

# Re-lighting St. Paul's Cathedral

A new sustainable lighting scheme to reveal the building's iconic architecture after dark, improving the quality of the lit environment in the local area, and contributing to London's nightscape.



 **St PAUL'S**  
CATHEDRAL



**CITY**  
OF  
**LONDON**

# Introduction

St Paul's Cathedral is one of the most famous and iconic landmarks on the London skyline. It is recognised both nationally and internationally. The way it is seen is critical to the character and identity of the entire city.

During the day, the Cathedral remains visible from many key parts of London, enjoying protected views that are unprecedented for any other building in London. After dark it risks disappearing altogether unless illuminated. To that end the external lighting of this great building is not just important to its immediate context and local community, but to the very identity of London and its skyline, particularly during the long, dark winter months.

The City Operations – Transportation and Public Realm Project team is working to renew the external lighting of the Cathedral and deliver a state of the art system which is responsive, adaptive, and allows for substantial reduction of electrical and maintenance costs thanks to energy efficient technology. An upgrade also provides the opportunity to reassess the lit character of the building after dark within its setting.

Speirs Major Light Architecture have produced a comprehensive concept design, using Light-Emitting Diodes (LED) technology to enhance the Cathedral's night-time appearance whilst reducing energy demands. This is summarised within the following pages.



Image: James Newton

# Existing Lighting

The existing lighting was designed in the 1980's and aimed to deliver an idea of the Cathedral being seen to be flooded with a cool, wash of moonlight, made possible through area floodlighting.

The substantial redevelopment of Paternoster Square and re-modelling of the South-West Churchyard resulted in removal of many of the original light fixtures. This has left the Cathedral only partially lit, with a highly-patchy appearance that belies the original concept.

The remaining floodlighting creates high levels of contrast with areas where ground-level lighting has been removed, creating intimidating and unsafe conditions in the surrounding area. The intensity of the lighting also has a detrimental effect on the area's ambience. It also adversely impacts on the award-winning interior lighting scheme of the Cathedral.

The existing lighting scheme was designed and installed in 1989 and has now exceeded its 25-year lifespan, raising several issues including energy use, light pollution and health and safety risks.



Image: James Newton

View from Ludgate Hill – the lantern, dome and peristyle are overlit whilst the bell towers are underlit.



Image: James Newton

South Churchyard – there are a large range of different values on the south façade

Existing lighting

# Existing lighting – distant views



Alexander Palace – Missing elements of the scheme are clearly visible from the north...



Greenwich Park – The scheme is bright enough to be visible from a great distance...



Westminster Pier – The lantern, dome and peristyle look very bright...



Southbank - The lantern needs to remain quite bright to be visible from a distance...

# Existing lighting – mid-range views



Fleet Street – The lantern, dome and peristyle look very bright...



Millennium Bridge – the large shadow on the dome is clearly visible...



Cannon Street – the scheme seems more balanced when seen from the south-east...



Watling Street – the uneven shadowing of the balustrade to the Stone Gallery is clearly visible...

## Existing lighting – close views



St. Peter's Hill – problems with shadowing and colour balance are clearly visible...

Paternoster Square – problems with shadowing are clearly visible

# Existing lighting – close views



Ludgate Hill – the lantern, dome and peristyle are overlit whilst the bell towers are underlit...



Cheapside – the east end and north facades appear underlit...



# Concept Design

# Proposed Lighting (Concept design)

The proposed new lighting concept comprises a warm wash of light across the exterior which graduates from being brighter and more dynamic to the upper parts of the building to support distant views, to being softer and dimmer to the base of the building to help positively contribute to the ambience of its local setting.

