MATCH
LIGHTING
STUDIO

Old Granada Studios (OGS) | External Lighting Addendum & Post-Installation Validation Report

20th March 2026

1.0 INTRODUCTION

This document provides post-installation validation of the installed external lighting scheme and supplements the previously issued report "MLS251-01 Old Granada Studios – External Lighting Assessment" (dated 4 March 2025).

The report has been prepared in response to a request from the Local Planning Authority (LPA) for post-installation verification of the installed lighting scheme. It presents measured illuminance levels and derived luminance of surrounding surfaces at receptor locations in accordance with Planning Condition 6.

1.1 SUMMARY OF FINDINGS

Post-installation measurements confirm that the installed lighting complies with ILP Guidance Note GN01/21 for Environmental Zone E3.

- Measured vertical illuminance at receptor locations remains below 10 lux (pre-curfew).
- Derived luminance confirms surrounding surfaces are of low brightness and not visually prominent.
- The lighting does not give rise to unacceptable levels of obtrusive light.

The assessment represents a worst-case scenario with all lighting operating simultaneously.

2.0 REFERENCE DOCUMENTS

- Original lighting assessment:
  'MLS251-01 Old Granada Studios - External Lighting Assessment' issued 4th March 2025.
- ILP Guidance Note GN01/21 – The Reduction of Obtrusive Light
- Planning Condition 6: Requirement for verification of installed lighting levels against approved design, supported by lighting drawings and specifications

3.0 SUMMARY OF LPA REQUEST

Following submission of the original lighting assessment, the Local Planning Authority (LPA) requested the following additional information:

"The assessment needs to include the lighting level expressed in cd/m² at the receptors. Also, as previously mentioned when accepting the proposed approach to addressing this condition, we will need some form of validation assessment once installed to confirm the light levels of the custom lighting units do not exceed the predicted /calculated lighting levels which has been based on comparable units".

This report provides the requested validation through measured illuminance and derived luminance values at representative receptor locations.

4.0 SURVEY CONDITION & METHODOLOGY

- **Date & time:** Survey undertaken on 26 February 2026 at approximately 18:45
- **Weather:** Dry conditions, approximately 4°C
- **Instrumentation:** Asensetek Lighting Passport Essence Pro spectrometer
- **Measurement heights:**
  – Horizontal illuminance measured at ground level
  – Vertical illuminance measured at receptor planes (approx. 1.6 m above ground level)
- **Lighting state:** All architectural lighting operating at full output (100%) during the survey
- **Ambient lighting context:**
  The site is influenced by municipal street lighting along Atherton Street and Quay Street, which could not be isolated during the survey. Measured values therefore include both architectural and ambient lighting contributions and represent a worst-case scenario.
- **Assessment Basis**
  The site is classified as Environmental Zone E3 (suburban/urban residential) in accordance with ILP Guidance Note GN01/21, and the corresponding limits have been applied. Luminance has been derived from measured illuminance to indicate the apparent brightness of surfaces at receptor locations.

The following sections present measured illuminance and derived luminance values, compared against the original design predictions.

5.0 AREA BY AREA VALIDATION

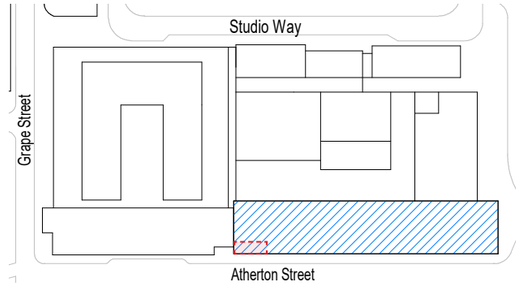
The following sections present a detailed validation of each area of the following installed lighting scheme at:

- Atherton St - Soho Entrance (Ground Level)
- Atherton St - Mollies Entrance (Ground Level)
- St John's Place Terrace (Lower Ground Floor)
- Pool terrace (Level 8)

5.1 ATHERTON STREET – SOHO ENTRANCE

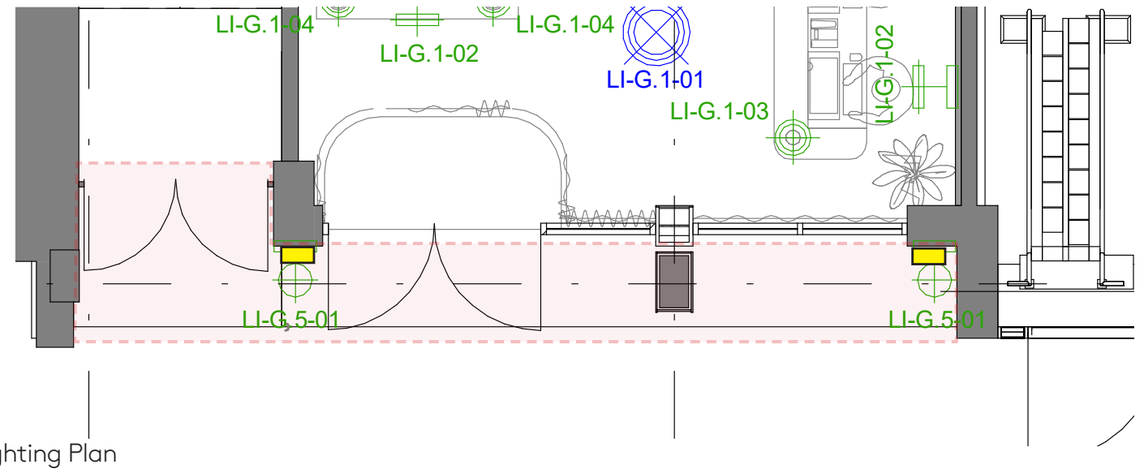
5.1.1 OVERVIEW

- The Soho entrance is located at ground level on Atherton Street within a recessed façade at the corner of Great John Street. The scheme was assessed under Environmental Zone E3 in accordance with ILP GN01/21.
- The recessed entrance geometry contains light within the immediate threshold and limits outward spill to the public realm.
- There are no residential receptors directly facing the entrance, and the opposite building is currently non-operational.
- The recessed form reduces visibility from the wider street and limits perceived brightness beyond the entrance zone.

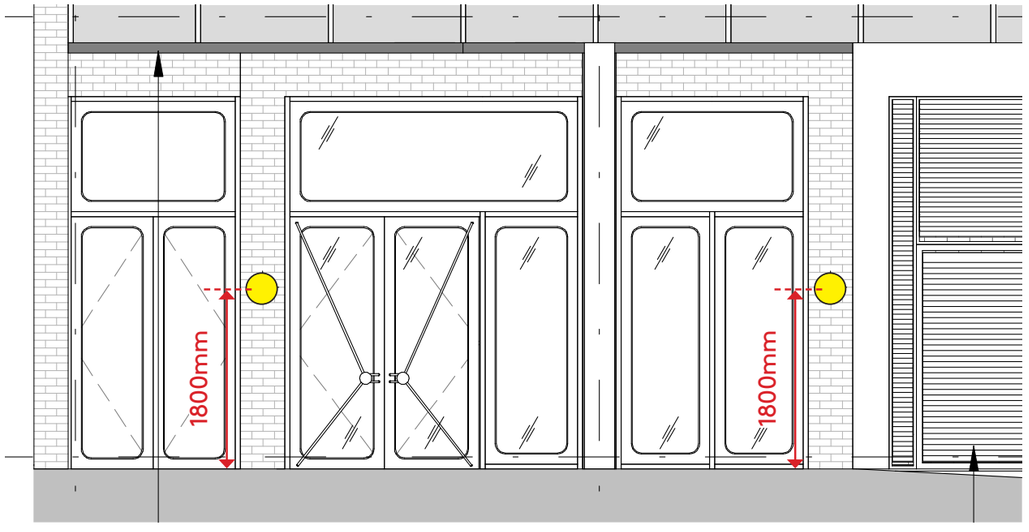


Key Plan





Lighting Plan



Lighting Elevation

5.1.2 INSTALLED SCHEME

A. Overview

The installed lighting follows the approved scheme, with two minor deviations. The overall lighting strategy and intent remain unchanged.

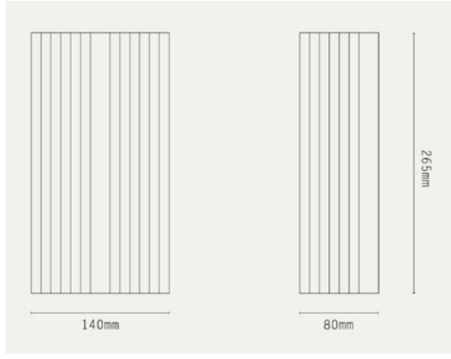
B. Deviations

- One luminaire has been relocated to an adjacent wall within the recessed entrance zone
- The originally proposed luminaire has been replaced with a shielded up/down wall light

C. Assessment of Impact

- The revised luminaire provides a more controlled up/down distribution, directing light onto the entrance façade and immediate threshold area rather than outward towards the street. As a result, light is more contained within the recessed entrance and does not increase spill beyond the site boundary..
- The installed scheme remains consistent with the original design intent and does not increase lighting impact beyond those assessed in the original lighting report.

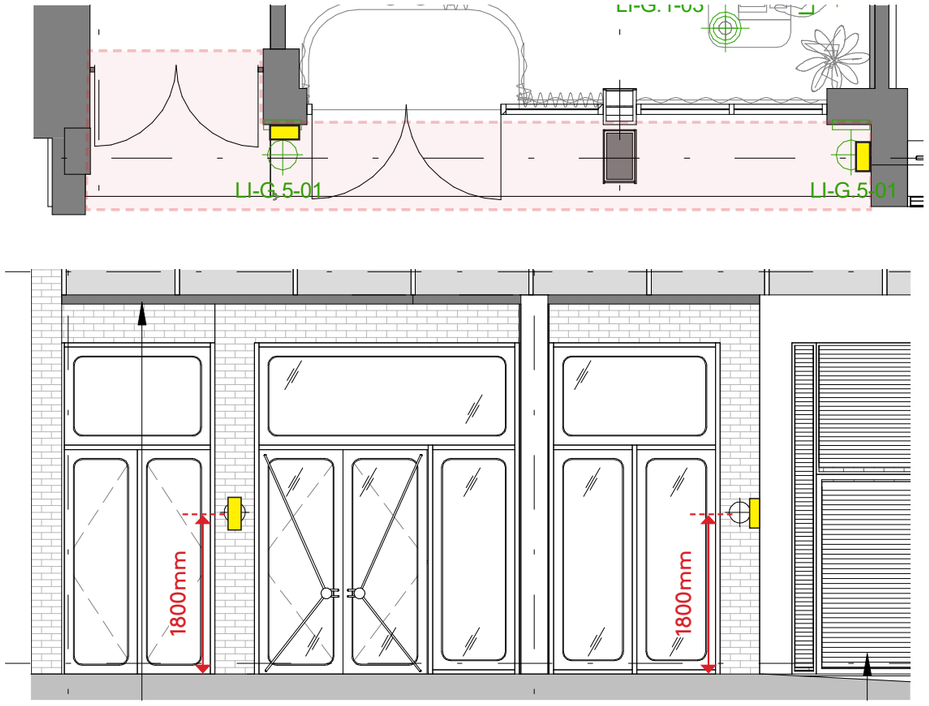




TECHNICAL CHARACTERISTICS OF INSTALLED

- **Lamp:** LED (12W)
- **Lumen Output:** 1200 Lumen
- **Colour temperature:** 2700K
- **Lighting Distribution:** Up/Down (diffused)

LI-G.5-01 Wall Light



Installed luminaire scheme

5.1.3 INSTALLATION PHOTOGRAPHS AND SITE CONTEXT

- The following photographs show the entrance in the context of its immediate surroundings.
- The Soho entrance lighting provides a localised contribution within a brighter ambient environment dominated by municipal street lighting along Atherton Street.



