

# Lighting & Electrical Services Concept

City Park, Penrith – Corner of Henry Street and Station Street,  
Penrith NSW 2750

REPORT

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City Park Penrith

Lighting & Electrical Services  
SY192968  
Designer:  
Ibby Kanalas & Mitchell Peatman

12.01.2021

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# introduction



The Penrith City Park redevelopment site is located on the Corner of Henry Street and Station Street Penrith NSW 2750.

In designing a lighting solution, we aim to meet the landscape architect's vision for the precinct to be realised, including the organic inspired shapes and architectural elements. It is of paramount importance that the lighting design complements JMD Design's and Penrith City Council's requirements without compromise.

The purpose of this design proposal package is to demonstrate how our external lighting strategy will meet safety and technical parameter recommendations of the relevant Australian Standards; and the consequent aesthetic considerations that will need to be made. In keeping with the forward-thinking nature of our design, we consider environmentally sustainable design (ESD) to be of importance, and have highlighted the benefits available through the use of LED lighting and intelligent controls.



City Park Penrith

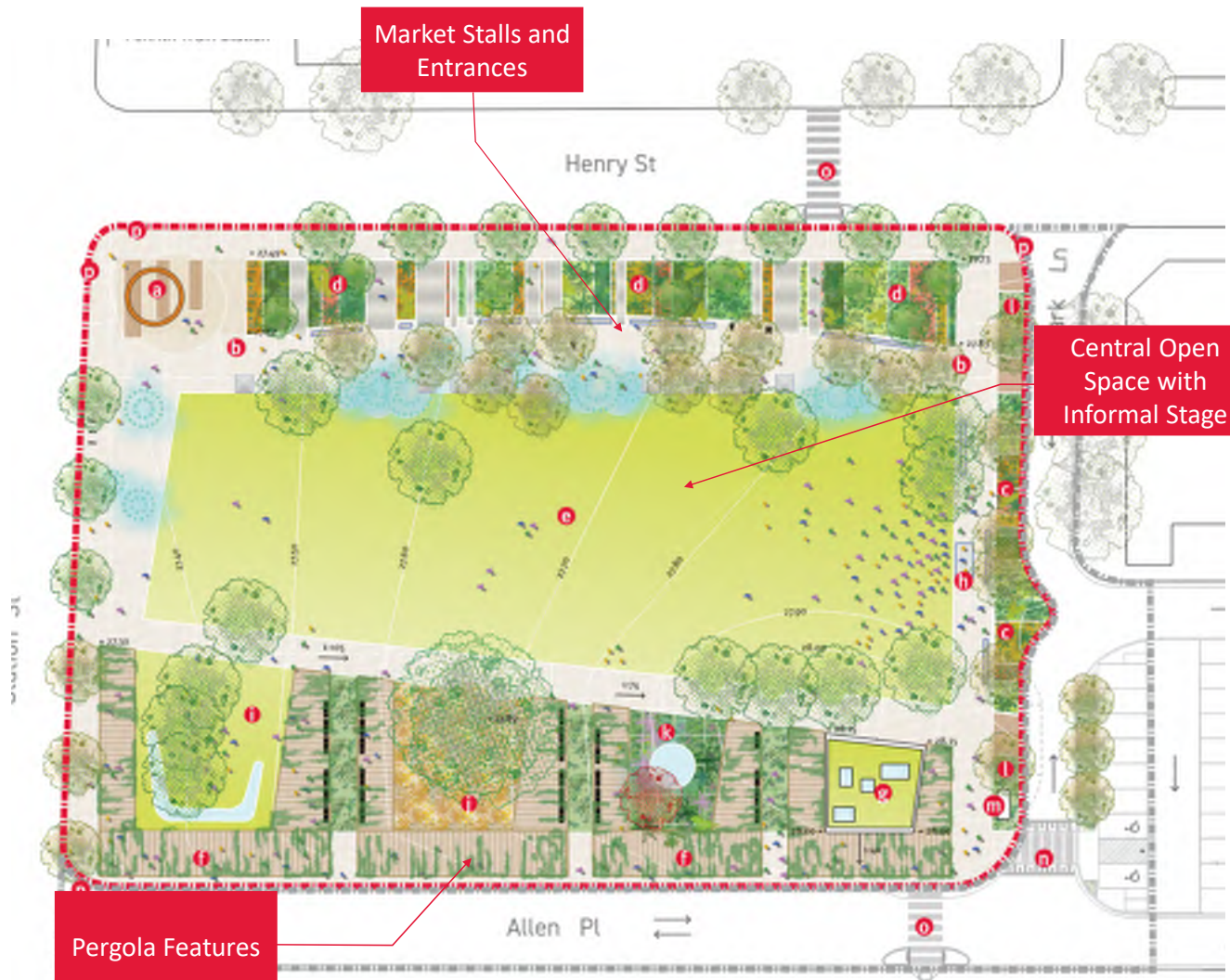
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# site overview

The scope of works for external lighting extends to the boundary outlined in the diagram below. All new works are within the property boundary and as such the external lighting assessment will be limited to that within the site. However, due consideration must be made to the surrounding areas – including obtrusive lighting that may envelop neighbouring properties and roadways.



Specific areas which require special attention are as follows:

- **Market Stalls and Entrances:** Lighting design shall enhance the landscape architectural features and maintain a high degree of visibility specifically at entrances and at the vertical marker feature.
- **Central Open Space with Informal Stage** Lighting design shall provide adequate lighting to promote a safe, secure environment as well as for events.
- **Pergola Features:** Lighting design shall allow for safe movement, create a warm, relaxed atmosphere and to complement the landscape.



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# vision & objectives

1

To complement the sales events & community activities at the site, providing a net economic benefit to Penrith City Council.

2

To use light to enhance and define the architecture, landscape, and uniqueness of the space.

3

To implement sustainable lighting schemes, reducing overall on-site maintenance.

4

To discourage crime and reduce the fear of crime.

The primary vision of incorporating external lighting in this project is to enhance the design intent of the architect to create an outstanding community hub in the heart of Penrith, a central park that is appealing and functional entrances for the City Park. This park will be an enticing space which will increase patronage to the area.

Northrop's external lighting design will be compliant with Australian Standard AS 4282 – *Control of the obtrusive effects of outdoor lighting*. This takes into consideration the commercial premises surrounding the site. In addition, such a philosophy adds to the sustainability and economic credits of the project and ensures councils DA condition emissions compliance is met.

Northrop will consider the key concepts of Crime Prevention Through Environmental Design (CPTED), including using vandal-resistant lighting elements, installing lighting that provides an overall long term benefit to the site (including corrosion resistance), and providing sufficient lighting to discourage anti-social behaviour such as graffiti vandalism.



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# standards

AS/NZS 1158.0 defines two lighting categories and their application. The lighting categories are broadly divided as follows:

## Category V lighting

Lighting which is applicable to roads on which the visual requirements of motorists are dominant, e.g. traffic routes. Subcategories range from V1 to V5. **This category is not applicable for this project.**

## Category Px lighting

Lighting which is applicable to roads, pedestrian pathways and cycle ways on which the visual requirements of pedestrians are dominant. Relevant design methods, requirements and application guidance for each of the lighting categories can be found in the following standards – the selection and placement of luminaires will be designed in accordance with Category P sub-categories (e.g. Category PA1, PP1 etc).

- Computer procedures for the calculation of light technical parameters for Category V and Category P lighting are given in AS/NZS 1158.2
- Guidance on the design, installation, operation and maintenance of Category P lighting is provided in AS/NZS 1158.3.1

**AS/NZS 1158.3.1-2020 – Table 3.4**

Values of light technical parameters for pathways and cyclist paths

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance <sup>a,b</sup> ( $E_h$ )	Point horizontal illuminance <sup>a,b,d</sup> ( $E_{ph}$ )	Illuminance (horizontal) uniformity <sup>c</sup> Cat. P ( $U_{h2}$ )	Point vertical illuminance <sup>a,b</sup> ( $E_{pv}$ )
	lx	lx		lx
PP1	10	2	5	1
PP2	7	1	5	0.3
PP3	3	0.5	5	0.1
PP4	1.5	0.25	5	0.05 <sup>c</sup>
PP5	0.85	0.14	5	0.02 <sup>c</sup>

**AS/NZS 1158.3.1-2020 – Table 3.5**

Values of light technical parameters for public activity areas

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance <sup>a,b</sup> ( $E_h$ )	Point horizontal illuminance <sup>a,b</sup> ( $E_{ph}$ )	Illuminance (horizontal) uniformity <sup>c</sup> Cat. P ( $U_{h2}$ )	Point vertical illuminance <sup>a,b,d</sup> ( $E_{pv}$ )
	lx	lx		lx
PA1	21	7	8	7
PA2	14	4	8	4
PA3	7	2	8	2



City Park Penrith

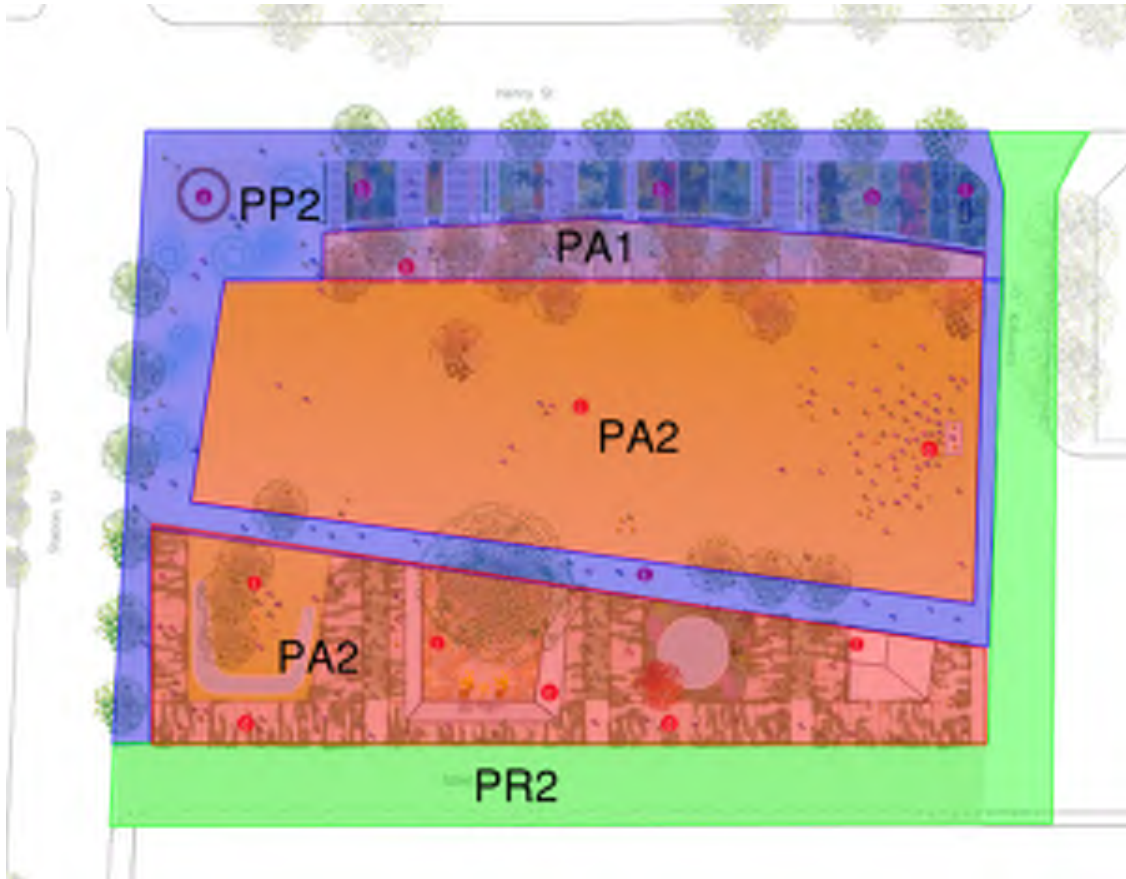
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# precinct lighting levels



We have recommended that the pathways in general should be equal to a **PP2** classification, due to:

- High pedestrian/cycle activity.
- Medium risk of crime (according to NSW Bureau of Crime April 2019 data, Penrith City Council has a non-domestic assault rate per 100,000 population of 529.1 (compared to the NSW average of 403.2)).

