

North West Cambridge

Future Phases of Eddington

September 2025

Lighting Design Concept Proposal

North West Cambridge Masterplan - Future Phases Development

Lighting design concept proposal

Date: 01.09.2025

Document number: NWC-MP2024-BDP-XX-RP-00001

Status: Final issue

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Introduction

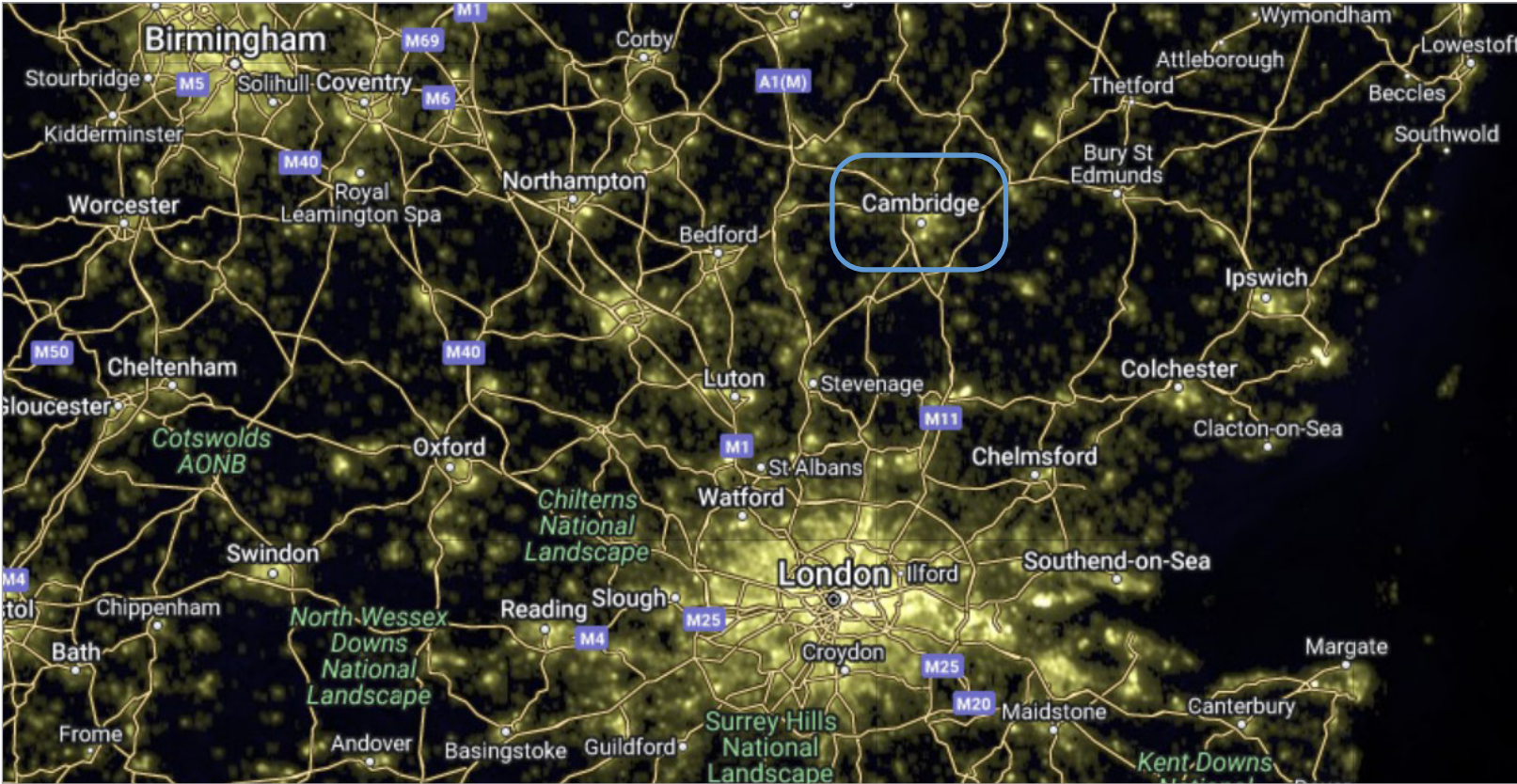
Eddington is the University of Cambridge's response to the need to provide affordable housing for its staff so it can attract and retain top talent to maintain its global competitiveness. By housing staff in a purpose-built, high quality neighbourhood, the University also reduces the demand on the wider housing market in the city. By providing 50% of housing for staff and the remainder contributing to increasing the overall supply of housing in the city, the Eddington development supports the highly successful Cambridge eco-system which provides long-term growth and prosperity for the local, regional and national economy.

Importantly however, Eddington is open to all. Eddington combines all the community infrastructure that is needed for a new, growing neighbourhood. The University's investment in the community is evident in the school, nursery, post-doc centre, hotel, supermarket, community centre, sports facilities and parklands as well as homes delivered in Phase 1. The Site will remain under the University's long-term stewardship. Outline Planning Permission for Eddington was originally granted (application references 11/1114/OUT and S/1886/11) in February 2013 for a residential led mixed use development.

