Lighting Impact Assessment

Sir John Soane’s Museum - Light Projected Artwork

# Project Summary

This temporary artwork will use highly controllable projected light. It will concentrate its effects on the main central elevation of the Sir John Soane’s Museum (No.13 Lincoln’s Inn Fields). The artwork will slowly transform the elevation deploying subtle shifts of colour, intensity and form. Over three months the installation will constantly alter the impact of the museum onto its immediate street context. The light installation itself will serve to highlight the historic architecture of Sir John Soane’s Museum and will do so in a sensitive and subtle manner.

Please refer to drawing SJS-01-B(140622)

# Lincoln’s Inn Fields

The Museum is positioned on the north side of the Lincoln’s Inn Fields Park. The artwork will be best observed from the pavement. Neighbouring properties will remain unaffected by the installation. Adjacent properties are well over one hundred meters away with the park and its mature trees obscuring the sight lines.

# Operational Hours

October 2023 to January 2024, sunset + 30 minutes to 11pm, Monday to Sunday.

# Projected Artwork

There will be no light spill and minimal movement (only caused by slowly changing light effects which mirror those seen inside the Museum).  As such, we do not anticipate any negative or lasting visual impact on Sir John Soane’s Museum or the surrounding street scene.

# Analysis

Using the guidelines in ILP GN01 [N2]. Please refer to drawing SJS-03-A(140622).

## Obtrusive Light

GN01 guidance: minimise obtrusive light (4.2.3)

Museum is in Environmental Zone E4 (urban), the guidelines note that pre-curfew facade lighting should not exceed 25 cd/m3. We will measure the installation at commissioning stage to ensure it conforms to this as a maximum intensity. As we are using Red, Green, Blue and White (RGBW) on chip colour mixing we will take the measurement with the brightest white mix generated by the light source. This ensures that no single colour can exceed the 25 cd/m3.

## Light Trespass

The light fittings use cinematic projection quality lenses with internal shuttering. This ensures that there will be no spill light as the beam edge can be focussed to produce a 100% cut off at the edge of the facade.

The lights will be projecting in a shallow upwards angle minimising reflected light (specular and defuse reflection). Residual specular and defuse reflection will only be observable from the pavement and within the park. In other words, no neighbour will be affected.

## Glare

Drawing SJS-03-A(140622) shows that there is a narrow zone where glare nuisance is possible in the installation. This zone will be inspected at commissioning stage and, if necessary, any glare hazard will be removed using either internal shuttering or an internal graduated neutral density filter.

## Skyglow

GN01 guidance: remove or minimise skyglow. The skyward edge of the projection will be cut off within the lens system to negate direct skyglow.

# Lighting Equipment

The light fittings are bespoke RGBW high power RG2 IP65 LED glass gobo projectors designed for permanent external architectural illumination and run silent.

PASSIVELY COOLED VIA FREE AIR CONVECTION: FOR EXTERNAL USE ONLY  
RG2 PROJECTOR: EN 62471-5 (2015)  
COMPLIES WITH BS EN 60598-1: 2015 (IEC 60598-1:2014)  
LUMINAIRE CLASS III SELV  
IP65  
ENGINEER REPLACEABLE LIGHT SOURCE

## LIGHT UNIT

* 1. RG2 IP65 LED Profile Gobo Projector;
  2. LED Cooling: 300mm 170W (max) at 25C IP65 Heat Pipe Passive Free Air Convection Heat Sink;
  3. Lens Cover Tube with Optical Glass Front Cover MR coated on inside;
  4. Primary Optics: user demountable twin aspheric condenser;
  5. EPDM primary O-ring seal;
  6. Black Silicone secondary outer weather seal;
  7. Mounted using ISO 7380 & DIN7991 M8 A4 stainless steel machine screws;
  8. Unit Power Connection: silicone rubber sealed Binder RD24 IP67;
  9. Unit Weight including Lens and Yolk Bracket ≤15Kg;
  10. Electrophoresis Coated to pass 1000 hour salt spray test.

## INSTALLATION mounting

* 1. Direct mount via Yolk Bracket.

## GOBO HOLDER

* 1. Lock rotation Gobo Holder;
  2. Custom Glass Gobo to supplied artwork;
  3. Tilt Shift Mechanism + fine focus;

## ELECTRONIC POWER CONTROL (DRIVER)

* 1. Output Power: 0-170W;
  2. Variable Output Current: 100mA to 1300mA per output;
  3. Up to 98% efficient LED output;
  4. High Resolution Constant Current Control;
  5. On power up set to automatic 100% output;
  6. Dimming Control: DMX-512A, RDM, DALI, DSI;
  7. Operating Ambient Temperature: -10oC to +40oC;
  8. Mounted in IP65 electronics enclosure: passively cooled via free air convection.

## POWER SUPPLY UNIT (PSU)

* 1. MXC: Meanwell HLG-320H-48/54A;
  2. 280mm trailing cable;
  3. Compliance: En55015; EN61000-3-2 Class C; EN61000-3-3; EN61000-4-2,3,4,5,6,8,11; EN61547;
  4. Circuit Breaker 16A type B: max 2 units at 230VAC;
  5. Passively cooled via free air convection.Image

# Installation Equipment

Visual impact has been a key concern in planning this installation. In order to negate the negative visual impact of using a large aluminium truss system with its requirements for secure temporary fencing and the threat of vandalism, we are proposing to use two bespoke ground-mounted cantilevered stands. Once installed these will disappear into the tree foliage behind and have a minimal visual impact upon the street scene. They will rest on the grass on 25mm marine plywood circular pads to distribute the weight of the equipment and protect the soil. On removal the effected grass will be reseeded if necessary. Power and data cables will be ground mounted in armoured cable ducts.

The light fittings are controlled by a Pharos LPC1 architectural lighting controller. This will provide both the curfew timings for the installation as well as control the colour and light requirements of the artwork. This controller will have a wireless remote control from the museum offices and internet.