The Market stall area should be equal to a **PP2** classification, due to:

- Medium pedestrian/cycle activity.
- Medium need to enhance prestige.
- Medium risk of crime (as outlined above)

Both the central open space and the pergola feature gardens should be equal to **PA2**.

The encompassing roadways that don't form a main thoroughfare should be of **PR2** due to the moderate vehicle usage and localised pedestrian activity.

Classification	Average horizontal illuminance ( $E_h$ ) (Lux)	Point horizontal illuminance ( $E_{ph}$ ) (Lux)	Illuminance uniformity ( $U_{E2}$ ) (Lux)	Point vertical illuminance ( $E_{pv}$ ) (Lux)
PA2	14	7	8	7
PP2	7	1	5	0.3
PR2	3.5	0.7	8	-



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# precinct lighting strategy

To achieve the required illuminance compliant with AS 1158.3.1 and AS 4282 , we suggest the following luminaires be installed:

## modular smart pole

Potential Product: Hess City Elements 200 (configured depending on installation location)



**Colour Temperature:** 3000K (Warm White) to minimise harsh effects on neighbouring properties

### Available Modules:

- Security Cameras
- Public Address Speakers
- 3-Phase Electrical Outlets
- Information Displays
- RGB Options
- Wifi Access Points
- Water Supplies
- Multiple Luminaire Support

## recessed wall/stair luminaire



**Colour Temperature:** 3000K (Warm White) to minimise harsh effects on neighbouring properties

**IP Rating:** IP66 Minimum



Pathways are to be illuminated with pole top luminaires with suitable optics to maximise light throw distance and maximise pole spacing (minimising the number of luminaires required). Recessed wall luminaires shall be utilised to provide supplemental lighting for stairways and ramps to ensure safe movement in these areas



**NORTHROP** SYDNEY

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# precinct lighting strategy

To achieve the architects' vision in crafting a prestigious precinct and a popular public hub, we extensively use LED strip and linear luminaires in conjunction with the aforementioned modular smart poles to minimise unsightly protruding luminaires. It is also important that the area is sufficiently lit for security, safe movement and functionality of the space.

## RGB led strip



**IP Rating:** IP68 Minimum

**Corrosion Resistance:** UV and Saltwater Resistance

**Mounting:** Mounted within corrosion-resistant aluminium profile, uplighting shelter ceilings and wharf

**Driver Location:** Remote Driver



Seating and Linear Structures are to be illuminated with RGB LED Strip Lighting with minimal visual protrusion.

Accenting outdoor furniture can also be achieved utilising the same LED strip, improving the ambience of the space



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# modular smart pole

For this project, Northrop proposes the use of a module pole luminaire system by Hess, the City Element Range. The benefits of utilising this product range (or equivalent) including the integration of multiple services into one fixture, minimising the visual protrusion of multiple separate services fixtures. The proposed poles are modular, and can be configured to suit any application. Modules which are available for integration within the suggested product range includes:

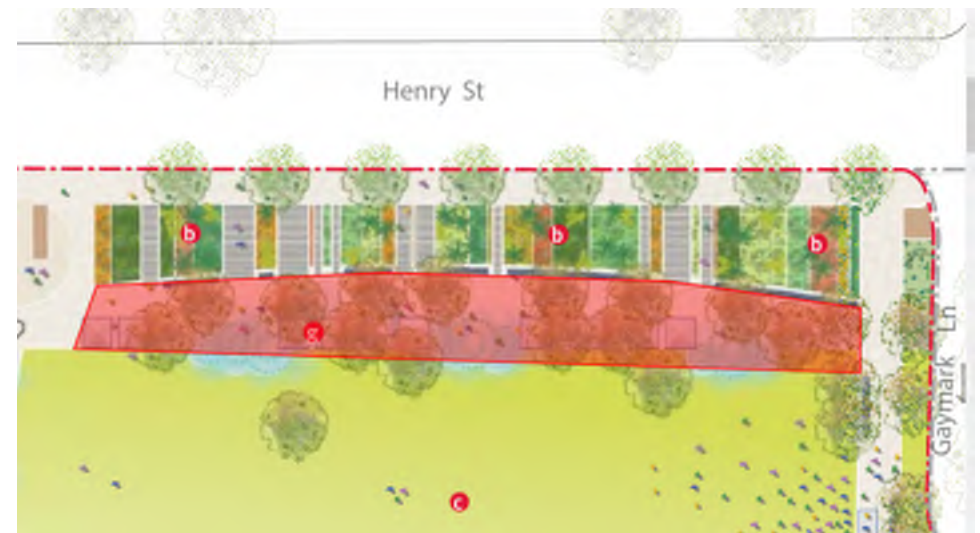
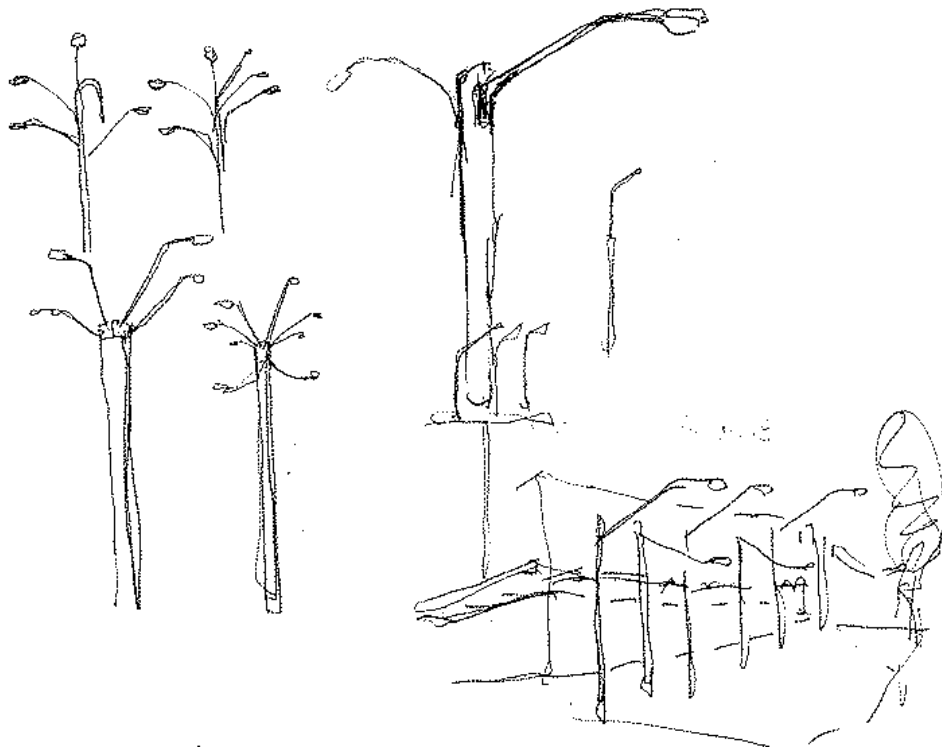
- Street Lighting (with optional RGB)
- Façade Lighting Elements (with optional RGB)
- RGB Feature Lighting Element
- Security Camera
- Public Address Speaker
- Information Displays
- Wifi Access Points
- Single and three phase power outlets
- Water Outlets
- Emergency Call Points
- E-Mobility Charging Infrastructure





# custom "tree" smart pole

For market/civic space on the northern edge of the site, the use of a modular smart poles is proposed with bespoke brackets and luminaires resembling trees. In order to achieve the desired *tree* effect, modular smart poles (such as the Hess pole outlined on the previous page or otherwise) would be modified to incorporate recycled luminaires from the old street poles. The old-style luminaires shall be retrofitted with LED light sources for efficiency and life expectancy reasons. We recommend the use several different styles and types of luminaire housings to make closer resemblance to trees. The brackets will also need to be different lengths and shapes for the same reason.



# lighting control strategy

The precinct is to be controlled by a sophisticated lighting control system housed within a switchroom (also containing switchboard, meters, security and communications equipment), with the following functionality at a minimum:

- Modular Control System to be used (Dynalite, DMX or similar)
  - Cloud Control Capable
  - Automatic Photocells for Daylight Harvesting and intelligent control
  - Meets Penrith City Council requirements and standards
- Multi-Stage Control Protocol
  - Pre-Curfew mode (between dusk till 11pm)
  - Curfew mode (11pm till dawn)
  - Utilise Photocells to dynamically adjust light output and change of program
  - Capable of controlling RGB Luminaires
  - Pre-programmed lighting scenes for event and market lighting can be carried out remotely via apps



*Lighting Control Equipment*



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# electrical services strategy

An allowance for a Electrical Services Room will be required to house the following equipment:

- Endeavour Energy Incoming Consumer mains and Supply Meter
- Private Metering
- Electrical Switchboard Communications Equipment
- Security Equipment Head-End
- Lighting Control Equipment
- The electrical/communications services cupboards shall be incorporated in the amenities building
- A custom-made switchboard will be designed for the overall park lighting, power, security and ICT services.

- USB charging points, 1-phase / 3-phase outlets and water outlets can be provided either via the modular smart poles, dedicated fixed power/water bollards (see image right) or by individual fixtures as required (integration into other fixtures will help to minimise the infrastructure required). Additionally for stage power requirements, a fixed power bollard shall be provided in the planted area at the rear of the stage. All equipment is to be external grade with a minimum IP 54 rating.



Distribution Board and Metering



Electrical Switchboard



Fixed Power Bollard

# surveillance camera strategy

With the utilisation of modular smart poles, surveillance cameras can be integrated into poles, minimising both the visual protrusion of a surveillance camera arm vs utilising the flexibility of the modular smart pole (see comparison below) .



Traditional Camera Mounting



Camera Integrated within Smart Pole (Left side of image)

Spatial allowances for surveillance cameras will need to be ascertained in order to determine if they can be integrated into the smart poles, along with any video and communications equipment required for their operation. Final camera locations and equipment requirements to be coordinated with the Penrith City Council Security Department.



# sustainability

# lighting control led luminaires

Northrop is a **sustainable engineering design** firm. From the concept stage, we will develop the design with energy efficiency in mind, with a specific goal to meet Council ESD initiatives. An additional benefit is a reduction in electricity bills.

For the City Park project , we propose the following **sustainability in lighting** initiatives for the external lighting design:

1

## LED Lighting

LED luminaires are more efficient than their traditional (HID, fluorescent, incandescent, etc) counterparts - sometimes in excess of 80%, and last longer too. Utilising hundreds of tiny electronic bulbs, they provide high lumens levels per watt. To further encourage a reduction in energy usage - Northrop aims to use luminaires with high controllability, such as incorporating dimming.