Recessed Soho entrance condition and the installed wall-mounted luminaires.

Street lighting column (approx. 8 m high) located directly opposite the entrance contributing significantly to the ambient lighting within the street and immediate areas around.

View of Soho entrance and surrounding street and building directly opposite. A municipal lighting column (approx. 8 m high) is located directly opposite the entrance.

• The photographs confirm that luminaires are recessed and direct light onto immediate façade surfaces, with minimal outward spill to the street.



View of the recessed Soho entrance and the installed wall-mounted luminaires.



Close-up of installed up/down wall luminaire.

5.1.4 MEASURED ILLUMINANCE RESULTS

Measurements were undertaken with all lighting operating at full output. Values represent a worst-case scenario including both architectural and municipal lighting.

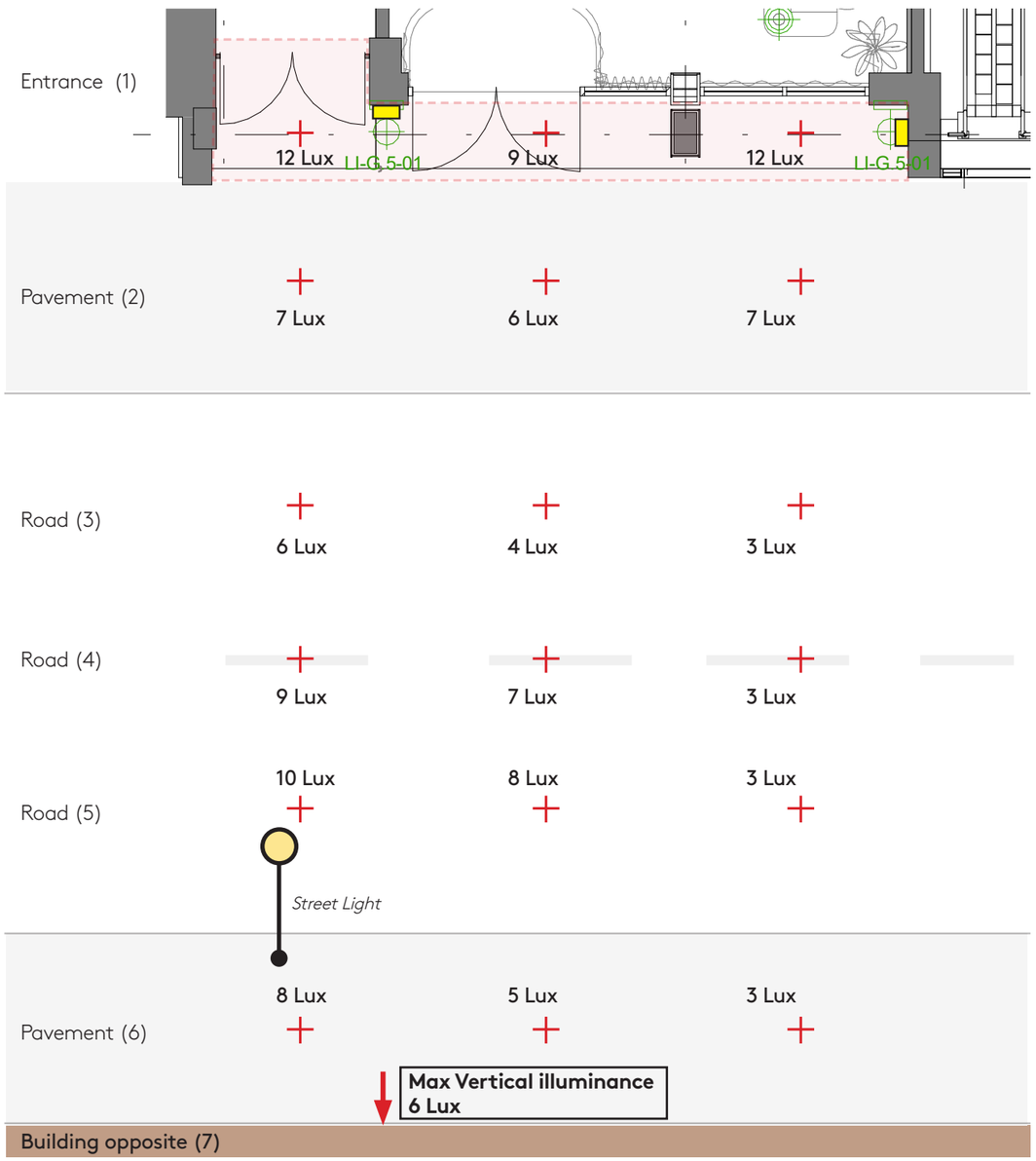
A. Horizontal Illuminance (Ground)

Location	Average Predicted (lux)	Average Measured (lux)	Variance
In entrance (1)	11	11	None
Pavement - entrance side (2)	7	7	None
Road (3)	2	4	2 Lux above*
Road centre (4)	1	6	5 Lux above*
Road (5)	0.5	7	6.5 Lux above
Pavement - opposite (6)	0.3	6	5.7 Lux above*

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

Commentary

- Illuminance within the entrance recess is consistent with predicted values.
- Measured levels initially decrease with distance from the entrance, consistent with predicted values, before increasing in proximity to the municipal street lighting column, which is the dominant ambient source in the surrounding street environment.
- This confirms that the installed lighting has a localised and limited contribution to the wider environment.
- This also confirms that municipal street lighting is the dominant contributor to overall illuminance levels within the area.



Plan of entrance and measurement points

B. Vertical illuminance at receptor plane

Location	Predicted (lux)	Maximum Measured (lux)	ILP Guidance Limit (E3)
Opposite building (7)	1.5	6	10 Lux pre-curfew

Vertical illuminance was measured at approximately 1.6 m above ground, representing a typical receptor height.

- The maximum measured value was 6 lux, below the ILP GN01/21 limit of 10 lux (pre-curfew) for Environmental Zone E3.
- Values include ambient street lighting and therefore represent worst-case conditions.
- Measured illuminance decreases with distance from the recessed entrance, consistent with the predicted lighting distribution. This confirms that the elevated vertical illuminance recorded at the receptor location is attributable to additional contributions from adjacent municipal street lighting rather than the entrance lighting itself.
- Notwithstanding this, all measured values remain within the applicable ILP limits and are therefore compliant.

5.1.5 DERIVED LUMINANCE - HORIZONTAL POINTS (cd/m²)

Measured horizontal illuminance values have been used to derive luminance in accordance with CIE 150 and ILP GN01/21.

$$L = \frac{E \times \rho}{\pi}$$

Where:

- L = luminance (cd/m²)
- E = illuminance on the surface (lux)
- ρ = surface reflectance
- π = 3.142

The ground surfaces where the measurements were taken comprise of standard road asphalt. A typical reflectance value of 0.10 has been applied for the purposes of this calculation.

A. Derived Horizontal Luminance (Ground)

Location	Average Measured (lux)	Surface reflectance value	Derived luminance (cd/m2)
In entrance (1)	10	0.1	0.32
Pavement - entrance side (2)	7	0.1	0.22
Road (3)	4	0.1	0.13
Road centre (4)	6	0.1	0.19
Road (5)	7	0.1	0.22
Pavement - opposite (6)	6	0.1	0.19

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

- Derived luminance values (0.1–0.3 cd/m²) confirm that surrounding surfaces are of low brightness and remain well below ILP reference limits.

5.1.6 DERIVED LUMINANCE - VERTICAL RECEPTOR POINT (cd/m²)

To provide an indication of the apparent brightness of vertical surfaces at receptor locations, measured vertical illuminance has been used to derive luminance in accordance with CIE 150 and ILP GN01/21.
The building opposite comprises of standard red brickwork. A typical reflectance value of 0.35 has been applied for the purposes of the calculation.

B. Vertical Measurements (Receptor point)

Location	Average Measured (lux)	Surface reflectance value	Derived luminance (cd/m2)
Wall opposite entrance	6	0.35	0.67

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

- ILP Guidance Note GN01/21 defines a reference limit of 10 cd/m² for vertical luminance in Environmental Zone E3
- The derived luminance value (0.67 cd/m²) is substantially below this reference level.

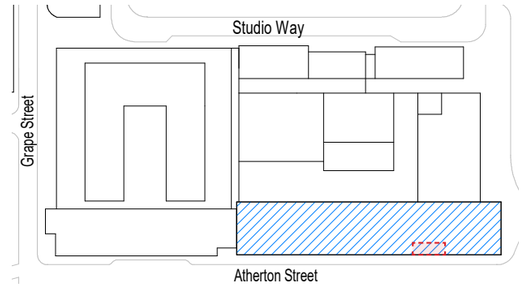
5.1.7 COMPLIANCE

- Measurements represent worst-case conditions with all lighting operating simultaneously.
- Measured illuminance levels are influenced by municipal street lighting, which forms the dominant source of ambient illumination.
- As contribution from the entrance lighting reduces rapidly beyond the recessed façade the impact is negligible at receptor locations.
- The maximum measured vertical illuminance (6 lux) remains below the ILP GN01/21 limit of 10 lux.
- The installed lighting does not give rise to unacceptable levels of obtrusive light and is compliant with Planning Condition 6.

5.2 ATHERTON STREET – MOLLIES ENTRANCE

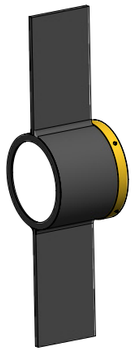
5.2.1 OVERVIEW

- The Mollies entrance is located on Atherton Street and forms a street-facing entrance to the development.
- The entrance is recessed beneath a canopy and set back from the main building line. This configuration limits outward light spill and reduces visibility from the wider street.
- The lighting comprises wall-mounted luminaires, step lights, and decorative pendant lighting beneath the canopy, with distribution directed predominantly downward onto local surfaces.
- The building directly opposite comprises a mixed-use development. A solid dark brick wall (approximately 3 m high) with no windows, directly facing the entrance has been adopted as the primary receptor location.
- The lighting was assessed within the original External Lighting Assessment under Environmental Zone E3 in accordance with ILP GN01/21, which remains applicable.



