

Our Town Hall Project

Facade Lighting Strategy

OTH-ARU-ZZ-XX-RPT-E-0003

Rev P02 | S3 - Suitable for Review

June 2024 | Job No. 256650-00



Planning Condition Updates

Introduction

- Reference Documents
- Design Objectives
- Design Considerations

Design Criteria

- Artificial Lighting Guidance
- Technical Requirements
- Lighting Parameters
- Obtrusive Lighting

Facade Lighting

- Existing
- Design Philosophy
- Control Strategy
- Access and Maintenance

Facade Luminaire Datasheets

Facade Lighting Drawings

Planning Condition Updates

This report is provided in response to Planning Condition 11(k)- External Lighting (CDN/22/0118). Since issuing the Facade Lighting Planning Report in 2019, there have been omissions to the quantity of luminaires on the façades. The report visuals have been updated to reflect this.

The updates to the facade lighting scheme due to the reasons listed above maintain the same lighting concept principles of showcasing the details, unifying the four façades and reviving Princess St and Lloyd St elevations with light. The projecting bays remain a focus of illumination on all façades. The main lighting treatment is to Albert Square and Cooper Street followed by reduced intensity on the lesser prominent elevations of Lloyd Street and Princess Street.

The reason for the change in the facade lighting strategy is due to on-site discoveries. When the wiring and fixing methodology has been progressed during the construction stage, it became apparent that some of the luminaire positions and/or cabling were non-maintainable and/or there was no suitable mounting position to conceal the luminaire. A route to affordability exercise was completed in 2020 which reduced the quantity of luminaires on some elevations.

The omissions are as follows:

- Albert Square roof luminaires
- Albert Square L03 ledge luminaires
- Albert Square detail lights to six figurines
- Albert Square clock tower roof
- Cooper Street roof turret luminaires
- Princess Street moat lighting to uplight the inset section of the facade
- Princess Street roof luminaires
- Princess Street detail light to one figurine
- Lloyd Street roof luminaires to link bridges and turrets

Updates have been incorporated in the following report sections:

- Facade lighting layers (pg20)
- Albert Square (pg21)
- Albert Square - Indicative Lighting Visual (pg22)
- Cooper Street (pg23)
- Cooper Street - Indicative Lighting Visual (pg24)
- Princess Street (pg25)
- Princess Street - Indicative Lighting Visual (pg26)
- Lloyd Street (pg27)
- Lloyd Street - Indicative Lighting Visual (pg28)
- Facade Luminaire Datasheets
- Facade Lighting Drawings

Introduction

This report is provided in support of the Listed Building Consent application for the Our Town Hall project. The report provides a summary of the new building services systems and how the design of these systems has been influenced by the existing building. The outcomes of these designs are captured in the full building services documentation; however, the final technical documents do not always capture the reasoning that such approaches have been taken. The intention of this report is to provide commentary on the new systems and the reasons for such designs. The facade luminaire datasheets and layouts are included at the end of this document.

The design of the building services systems has been guided by Purcell in their role as Lead Designer, Architect and Heritage Architect. Their feedback regarding the heritage considerations has informed the development of the technical solutions through the design of the project. This report is intended to be a summary of the technical solutions that are being implemented. The appearance, visual and heritage impact of the overall solutions are addressed by others in various reports as follows:

- For overall approach and/or visual impact of the proposals refer to Purcell report OTH-PUR-XX-XX-RPT-A-0100 ‘Design & Access Statement’
- For heritage impact relating to the building services refer to Section 4 of the Purcell report OTH-PUR-XX-XX-RPT-Z-0103 ‘Heritage Impact Assessment: Manchester Town Hall’ and the Purcell Existing Heritage Significance plan drawings.
- For layout of new exposed services in very high significance spaces refer to Purcell drawings series OTH-PUR-TH-ZZ-DWG-A-57xx

The works will require various samples to be submitted for approval as well as careful management of workmanship. This process will be managed by the Management Contractor, Lendlease. For further details of their approach please refer to Lendlease report OTH-LLC-XX-XX-RPT-W-0005 ‘LBC Method Statement: Management of Construction Works’.

This report should also be read in conjunction with the following documents relating to the building services:

- ‘Heritage Lighting Strategy’ document reference OTH-ARU-ZZ-XX-RPT-E-0001, Arup
- ‘Audio Visual Strategy’ document reference OTH-ARU-ZZ-XX-RPT-B-0002, Arup.

Refer to the full Planning Application and Listed Building Consent application for all supporting documentation.

This document outlines the specialist lighting design for the facade lighting scheme which have been developed in collaboration with the wider design team and stakeholders for the Our Town Hall project.

As well as communication the design, the main goal of this report is to provide further information on the lighting character, control methodology and luminaire selections / locations. The report describes the lighting for the following spaces:

- All facade elevations and the link bridges

Pre-Application Planning

Pre-application consultation has been undertaken with MCC Planning team in anticipation of the application submission. The following presentations specific to the lighting design have taken place:

- 8th May 2019- Facade lighting presentation

Design Objectives

The facade lighting scheme objectives:

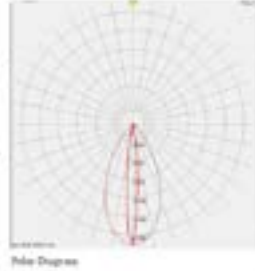
- Lighting treatment to emphasise and define architectural features and monuments.
- Lighting installations will be sympathetic to the architectural aspirations, heritage and building fabric.
- Flexibility and controls will be incorporated into the lighting scheme appropriately.
- Light sources will assist in ‘future-proofing’ the building, have high energy efficiency and intelligent controls.
- Minimise maintenance burden and operational costs where possible.
- Facade lighting will provide continuity to all of the elevations with a consistent lighting approach applied to the external building fabric.
- All internal lighting will be of the same colour temperature in similar spaces and mounted at the same height across each floor to compliment the facade lighting strategy when energised.

Fixing Details

The mounting brackets are shown on the luminaire datasheets at the end of this document in the lighting specification document.