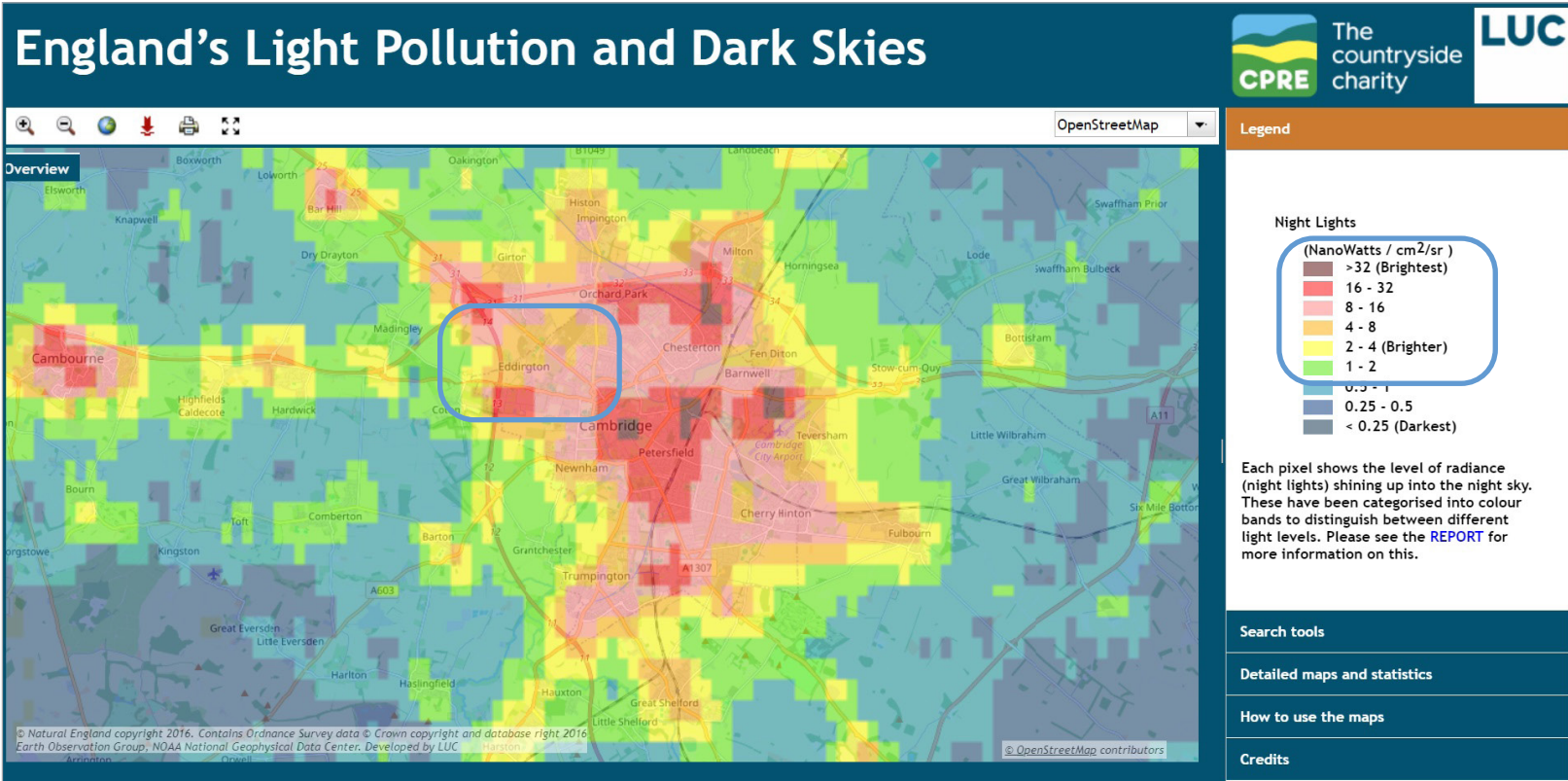
The ability to bring forward further residential dwellings under the Outline Planning Permission (through Reserved Matters Applications) expired in 2023. As a result, the University needs to bring forward a new planning application for the Future Phases of the North West Cambridge Masterplan.

BDP has been asked to explore the lighting impact of the future phases, with a focus on minimising light pollution. Light pollution can disrupt local ecosystems, affect residents' health and well-being, and reduce overall quality of life. This report presents a conceptual lighting strategy that supports environmental sustainability, enhances safety, and creates a welcoming atmosphere across the development.

Please note that this proposal is based on the illustrative scheme of the NWC Masterplan's future phases; detailed lighting design will be finalised at the reserved matters stage as individual plots and infrastructure works come forward.