2

## Programmable Control System

A pre-programmed lighting system is capable of utilising available daylight and detecting motion to control lighting. Lighting levels will be programmed to suit the level of traffic at different times of the night. This lighting concept ensures that sufficient lighting for security cameras to operate is provided throughout the night, and lighting for safe movement is available when required. Lighting control will also allow council change the lighting levels in accordance with the planned public activity such as markets, concerts ad night time public activities.



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# appendix a – lighting concept plans



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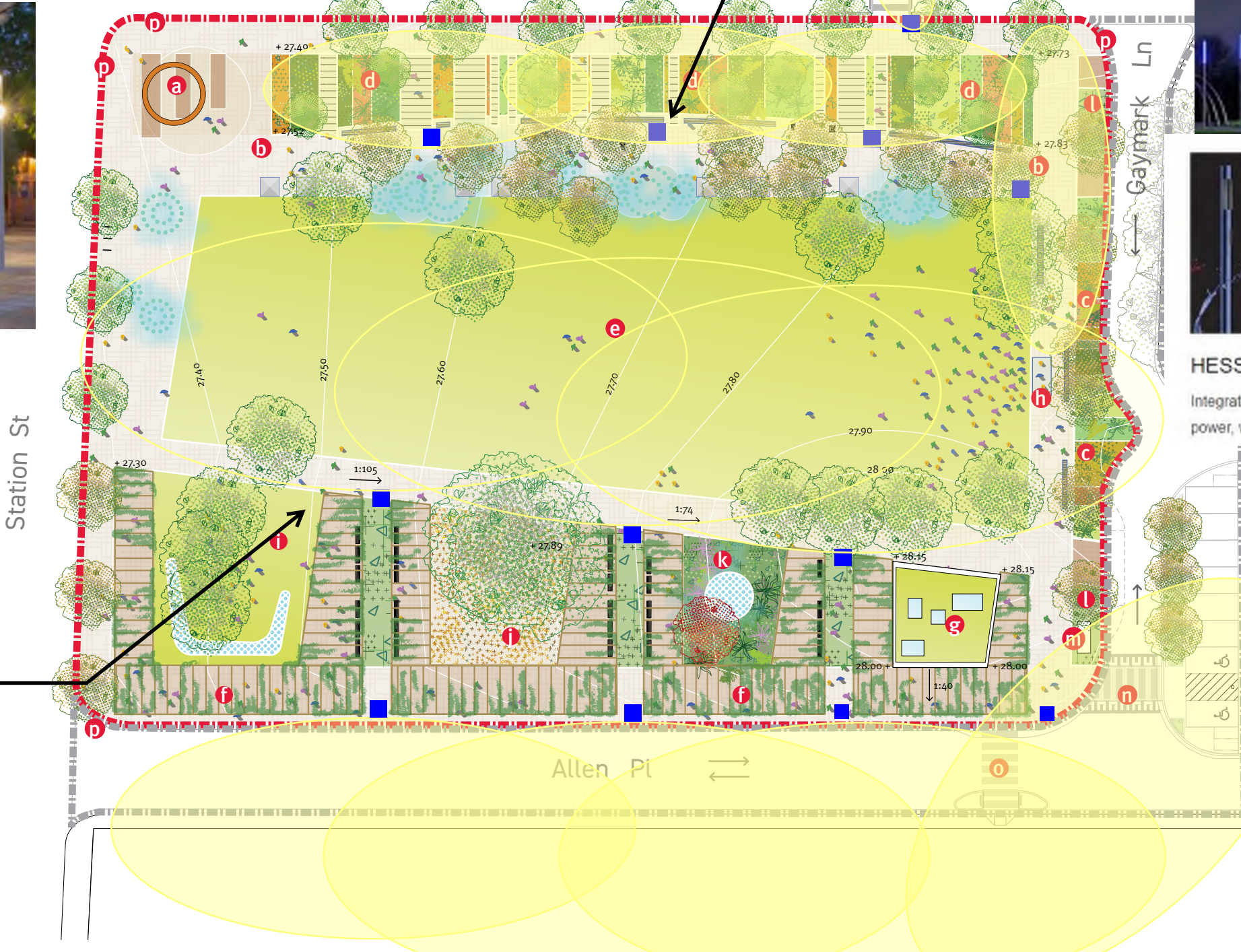




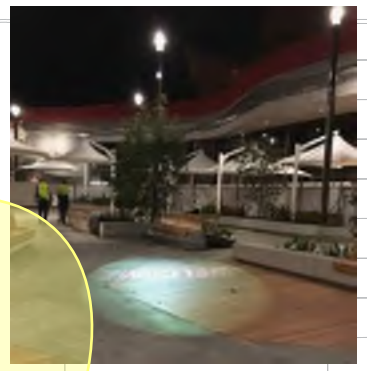
Hess City Elements modular light poles with customised fixtures to achieve tree aesthetic (refer to section in report). To be used within the civic/market area for lighting of pedestrian area and landscape features (such as the bridges)

Masterplan

- Feature Seat
- Pergola Seating
- Low Bridge
- Fog Fountains
- Hardstand Pavement - Feature pavement
- Hardstand Pavement - Green concrete
- Hardstand Pavement - Recycled brick
- Water Feature
- Temporary Market Stalls
- Drinking Fountain
- Hess City Elements modular light poles with modular lighting components of single or variable colours.
  - Choice of beam spreads to suit lighting requirements.
  - WI-F module
  - CCTV module
  - Dimming facility
  - Choice of pole colour.
- Evergreen Trees
- Feature Tree
- New Traffic flow



**HESS City Elements**  
Integrated lighting, projection, WIFI, CCTV, power, water - everything is possible...



1:250@A1 0 2.5 5 10m

# GENERAL PUBLIC SPACE LIGHTING

Revision	Date	Description	Drawn	Check
ADV	27.11.20	Development Application	LP/ZH	AJ/BC
ADV	06.01.21	Development Application	LP/ZH	AJ/BC

JMD design



190 James Street  
Redfern NSW 2016  
T (02) 9310 5644  
info@jmdesign.com.au

Project  
City Park  
Drawing title  
Masterplan

Date  
January 2021  
Scale  
1:250@A1/1:500@A3

Drawing No. Issue No.  
Lo4 ADV



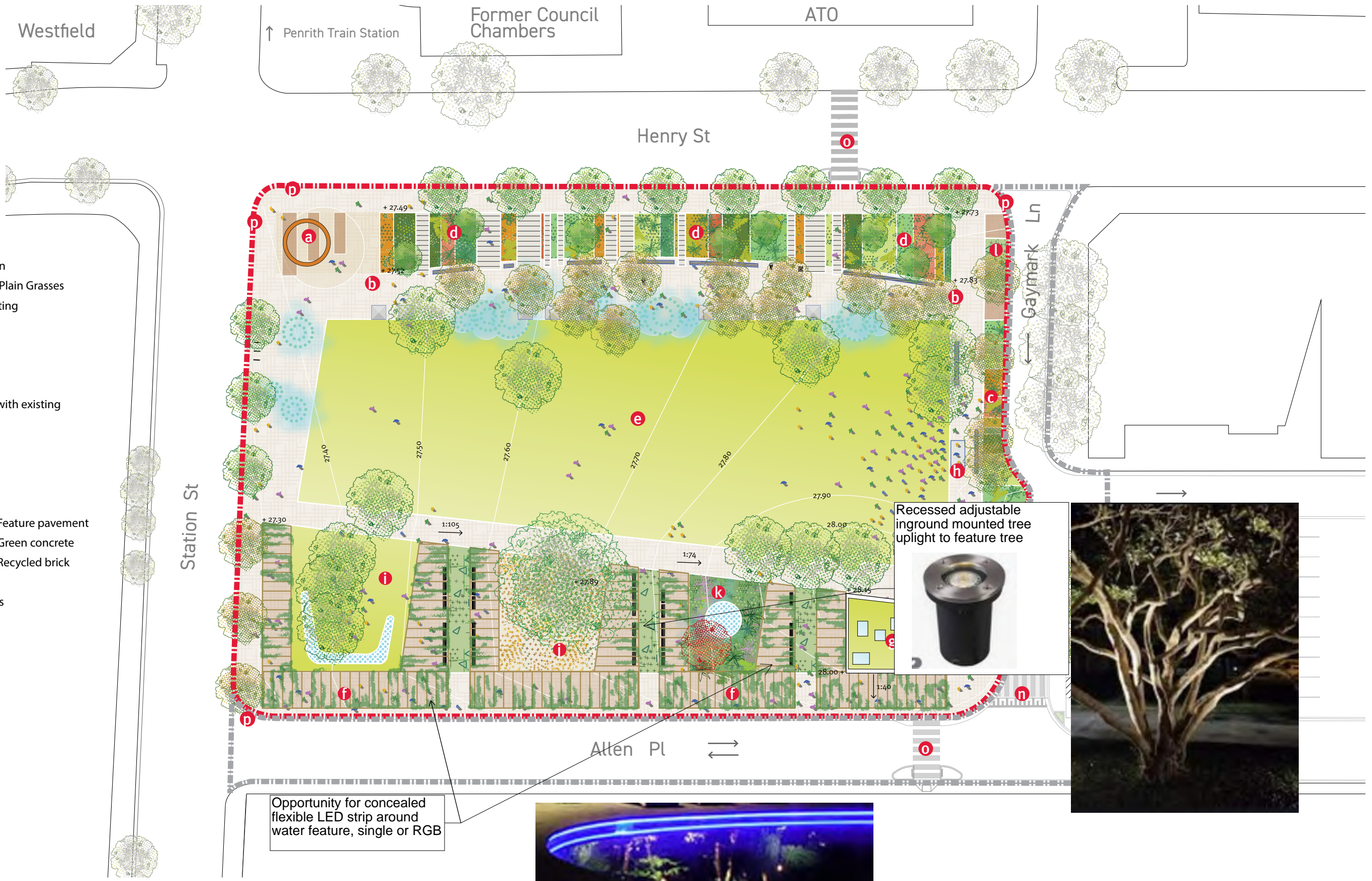
Legend

- EOW - City Park
- EOW - Road Works

- Entrance statement
- PCC Signage
- Passive Irrigation
- Raingarden
- Central Lawn
- Pergola
- Amenities Building
- Informal Stage
- Gardens - Informal Lawn
- Gardens - Cumberland Plain Grasses
- Gardens - Sensory Planting
- Mass Planting
- Electrical Substation
- Raised crossing
- Pedestrian crossings
- Pram crossing to align with existing

- Feature Seat
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- Drinking Fountain
- Bin
- Bike Rack

- Existing Feature Tree
- Deciduous Trees
- Evergreen Trees
- Feature Tree
- New Traffic flow



Opportunity for concealed flexible LED strip around water feature, single or RGB



1:250@A1 0 2.5 5 10m

Client	Consultant	Revisions		Issue	Date	Description	Drawn	Check
		AD	11.30	Development Application	11.30		LJZ	AJ/BC
		AD	06.01.21	Development Application	06.01.21		LJZ	AJ/BC
		AD	06.01.21	Development Application	06.01.21		LJZ	AJ/BC

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Drawing No. Issue No.  
Lo4 ADV