An extract of one of the luminaire datasheets with a typical mounting bracket is shown below:

Project Title: Manchester Town Hall		Luminaire Specification Sheet	
Job No.: 256650		Facade Luminaires	
Manufacturer:	Landscape	Light source type:	LED
Product range:	Landscape Horizontal	Light source colour:	3000K
Mounting:	Universal mounting bracket	Colour rendering:	90
Finish:	Brushed Black	Max Colour Variation:	±10% CIE
Accessories:	See notes	Rated lumens (lm):	±2700 lumens
Protection rating:	IP65 (ICCT)	Input power / efficacy:	16.7W / lm
Optical distribution:	15x30	Driver location:	Integral
Luminaire Lifetime:	≥ 100,000 hrs	Dimmable & type:	DMX
Lifetime Risk:	≥ 5.0/1000	Emergency:	No



General Notes:

- Refer to luminaire particulars specification for additional requirements.
- Luminaires to be provided with all necessary installation accessories.

Notes:

- Low voltage control circuit distance limiting
- Insulation and hardware
- Maximum distance not to exceed
- Clear required glass area
- 4.5kg
- 1 year limited warranty
- Include for special fixtures, if considered necessary during work up, to limit potential light spill

Design Criteria

Artificial Lighting Guidance

The lighting has been designed with reference to with the following guides and standards:

- CIBSE SLL Code for Lighting
- CIBSE SLL Lighting Guide 6: Exterior environment
- CIBSE SLL Lighting Guide 7: Lighting for museums and art galleries
- CIBSE SLL Lighting Guide 8: Lighting for offices
- CIBSE SLL Lighting Guide 12: Emergency lighting
- CIBSE SLL Lighting Guide 14: Control of electric lighting
- CIBSE SLL Lighting Guide 16: Lighting for stairs
- British Standard EN 12464-1: Light and Lighting - Lighting of indoor work places
- British Standard EN 12464-2: Light and Lighting- Lighting of outdoor work places
- British Standard EN 5489-1: Code of practice for the design of road lighting
- British Standard EN 5266-1: Emergency Lighting
- British Standard EN 1838: Lighting Applications- Emergency Lighting

Technical Requirements

The following factors will be applied to all of the principle lighting elements:

- Generally, use of warm white light sources synonymous with the original gas and tungsten light sources.
- Reliable lighting control systems are considered to reduce unnecessary lighting use and to maximise efficiency and flexibility.
- Sky glow and light trespass will be minimised to limit obtrusive light impact.
- High quality LED light sources will be used within front-of-house spaces to ensure consistent colour, high efficiency and reduced maintenance.
- In ‘wet or outdoor’ spaces lighting will have a suitable ingress protection (IP) rating and corrosion resistance.
- All luminaires will have effective glare limiting measures.

Lighting Parameters

Illuminance (lux)

Illuminance is a photometric quantity which describes the total luminous flux incident on a surface, per unit area (i.e. the amount of light landing on a surface). It is measured in lumens/square-meter and this is more commonly referred to as ‘lux’.

Luminance (cd/m²)

Luminance is a photometric quantity that correlates objectively to the subjective sensation of brightness. It is described as the intensity of light emitted from a surface, per unit area and in a given direction (units candelas/square-metre, cd/m²)

Correlated Colour Temperature, CCT (K)

The correlated colour temperature is used to help define the appearance of white light. Some white light sources have a high colour temperature (e.g. 5000K) and will appear bluish-white, others may have a lower colour temperature (e.g. 2700K) and will appear more yellow-white (e.g. tungsten domestic ‘light bulb’). Selecting the appropriate colour temperature is essential to ensure the light is harmonious with the surface-finishes it illuminates, and can significantly impact on the atmosphere of the space.



Colour Rendering Index, CRI

The colour rendering index is seen as one of the most useful parameters for determining the quality of light. The index represents the light source’s ability to accurately depict colours. The scale varies from 0 and up to 100 (daylight).

Lighting Colours

When referring to light and colours, the following should be referenced:

- Coloured light: full spectrum colour-range
- White light: 3000K (public realm) and 2700K (facade lighting).

All luminaires on the Albert Square facade elevation will be able to display white and coloured light either statically or dynamically. All luminaires on the other elevations will display white light only with the ability to be static or dynamic.

Entrances - Emergency Lighting

Cooper Street Entrance and Lloyd Street Entrance

The entrance will be illuminated via discreet downlights surface-mounted to the centre of the soffit. The original gasolier within this entrance will be restored and sensitively converted to electricity to provide additional illumination to this space as well as the emergency lighting requirements.

Albert Square Entrances

The entrance will be illuminated by discreet downlights surface-mounted to the centre of the soffit. The handrail lighting will provide the emergency lighting requirements.

Obtrusive Light

The external lighting scheme, including the facade and public realm, will be designed in context with the existing neighbourhood nocturnal environment and with particular attention paid to minimising obtrusive light. Light obtrusion characteristics can be defined as follows:

- Light Intrusion: spill light beyond the task area and into a neighbouring dwelling. Units: illuminance (Ev), measured in lux.
- Source Intensity: how bright the light source appears to an observer. Units, Intensity (I), measured in candelas (cd).
- Sky Glow: a combination of Direct Upward Light and Indirect Upward Light, an effect seen as an orange glow in the night sky. The sky glow is quantified by ILP GN01 as the percentage of the luminaire output emitted above the horizontal plane.
- Façade Luminance: the brightness of façade appearance to an observer. Units: Luminance (Lv) measured in cd/m².

ILP GN01 proposes lighting design thresholds defined by environmental zones designated E0 to E4, relative to the development site location. These are described in Table 1 below:

Zone	Description
E0	UNESCO Starlight Reserves, IDA Dark-Sky Parks
E1	Intrinsically dark areas – National parks and areas of outstanding natural beauty
E2	Low district brightness areas – Rural or small village locations
E3	Medium district brightness areas – Small town centres or urban locations
E4	High district brightness areas – Town or city centres

Table 1: Environmental Zones

It is considered that Zone E4 is applicable to the OTH project. Limits for lighting performance are proposed by the ILP in the form of Guidance Note GN01: Guidance Notes for the Reduction of Obtrusive Light and CIE 150: Guide On The Limitation Of The Effects Of Obtrusive Light From Outdoor Lighting Installations. In summary, the guidance proposes the following thresholds should not be exceeded to minimise the effects of obtrusive light:

Environmental Zone	Sky Glow ULR (Max %)	Light Intrusion E _v (lux) Pre/Post Curfew	Source Intensity I (kcd) Pre/Post Curfew	Average Building Luminance L _v (cd/m²) Pre-Curfew
Zone E0	0	0	0	0
Zone E1	0.0	2.0/1.0	2.5/0.0	0.0
Zone E2	2.5	5.0/1.0	7.5/0.5	5.0
Zone E3	5.0	10.0/2.0	10.0/1.0	10.0
Zone E4	15.0	25.0/5.0	25.0/2.5	25.0

Table 2: Guidance for limiting obtrusive light (ILP GN01)

Note: a curfew is defined as the time in the evening beyond which lower light levels are considered appropriate for the late night to early morning scenario. Typically this is around 2300hrs and may be defined by the local planning authority.