UK milky way light pollution map



England's light pollution and dark skies map - Cambridge

Light pollution

As part of the design process, we have carefully considered the following local policies:

- Policy 34: Light Pollution Control of the **Cambridge Local Plan (2018)**
- Policy SC/9: Lighting Proposals of the **South Cambridgeshire Local Plan (2018)**
- Policy 3.6: Pollution set out in the **Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (2020)**

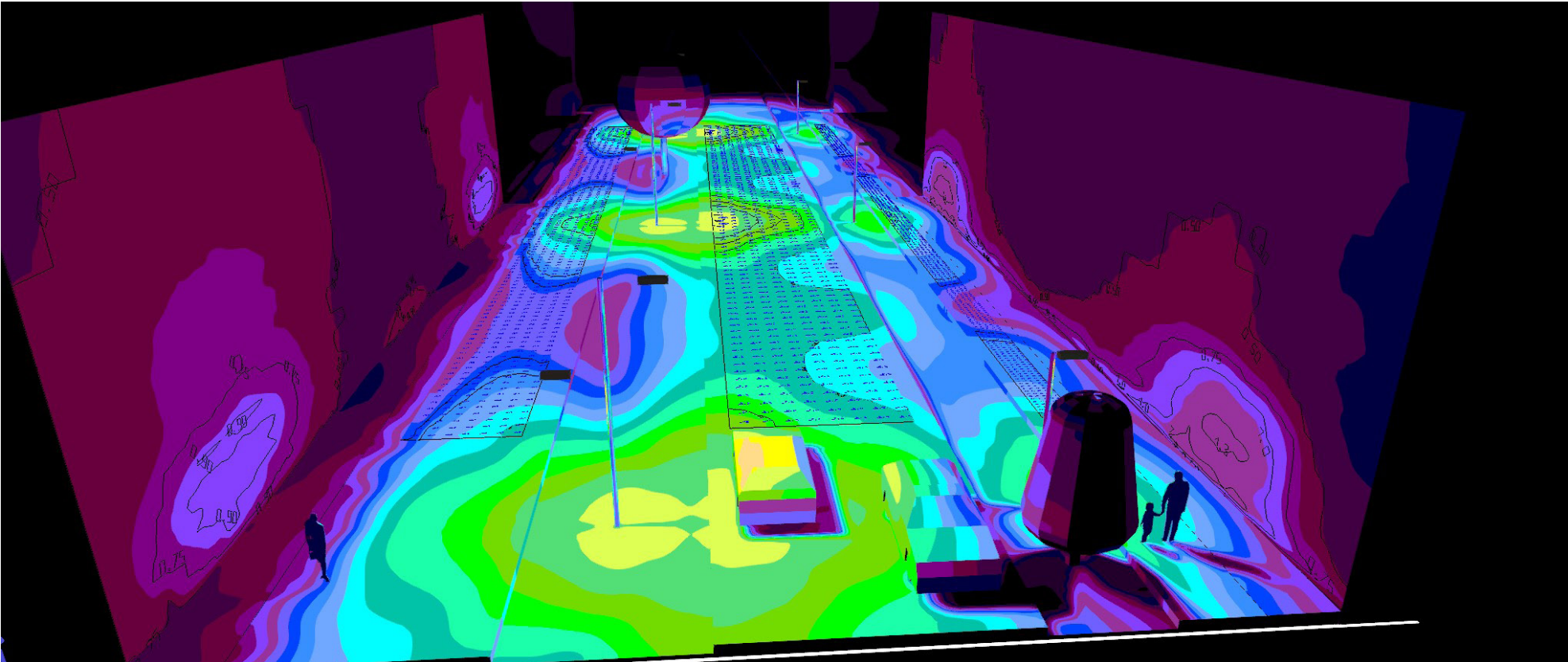
Cambridge Local Plan (2018) Policy 34: Light Pollution Control states:
Development proposals that include new external lighting or changes to existing external lighting will be permitted where it can be demonstrated that:
a. it is the minimum required to undertake the task, taking into account public safety and crime prevention;
b. upwards or intrusive light spillage is minimised;
c. it minimises impact to local residential amenity; and
d. it minimises impact to wildlife and landscape character, particularly at sites on the edge of Cambridge.
Developers of major sites will be required to submit an assessment of the impact on any sensitive residential premises both on- and off-site.

South Cambridgeshire Local Plan (2018) Policy SC/9: Light Proposals state that,
1. Development proposals which include new external lighting will only be permitted where it can be demonstrated that:
a. The proposed lighting scheme and levels are the minimum required for reasons of public safety, crime prevention / security, and living, working and recreational purposes;
b. Light spillage and glare are minimised;
c. There is no unacceptable adverse impact on the local amenity of neighbouring or nearby properties, or on the surrounding countryside;
d. There is no dazzling or distraction to road users including cyclists, equestrians and pedestrians;
e. Road and footway lighting meets the County Council's adopted standards.
2. Proposed development that is adversely affected by existing artificial lighting outside the development site will not be permitted unless any significant impact can be mitigated to an acceptable level.