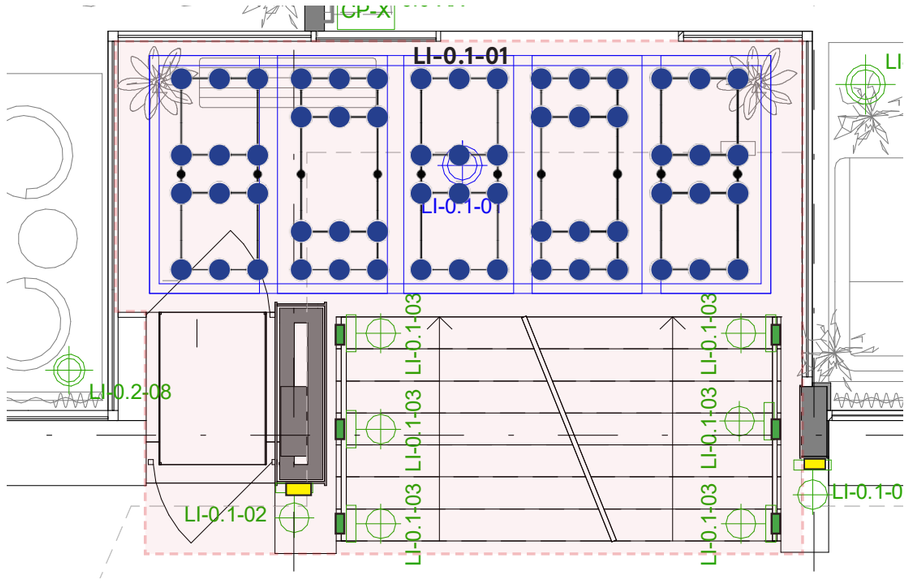
Key Plan



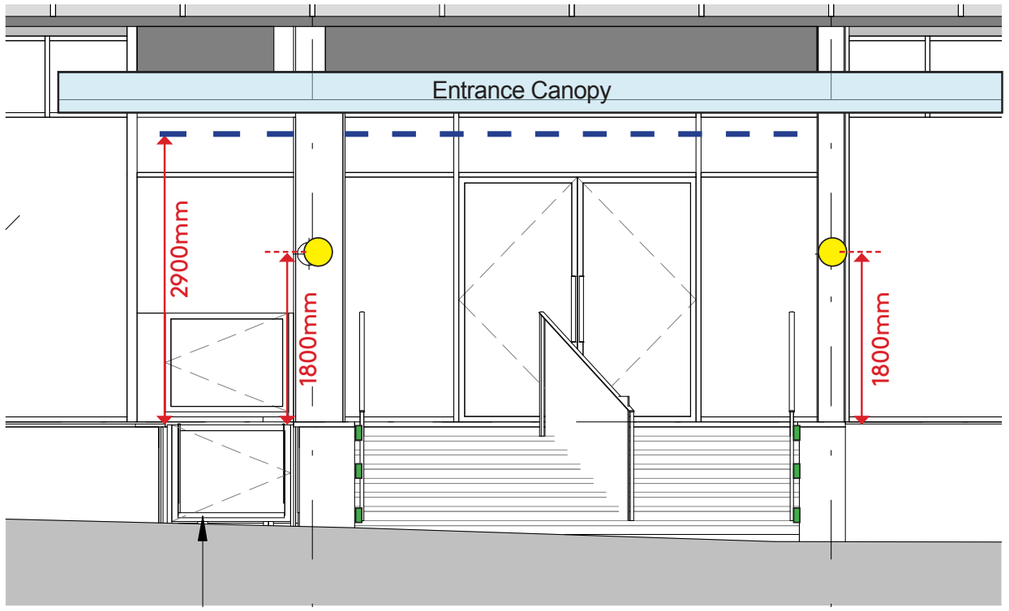




●●● LI-0.1-01 Feature Chandelier LI-0.1-02 Wall Light LI-0.1-03 Steplight



Lighting Plan



Lighting Elevation

5.2.2 INSTALLED SCHEME

A. Overview

The installed lighting follows the approved scheme, with two minor deviations. The overall lighting strategy and intent remain unchanged.

B. Deviations

- Wall-mounted luminaire type changed to a shielded up/down wall light.
- Two step lights installed within the entrance steps in place of the three originally illustrated.

C. Assessment of Impact

- The revised wall luminaire provides a more controlled up/down distribution, directing light onto the entrance and soffit rather than outward towards the street.
  As a result, light is more contained within the recessed entrance and does not increase spill beyond the site boundary..
- The reduction in the number of step lights results in a lower overall installed light output than originally assessed.
- All luminaires are located beneath the entrance canopy and set back behind the building façade line, restricting direct light emission towards the street. Light is therefore contained within the entrance zone, limiting spill and reduced visibility from the wider public realm.
- The installed scheme remains consistent with the original design intent and does not increase lighting impact beyond those assessed in the original lighting report.

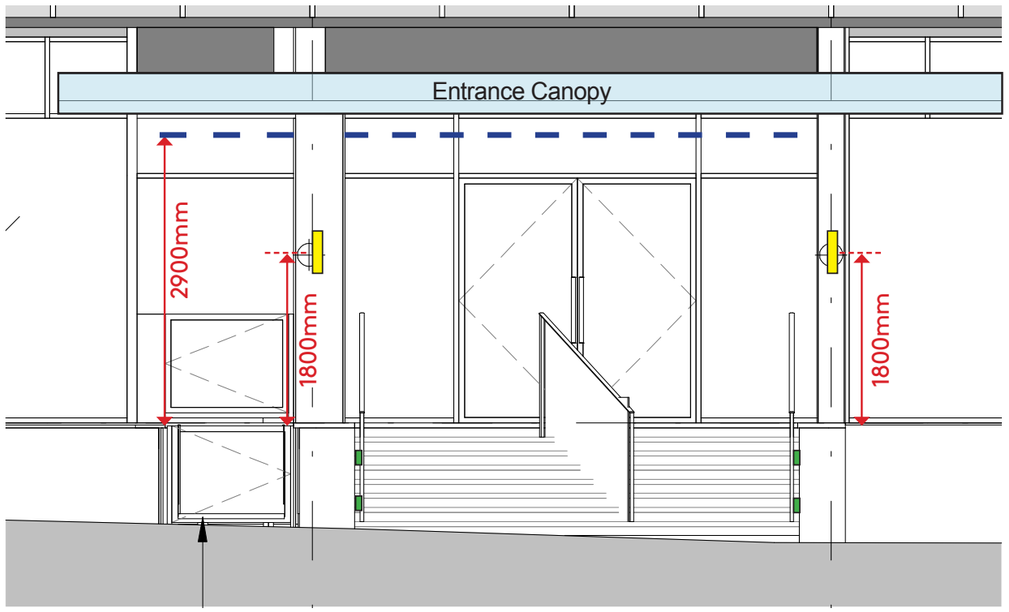




TECHNICAL CHARACTERISTICS OF INSTALLED

- **Lamp:** LED (2 x 5W)
- **Lumen Output:** 1200 Lumen
- **Colour temperature:** 2700K
- **Lighting Distribution:** Up/Down (diffused)

LI-0.1-02 Wall Light



Installed luminaire scheme

5.2.3 INSTALLATION PHOTOGRAPHS AND SITE CONTEXT

- The following photographs illustrate the entrance within its wider street context and confirm that the municipal street lighting on Atherton Street again provides the dominant ambient illumination.



Street lighting column (approx. 8 m high) located directly opposite the entrance contributing significantly to the ambient lighting within the street and immediate areas around.

The entrance is recessed beneath a canopy, which contains light within the entrance zone and limits outward spill.

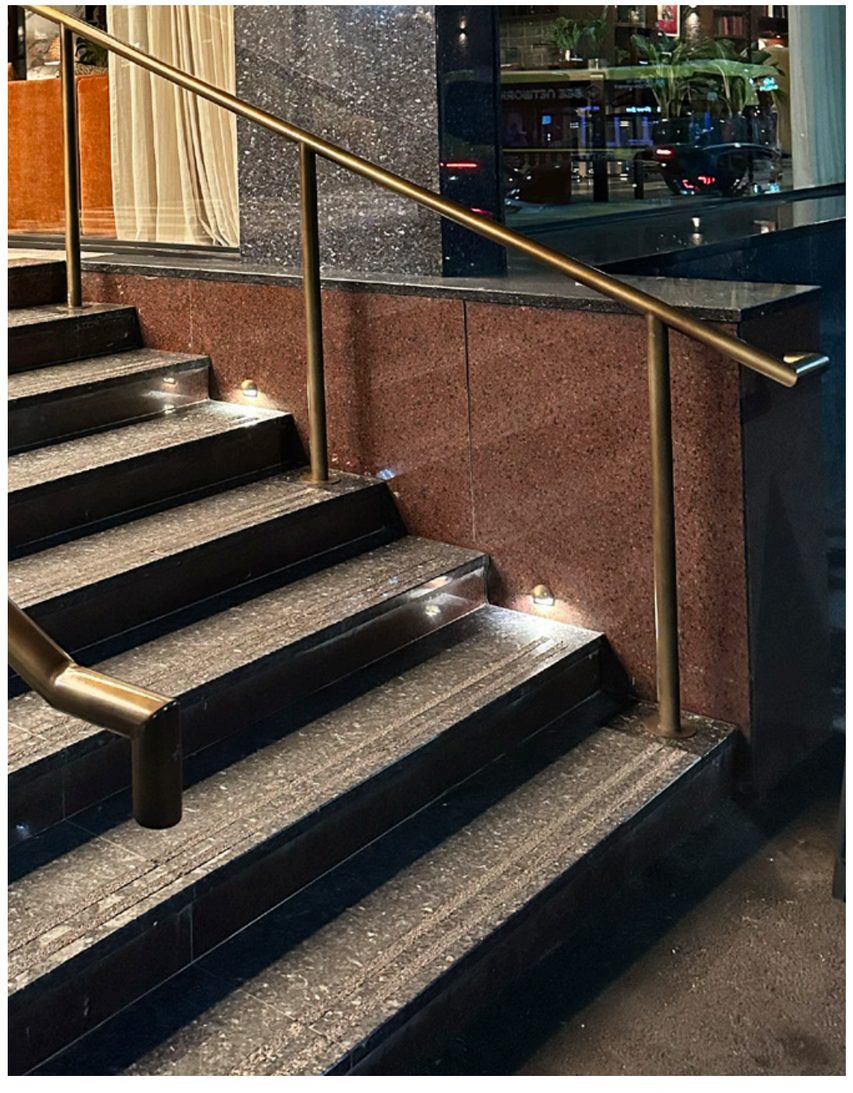
The Mollie's entrance is recessed beneath a canopy within the building façade, which contains the emitted light within the entrance zone and limits visibility from the surrounding public realm.

View of the Mollie's entrance and surrounding street and building directly opposite. A municipal lighting column (approx. 8 m high) is located directly opposite the entrance.

- The photographs below illustrates the lighting is localised and fully recessed behind the canopy and directed onto internal surfaces (not outwards).



Recessed canopy lighting directed downward and contained within the entrance, with no direct emission towards the street.



Integrated step lighting providing localised illumination with negligible spill.