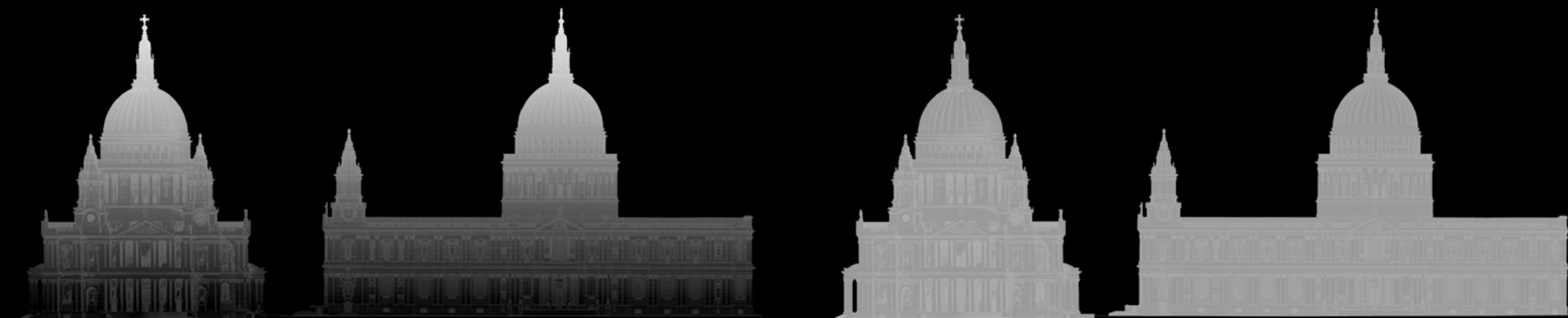
This wash is complimented by the idea of warm light appearing to radiate out from the main body of the Cathedral to create the sense of a 'living building'.

This approach aims to reveal the entire form of the Cathedral through carefully balancing the illumination of the striking features that form the 'skyline' composition of the building – the dome and bell towers, with the reveals, setbacks and internal details, including the peristyle and porticos.

The central concept is to create an overall composition that uses light to interpret the building in its setting after dark and which is legible from a distance, within the general area of the City and when experienced from the precinct and Churchyard.

The proposed scheme has the potential to deliver a minimum of 65% reduction in annual energy and maintenance costs and approximate 66% reduction in CO2 emissions.

The design also meets the objectives of the City Lighting Strategy and Climate Action Strategy, as well as the Church of England's environmental commitments to be 'net zero carbon' by 2030.



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The proposed scheme graduates the light to help respect the views and architecture whilst improving local ambience.

The original scheme provides a uniform, homogeneous, overall wash of bright white light from top to bottom.