Luminance and Illuminance

The following obtrusive light measures will be applied to the external lighting scheme:

- The average luminance level across the proposed facade lighting scheme will not exceed 25cd/m².
- Lighting calculations and on-site mock-ups of the proposed external lighting scheme have demonstrated that the maximum average building luminance is <25cd/m² on each of the four elevations.
- The clock faces are an internally illuminated element and can be considered as a ‘signage’ element in context with the recommendations of CIE 150:2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations. The maximum average luminance for the clock faces has been calculated to be 50cd/m². This is significantly lower than the CIE 150 recommended limit of <1000cd/m² for Zone E4.
- The proposed lighting installation is intended to enhance and illuminate the building fabric and architectural features, all luminaires are aimed and directed upwards onto the building façade or onto the working plane. Therefore, there is no direct

- light spill down to ground/street level and the resultant illuminance will be <1lux.
- Luminaires will be selected to limit the amount of upward light spill.

Rate of Change

Albert Square, Princess Street and Cooper Street elevations and the Albert Square public realm scheme are all visible from the drivers primary field of view (tram, bus or car) on the arterial route, Princess Street.

There is little guidance on an acceptable rate of change of façade lighting systems. However, the findings of a recent study presented at the Conference of European Directors of Roads on ‘The Safety Effects of Roadside Advertising’ (published in 2018) concluded that driver gaze behaviour towards digital advertising boards rarely lasts for more than two seconds.

- Primary field of view:

Albert Square and Princess Street elevations: Up to and including Level 01
Cooper Street elevation: Up to and including Roof Level
Rate of change will be up to 0.5Hz (1 change per 2 seconds)

- Tertiary field of view:

Albert Square and Princess Street elevations: Level 02 to Roof level
Rate of change will be up to 1Hz (1 change per second)

- Outside of field of view:

Clock towers
Lloyd Street elevation
Albert Square public realm
Rate of change will be up to 20Hz (20 changes per second)

Stroboscopic Effects

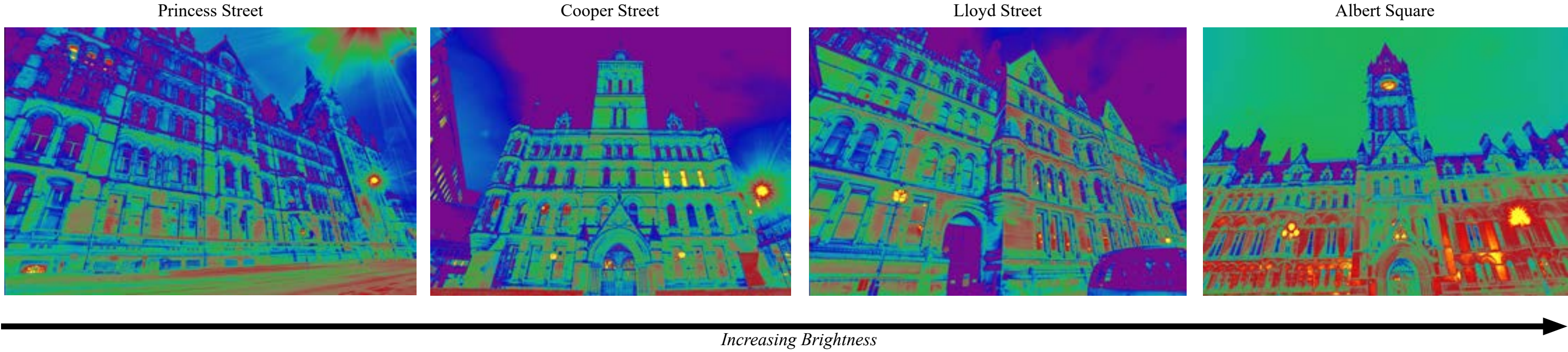
Stroboscopic effects are caused by regular, instantaneous on/off cycles of an entire lighting scheme. While individual luminaires may change rapidly during a light show (not exceeding the rates of change detailed), the average luminance of each facade will be designed for consistency to avoid stroboscopic effects.

Facade Lighting

Existing

Baseline Survey

A survey of the existing lighting scheme and the surroundings was undertaken to establish the baseline luminance levels, the ambience of the building setting and the lighting quality to characterise the lighting scenario visible on each of the four elevations. The survey findings are summarised on the following pages. Observations recorded during the survey are provided against each image to help characterise the visual experience and identify lighting treatment which may be required.



- Observations**

 - Lots of observers due to the amount of traffic passing each day - trams, buses, taxis and pedestrians
 - This is the darkest façade with the least luminance contrast. The resulting effect is bland and uniform.
 - The eye is currently drawn to the street lighting and the spill from the street lighting onto the lower levels of the façade
 - There is no illumination to the upper levels (from L01 upwards)
- Observations**

 - Visible from a long distance from the town hall
 - A key viewpoint from St Peter’s Square with the tram stop and Cenotaph
 - Minimal contrast up the façade and no definition of the architecture
 - Entrance undefined
 - High levels of competition from existing light sources
- Observations**

 - Higher luminance levels due to illumination from the Town Hall Extension.
 - However, when the Town Hall Extension is not occupied, Lloyd Street can feel very dark.
 - Entrances undefined.
 - Minimal contrast across the façade
- Observations**