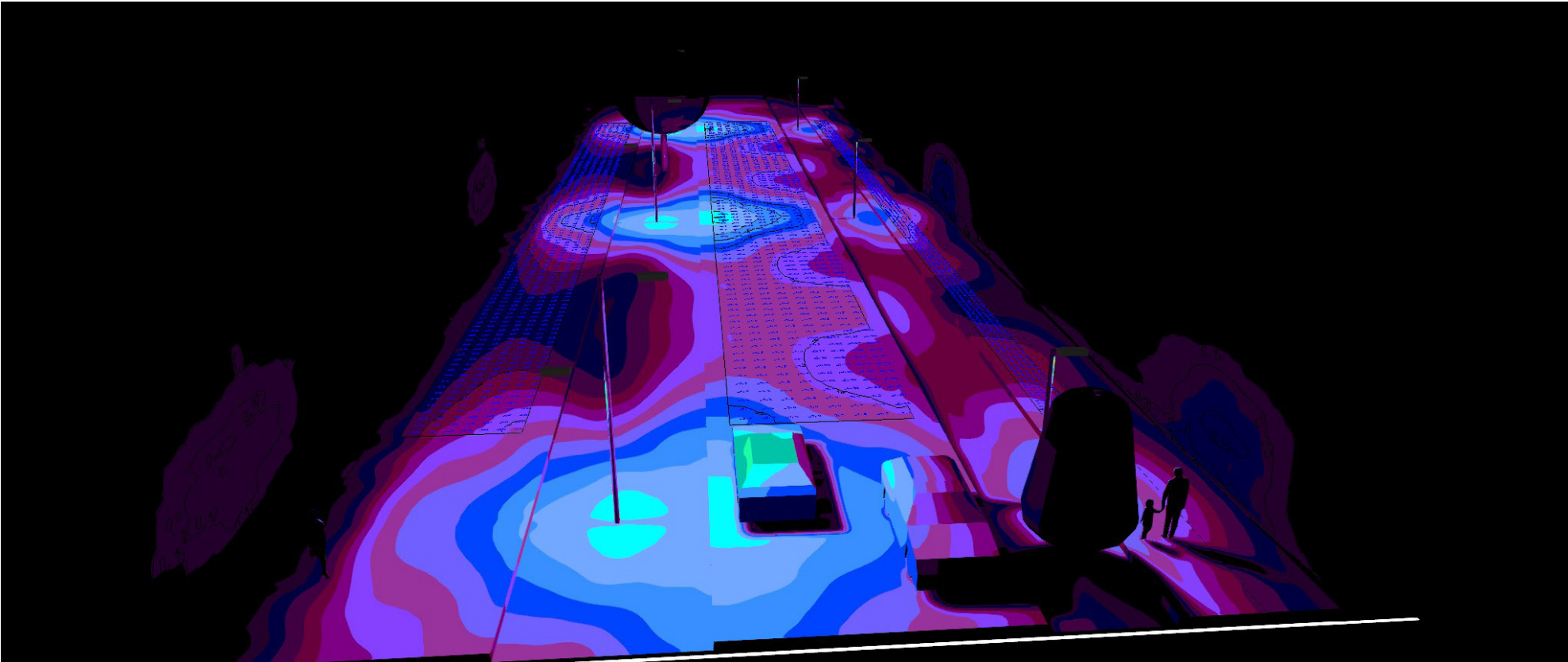
Our lighting strategy ensures that external illumination is limited to what is essential for safety and functionality, covering Cartwright Avenue, on-plot streets, pedestrian and cycle pathways. The design priorities the avoidance of upward light spill, with careful attention to shielding and the directional control of luminaires, and is fully compliant with BS 5489-1:2020. This approach aims to reduce unnecessary light spill in order to protect residential amenity, safeguard local wildlife, and preserve the character of the surrounding landscape by mitigating glare and light trespass.

Energy-efficient solutions have been incorporated throughout the scheme, including a pre-programme lighting control system to reduce light levels after curfew. The lighting system automatically switches on at dusk and dims at midnight, and is equipped with motion sensors that temporarily increase brightness when vehicles, pedestrians, or cyclists are detected. This ensures that lighting remains at low levels for the majority of the night, significantly reducing the impact on both residents and the natural environment, while continuing to provide public safety. For further details, please refer to the Lighting Control Strategy page.

The adjacent false colour diagrams provide an illustration of the anticipated lighting levels during both pre-curfew and post-curfew periods.



False colour visual showing light distribution for the mixed lighting strategy at Cartwright Avenue with 100% pre-curfew output



False colour visual showing light distribution for the mixed lighting strategy at Cartwright Avenue with the 20% post-curfew output

Lighting performance requirements

Environmental zones and ecological consideration

The Institution of Lighting Professionals, Guidance Notes for the Reduction of Obtrusive Light (GN01:2021) and GN08:2023 Bats and Artificial Lighting at Night have both been considered in this project to guide environmentally sensitive lighting design. According to GN01:2021, Cartwright Avenue in the future phases falls within Environmental Zone E3 - Suburban, while the remainder of the site is defined as Environmental Zone E2 - Rural. These classifications inform appropriate lighting levels to reduce obtrusive light. GN08 provides specific recommendations to minimise disruption to bats and other nocturnal wildlife, supporting the use of wildlife-friendly lighting in ecologically sensitive areas.