# Concept – context 2013

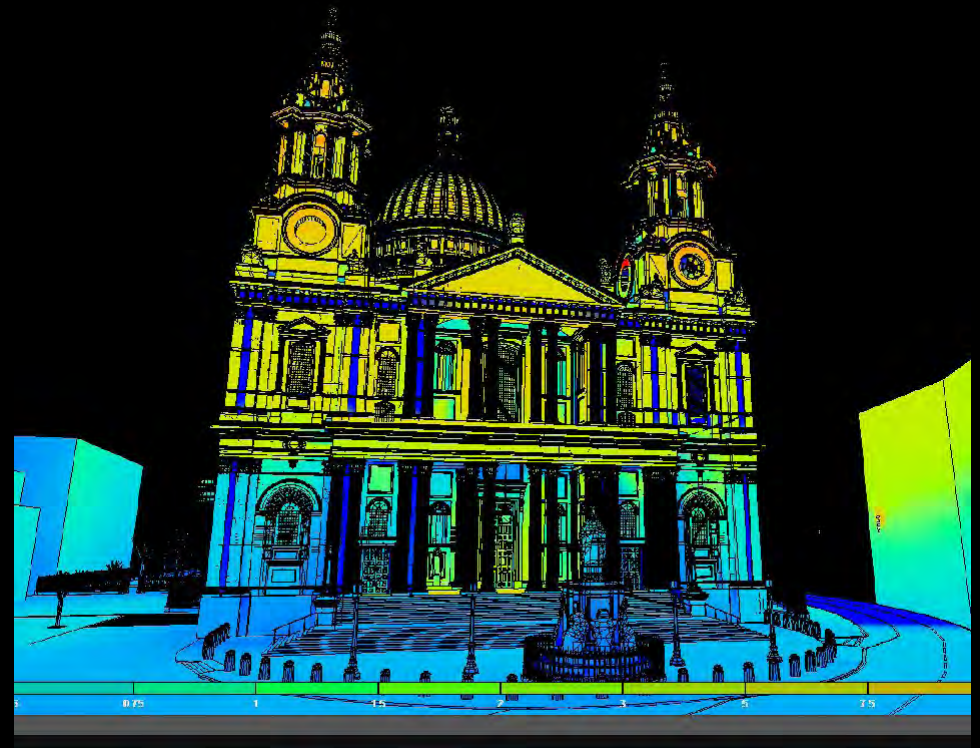


The cathedral should be illuminated within its setting.



Rendering of proposed lighting to West elevation; Warm light to the exterior... warmer light from within

The new design will use advanced LED technology and digital control to allow the scheme to continually adapt to the level of lighting needed (i.e. for special events, at different times of the night) delivering considerable energy savings and reducing maintenance costs. The project will also assist in achieving a reduction in light pollution and the City's carbon footprint in line with the Corporation and Cathedral's commitments to sustainability.



Extract from current lighting model



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Artist's impression of South elevation looking from St. Paul's Churchyard

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Rendering of proposed lighting to South elevation

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Artist's impression looking towards West front from Ludgate Hill

© Speirs Major 2023



The proposed scheme graduates the light to help respect the views and architecture whilst improving local ambience.