# LANDSCAPE LIGHTING CONCEPT

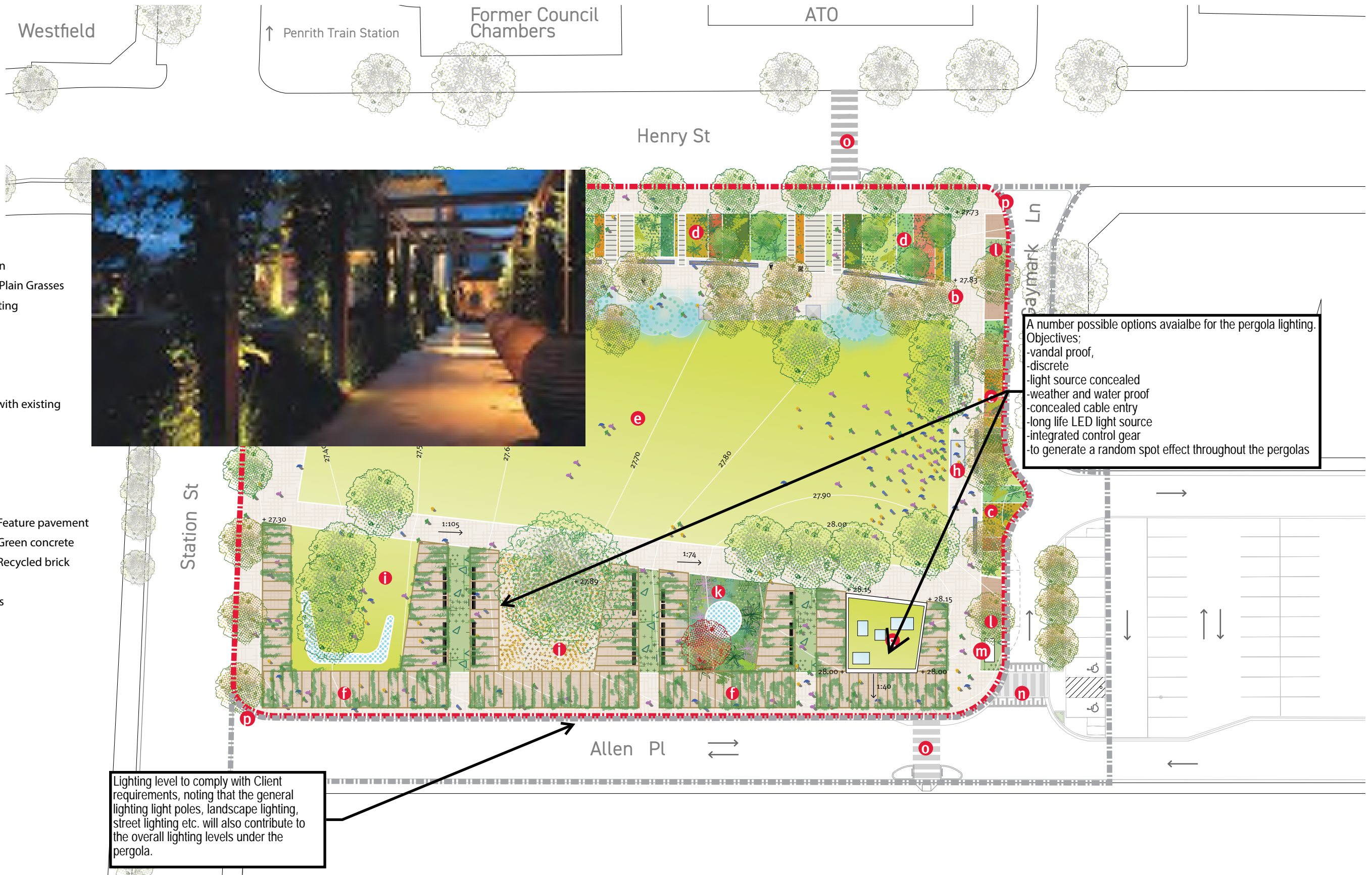


Legend

- ▬▬▬ EOW - City Park
- ▬▬▬ EOW - Road Works

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1:250@A1 0 2.5 5 10m

Client Consultant

Revisions

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# PERGOLA LIGHTING



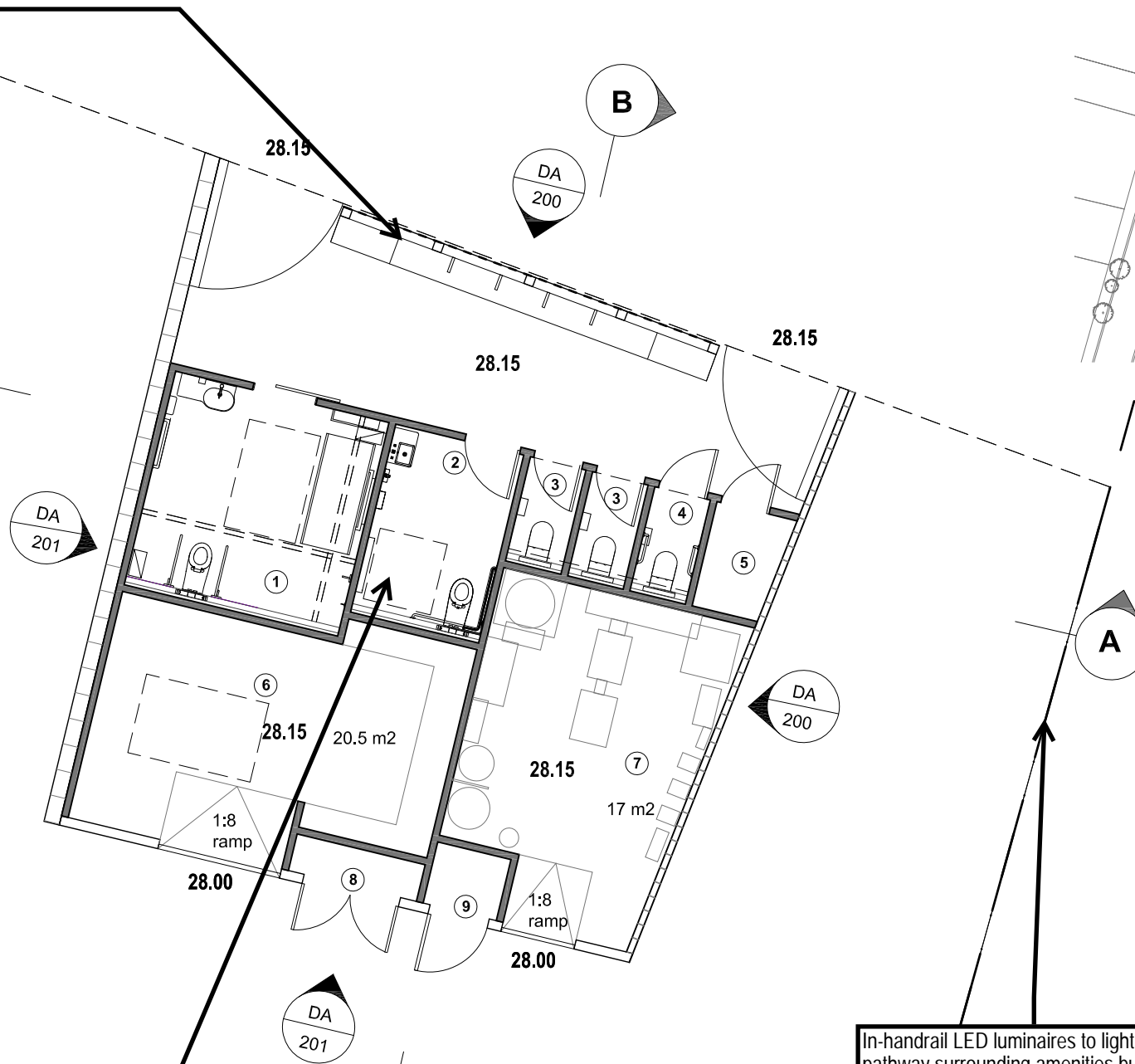
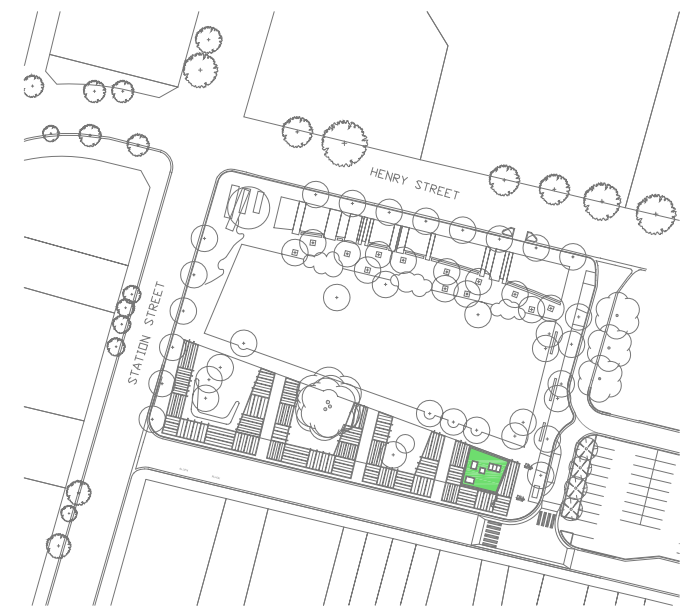
# AMENITIES BUILDING FEATURE LIGHTING

LED Strip Lighting accenting timber battens at Wash Basins



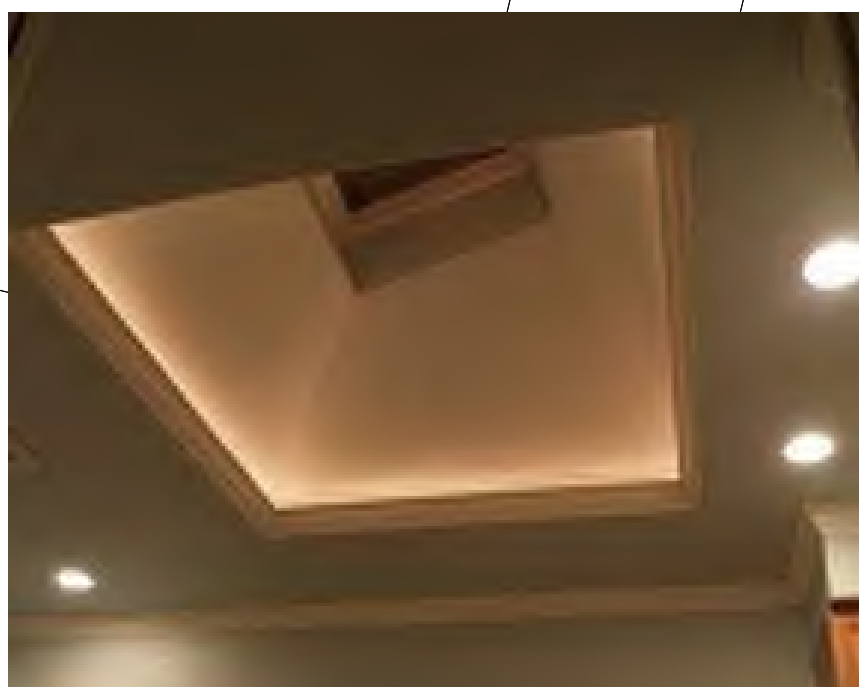
A

B



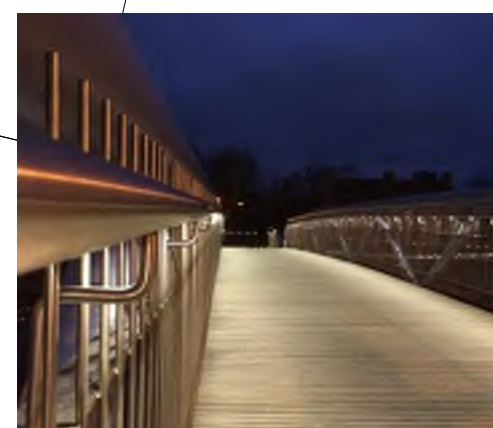
In-handrail LED luminaires to light pathway surrounding amenities building