5.2.4 MEASURED ILLUMINANCE RESULTS

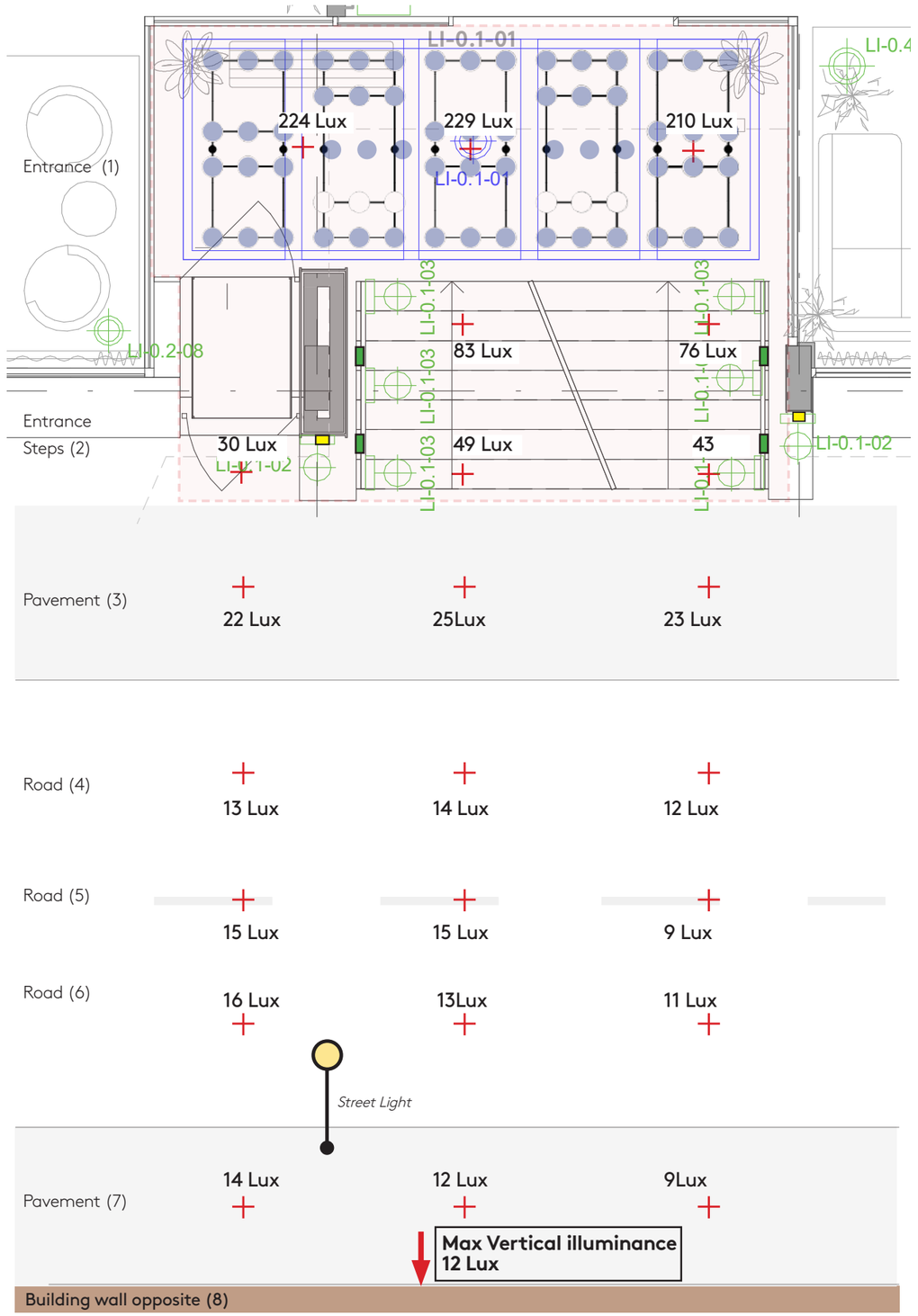
A. Horizontal Illuminance (Ground)

Location	Average Predicted (lux)	Average Measured (lux)	Variance
In entrance (1)	300	222	78 Below expected
Entrance steps (2)	70	62	8 Below expected
Pavement - entrance side (3)	55	24	31 Below expected
Road (4)	20	14	6 Below expected
Road centre (5)	11	13	2 Lux above*
Road (6)	7	14	7 Lux above
Pavement - opposite (7)	4	11	7 Lux above*

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

Commentary:

- Measured illuminance levels within the entrance zone are consistent with, and in some locations below, those predicted within the original assessment.
- The pattern of light distribution and reduction with distance from the entrance aligns with the predicted lighting performance.
- Measured levels increase towards the carriageway due to the influence of the municipal street lighting column located directly opposite, which forms the dominant ambient light source.
- Measurements beyond the entrance therefore represent cumulative lighting conditions, with the majority of illumination attributable to municipal street lighting.
- The installed entrance lighting does not materially increase lighting levels within the wider street environment.
- This also confirms that municipal street lighting is the dominant contributor to overall illuminance levels within the area.



Plan of entrance and measurement points

B. Measured vertical illuminance at receptor plane

Location	Predicted (lux)	Maximum Measured (lux)	ILP Guidance Limit (E3)
Opposite wall building (8)	8.5	12*	10 Lux pre-curfew

*Measurement includes contribution from municipal street lighting directly opposite the entrance

- The measured vertical illuminance includes a significant contribution from the municipal street lighting located directly opposite and does not represent the entrance lighting in isolation.
- Measured illuminance decreases with distance from the recessed entrance, consistent with the predicted lighting distribution. This confirms that the elevated vertical illuminance recorded at the receptor location is attributable to additional contributions from adjacent municipal street lighting rather than the entrance lighting itself.
- The opposite wall up to 3 m in height contains no windows or sensitive receptors.
- The lighting therefore operates within the intent of ILP GN01/21 and does not give rise to unacceptable obtrusive light.

5.2.5 DERIVED LUMINANCE - HORIZONTAL POINTS (cd/m²)

Measured horizontal illuminance values have been used to derive luminance in accordance with CIE 150 and ILP GN01/21.

$$L = \frac{E \times \rho}{\pi}$$

Where:

- L = luminance (cd/m²)
- E = illuminance on the surface (lux)
- ρ = surface reflectance
- π = 3.142

A. Derived Horizontal Luminance (Ground)

Location	Average Measured (lux)	Surface reflectance value	Derived luminance (cd/m2)
In entrance (1)	222	0.2	9.19
Entrance steps (2)	62	0.1	1.97
Pavement - entrance side (3)	24	0.1	0.76
Road (4)	14	0.1	0.45
Road centre (5)	13	0.1	0.41
Road (6)	14	0.1	0.45
Pavement - opposite (7)	11	0.1	0.35

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

- The resulting luminance values (approximately 0.35–9 cd/m²) are within ILP guidance.
- Higher values are confined to the recessed entrance and are not directly visible from the public realm.
- Away from the entrance, luminance levels reduce and but increase again as you move further away as a result of the the existing municipal street lighting which is more dominent.

5.2.6 DERIVED LUMINANCE - VERTICAL RECEPTOR POINT (cd/m²)

To provide an indication of the apparent brightness of vertical surfaces at receptor locations, measured vertical illuminance has been used to derive façade luminance in accordance with CIE 150 and ILP GN01/21.

The building façade opposite comprises dark brickwork. For the purposes of this calculation, a typical reflectance value of 0.1 has been applied.

B. Vertical Measurements (Receptor point)

Location	Average Measured (lux)	Surface reflectance value	Derived luminance (cd/m2)
Wall opposite entrance	6	0.1	0.19

**Measured values away from the entrance are influenced primarily by existing municipal street lighting within the street.*

- The derived luminance value (0.19 cd/m²) is well below the ILP reference limit of 10 cd/m² for Environmental Zone E3.
- This is substantially below this reference level and limit.

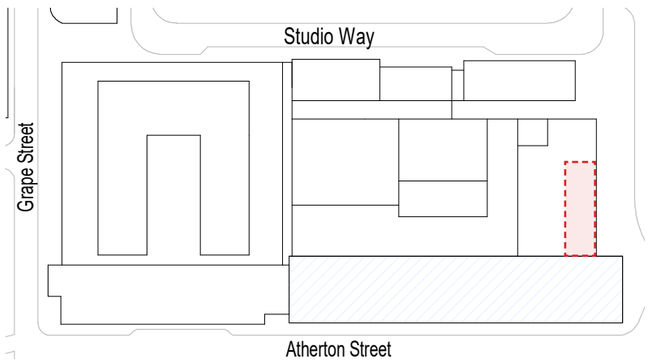
5.2.7 COMPLIANCE

- Measured lighting levels within the street environment include a significant contribution from existing municipal street lighting, representing a worst-case scenario.
- Illuminance within the entrance zone is consistent with, and in some locations lower than, that predicted within the original assessment.
- Measured vertical illuminance at the receptor location remains within ILP GN01/21 limits when considering the cumulative lighting environment.
- Derived luminance values confirm that illuminated surfaces remain within ILP guidance for Environmental Zone E3.
- The installed lighting is localised, with its influence reducing rapidly beyond the entrance.
- The lighting therefore complies with ILP GN01/21 and does not give rise to unacceptable obtrusive light.
- The development is compliant with Planning Condition 6.

5.3 LOWER GROUND FLOOR - ST JOHNS PLACE TERRACE

5.3.1 OVERVIEW

- The lower ground floor terrace forms an external seating area associated with Mollie's restaurant. The space is recessed below street level and enclosed by a retaining wall, which limits visibility of illuminated surfaces and restricts light spill beyond the terrace.
- The terrace is located adjacent to Quay Street within a brightly lit urban environment influenced by municipal street lighting and surrounding commercial development.
- Surrounding buildings are predominantly commercial, with no nearby residential receptors or sensitive windows overlooking the terrace.
- The lighting scheme was previously assessed under Environmental Zone E3 in accordance with ILP GN01/21, which remains applicable.



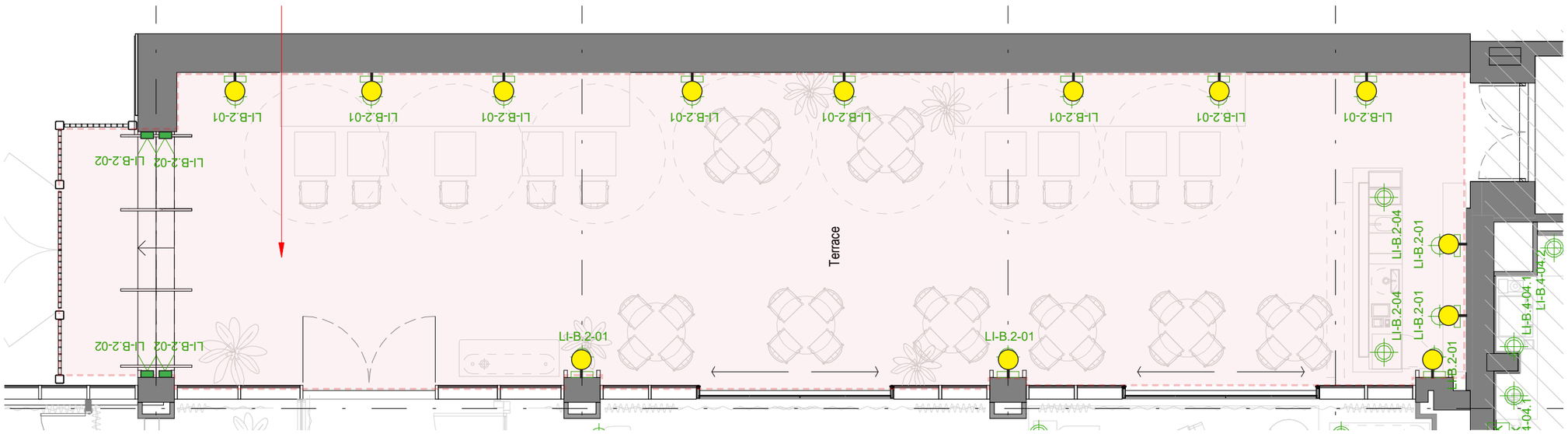
Key Plan





LI-B.2-01 Wall lantern

LI-B.2-02 Steplight



Lighting Plan

5.3.2 INSTALLED SCHEME

A. Overview

The installed lighting follows the previously assessed layout, with a minor deviation noted below. The overall lighting strategy and distribution remain consistent with the approved scheme and are fully contained within the terrace.