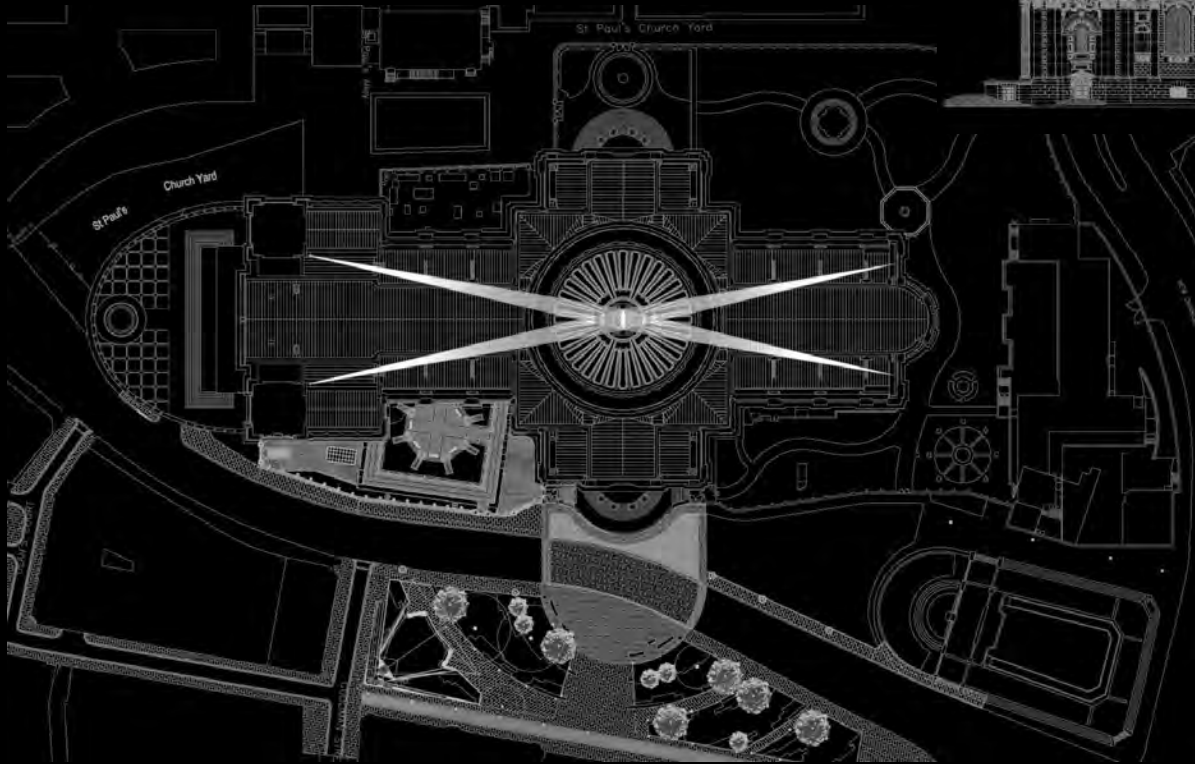
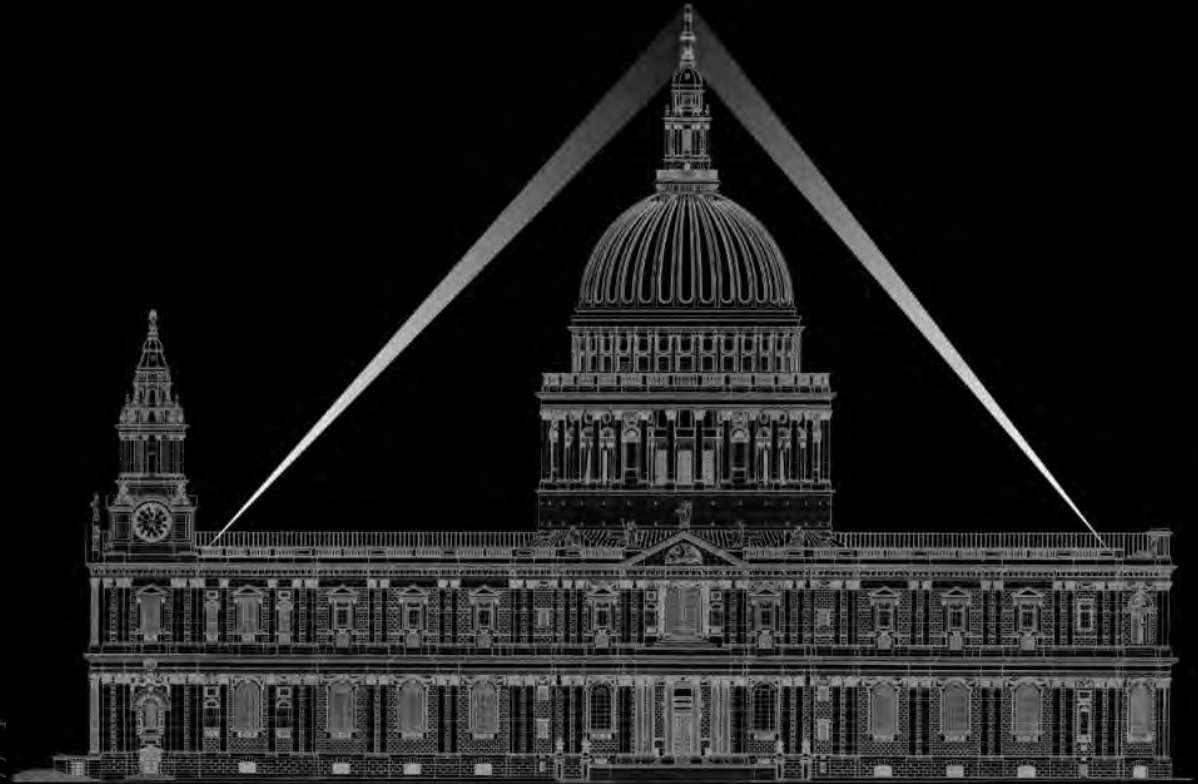


The original scheme provides a uniform, homogeneous, overall wash of bright white light from top to bottom.