A



LED Strip Lighting lights with suitable optics to uplight walls/ceiling of skylights pending material

- KEY**
1. ADULT CHANGE WC
  2. ACCESS WC
  3. UNISEX WC
  4. AMBULANT WC
  5. CLEANERS CUPBOARD
  6. STORE 1
  7. STORE 2 (PUMP-ROOM)
  8. EDB CUPBOARD
  9. COMMS CUPBOARD



note All dimensions and levels are to be checked on site prior to the commencement of work. Figured dimensions are to be taken in preference to scaling. Discrepancies are to be reported to the architect for clarification prior to commencement. All drawings are to be read in conjunction with the specification and consultant requirements.	rev.	date	amendment	client	project				sheet	drawing no.	
	A	9.12.2020	DA ISSUE	<b>Penrith City Council</b>	<b>PENRITH CITY PARK</b>				<b>Amenities Floor Plan</b>	<b>DA-100</b>	
				LACOSTE + STEVENSON Architects Level 4, 69 Reservoir Street Surry Hills NSW 2010   T +612 9310 1555 www.l-s.com.au   Nominated Architect: David Stevenson NSW 6317	project no.	drawn	checked	sheet size	scale bar	issued date	rev.
					2003	AR	TL	1:100 @ A3	0 1 5	9.12.2020	A

# appendix b – power concept plan



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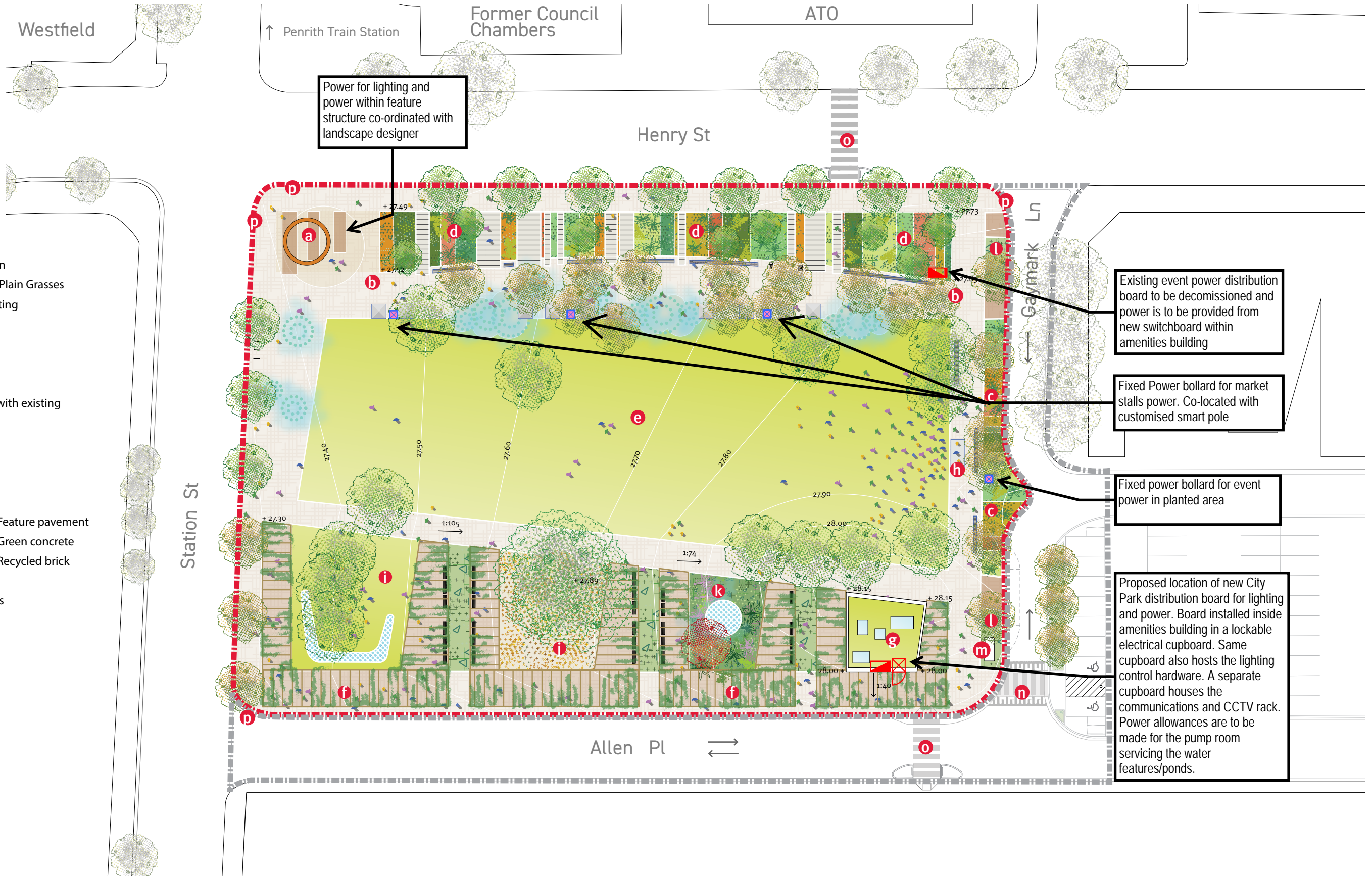
12.01.2021

C



Legend

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Drawing No. **Lo4** Issue No. **ADV**

# appendix c – modular smart pole information



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# CITY ELEMENTS 200

Evolution in light and multifunctionality



.hess



**More than just a luminaire.**

CITY ELEMENTS, a comprehensive lighting system, answers virtually every urban lighting need and even more.

Thanks to the variety and versatility of its elements, diameters of 180mm, 200mm and 230mm and variable heights up to 9 meters and even above, the system easily configures to match its specific architectural environment proportionately.

**CITY ELEMENTS 200 – the new cutting edge**

With the new CITY ELEMENTS 200, Hess is bringing together the advantages and decades of experience of the globally successful CITY ELEMENTS 180 and CITY ELEMENTS 230 in an innovative yet simple illuminating column. With a diameter of 200 mm as well as many innovations and new features, the CITY ELEMENTS 200 is the new cutting edge, destined for use in attractive design and supply concepts in urban areas.

**A holistic solution for cities**

The potential of CITY ELEMENTS 200 goes far beyond illumination: The most innovative LED technology and individually combinable basic, intermediate and terminating elements offer a variety of additional features and supply solutions for the urban requirements of today and tomorrow – whether loudspeakers, cameras, spotlights, power and water connections, or charging infrastructures for e-mobility. Despite this versatility, it is extremely easy to handle, that is to say, easy to set up and easy to install.

CITY ELEMENTS 200: Simply variable, simply multifunctional – simply smart.





1

Optimum integration in both modern and older architectural settings.

2

Various column heights configurable with multiple varied optical systems.

3

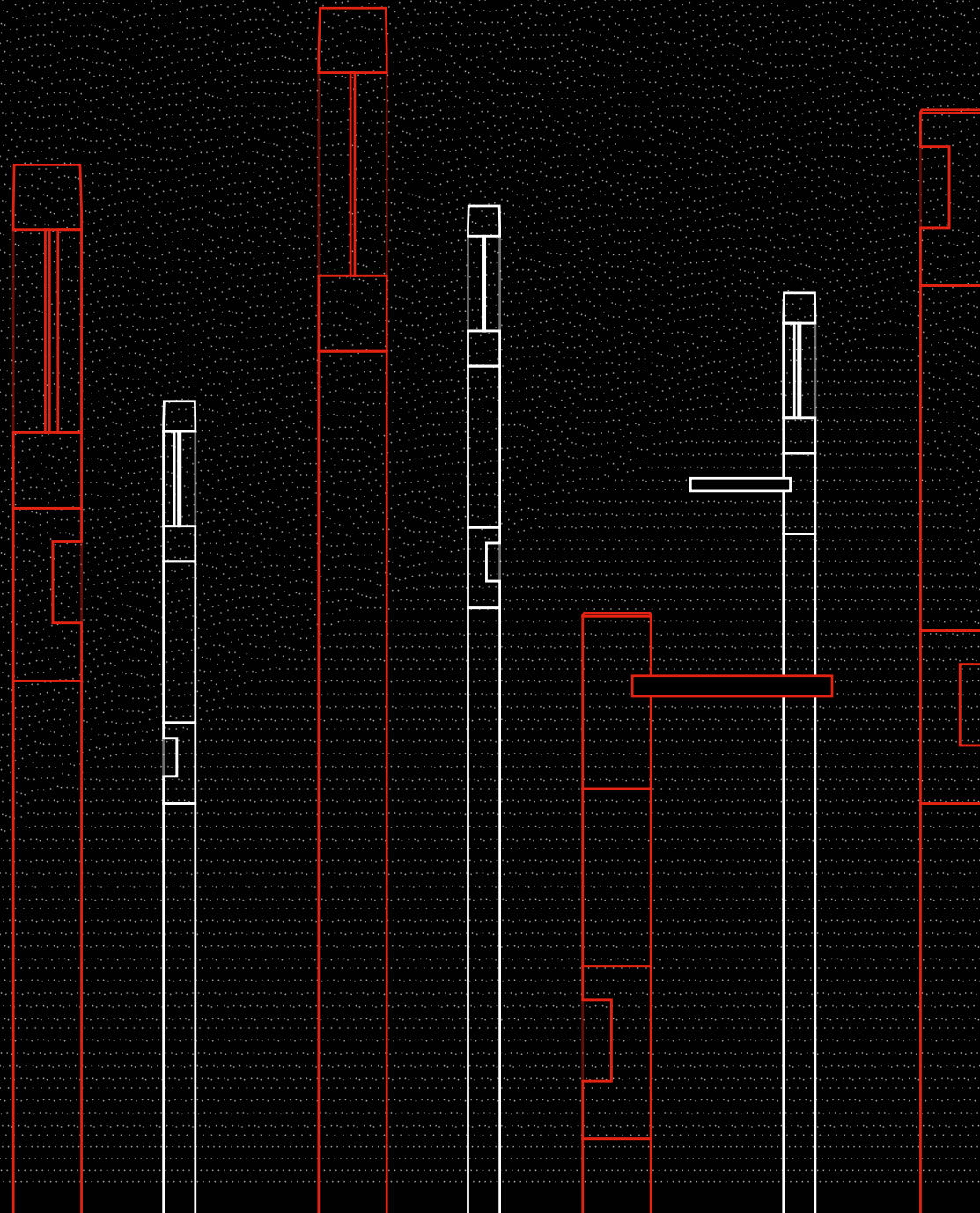
Extremely efficient due to high-efficacy LED-technology.