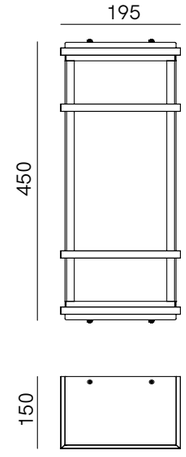
B. Deviations

- Wall-mounted luminaire type changed to a rectangular wall-mounted fitting with diffused front and side distribution. The luminaire emits no direct upward or downward light.

C. Assessment of Impact

- The installed luminaires provides a more controlled, diffuse distribution with limited high-angle emission compared to the original specification.
- Due to the recessed and enclosed nature of the terrace, light is contained within the space and does not contribute to the wider public realm and surroundings.
- The change in luminaire type does not increase lighting impact and remains consistent with the approved design intent.

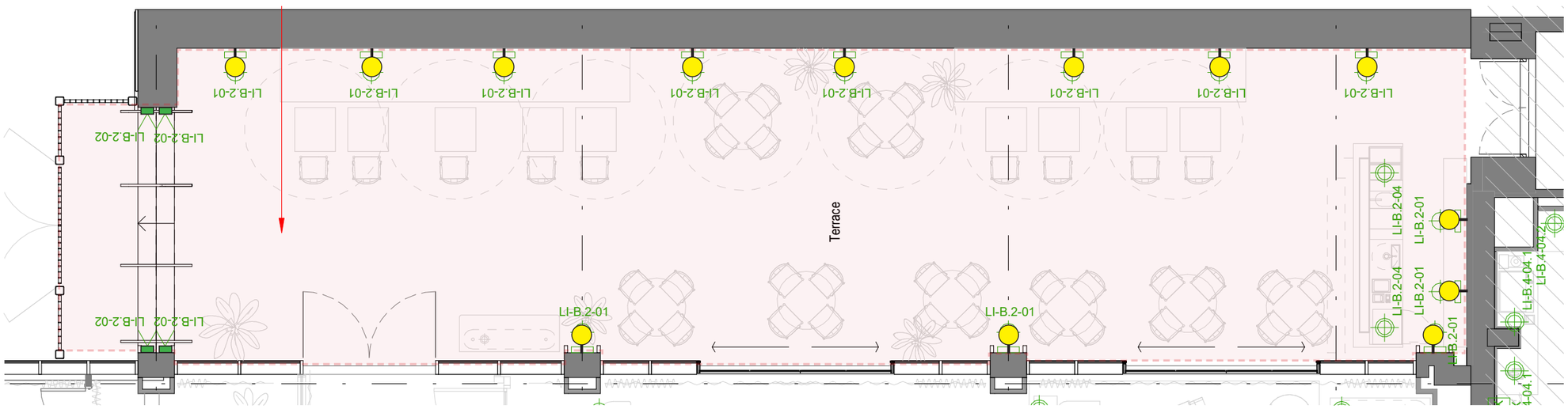




TECHNICAL CHARACTERISTICS OF INSTALLED

- **Lamp:** LED (2 x 5W)
- **Lumen Output:** 1200 Lumen
- **Colour temperature:** 2700K
- **Lighting Distribution:** Front and side (Diffused)

LI-B.2-01 Wall lantern



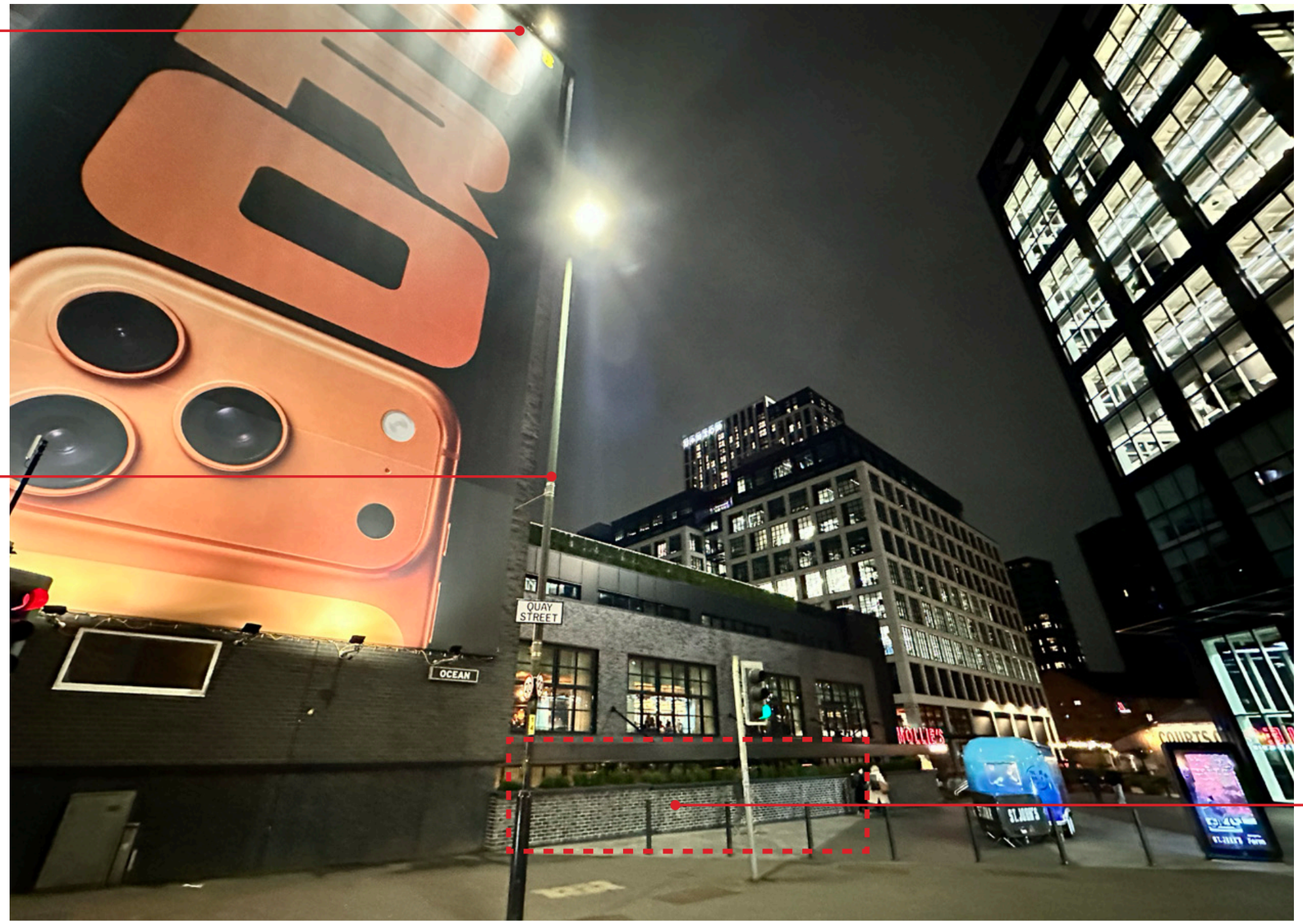
Installed luminaire scheme

5.3.3 INSTALLATION PHOTOGRAPHS AND SITE CONTEXT

The photograph illustrates the terrace in the context of the surrounding street environment, including already existing dominant ambient light sources.

High-level façade lighting contributing to elevated ambient levels

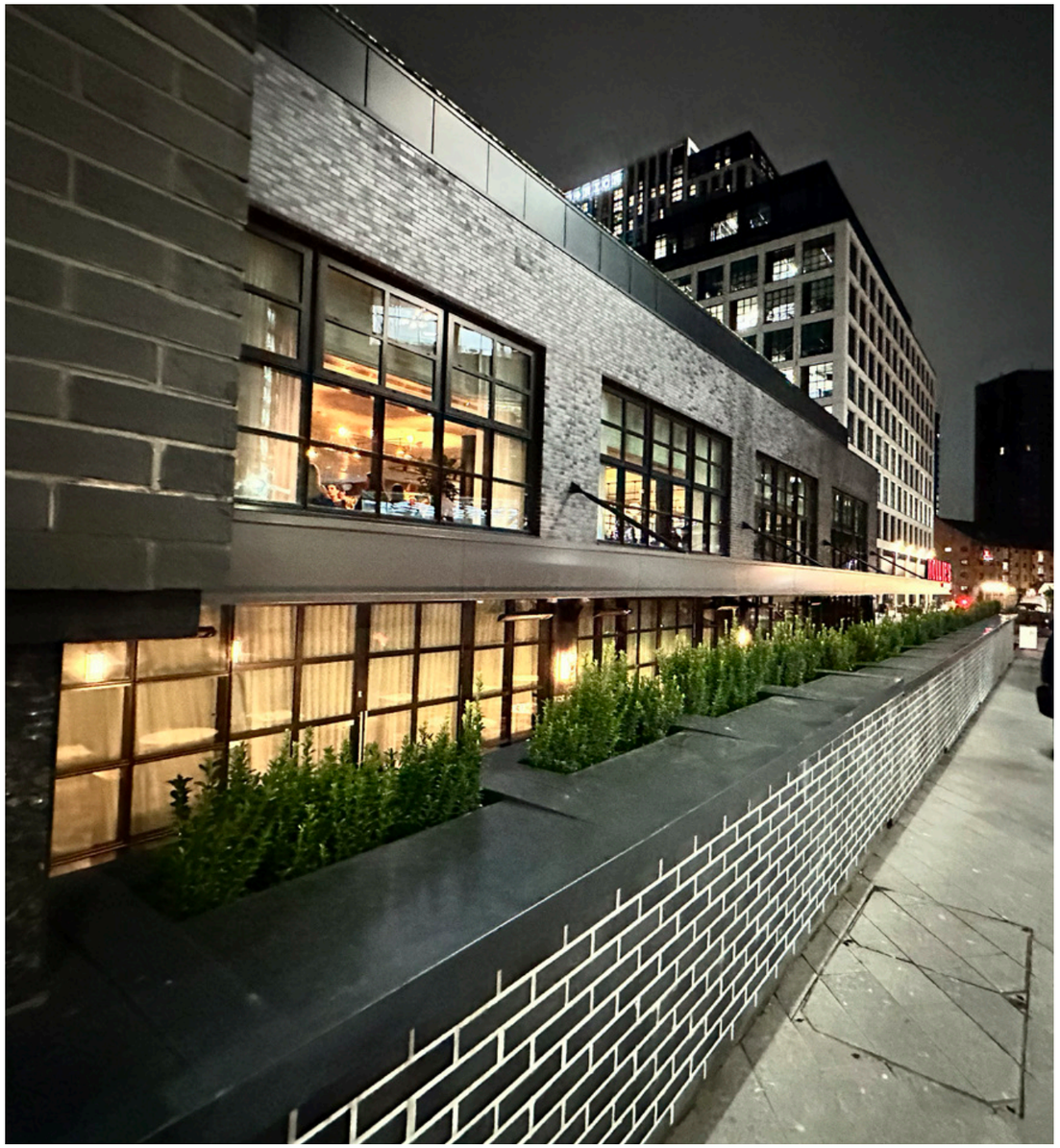
Municipal street lighting column – primary ambient source



Terrace below street level and partially screened by the retaining wall

The surrounding street environment is characterised by high ambient lighting from municipal street lighting and façade illumination all located at high level. The terrace is recessed and screened, limiting visibility and reducing its influence on the wider public realm.