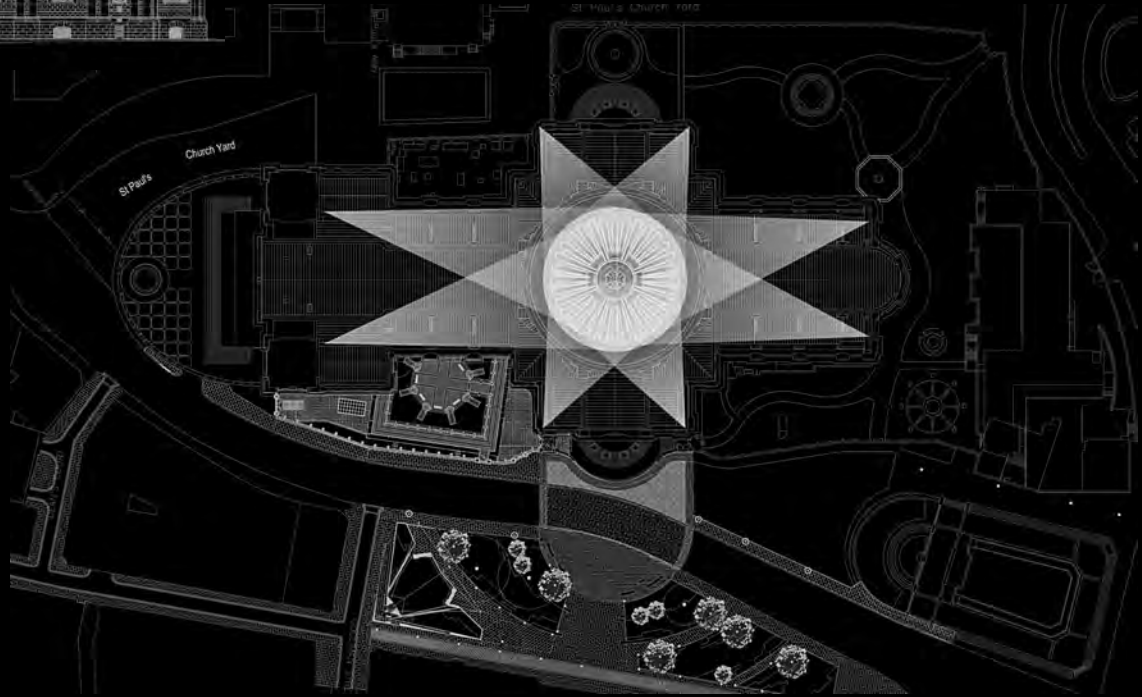
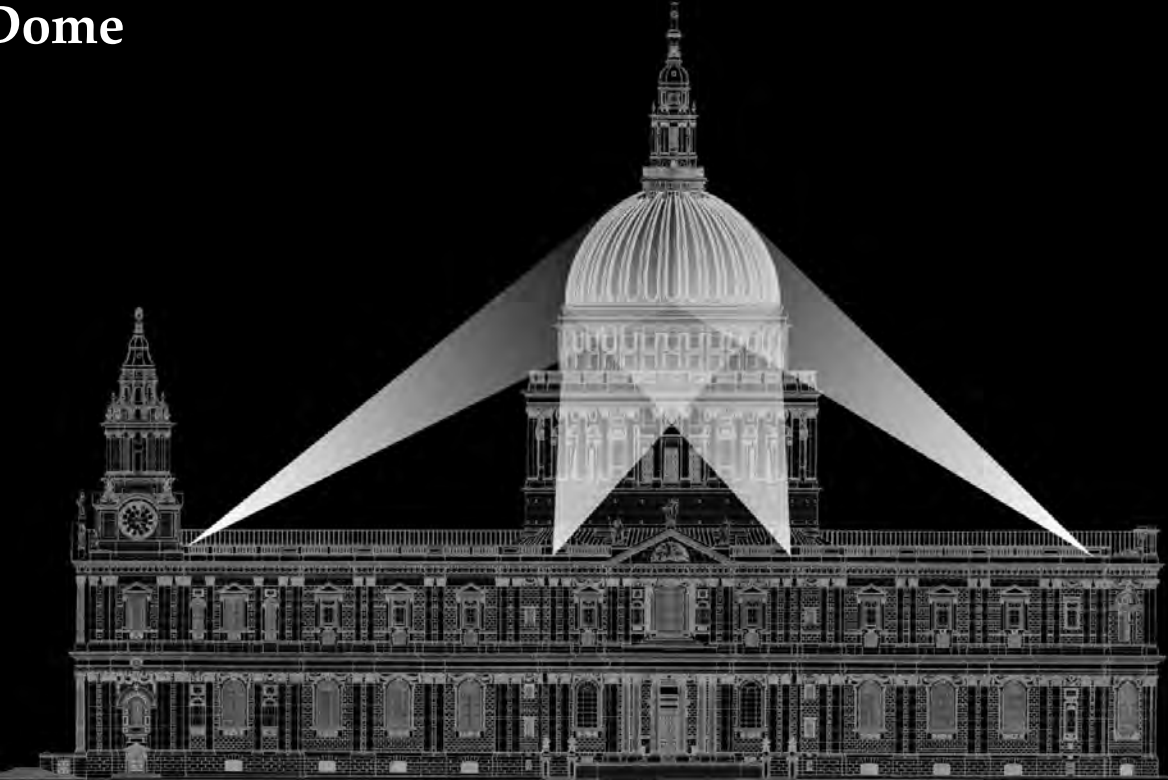