4

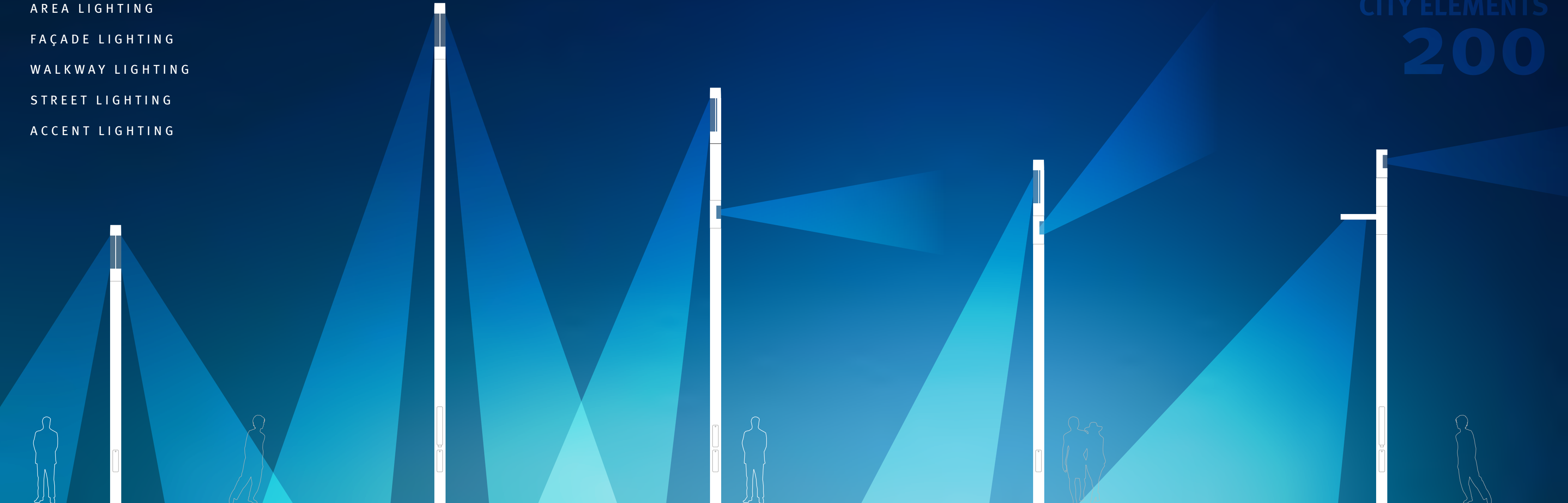
Ideal for numerous lighting and utility functions for Cities and Municipalities (WLAN, security solutions, public address speakers, electricity and water supply, RGB, projectors, e-mobility charging infrastructure).

5

Minimum installation work – only 1 tool. Extremely easy to install and handle – in all weathers.



- AREA LIGHTING
- FAÇADE LIGHTING
- WALKWAY LIGHTING
- STREET LIGHTING
- ACCENT LIGHTING



Area lighting

Street lighting

Street and  
façade illumination

Street and  
façade illumination

Street / area lighting and  
façade illumination



# CITY ELEMENTS – GET CREATIVE!

With Hess' CITY ELEMENTS, both your creativity and the column's future uses are free to develop, as need dictates – now and in the future.

CITY ELEMENTS delivers more than unlimited lighting potential, adding many useful functions and expanding your creative repertoire.

Light and multifunctionality.

**1** Light + communication (display integrated in the column for time/date/temperature/UV radiation/ozone/pollen)


**2** Security solutions (for example cameras)

**3** Emergency call functions

**4** Electricity and water supply

**5** WLAN

**6** E-mobility charging infrastructure

CONTROL EQUIPMENT 

LIGHT MANAGEMENT 

SENSOR TECHNOLOGY 

WLAN 

E-MOBILITY 

POWER SUPPLY 

WATER SUPPLY 

SECURITY / CAMERA 

SPEAKER 

DISPLAY 





OUR CITY ELEMENTS  
EVOKE EMOTION

The ability to customize the colour scheme of illuminating columns can intensify emotions. Colour is a powerful design element. Colour adds character and is a truly urban element. Which makes colour a CITY ELEMENT.

Whether white, red, green, grey, blue or black— which colour is your colour?

CITY ELEMENTS by Hess. Individual and unique.

## CITY ELEMENTS 200

Thanks to its completely new design and construction, it takes just a few simple movements and simple tools to allow the CITY ELEMENTS 200 to be quickly and effortlessly...

... set up, added to, scaled down or retrofitted according to modular principles – in any weather!

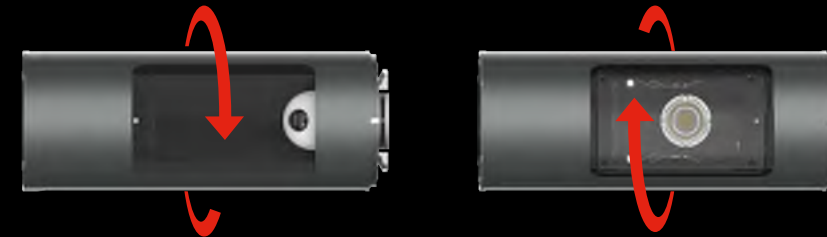
We make this a reality on the basis of a completely new concept. This means the illuminating column consists of initially empty basic and intermediate elements. This basic framework is then equipped as needed with self-contained and thus sealed elements, so-called inserts. These inserts are simply placed into the recesses provided and affixed, without it being necessary to open them, resulting in a whole new dimension of simplicity.

The terminating elements are factory sealed and only need to be put on and connected.

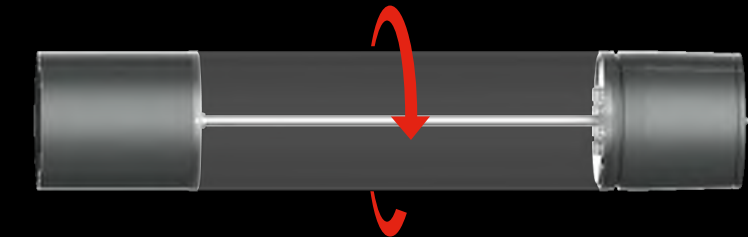
CITY ELEMENTS 200 by Hess – modularity and simplicity par excellence.



BASE ELEMENT



INTERMEDIATE  
ELEMENT



TOP ELEMENT

## CITY ELEMENTS 200 and DALVIK – the perfect combination

The CITY ELEMENTS stand for the most diverse multifunctionality – and that at its best. Due to the impressive combination of the illuminating column with the DALVIK S luminaire, the CITY ELEMENTS offer even more possibilities for holistic lighting solutions.

CITY ELEMENTS and DALVIK – for holistic lighting and infrastructure solutions.



### CITY ELEMENTS 200 with DALVIK S

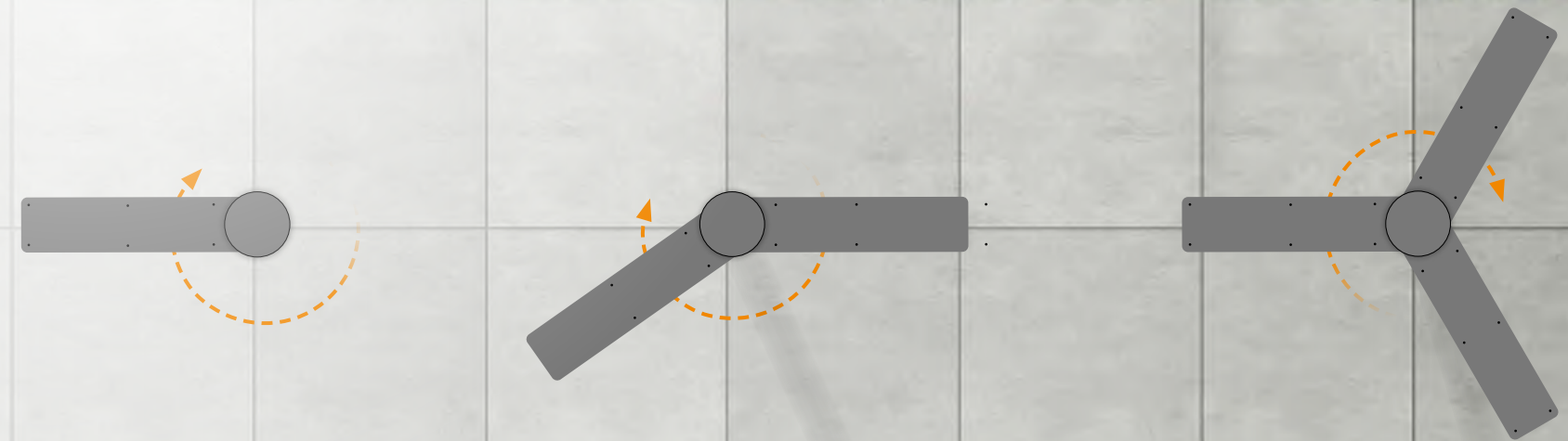
In combination with the DALVIK S, the CITY ELEMENTS 200 is designed for heights of up to 9 meters. The 200 model can be fitted with up to 3 DALVIK S luminaire heads.



[www.hess.eu/dalvik](http://www.hess.eu/dalvik)

As a result of the connection of the DALVIK S to the CITY ELEMENTS, its lighting technology becomes more flexible and versatile and thus offers architects, planners and lighting designers an even broader spectrum of applications – and simultaneously, a highly attractive appearance.

Reflecting the DALVIK slogan – „Your city will love them“ – CITY ELEMENTS incorporates the best of both worlds in this configuration – namely maximum multifunctionality and the best lighting.







## MOUNTING

The CITY ELEMENTS 200 consists of individual, open tube elements with fixed standard heights – and corresponding recesses for the (multifunctional) elements, the inserts.

These tube elements are affixed from the outside by four screws attached in a narrow shadow gap. The internal mechanism guarantees absolutely secure connection of the individual elements without restricting their rotation.

## ROTATING

The intermediate and terminating elements can be steplessly rotated by 360° and aligned as needed before the mechanical inner closure is finally tightened – in an unproblematic and simple manner.

After that, the element can also be easily adjusted by slight unscrewing of the screws.

## EQUIPPING

The multifunctional elements, such as the lighting and supply modules, are available as self-contained inserts and are placed into the recesses provided for the tube elements.

Fine alignment of the reflector in a light element can be accomplished after opening the cover of the insert from the front with a simple hand movement. Each individual multifunctional or illuminating element is connected individually to the cable junction box in the basic element.

The steps of installation and putting into service are separated in this way. Or in other words: Installation and handling are made easy – while ingress of humidity is prevented (no opening) regardless of prevailing weather conditions.

## STYLING

Thanks to its modular system, the CITY ELEMENTS 200 can be individually tailored to your needs, impressing in every configuration with its elegant design – a design made for attractive styling and supply solutions in modern and historical surroundings – and with a diameter that guarantees a wide variety of multifunctional possibilities while simultaneously meeting the highest aesthetic standards.



**TOP ELEMENT**

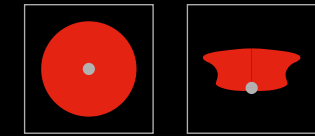


**OPTICAL SYSTEM 1**

downwards

**L1.9 / LEVO3**

LED-module for asym. & sym. street or area lighting



Rot. sym Asym.