- The photographs show the relationship between the terrace, entrance and surrounding street.
- Lighting is contained within the recessed entrance and terrace, with limited spill towards the public realm.



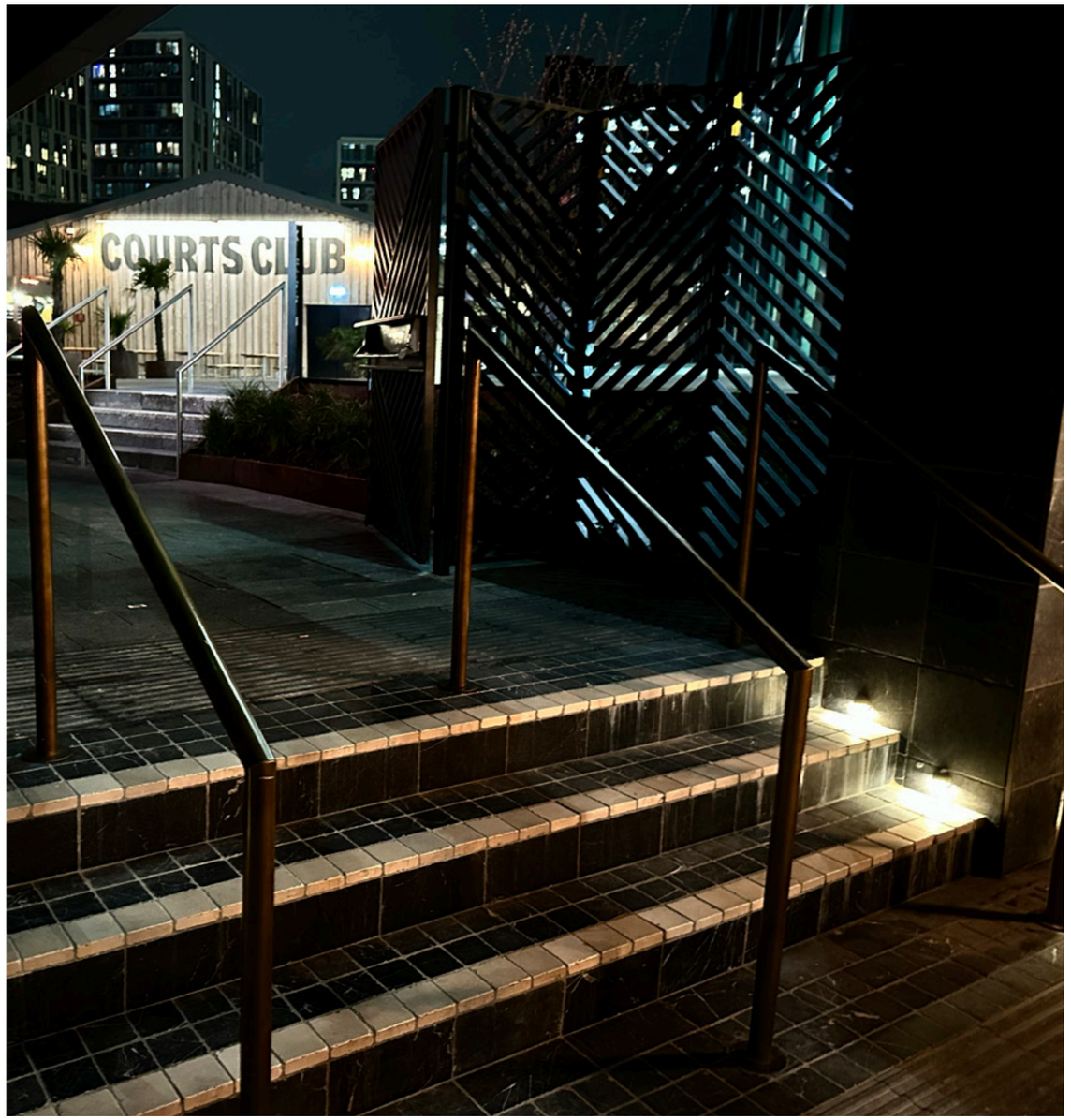
View of the terrace from street level looking over the retaining wall. The street level lighting is much brighter.



View from the entrance looking towards the sunken enclosed terrace and surrounding street which is lit to much higher levels.



View of the terrace showing installed wall-mounted luminaires within the contained environment.



Installed low-level step lighting providing localised illumination with minimal spill beyond the terrace area.

5.3.4 MEASURED ILLUMINANCE RESULTS

The original lighting calculations assessed the proposed scheme in isolation and did not include contributions from external ambient lighting sources such as municipal street lighting and surrounding façade illumination at high level.

Measured illuminance values recorded on site therefore represent cumulative lighting conditions within the surrounding urban environment, including these ambient sources.

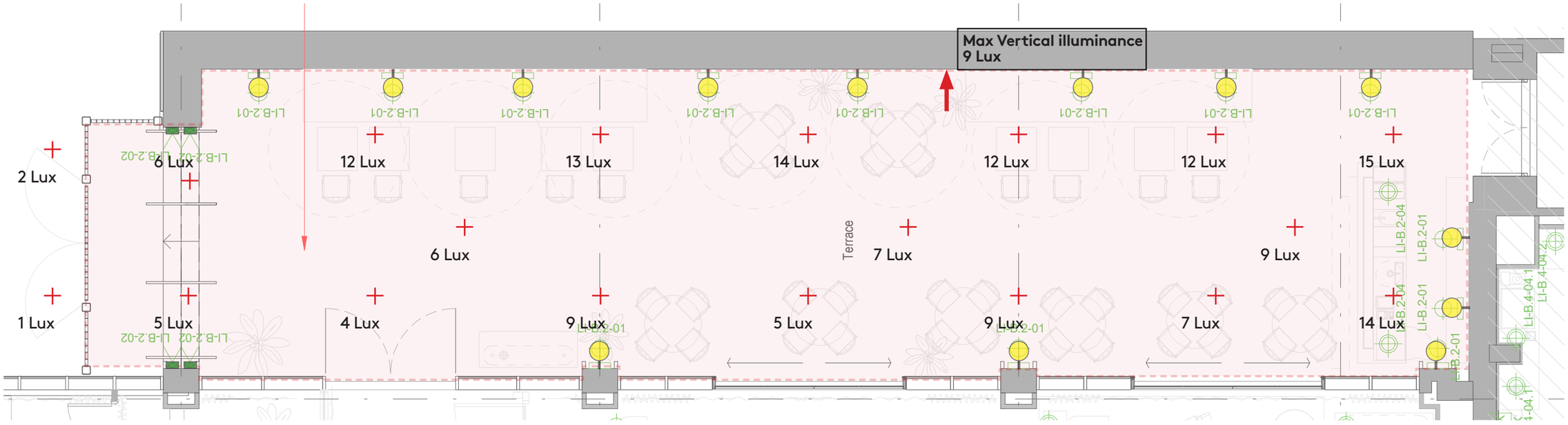
A. Horizontal Illuminance (Ground)

Location	Average Predicted (lux)	Average Measured (lux)	Variance
In entrance (1)	0.4	1.5	1.1 Lux above*
Entrance steps (2)	4	5	1 Lux above*
Near Wall light (3)	8	13	5 Lux above*
Centre of terrace space (4)	7	7	-

**Measured values influenced by existing municipal street lighting and façade lighting within the surrounding street environment.*

Commentary:

- Measured illuminance broadly follows the predicted distribution, with levels reducing with distance from the luminaires.
- Light levels are in line with the predicted values, bith minor localised increases attributable to surrounding ambient lighting (high level street and facade lighting, plus the different choice in the installed wall lanterns).
- The terrace is recessed and enclosed, ensuring the installed lighting remains contained and does not materially contribute to illumination beyond the site boundary.
- Variations between predicted and measured values are typical for post-installation surveys in urban environments.



Plan of terrace and measurement points

B. Measured vertical illuminance at receptor plane

Location	Predicted (lux)	Maximum Measured (lux)	ILP Guidance Limit (E3)
Wall of terrace on retaining wall side	8	9	10 Lux pre-curfew

Vertical illuminance measurements were undertaken at approximately 1.6 m above ground level, representing a typical receptor height.

- There are no residential windows or sensitive receptors surrounding the terrace. The retaining wall location is therefore a conservative proxy receptor position for assessment purposes.
- The maximum measured vertical illuminance at this location was 9 lux, which is below the ILP GN01/21 recommended limit of 10 lux (pre-curfew) for sensitive receptors in an Environmental Zone E3.
- Measured values include any contributions from municipal street lighting and surrounding façade lighting, representing a worst-case scenario.
- Due to the recessed and enclosed nature of the terrace, the installed lighting is contained and reduces rapidly with distance at the entrance.
- The lighting is therefore compliant with ILP GN01/21 and does not give rise to unacceptable obtrusive light.

5.3.5 DERIVED LUMINANCE - HORIZONTAL POINTS (cd/m²)

Measured horizontal illuminance values have been used to derive luminance in accordance with CIE 150 and ILP GN01/21.

$$L = \frac{E \times \rho}{\pi}$$

Where:

- L = luminance (cd/m²)
- E = illuminance on the surface (lux)
- ρ = surface reflectance
- π = 3.142

The ground comprises of black and grey polished tiles. A conservative reflectance value of 0.2 has been applied for this assessment.

A. Horizontal Measurements (Ground)

Location	Average Predicted (lux)	Surface reflectance value	Derived luminance (cd/m2)
In entrance (1)	0.4	0.2	0.03
Entrance steps (2)	4	0.2	0.25
Near Wall light (3)	8	0.2	0.51
Centre of terrace space (4)	7	0.2	0.45

- Derived luminance values (0.03–0.45 cd/m²) confirm that surrounding surfaces are of low brightness and remain well below ILP reference limits for Environmental Zone E3.

