implementation of the new scheme (based on the current Concept Design).</p> <p>6.4 The project will also assist in achieving a reduction in light pollution and the City’s carbon footprint in line with the Corporation’s commitment to sustainability and achieving the net zero by 2040.</p> <p>6.5 It is proposed that a sustainability consultant is appointed to calculate the embodied and operational carbon of the project and provide guidance and best practice on all aspects of sustainability, including material choices, recycling, waste, and circularity of design and help evaluate the potential social, economic, and environmental impact of the scheme.</p>

<p>7. Equality impact assessment</p>	<p>7.1 The initial Equality Impact Assessment screening undertaken in accordance with the City of London's procedures showed the project is irrelevant to equalities duties and is unlikely to have impact on anyone with protected characteristics.</p>
<p>8. Legal implications</p>	<p>8.1 St Paul's Cathedral has agreed to accept financial responsibility for the new external lighting system once it has been installed. This agreement is subject to a final sign-off by the Dean and Chapter. A Letter of understanding will be prepared to formalise the handover.</p> <p>8.2 It is proposed that a detailed legal agreement is entered before the implementation of the permanent scheme is completed. This will formalise the future maintenance and running arrangements in line with St Paul's Cathedral acceptance of financial responsibility for the new external lighting system.</p>
<p>9. Risks</p>	<ol style="list-style-type: none"> 1. <i>Necessary approvals unobtained.</i> The new design requires approvals from the Cathedral, City Committees, and external statutory bodies. An approval Matrix was prepared summarising the necessary approvals and likely timelines for securing these. Officers are liaising closely with the Cathedral's representatives and the City of London planning team to ensure required packages of information are prepared and submitted on time to the relevant Boards and Committees. 2. <i>Insufficient coordination between St Paul's and the City</i> A project board consisting of St Paul's and the City's representatives was created to support the development of the project. Regular meetings allow effective communication and ensure both the City's and St Paul's objectives are met. 3. <i>Project programme is delayed.</i> Regular board meeting and effective communication with St Paul's Cathedral, external consultants, and future contractors. 4. <i>Lighting test and trials unsuccessful to secure decision maker approvals</i> Active engagement with decision makers, including circulation of briefings and presentations to provide project updates and highlight the opportunities offered by the new lighting system. 5. <i>Increase of Project Budget.</i> Budget to be closely monitored to meet its current estimate. If Budget is to increase, additional funding will be secured through external sponsorship. If further external funding cannot be secured, the scope of the project will be reduced to fit the budget available. <p>Costed Risk Provision Utilised at Last Gateway: None Change in Costed Risk: 0</p> <p>Further information available in the Risk Register (Appendix 4) and Options Appraisal.</p>

<p>10. Procurement strategy</p>	<p>For the tests and demonstration trials, it is intended that:</p> <ul style="list-style-type: none"> • The City Term Contractor will undertake works on the highway maintainable at public expense, and locations outside the Cathedral's curtilage. • The Cathedral's Works Department, as sole supplier authorised to carry out works on the Cathedral, will undertake works on and within the curtilage of the building. • City's procurement processes to be followed for the equipment, specialist contractors and consultants' appointments. • The relevant procurement forms for the permanent scheme will be included in the Gateway 5 report.
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Appendix 1	Project Coversheet
Appendix 2	Concept design update and lighting trials
Appendix 3	Finance Tables
Appendix 4	Risk Register
Appendix 5	Programme

Contact

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