Glare

Glare to drivers, pedestrians and cyclists should be carefully considered, as it can pose safety hazards. A general design principle is to avoid aiming fitting more than +30° from the vertical (straight down). Refer to the Guidance Notes for the Reduction of Obtrusive Light GN01:2021 for further information.

Optics/control of upward light

Due to the close proximity to the natural and residential area, upward lighting should be avoided in line with The Guidance Notes for the Reduction of Obtrusive Light GN01:2021 recommendations. It specifies maximum values for vertical illuminance on premises for pre-curfew and post-curfew hours and the upward light ratio. For details, refer to GN01/21 - Table 3 and Table 6.

Light level requirements

Lighting level requirements calculated alongside the pedestrians, cyclists, and drivers of motorized vehicles at low speeds (P class) of the BS 5489-1:2020 guidelines to determine the appropriate lighting class for NWC. Exterior illuminance criteria are outlined in:

- *PD CEN/TR 13201-1:2014 Road lighting - Part 1: Guidelines on Selection of Lighting Classes*
- *BS EN 13201-2:2015 Road Lighting - Part 2: Performance Requirements*
- *BS EN 5489-1:2020 Design of Road Lighting - Part 1: Lighting of Roads & Public Amenity - Code of practice*
- *BS EN 12139:2018 Light and lighting - Sports lighting*
- *BS 8300-1:2018 Design of an accessible and inclusive built environment - Part 1: External environment - Code of practice*
- *LG4: Sports lighting, SLL, 2021*
- *LG6: The exterior environment, SLL, 2016*
- *LG21: Protecting the night-time environment, SLL, 2021*

The following light level classifications are proposed based on industry standard guidance documents and best practise. We recommend illuminating primary routes to a **P3** class, secondary routes to a **P4** class, and pedestrian routes/ridgeway to a **P5** class. The following parameters have been selected to determine these classifications:

ANALYSIS SCORE IS '3' - RESULTANT LIGHTING CLASSIFICATION IS P3 FOR PRIMARY ROUTE

The lighting performance requirements of the BS EN 13201-2:2015 are as follow:

- Primary route: P3 - 7.50 lx average, 1.50 lx minimum
- Secondary route: P4 - 5.00 lx average, 1.00 lx minimum
- Pedestrian/ridgeway: P5 - 3.00 lx average, 0.60 lx minimum

The lighting levels for sports fields, primarily for recreational and school purposes, are specified as 200 lx (for tennis courts) and 75 lx (for football pitches) in BS EN 12193:2018. It is recommended that sports fields be located away from sensitive areas.

Table 2: Environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Table 3: (CIE 150 table 2): Maximum values of vertical illuminance on premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E _v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Table 6: (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR) / %	0	0	2.5	5	15

GN01/21 - The reduction of obtrusive light

Table 4 — Parameters for the selection of lighting class P

Parameter	Options	Description ^a	Weighting Value <i>V_w</i> ^a
Travel speed	Low	v ≤ 40 km/h	1
	Very low (walking speed)	Very low, walking speed	0
Use intensity	Busy		1
	Normal		0
	Quiet		-1
Traffic composition	Pedestrians, cyclists and motorised traffic		2
	Pedestrians and motorised traffic		1
	Pedestrians and cyclists only		1
	Pedestrians only		0
	Cyclists only		0
Parked vehicles	Present		1
	Not present		0
Ambient luminosity	High	shopping windows, advertisement expressions, sport fields, station areas, storage areas	1
	Moderate	normal situation	0
	Low		-1
Facial recognition	Necessary		Additional requirements ^b
	Not necessary		No additional requirements

PD CEN/TR 13201-1:2014 - Parameters for the selection of lighting class P

Lighting performance requirements

Table 3 — P lighting classes

Class	Horizontal illuminance		Additional requirement if facial recognition is necessary	
	$\bar{E}^a$ [minimum maintained] lx	E_{min} [maintained] lx	$E_{v,min}$ [maintained] lx	$E_{sc,min}$ [maintained] lx
P1	15,0	3,00	5,0	5,0
P2	10,0	2,00	3,0	2,0
P3	7,50	1,50	2,5	1,5
P4	5,00	1,00	1,5	1,0
P5	3,00	0,60	1,0	0,6
P6	2,00	0,40	0,6	0,2
P7	performance not determined	performance not determined		

BS EN 13201-2 2015 - Road lighting part 2: Performance requirements

Table A.5 — Lighting classes for subsidiary roads

Traffic flow	Lighting class		
	E1 to E4 ^{A)}	E1 to E2 ^{A)}	E3 to E4 ^{A)}
	Pedestrian and cyclists only	Speed limit $v \leq 30$ mph	Speed limit $v \leq 30$ mph
Busy ^{B)}	P5	P4	P3
Normal ^{C)}	P5	P5	P4
Quiet ^{D)}	P6	P5	P4