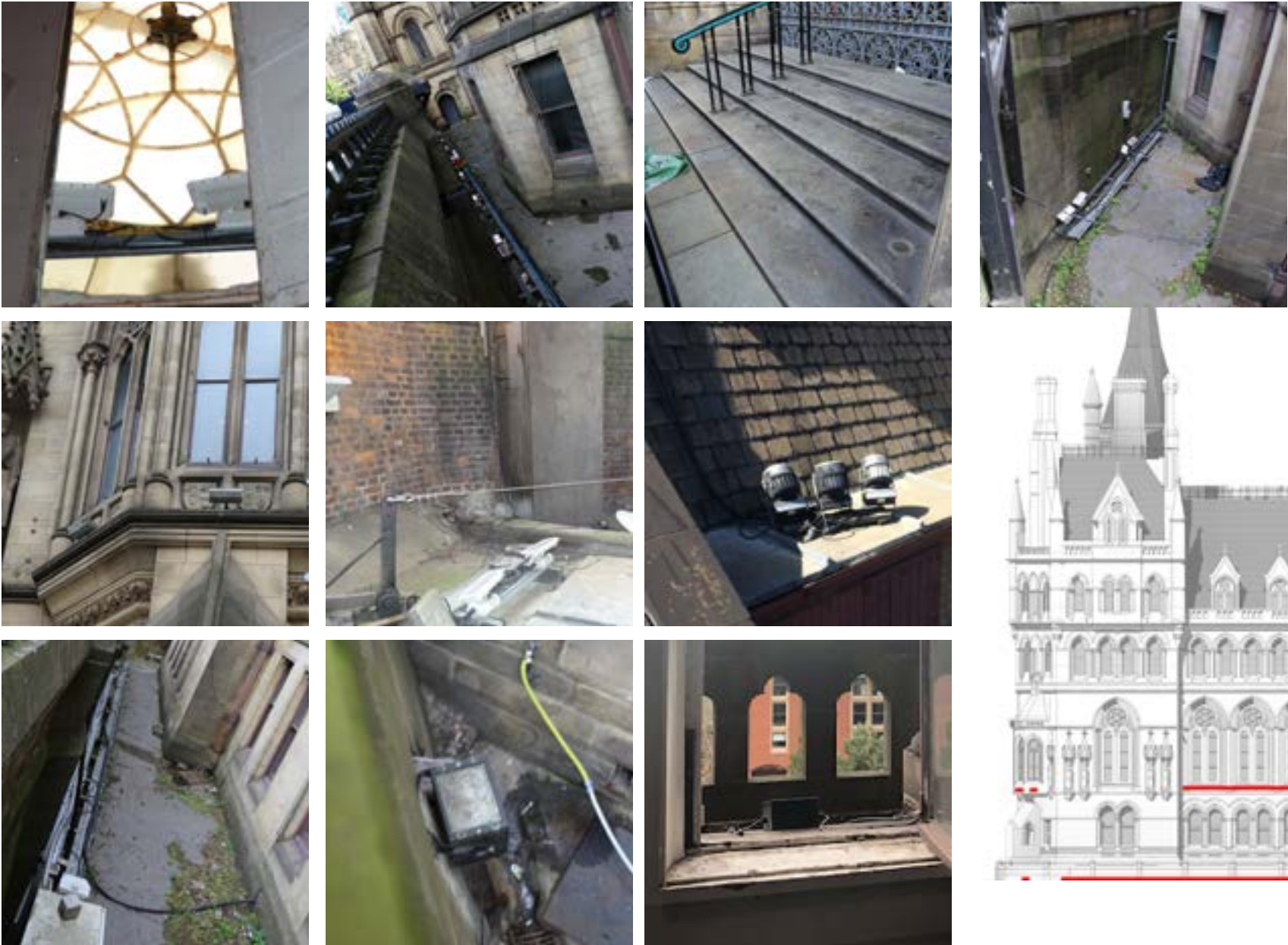
 - The most viewed façade due to the amount of traffic passing each day- trams, buses, taxis and pedestrians
 - Varying levels of luminance contrast on lower levels due to failing luminaires
 - Entrance and clock tower undefined
 - Low luminance levels to the roof and upper levels (from L02 upwards)
 - Generally uniform distribution of light with no modelling to the architecture
 - Excess spill/wash light from the street lighting columns

Existing Luminaires

- In general, the existing luminaires are in poor condition. The following observations were made:
1. The operational luminaires lack optical control and efficient delivery of light onto the façade.
 2. Apart from those located in the Albert Square moat, the Clock Face and the Lloyd St ramp, all luminaires are non-operational.
 3. Rust, corrosion and water ingress are evident on most luminaires.
 4. There is a large variety of luminaires from different manufacturers resulting in difficulties with servicing and sourcing replacement parts.
 5. Many luminaires are obsolete and unserviceable.

The existing luminaires on each of the elevations are shown on the subsequent pages. All luminaires will be removed during the construction works including cabling and associated elements. When removed, the building fabric will be made good as per Purcell’s strategy.