L1

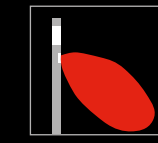
**INTERMEDIATE ELEMENT**



**OPTICAL SYSTEM 3**

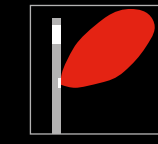
lateral

**L3.1**



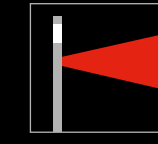
Reflector  
Asym. distribution area/walkway lighting downwards  
LED

**L3.2**



Reflector  
Asym. distribution for facade lighting upwards  
LED

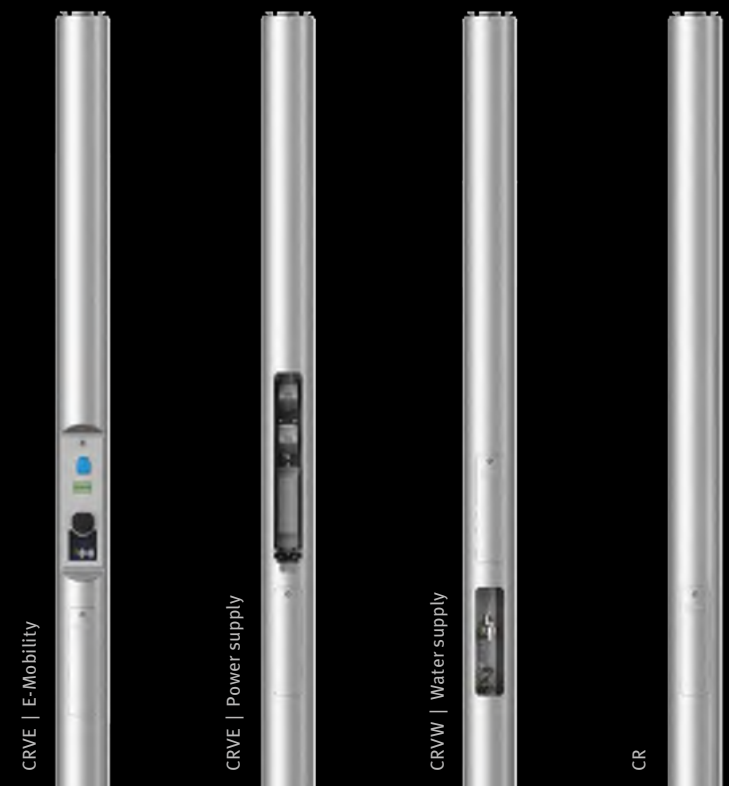
**L3.3**



Spot  
Rot. sym. reflector  
-35° up to +35° inclinable for facade lighting  
LED

L3

**BASE ELEMENT**





## ILLUMINATION

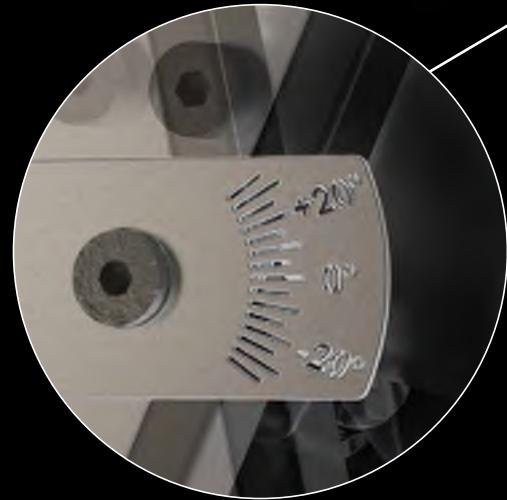
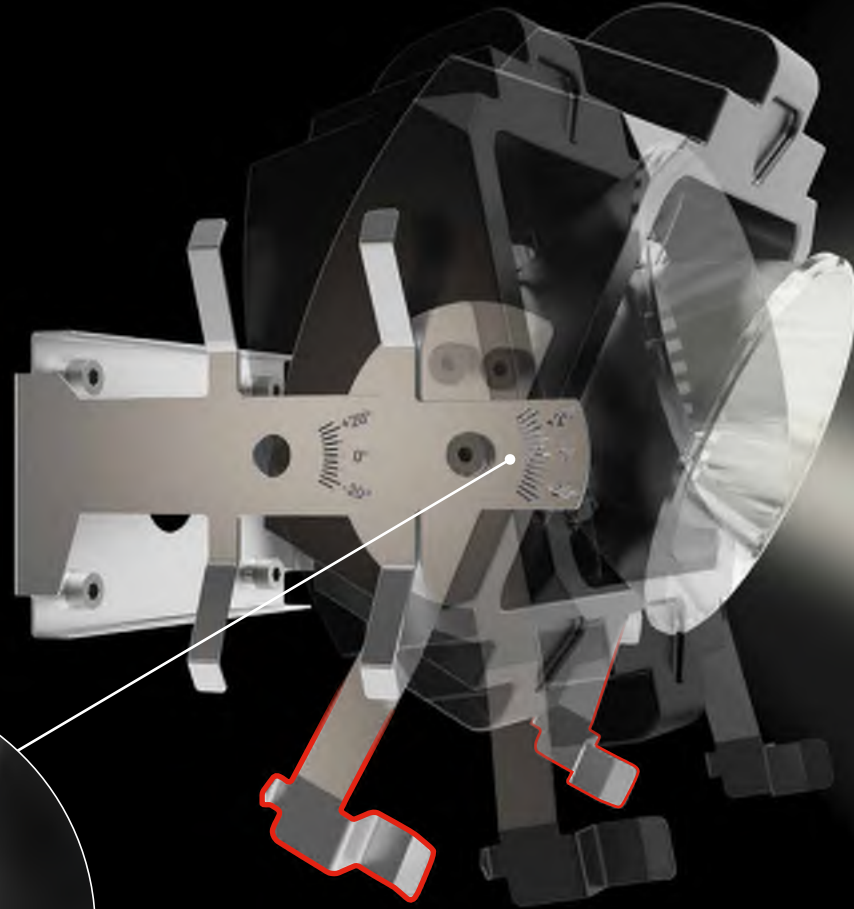
Increase the attractiveness of an urban space with the CITY ELEMENTS 200 and perfectly stage façades, fountains or individual plants using target illumination.

For this, the CITY ELEMENTS 200 can be equipped with additional illuminating elements as required. Whether rotationally symmetrical or asymmetrical – we offer various ways of distributing light that meet just about any need. Using optional diffusing lenses, the light control and the light quality can be further optimised and ideally adapted to the respective project.

So that the highlights can take full effect, we have further simplified the adjustability of the illuminating elements. Within the beam angle specified by the selected lighting technology, it's possible to exactly align the spotlight easily and at any time.

So you see, the way to achieve perfect settings is easier than ever.

The new simplicity – Made by Hess.



Push the clamp, set the inclination angle and lock the spotlight by releasing the clamp. That's how easy it is to make adjustments to the spotlight in the new CITY ELEMENTS 200 collection.

### Optical systems

L3.1 „DOWN“ | asymmetrical downwards

L3.3 „DOWN“ | rotationally symmetrical  
▶ Reflector 18°, 28°, 46°

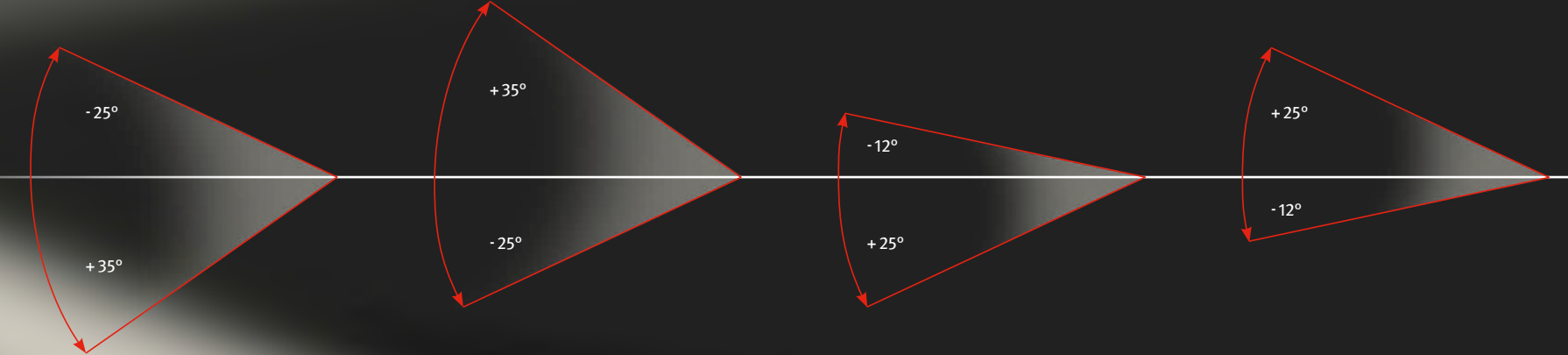
L3.2 „UP“ | asymmetrical upwards

L3.3 „UP“ | rotationally symmetrical  
▶ Reflector 18°, 28°, 46°

L3.3 „DOWN“ | rotationally symmetrical  
▶ Reflector 14°

L3.3 „UP“ | rotationally symmetrical  
▶ Reflector 14°

### Reflector adjustments







CITY ELEMENTS 200  
Charging station

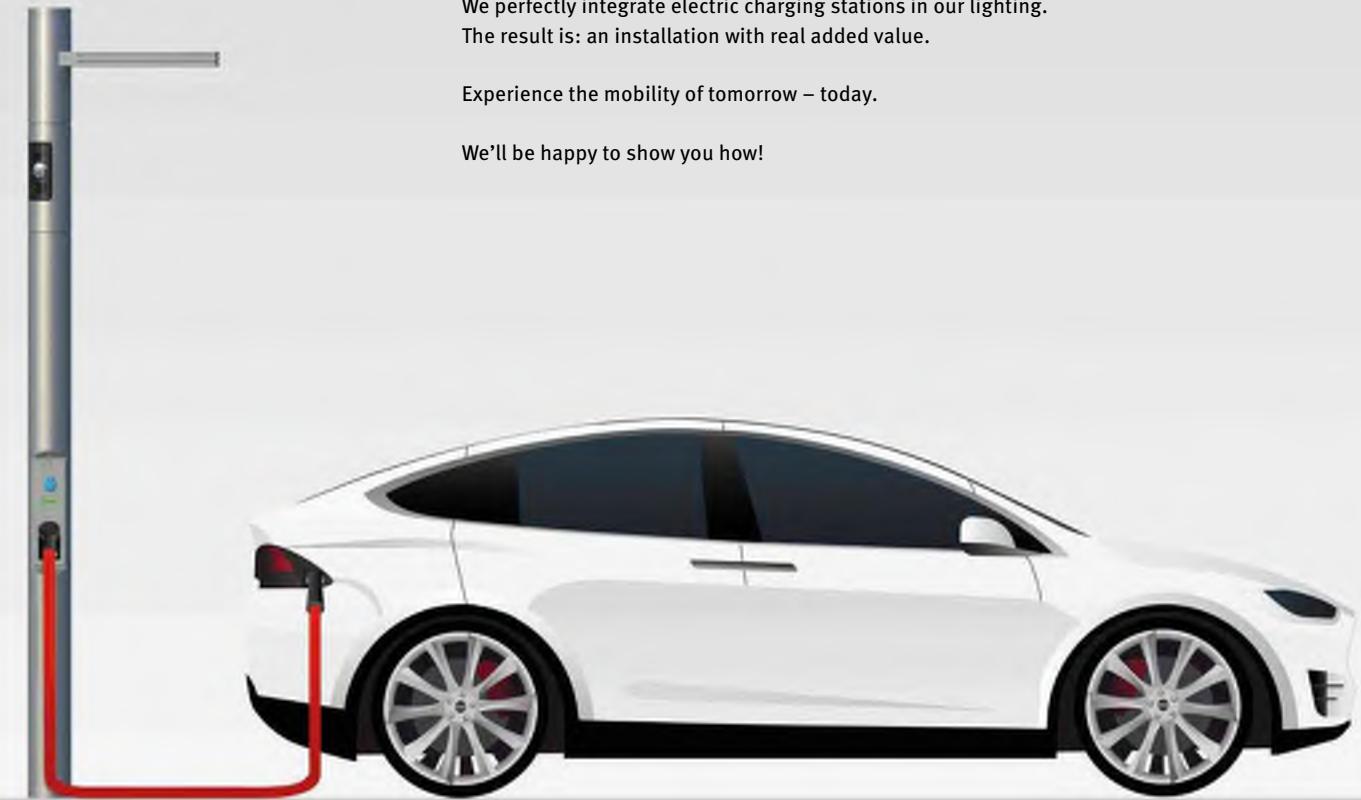
## CHARGING STATION

Low emission city centres and fuel from power outlets.  
The future will bring changes – especially when it comes to mobility.