5.3.6 DERIVED LUMINANCE - VERTICAL RECEPTOR POINT (cd/m²)

To provide an indication of the apparent brightness of vertical surfaces of the immediate walls within the terrace, the measured vertical illuminance at the receptor location can be used to estimate the resulting luminance using the relationship defined in CIE 150 and ILP Guidance Note GN01/21.

The inner walls comprises of polished black tiles. For the purposes of this calculation, a typical reflectance value of 0.1 has been applied.

B. Vertical Measurements (Receptor plane)

Location	Average Measured (lux)	Surface reflectance value	Derived luminance (cd/m2)
Wall opposite entrance	9	0.1	0.29

- The derived luminance value (0.29 cd/m²) is significantly below the ILP reference limit of 10 cd/m² for Environmental Zone E3.

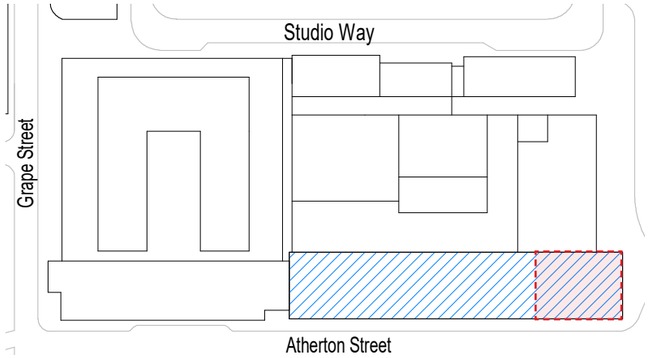
5.3.7 COMPLIANCE

- Illuminance levels across the terrace are consistent with the predicted distribution.
- The maximum measured vertical illuminance (9 lux) remains below the ILP GN01/21 limit of 10 lux (pre-curfew).
- Derived luminance values confirm that surrounding surfaces are not visually prominent and remain within ILP guidance.
- The sunken and enclosed form of the terrace, set below street level, ensures that the installed lighting is contained and does not materially affect the wider environment.
- The lighting is therefore compliant with ILP GN01/21 and does not give rise to unacceptable obtrusive light. Accordingly, the development complies with Planning Condition 6.

5.4 LEVEL 08 - POOL TERRACE

5.4.1 OVERVIEW

- The Level 08 pool terrace is located approximately eight storeys above street level.
- The terrace is partially enclosed on one side by the building massing, and due to its elevated position, lighting is visually contained within the development and not readily perceptible from street level.
- The outdoor bar is located beneath a cantilevered canopy, with additional screening provided by pergolas and architectural elements across the terrace.
- The lighting scheme comprises predominantly low-level, shielded luminaires (including step lights, integrated pool lighting and wall-mounted fittings, all directed onto immediate surfaces.
- Surrounding buildings are commercial, with no nearby residential receptors.
- The scheme was assessed under Environmental Zone E3 (ILP GN01/21).



Key Plan

LI-8.4-06 Wall recessed steplight

LI-8.4-07 Wall recessed pool light

LI-8.4-04 Wall lantern

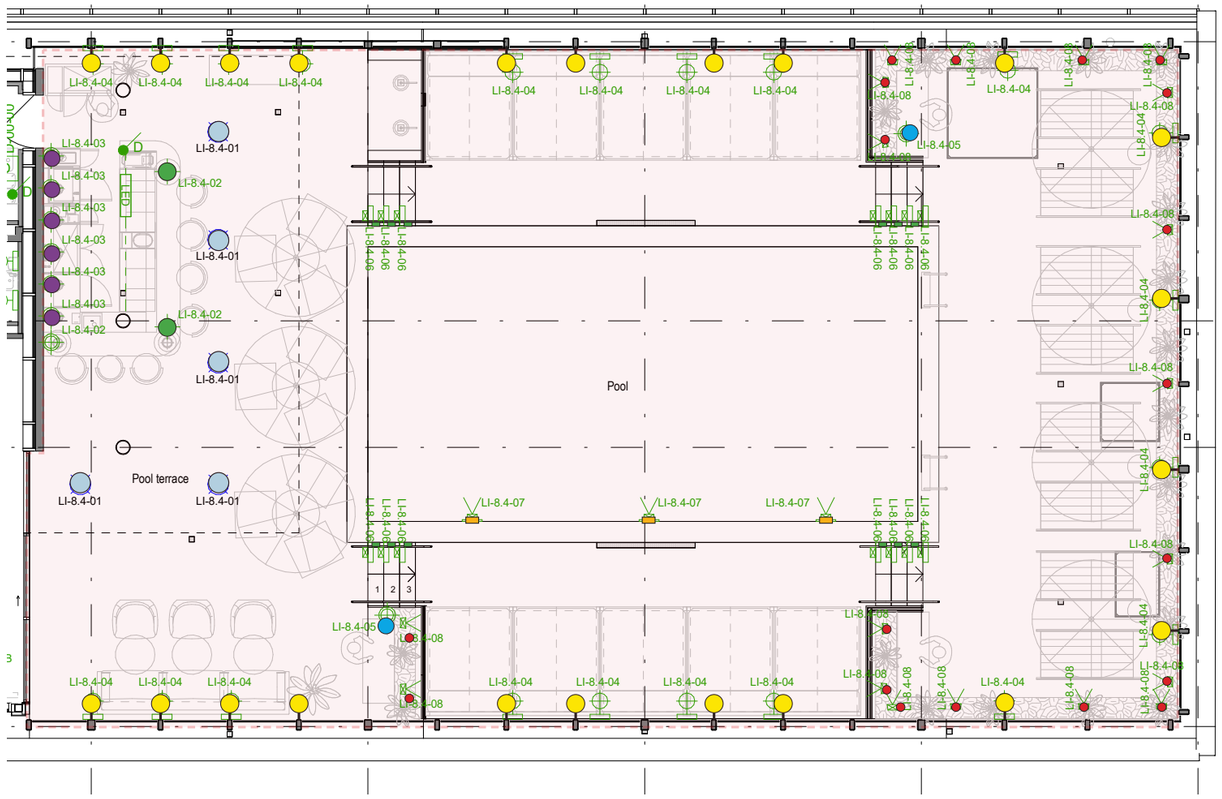
LI-8.4-05 Table Lamp 1 (non-fixed item)

LI-8.4-02 Table Lamp 2 (non-fixed item)

LI-8.4-03 Bar Lamp 3 (non-fixed item)

LI-8.4-08 Spike Light (in planters)

LI-8.4-01 Globe Pendant



Proposed Lighting Plan

5.4.2 INSTALLED SCHEME

A. Overview

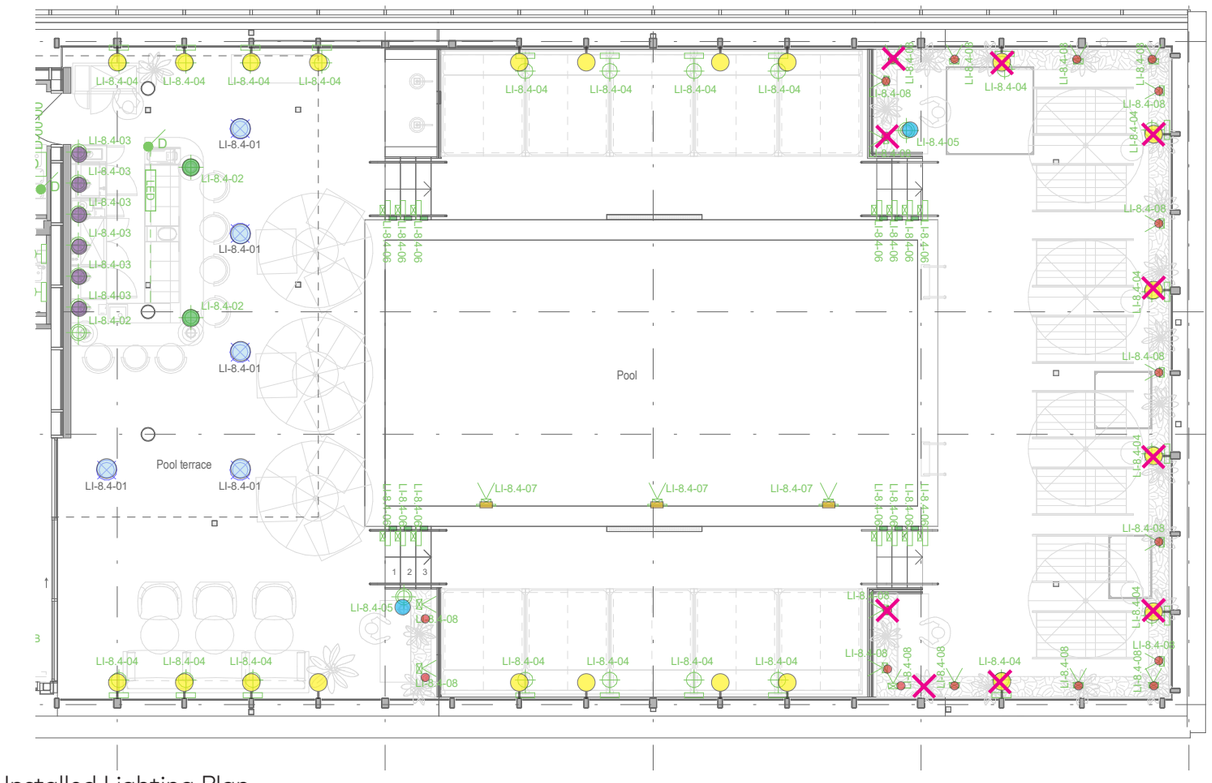
The installed lighting arrangement follows the layout illustrated within the original lighting assessment, with minor deviations identified during site inspection.

B. Deviations

- 4no. LI-8.4-08 spike lights within planters at the end of the terrace were not installed.
- 6no. LI-8.4-04 wall lantern luminaires originally proposed at the end terrace area were not installed.