## Extracts of key design elements

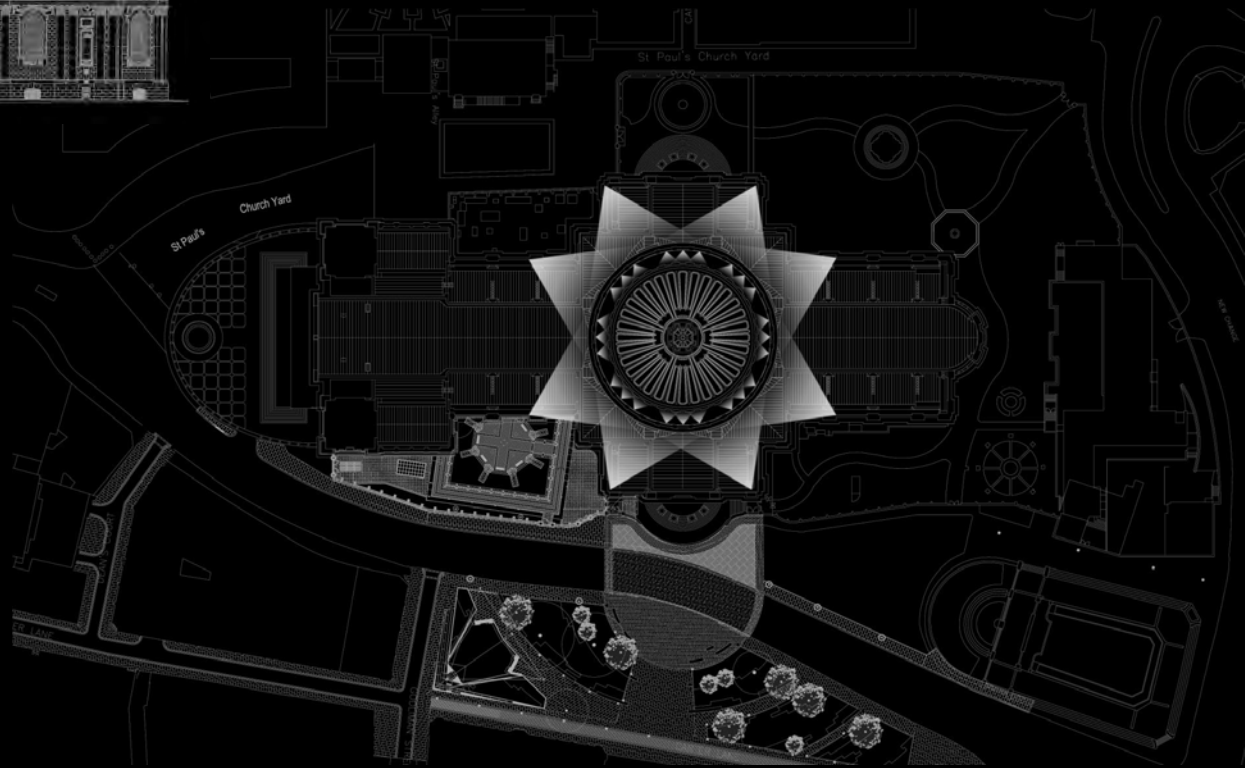
# Cross



# Dome

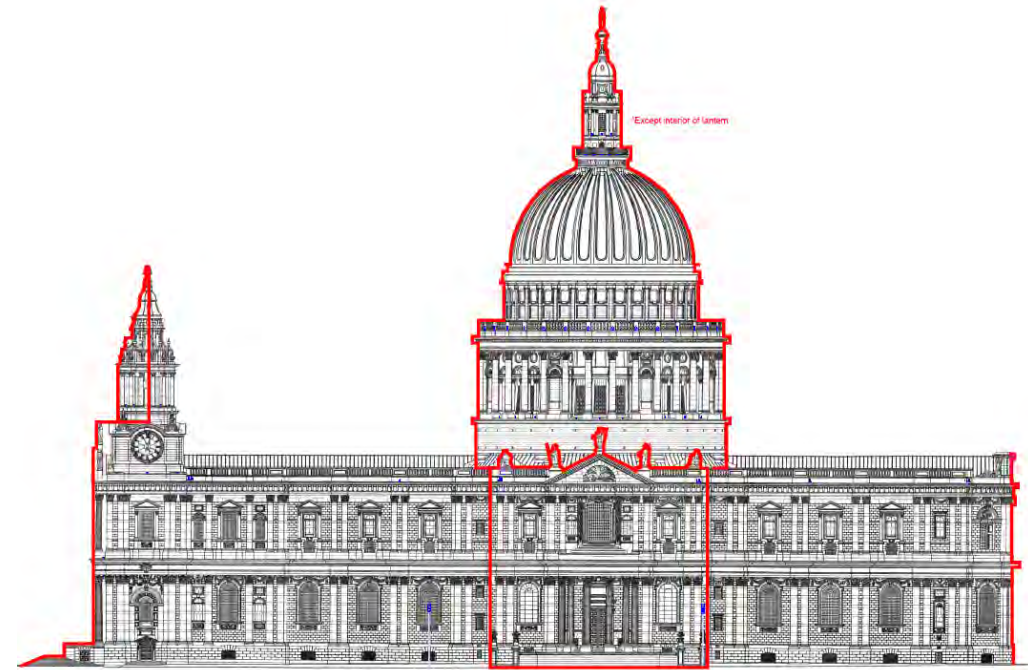


# Peristyle (outer)

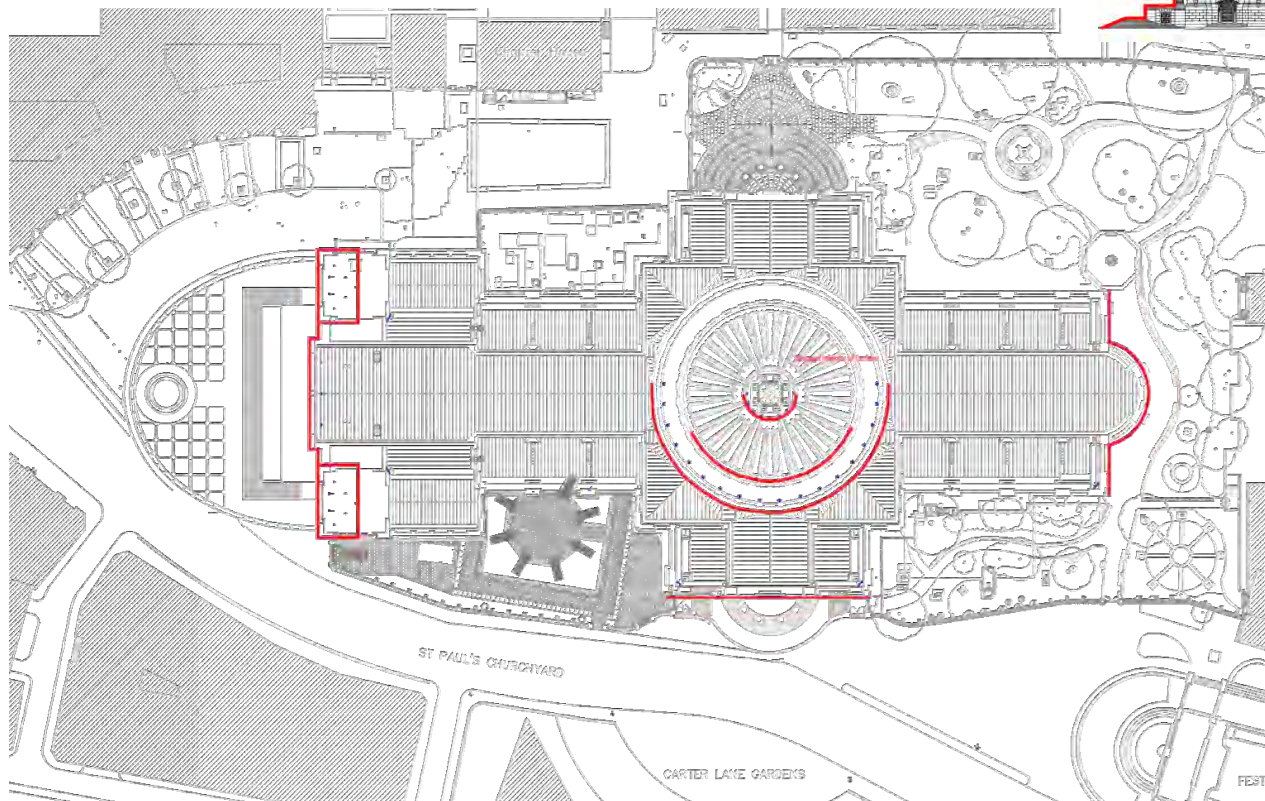


# Lighting tests and demonstration trial

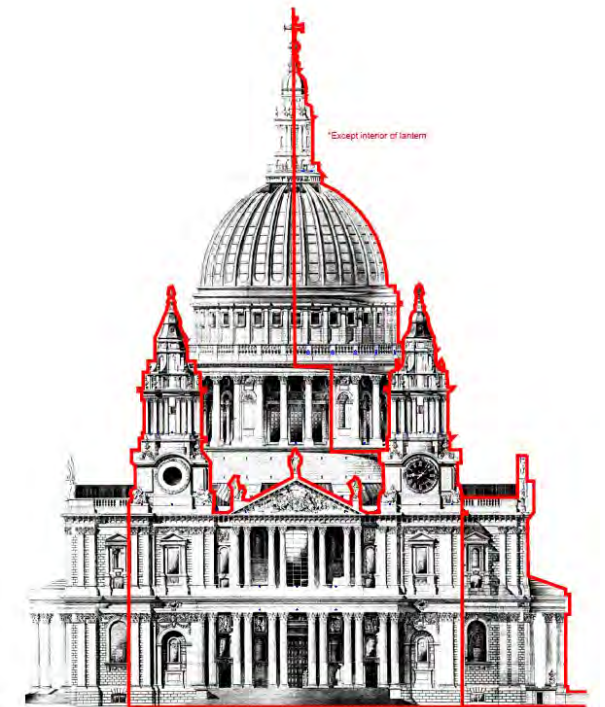
- The lighting consultant, Speirs Major Light Architecture, has produced a comprehensive concept design in 2013, using Light-Emitting Diodes (LED) technology to enhance the Cathedral's night-time appearance whilst reducing energy demands.
- The 2013 concept design has now been reviewed, with tests planned for October 2023.
- A large-scale trial of the new lighting is proposed for January 2023. This will involve a temporary installation of lighting equipment and its wiring to illuminate West Façade, South Transept, Dome and Peristyle and East Façade of the Cathedral (indicative surfaces outlined in red on the images right and below will form part of the lighting trial).



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