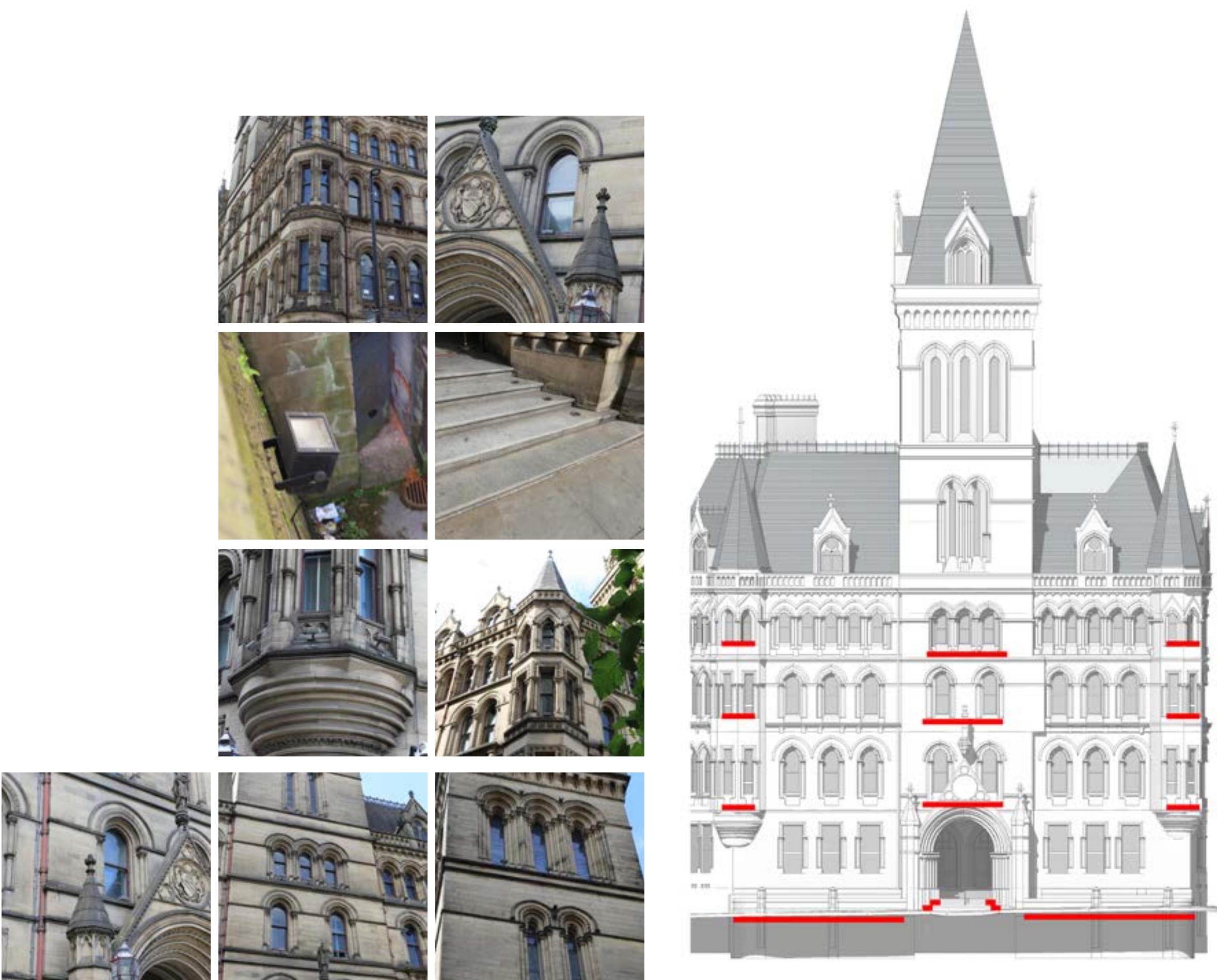
Albert Square Elevation



Princess Street Elevation



Cooper Street Elevation



Lloyd Street Elevation



Visual Prominence: Albert Square

Visual prominence explores the key viewpoints from observers when approaching the town hall. This looks at if the observer can step back and view the complete facade or if there is an obscured view. It also explores which facade elements are most prominent.

Albert Square facade is the most visually prominent facade with the greatest proportion of 'entirely visible' elements. Observers can step back and view the facade in its entirety, while also being able to get close to the facade and view detailed elements.

The visual prominence hierarchy of Albert Square is as follows:

1. The clock tower is viewed from each approach at street level but also from height across the city. This is arguably the most prominent feature on the Town Hall façades.
2. The projecting bays and entrance where you can view details.
3. Level 04 windows with larger, prominent ledges.
4. Inset bays
5. Level 05 and Level 06 roof. Note that the Albert Square roof has a unique tile pattern which is currently not visible.

	Entirely visible / Projecting (vertical element, towers, projecting bays, entrances)
	Partially visible / Inset (roof, inset bays observed from close proximity)
	Not visible / Obscured (cannot see from ground level or on low hierarchy facade)

Albert Square Facade
Unobstructed view



Visual Prominence: Princess Street

Princess street facade can never be viewed in its entirety due to the close proximity of surrounding buildings and the road / Metrolink tram lines. Due to this, the facade elements can be treated individually but consideration needs to be taken of the detailed architectural elements as the observer can get closer to this facade than any other. This facade is the third most visually prominent out of the four.

The visual prominence hierarchy of Princess Street is as follows:

1. The entrance with the projecting bays, leaded lights and tower.
2. Cooper Street corner projecting bay which is visible from the approach.
3. Central projecting bay with carving.
4. Inset bays
5. Level 06 roofs on projecting bays.
6. Level 07 bays are barely / not visible from key observer locations.

	Entirely visible / Projecting (vertical element, towers, projecting bays, entrances)
	Partially visible / Inset (roof, inset bays observed from close proximity)
	Not visible / Obscured (cannot see from ground level or on low hierarchy facade)

Princess Street Facade
Obstructed view



Visual Prominence: Cooper Street

Cooper Street facade, similar to Albert Square, can be viewed in its entirety while also being observed in close proximity. Cooper Street facade is the second most visually prominent facade.

The visual prominence hierarchy of Cooper Street is as follows:

1. The tower is visible from most of the approaches to the town hall and also from the height i.e. high rise buildings and helicopter shots.
2. The entrance with the statue is highly decorated and slightly protrudes from the facade face.
3. The corner bays can be viewed in close detail.
4. The Level 04 and Level 05 windows have clearly defined ledges.
5. Level 06 roof is stepped back from the facade and does not include the roof tile pattern.

	Entirely visible / Projecting (vertical element, towers, projecting bays, entrances)
	Partially visible / Inset (roof, inset bays observed from close proximity)
	Not visible / Obscured (cannot see from ground level or on low hierarchy facade)

Cooper Street Facade
Unobstructed view



Visual Prominence: Lloyd Street

Similarly to Princess Street, the observer has an obstructed view of Lloyd Street. This is due to the Town Hall Extension which prevents the observer from being able to step back and view the facade completely. This facade is the least visually prominent facade of all of them.

The visual prominence hierarchy of Lloyd Street is as follows:

1. Link bridges which are visually impressive and visible from a number of key viewpoints.
2. Entrance which is visible from Mount Street and includes a projecting bay with decorative leaded lights.
3. Cooper Street corner bay which is also projecting and can viewed at close proximity.
4. Corner decorative bays on central projecting bay.
5. Windows on the projecting bay with gable ends.
6. The inset bays and roofs are barely visible from the observers.

Entirely visible / Projecting
(vertical element, towers, projecting bays, entrances)

Partially visible / Inset
(roof, inset bays observed from close proximity)

Not visible / Obscured
(cannot see from ground level or on low hierarchy facade)

Lloyd Street Facade
Obstructed view



Summary

The hierarchy of the façades and their corresponding lighting treatment is defined by a combination of visual prominence, architecture and observer location. These findings are summarised below.