Table 4 — Maintained lighting levels for outdoor car parks

Type of area and usage	Values in lux	
	$\bar{E}$	U_o
Light traffic, e.g. parking areas of shops, terraced and apartment houses; cycle parks	5	0.25
Medium traffic, e.g. parking areas of department stores, office buildings, plants, sports and multipurpose building complexes	10	0.25
Heavy traffic, e.g. parking areas of major shopping centres, major sports and multipurpose sports and building complexes	20	0.25

BS EN 5489-1 2020 - Design of road lighting Part 1: Lighting of roads and public amenity areas

Table 4 — Selection of the lighting class

Level of competition	Lighting class		
	I	II	III
International and National	X		
Regional	X	X	
Local	X	X	X
Training		X	X
Recreational/School sports (Physical education)			X

Outdoor			Reference area		Number of grid points	
			Length m	Width m	Length	Width
Tennis	PA		30	15	13	7
	TA		36	18	15	7
Padel ^a	PA		20	10	13	7
Class	Horizontal illuminance		Horizontal illuminance TA		R_G	R_a
	$E_{hor Ave lx}$	$U2_{hor}$	$E_{hor Ave lx}$	$U2_{hor}$		
I	500	0,70	75 % PA	75 % PA	50	70
II	300	0,70	75 % PA	75 % PA	50	60
III	200	0,60	75 % PA	75 % PA	55	60
^a A safety zone around both entrances of width 2 m, height 4 m and extending 4m from the centre to both sides is to be kept clear of any obstacles.						

Outdoor		Reference area		Number of grid points	
		Length m	Width m	Length	Width
Basketball	PA	28	15	13	7
	TA	32	19	15	9
Football	PA	100 to 110	64 to 75	19 to 21	13 to 15
	TA	108 to 118	72 to 83	21	13 to 15
Football (5/6-a-side)	PA	30 to 40	18,5 to 20	13 to 15	9
	TA	44	24	15	9
Netball	PA	30,5	15,3	13	7
	TA	37,5	22,5	15	9
Class	Horizontal illuminance			R_G	R_a
	$E_{hor Ave lx}$	$U2_{hor}$			
I	500	0,70	—	55	70
II	200	0,60	—	55	60
III	75	0,50	—	55	60

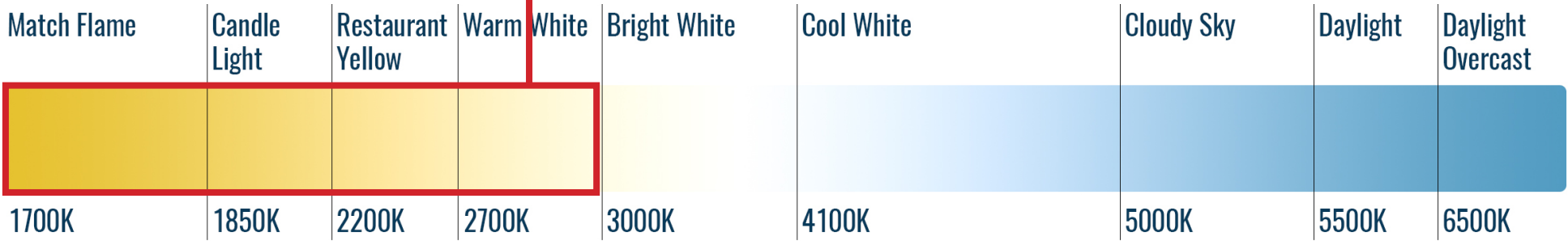
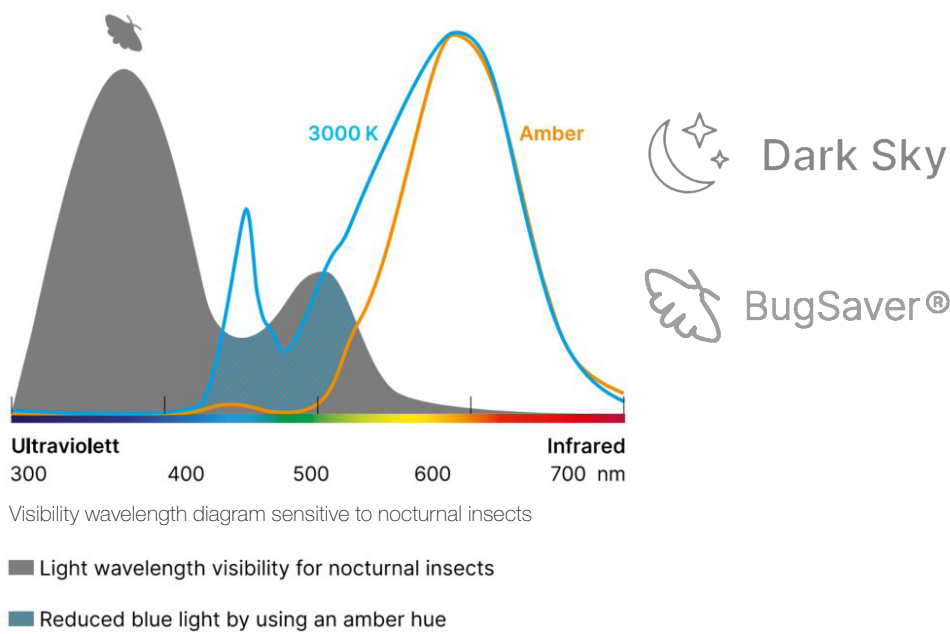
BS EN 12193:2018 Light and lighting - Sports lighting