We will pave the way for new strategies for you – and the way to electromobility, with modern and intelligent charging infrastructures.  
We perfectly integrate electric charging stations in our lighting.  
The result is: an installation with real added value.

Experience the mobility of tomorrow – today.

We'll be happy to show you how!





## CITY ELEMENTS 200



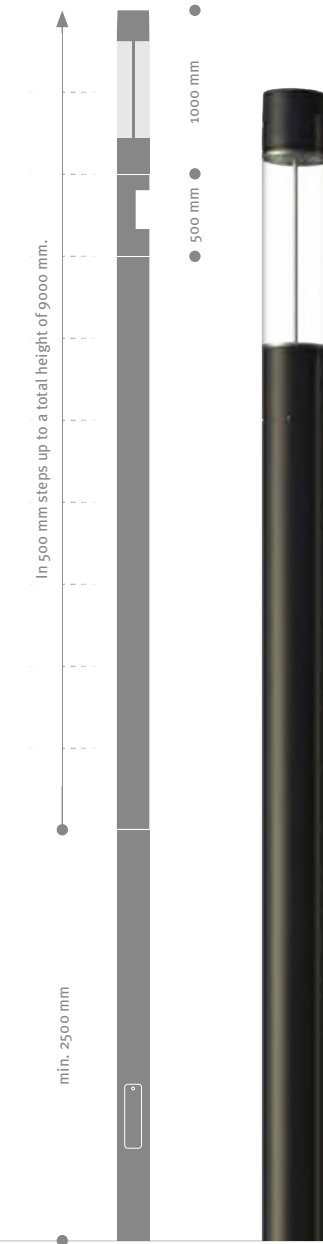
Product information  
[www.hess.eu/3400](http://www.hess.eu/3400)

Hess columnar lighting system with top, base and, if required, intermediate extension elements. Constructed from round aluminium section. 200 mm diameter, for a maximum height of 9 m. All of the elements pivot through 360°. As a standard painted in DB 703. Choice of any RAL (classic-unifarb), Hess mica or Hess DB finish.

If illuminated columns are installed up to a total installation height of 5500 mm, the total length of the embedded base or attached embedded base is 800 mm. If illuminated columns are installed up to a total installation height of 6000 to 9000 mm, the total length of the base is 1200 mm.

### CHOOSE YOUR HEIGHT:

Starting from the base element with a minimum height of 2500 mm, it can be extended in 500 mm steps according to your wishes and the needs of the lighting situation. CITY ELEMENTS 200 reaches a maximum total height of up to 9000 mm.







### Top Element AR | CITY ELEMENTS 200-2

Terminating element made of aluminium. Ø 200 mm, for asymmetrical or rotationally symmetrical plaza and street lighting, foot and cycle path lighting, and carpark lighting. Without inspection door. Luminaire glass made of PMMA, element height 1000 mm. Colour: DB 703.

Ingress protection IP 65, IK 07, protection class I/II, CE

Optional: WLAN. Night-time dimming with or without control line. DALI dimming and special shapes.



### Top Element AA | CITY ELEMENTS 200-2

Terminating element made of aluminium with inner 120° shade. Ø 200 mm, for asymmetrical plaza or street lighting, foot and cycle path lighting, and carpark lighting. Without inspection door. Luminaire glass made of PMMA, element height 1000 mm. Colour: DB 703.

Ingress protection IP 65, IK 07, protection class I/II, CE

Optional: WLAN. Night-time dimming with or without control line. DALI dimming and special shapes.



### Top Element AS | CITY ELEMENTS 200-2

Top element made of aluminium. Ø 200 mm, with side recess for receiving an insert. Insert with lateral light emission for asymmetrical or symmetrical illumination of plazas, paths and façades. Lateral PMMA cover, clear. Element height 525 mm. Colour: DB 703. Ingress protection IP 65, IK 07, protection class I/II

Note: With L3.3 LED optionally 14°, 18°, 28° or 46° emission characteristics.

Optional: Ribbed glass or prism panel. Night-time dimming with or without control line. DALI dimming and special shapes.



### Top Element AD - ADAPTER DALVIK S | CITY ELEMENTS 200-2

Top element 200-2 AD - ADAPTER DALVIK S constructed from cast aluminium. Ø 200 mm with lateral adaptor für luminaire DALVIK S. Module length 525 mm. For area or street lighting with DALVIK S. Colour: DB 703



### Intermediate Element BS 500 | CITY ELEMENTS 200-2

Intermediate element made of aluminium. Ø 200 mm, with side recess for receiving an insert. Insert with lateral light emission for asymmetrical or symmetrical illumination of plazas, paths and façades. Lateral PMMA cover, clear. Element height 500 mm. Colour: DB 703.

Ingress protection IP 65, IK 07, protection class I/II

Note: With L3.3 LED optionally 14°, 18°, 28° or 46° emission characteristics.

Optional: Ribbed glass or diffusor. Night-time dimming with or without control line. DALI dimming and special shapes.



### Intermediate Element BK 500 | CITY ELEMENTS 200-2

Intermediate element made of aluminium. Ø 200 mm, with integrated camera and lining of the recess without additional element cover. Camera field of view approx. 120°, lens inclinable by up to -90°. Connection and extension provided by the customer. Connection only via PoE, 48V, 0.5A, max. connected load 4.5 W. Element height 500 mm. Colour: DB 703.

Ingress protection IP 66, IK 10, CE



### Intermediate Element Speaker | CITY ELEMENTS 200-2

Intermediate element made of aluminium. Ø 200 mm, with integrated loudspeaker and perforated metal cover. Connection and extension provided by the customer. Beam angle 170° H x 160° V, continuous load capacity 2 16 W (64 W peak), nominal impedance 8 Ω (transformer bypassed). Element height 500 mm. Colour: DB 703.

Protection class IP 55, CE



### Intermediate Element BD - ADAPTER DALVIK S | CITY ELEMENTS 200-2

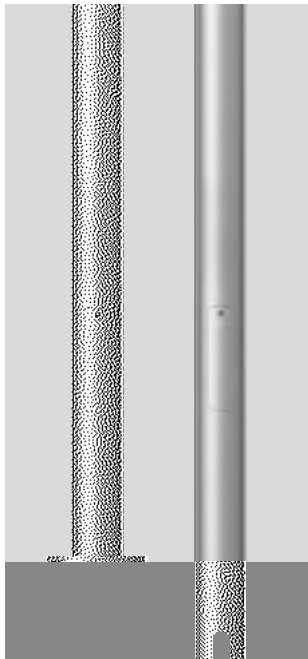
Intermediate element 200-2 BD - ADAPTER DALVIK S made of aluminium. Ø 200 mm with lateral adaptor für luminaire DALVIK S. Module length 500 mm. For area or street lighting with DALVIK S.

Colour: DB 703



### Intermediate Element BH | CITY ELEMENTS 200-2

Intermediate element made of aluminium. Ø 200 mm. Element height min. 500 mm. Prolongable in 500 mm steps. Colour: DB 703.



### Base Element CR02/04 | CITY ELEMENTS 200-2

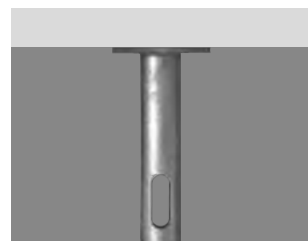
Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with inspection door and top C rail for cable junction box. Element height at least 2500 mm above the ground. External fixing via welded flange plate Q400/25 mm or Q400/35 mm. Colour: DB 703

### Base Element CR03 | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with inspection door and top C rail for cable junction box. Element height at least 2500 mm above the ground. Secured by attached embedded base. Length of base 800 or 1200 mm, depending on total height, with two cable entry openings. Colour: DB 703.

### Base CR02/CRV02 | CITY ELEMENTS 200-2

Separate embedded base for basic element CR02/CRV02. Made of steel, galvanized. With connecting screws. With two cable entry openings. Length of base 800 or 1200 mm, depending on total column height.



### Base Element CRVE02/04 | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with two inspection doors and top C rail below for cable junction box. Inspection door above for customer-provided supply unit, door with cable outlet and cylinder lock for operation with the door closed. Element height at least 2500 mm above the ground. External fixing via welded flange plate Q400/25 mm or Q400/35 mm. Colour: DB 703.

### Base Element CRVE03 | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with two inspection doors and top C rail below for cable junction box. Inspection door above for supply unit, door with cable outlet and cylinder lock for operation with the door closed. Element height at least 2500 mm above the ground. Secured by attached embedded base. Length of embedded base 800 or 1200 mm, depending on attachment height, with two cable entry openings. Colour: DB 703.



### Base Element CRVW02/04 | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with two inspection doors and top C rail above for cable junction box. Lower inspection door for supply unit OF 01, 1 x outlet valve 3/4" with aerator in discharge shape and backflow preventer. 1 x oblique seat shut-off valve 3/4" with backflow preventer and drain. Door with cylinder lock for operation with the door open. Element height at least 2500 mm above the ground. External fixing via welded flange plate Q400/25 mm or Q400/35 mm. Colour: DB 703.

### Base Element CRVW03 | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 9000 mm. ø 200 mm, with two inspection doors and top C rail above for cable junction box. Lower inspection door for supply unit OF 01, 1 x outlet valve 3/4" with aerator in discharge shape and backflow preventer. 1 x oblique seat shut-off valve 3/4" with backflow preventer and drain. Door with cable outlet and cylinder lock for operation with the door closed. Element height at least 2500 mm above the ground. Secured by attached embedded base. Length of embedded base 800 or 1200 mm, depending on attachment height, with two cable entry openings. Colour: DB 703.



### Base Element CRV02/04 E-MOBILITY | CITY ELEMENTS 200-2

Basic element made of aluminium tubing for a total column height up to 6000 mm. ø 200 mm, with inspection door and top C rail below for cable junction box. Charger above with charging socket: type 2 (3-phase, 400VAC, 32A), automatic locking, rated power up to 22 kW, earthed socket (1-phase, 230VAC, up to 16A), integrated meter EHZ - EDL 21/40, meter display, status indicator: LED (green, yellow, blue), LCD optional, authorisation/activation: RFID Mifare Classic, via SMS or mobile app (iPhone, Android). Element height at least 2500 mm above the ground. Mounting via welded flange plate Q400/35 mm. Colour: DB 703.





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