Increasing Hierarchy

Lloyd Street

Architectural detailing:

- Link bridges and projecting bays

Statues/Carvings:

- No

Entrances:

- Staff entrance

Destination or Journey:

- Journey

Observer Location:

- Walking, cars or Town Hall Extension workers

View:

- Street Level or surrounding tall buildings
- Obscured and angular view

Pace of Observer:

- Slow (walking) to Medium (vehicular)

Cooper Street

Architectural detailing:

- Tower and leaded lights

Statues/Carvings:

- Yes

Entrances:

- Main entrance for public

Destination or Journey:

- Non-obscured, angular/panoramic

Observer Location:

- Walking, Trams, Buses

View:

- Street level
- Non-obscured, angular/panoramic

Pace of Observer:

- Stationary to slow (walking) to fast (vehicular)

Princess Street

Architectural detailing:

- Leaded lights and projecting bays

Statues/Carvings:

- Yes

Entrances:

- Fire exit

Destination or Journey:

- Journey

Observer Location:

- Tram, Bus, Walking

View:

- Low level from tram window, higher level from double-decker bus, street level or from surrounding tall buildings
- Obscured and angled view

Pace of Observer:

- Slow (walking) to Fast (vehicular)

Albert Square

Architectural detailing:

- Roof tile patterns, clock tower, leaded lights, projecting bays

Statues/Carvings:

- Yes

Entrances:

- Main entrance for public

Destination or Journey:

- Major Destination

Observer Location:

- Walking- Albert Square and arrival points

View:

- Street Level or surrounding tall buildings
- Non-obscured, panoramic view

Pace of Observer:

- Stationary to Slow (walking)

Design Philosophy

Concept

The facade lighting concept has been developed by exploring the relationship between the themes described below.



Showcase neo-gothic detailing

What?
Manchester Town Hall is regarded as one of the finest examples of neo-gothic architecture in the world. During daylight hours, the façade detailing is showcased, however, in the evening, much of the craftsmanship is lost due to inadequate / no façade lighting.



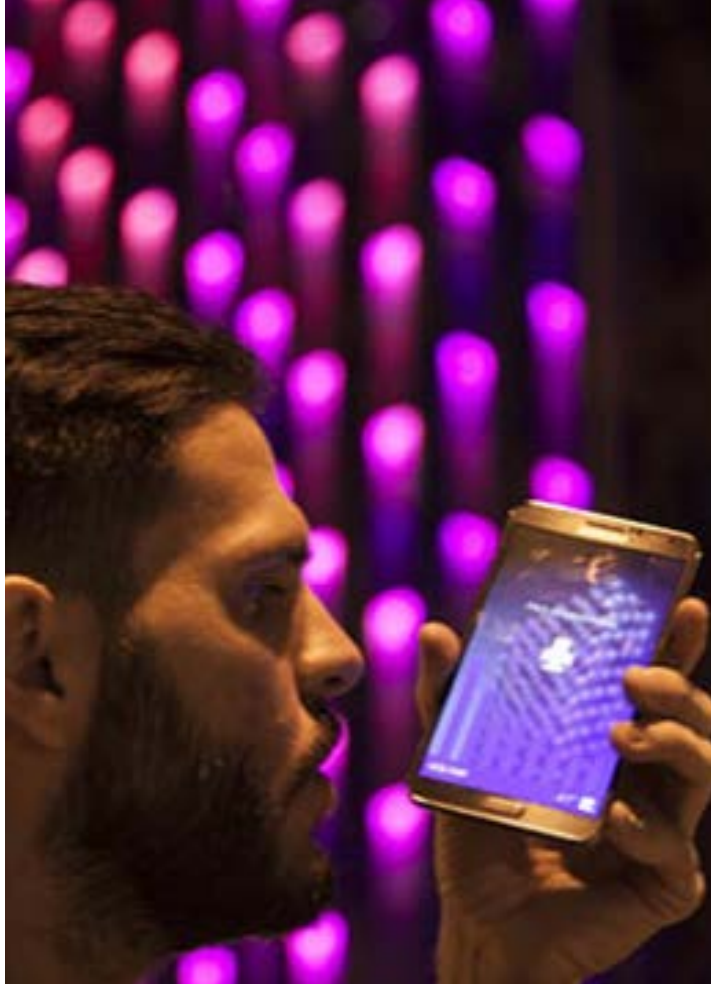
Unifying the four façades

What?
The four façades all have varying lighting treatment with no consistency from one to the other.



Revival

What?
Princess Street façade and Cooper Street façade have very low luminance levels. Princess Street creates an imposing, dark backdrop to the footpath. Cooper Street has an opportunity to be viewed from quite a distance from the Town Hall.



Interaction with the public

What?
Public engagement has been a key policy throughout the design process. This will be continued into the use of the Town Hall to connect the people back to the building.

Precedents

Manchester Town Hall exudes architectural detailing, statues, carvings and patterns that are lost with the existing facade lighting scheme. The detailing of the four examples below of similar Gothic buildings are visible from close up and from afar. These methods of revealing the architecture will be applied to the Town Hall through techniques using light intensity, a play with shade and light and experimentation with different lighting colour temperatures.

a. Height

The precedents define the tall vertical elements of the building through tower illumination, landmarking the tower onto the city skyline.

b. Shade and Light

The Principal lighting scheme effectively demonstrates the play with shade and light on the facade, drawing attention to the projecting bays and entrance. Bringing ‘gloomth’ to the external.

c. Horizontal Elements

Bands of tiered linear lighting define the horizontal elements of the clock tower on third image to connect the four faces. The Medieval City Hall upper ledge is highlighted with upward illumination.

d. Intricate Detailing

Higher intensity illumination is provided to intricate elements to contrast against the lesser feature elements.

e. Grazing

All of the façades are illuminated with gentle low level grazing which forms the backdrop to the other lighting features.



A



B



C



D



E

Facade Lighting Layers

The facade lighting scheme comprises layers of light applied to:

- 1. Moats
- 2. Horizontal Ledges
- 3. Roofs
- 4. Entrances
- 5. Window Reveals
- 6. Statues, Carvings

The image below demonstrates how the facade lighting applies a consistent theme to each facade to provide an identity and connection to the Manchester Town Hall elevations.