Brightness & colour temperature

When designing the lighting scheme for the NWC masterplan, it is essential to balance functional performance with ecological responsibility. The Phase 1 development incorporates higher light levels to support urban dynamics, ensuring key routes and public spaces are well-lit for both safety and visibility. As the masterplan progresses into Future Phases, the lighting levels will gradually decrease, particularly in residential areas and shared garden spaces, to create a more relaxed and intimate atmosphere. In these quieter zones, the light levels will drop to lower thresholds, contributing to a sense of calm while maintaining sufficient illumination for pedestrian safety. This hierarchical approach allows for a smooth transition from areas of higher activity to more peaceful residential environments, optimising both functionality and aesthetics.

In addition to adjusting light levels, warmer colour temperatures (2700K, amber or red colour) are a priority to minimise disruption to sensitive species, such as bats and insects, which are more likely to be affected by harsher, cooler lighting. Warmer tones help reduce the attraction of insects to artificial lights, thereby supporting local biodiversity and minimising negative ecological impacts. This approach ensures that pedestrian safety is maintained without compromising the natural environment. By selecting lighting with carefully considered colour temperatures, we can create spaces that are both inviting to people and considerate of the surrounding wildlife.

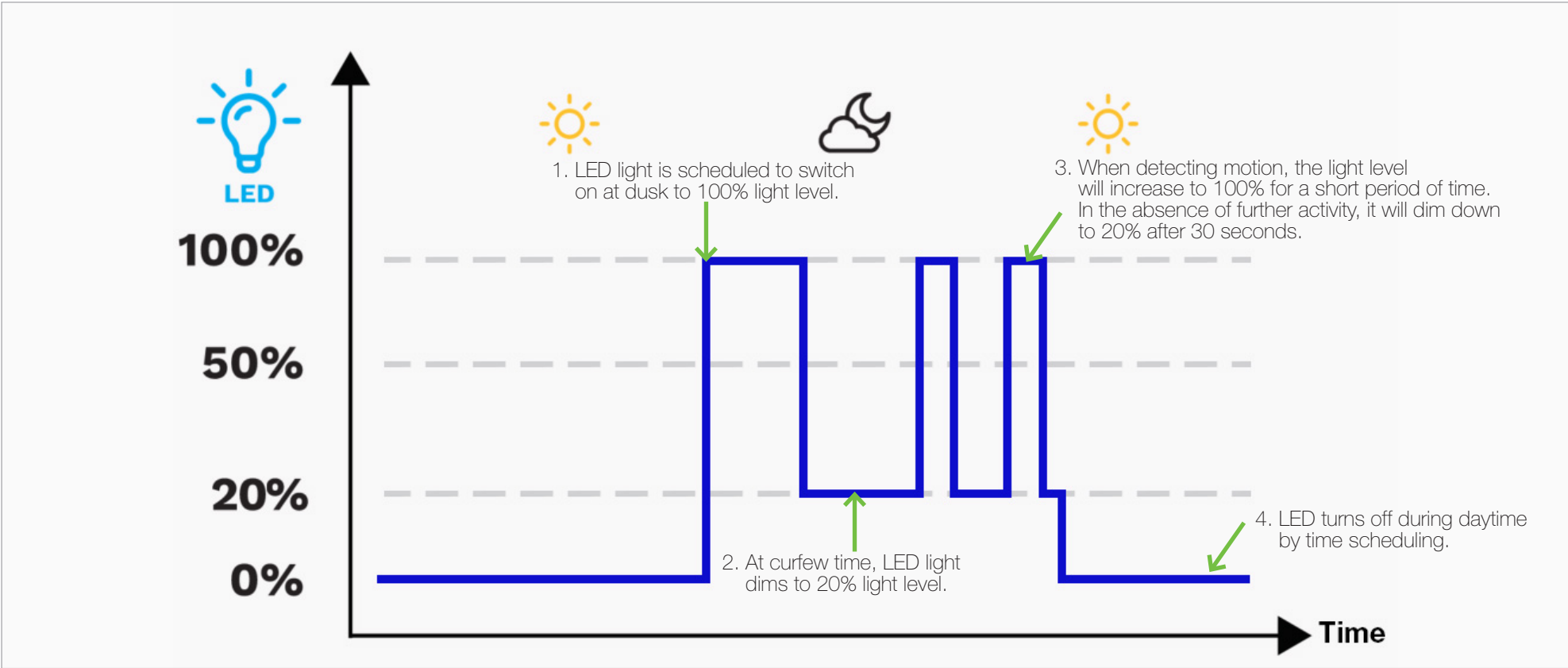
Furthermore, by incorporating dimmable LED technology, the lighting system can adapt to varying activity levels throughout the day and night. This flexibility allows for dynamic adjustments, enhancing visual comfort and supporting energy efficiency. It also aligns with dark sky initiatives aimed at reducing light pollution and preserving the natural nighttime environment. Ultimately, the goal is to create safe, welcoming spaces that respect the delicate balance between urban life and the surrounding ecosystem.