C. Assessment of Impact

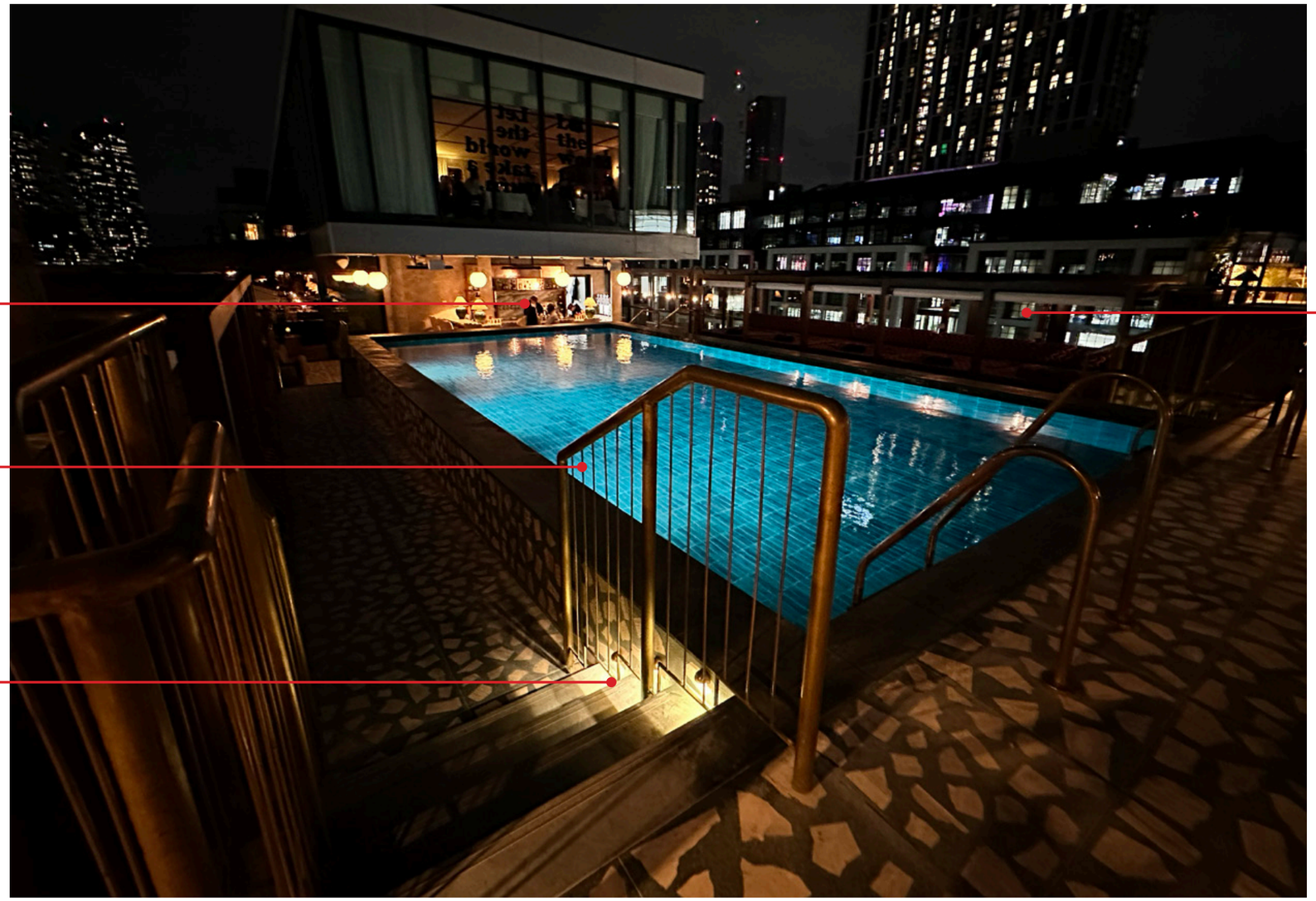
- The installed scheme includes fewer luminaires than originally assessed, resulting in a reduction in overall light output.
- Omitted fittings were located at the end terrace; their removal further should reduce the overall light output in this area.
- No additional sources of upward or outward light have been introduced.
- The as-built scheme therefore represents a reduction in potential lighting impact compared to the approved design.



Installed Lighting Plan

5.4.3 INSTALLATION PHOTOGRAPHS AND SITE CONTEXT

- The photograph illustrate the installed lighting within the terrace. Luminaires are predominantly recessed, shielded or directed onto local surfaces, limiting upward emission and outward light spill.
- Lighting is low-level and localised to circulation routes, seating areas and the pool perimeter, ensuring effective containment within the terrace.



Lighting within the terrace is predominantly low-level and localised, with luminaires directed towards circulation areas, seating zones and the pool perimeter. Shielding and controlled optical distributions limit light emission beyond the intended surfaces, ensuring effective control of obtrusive light.

- The photographs demonstrate the contained and low ambient lighting levels in the terrace.
- No significant upward light emission or outward spill beyond the development envelope is evident.



View of the pool terrace and local step lights with surrounding commercial buildings visible beyond.



Outdoor bar area showing canopy structure providing physical shielding and containing light within the terrace.

- Additional photographs show perimeter and end terrace areas.
- Lighting remains localised and screened by canopy and awning structures, limiting outward light distribution.



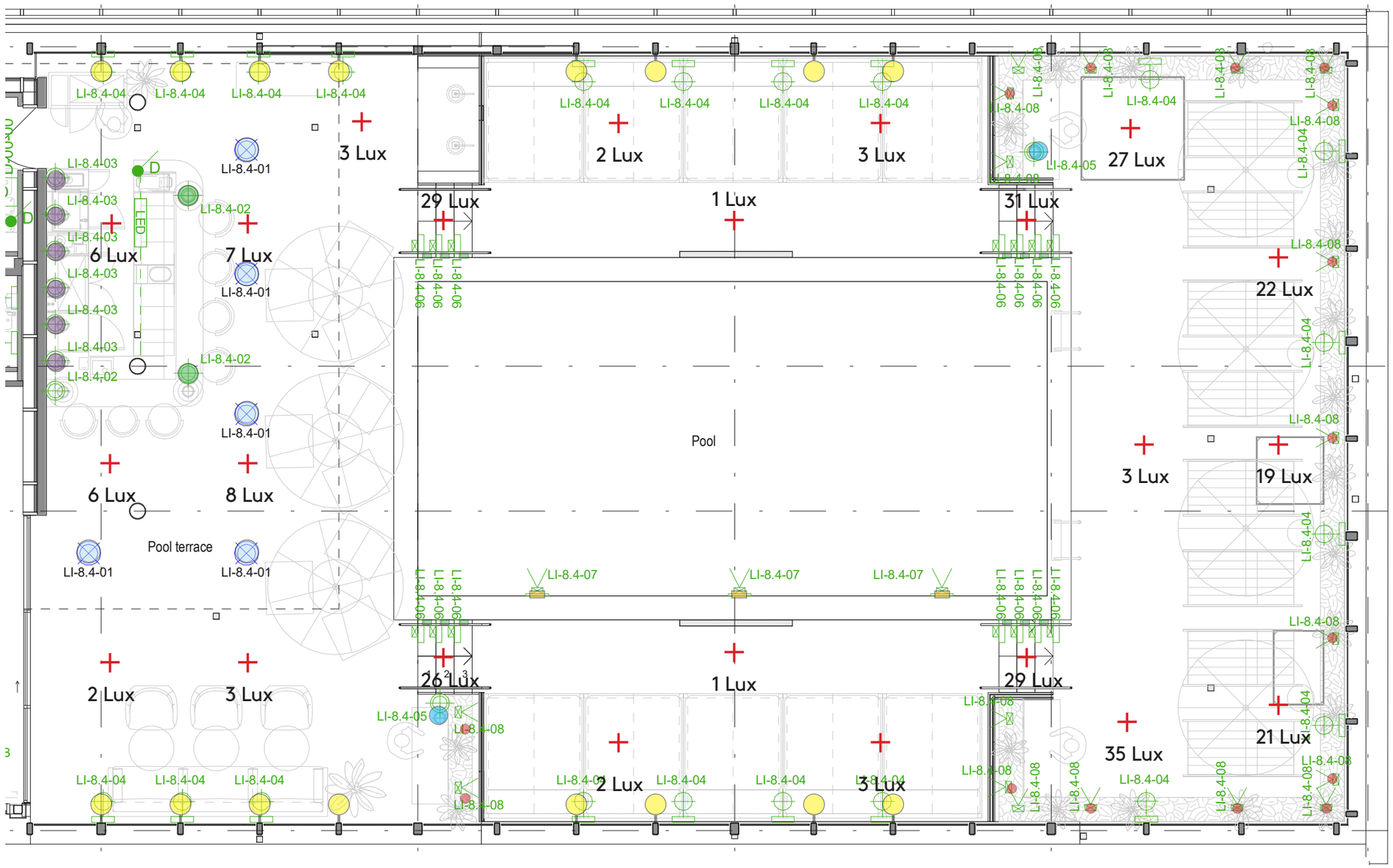
Perimeter lounge area with wall-mounted lanterns and awnings providing screening.



View towards the end terrace area.

5.4.4 MEASURED ILLUMINANCE RESULTS

- The diagram illustrates measured horizontal illuminance across the terrace.



Plan of pool terrace and measurement points

A. Horizontal Illuminance (Ground)

Location	Average Predicted (lux)	Average Measured (lux)	Variance
Outdoor Bar	16	7	9 Lux below
Bar seating zone	7	4	3 Lux below
Perimeter lounge	5	3	2 Lux below
Steps	28	27	1 Lux below
Access route between bar & end terrace	1	1	-
End terrace	20	23	3 Lux above

Commentary:

- Illuminance measurements across the pool terrace are consistent with the levels predicted in the original design calculations.
- Minor variations are attributable to ambient light, surface reflectance and typical post-installation measurement tolerances.
- The distribution of light is characterised by higher levels localised around luminaires and lower ambient levels across circulation and seating areas, confirming that lighting is controlled and contained within the terrace with no evidence of excessive light spill.

B. Measured vertical illuminance at receptor plane.

- Due to the elevated position of the terrace and the absence of nearby residential properties, there are no sensitive receptors directly facing the site.
- The nearest building comprises commercial offices located across Atherton Street.
- Direct vertical illuminance measurements at these façades were not possible; however, measured illuminance levels within the terrace are low and lighting is contained.
- Luminaires are predominantly low-level and directional, with additional screening provided by the building structure, including canopy and perimeter elements.
- On this basis, light spill to surrounding façades is negligible.

5.4.5 DERIVED LUMINANCE - HORIZONTAL POINTS (cd/m²)

Measured horizontal illuminance values have been used to derive luminance in accordance with CIE 150 and ILP GN01/21.

$$L = \frac{E \times \rho}{\pi}$$

Where:

- L = luminance (cd/m²)
- E = illuminance on the surface (lux)
- ρ = surface reflectance
- π = 3.142

A. Horizontal Measurements (Ground)

Location	Average Measured (lux)	Surface reflectance value	Equivalent luminance (cd/m2)
Outdoor Bar	7	0.25	0.56
Bar seating zone	4	0.25	0.32
Perimeter lounge	3	0.1	0.10
Steps	27	0.25	2.15
Access route between bar & end terrace	1	0.25	0.08
End terrace	23	0.25	1.83

- Derived luminance values (approx. 0.08–2.15 cd/m²) confirm that surfaces remain within ILP guidance and are not visually prominent.

5.4.6 COMPLIANCE

- Measured illuminance levels across the terrace are consistent with the original design intent, with minor variations typical of post-installation conditions.
- The lighting is low-level and directional, focused on local surfaces and contained within an enclosed terrace environment. Perimeter walls and overhead structures provide effective screening and limit outward light distribution.
- There are no nearby sensitive residential receptors, and surrounding buildings are not materially affected by the terrace lighting.
- Derived luminance values (up to 2.15 cd/m²) are within ILP guidance and confirm that surfaces are not visually prominent.
- The installed lighting does not give rise to unacceptable obtrusive light and is compliant with Planning Condition 6.

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