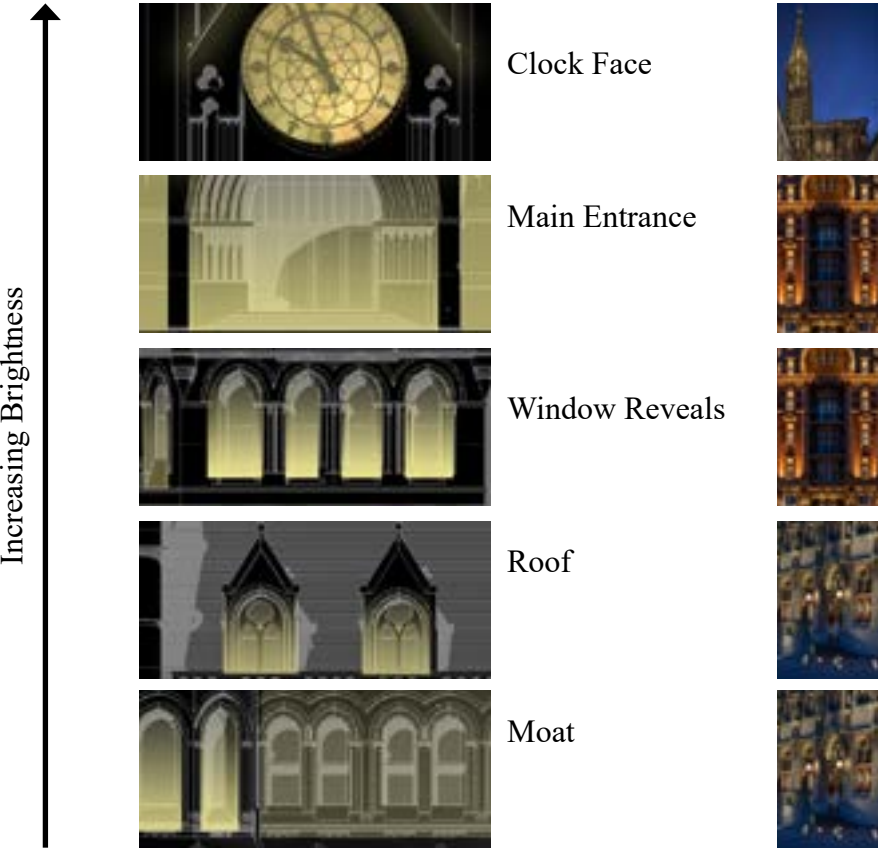
Key
[Red box] Omitted luminaires
[Green box] Change from 1No. luminaire to 2No. Smaller luminaires

Albert Square

This facade features the highest quantity and intensity of facade lighting due to the following factors:

- Backdrop for a major destination in Manchester
- Most architecturally decorated
- Provides an unobstructed view to observers and can be viewed in its entirety

- Number of accessible locations for maintenance
- Includes the main entrance for visitors



Albert Square : Indicative Lighting Visual

By locating luminaires to the upper levels, grazes of light and more focal accents of light are introduced which will be visible when the Town Hall is viewed from above; an increasing number of high rise offices and residences now enjoy a view over the Town Hall.

On the clock tower, there are a number of ledges and window reveals which will provide ease of access for future maintenance. Lights located in these locations can be accessed safely and readily.



Helicopter Shot



View from Albert Square



View from Albert Square
Note the ability to depict detail

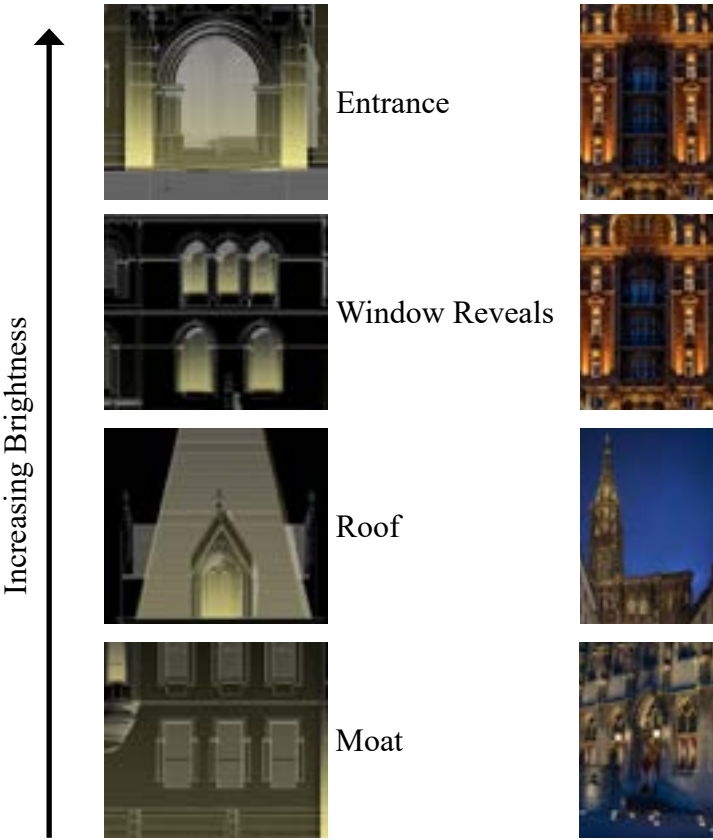
Cooper Street

This facade features the second highest amount and intensity of facade lighting due to the following factors:

- High amount of observer traffic from bus routes, tram journeys and pedestrians.
- A destination for due to the adjacent cenotaph.
- One of two entrances for the public.
- One statue to the main entrance and the second tallest tower to the Town Hall.
- Number of accessible locations for maintenance.
- Unobstructed view of the facade but also can be viewed in detail.
- Number of architectural details (carvings and statues).

However this facade includes features which restrict and reduce the overall lighting treatment:

- Fewer architectural details and finishes.



Cooper Street : Indicative Lighting Visual



View from Cenotaph



View from street level
Note the ability to depict detail

Princess Street

This facade features the third highest amount and intensity of facade lighting due to the following factors:

- High amount of observer traffic from bus routes, tram journeys and pedestrians
- Number of architectural details (carvings and statues)
- Elements can be viewed in detail

However this facade includes features which restrict and reduce the overall lighting treatment:

- Maintenance access from ground level is limited due to Metrolink possession

- The entrance is not for staff or public so there is a lower intensity of light to discourage unwanted attempted access.
- Many elements of the facade are visually obstructed from ground level.



Princess Street : Indicative Lighting Visual



View walking at street level along Princess Street



View from across the tram tracks

Lloyd Street

This facade is the easiest to maintain but it also includes the lowest quantity of luminaires and lighting. The following facade features will be illuminated:

- The link bridges are the main element to this facade as they are visible on approaching. These can also be viewed in their entirety.
- The projecting bay also includes the staff entrance, decorative leaded lights and has a strong visual prominence when approaching from Mount Street.

However this facade is exposed to limitations which restrict and reduce the overall lighting treatment:

- Low amount of observer traffic, mainly from pedestrians

- No statues / monuments or decorative detailing
- Obstructed view



Lloyd Street : Indicative Lighting Visual



View from street level on entering town hall



View from Lloyd Street (Albert Square end)



View from Lloyd Street (cenotaph end)

Control Strategy

The facade lighting scheme will predominantly comprise a timeless, white lighting scheme. However, the lighting installation will incorporate the capability to change colour for annual events, one-off events, quick response events and a weekly light show. Each luminaire will be individually controllable to create optimum flexibility of white, coloured, static and dynamic light display across the facade.

The Albert Square facade will be the only one with RGBW luminaires (which display a full range of colours as well as high quality whites). All other façades will be illuminated with white colour. The Albert Square facade has the greatest prominence and is the most significant of the whole building. It forms the backdrop to the square which will be the scene for large public gatherings, therefore it is the only appropriate facade to receive white or colour treatment.

Providing a layered lighting treatment, with light emanating from many discreet sources, allows the facade lighting effects to be de-constructed to match the architectural features of the building. The new lighting scheme subdivides the facade into a matrix of lighting cells which enable dynamic colours and fade effects to be created that can be distributed across the facade in a dynamic and meaningful way.

The facade lighting control system will use a standard theatrical DMX protocol to enable extensive functionality. Further details of the control system are provided elsewhere in this document.

Coloured Light

The luminaires will deliver an infinite variety of coloured light and will not be limited to those shown in the example visuals below.



Scenario One: Non-event Mode

The normal lighting scheme displayed on nightly basis will be the ‘white light’ scheme; static or softly dynamic to all four façades. The chosen colour of white light will work in harmony with the facade materiality. This will be the most frequent scenario.



Scenario Two: Annual Event

Annual events, typically a pre-programmed scene displayed for ‘one week only’ which can be recalled on a timed schedule and will have the capability for dynamic movement. For example; Halloween, Christmas, Pride. The coloured lighting will only be applied to Albert Square elevation and the public realm lighting scheme, all other façades will be a white light with static or soft dynamic movement.



Scenario Three: One-off event

One-off events requiring a coloured scene either static or with movement which can be easily programmed and recalled by the building manager. These can be designed before the event e.g. charity or cultural events. Coloured light will only be on the Albert Square elevation.



Scenario Four: Quick response

Quick response events that require a very fast turnaround, generally on the day. Difficult to predict, but a specialist designer can remote programme a sophisticated design in response e.g. national celebrations, sporting events etc. Coloured light will only be on the Albert Square elevation.



Victoria Gallery & Museum, Liverpool



Hull Public Realm



Hull Public Realm



Grand Palace, Brussels

Scenario Five: Light Show

A regular light show that is designed to be an attractive and regular tourist/visitor attraction which will draw crowds to Albert Square and the town hall. This will be a pre-programmed scene that plays at the same time each week and connects the history of the town hall to the Albert Square facade lighting scheme. Interface required to communicate the narrative i.e. app on handheld device.

Scenario Five: Light Show

This page demonstrates a typical scenario for how the sound and light show could work within Albert Square.



- Visitors/residents begin to gather, perhaps triggered by social media prompts from tourist office
- The public realm projectors act as a countdown to people from dusk that the show will be happening.
- Show runs from Thursday to Saturday each week on a seasonal basis i.e. later in the summer months.



- Audience have downloaded the app onto their phone.
- App is the same as the one used when inside the building for wayfinding and user experience.



- Crowd has gathered within the square and are eagerly awaiting the start of the show.
- The app is in sync with the light and sound show and will automatically begin at the time of show. This is similar to the 'Symphony of Lights' in Hong Kong.



- Sound and light show begins.
- Speakers are located within the public realm totems or from town hall.
- Coloured lights act as an indicator of the location of the corresponding historical event or fact simultaneously displayed on the mobile phone app.



- Historical events connected to the town hall or Manchester can be introduced to the audience.



- Static light and transitional light with movement will add excitement and interest.
- The statues within the square can also be lit with colour and incorporated into the show.



- Events about the history or architecture of the town hall can be told to the public.



- After the show, the audience can share their experience on social media, encouraging other people to come and see the show.

Access and Maintenance

The facade lighting scheme has been coordinated closely with practical access and maintenance methods for mounting the façade luminaires. The existing facade lighting scheme has a number of failed, redundant luminaires mounted on each of the four façades and from the internal roof.

One of the main objectives of the facade lighting scheme is to minimise the frequency of the maintenance cycle and to enable ease of access for when the luminaires need to be serviced.

By looking at the items listed below, a set of nine principles have been established to apply to all of the facade lighting luminaires:

1. Locating luminaires in positions that also require access for another maintenance purpose
2. Removing the need for cherry picker access to Princess Street
3. Luminaire selection for longevity
4. Looking at where windows are openable and/or allow access to the façade

Principle One :

- Mount luminaires within moats for low level access

Principle Two :

- Externally mount luminaires within close reach of openable windows.

Principle Three :

- Luminaires to be mounted within roof ledges where access is being provided for gutter cleaning

Principle Four :

- Cherry picker access avoided to Princess Street facade due to proximity of the Metrolink OLE

Principle Five :

- Luminaires mounted on prominent ledges with access from open-able windows

Principle Six :

- Entrances illuminated from ground recessed luminaires for low level access

Principle Seven :

- Side-mounting luminaires to prevent water ingress into the building and luminaires

Principle Eight :

- Reduced maintenance cycle via luminaire specification (longevity, same manufacturer, limited palette of luminaires)



Facade Luminaire Data Sheets

Facade Lighting Drawings