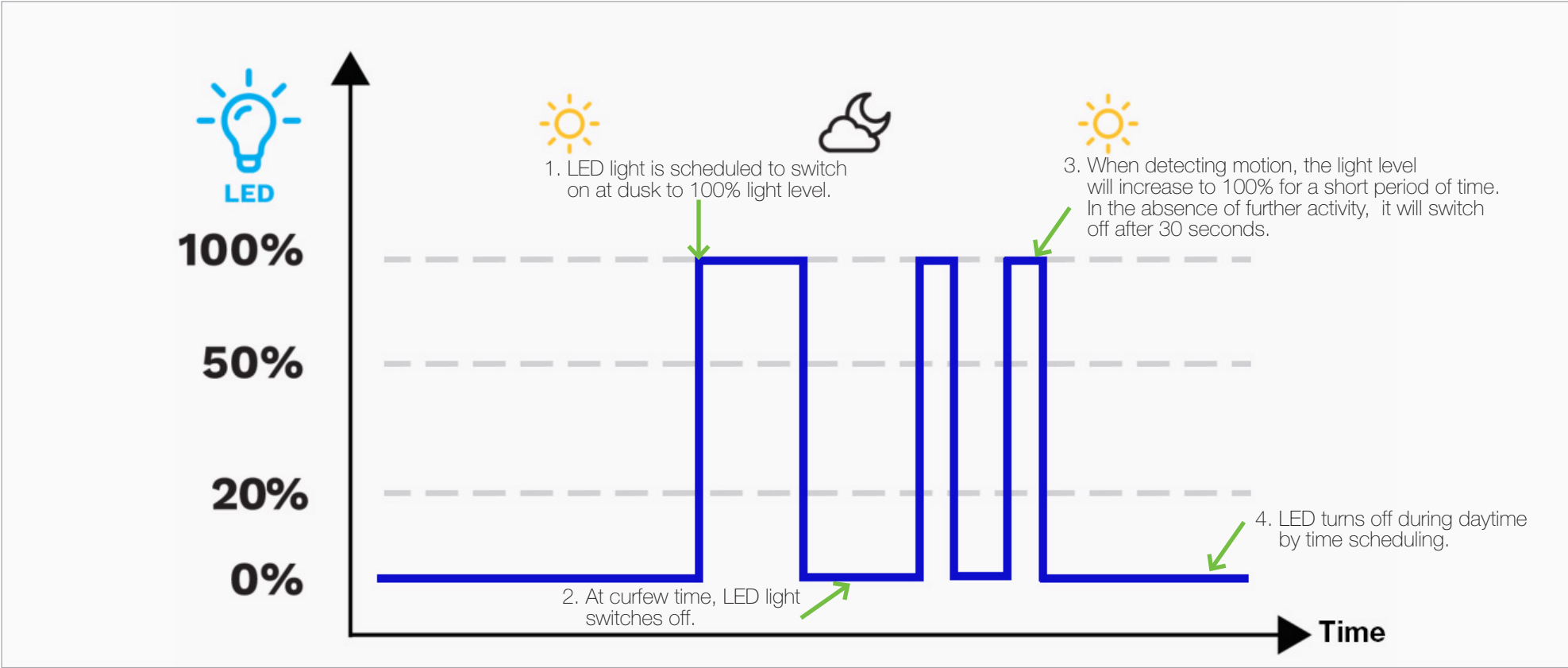
Lighting control strategy

Energy efficient lighting has been integrated throughout the illustrative scheme, with a smart control system designed to reduce energy use after curfew. The system is programmed to switch on automatically at dusk at 100% brightness, based on a preset schedule, and remain at full output until midnight. After curfew, the lights dim to 20% output to minimise lighting impact on residential amenity. The lighting is equipped with PIR (passive infrared) sensors that detect motion and temporarily raise the output to full brightness when triggered by vehicles, pedestrians, or cyclists. If no further movement is detected, the lights return to 20% brightness after 30 seconds.

For pedestrian-priority routes such as the Community Lanes, pathway lighting is programmed to switch on automatically at dusk. Set to operate at full brightness on a preset schedule, the lights remain at 100% output until midnight. In contrast to the lighting on Cartwright Avenue and on-plot streets, the pathway lights switch off entirely after curfew and are controlled by PIR sensors. When movement is detected from pedestrians or cyclists, the lights are temporarily reactivated at full brightness. If no further activity is detected, the lighting returns to 0% output after 30 seconds, helping to conserve energy while maintaining safety when needed.

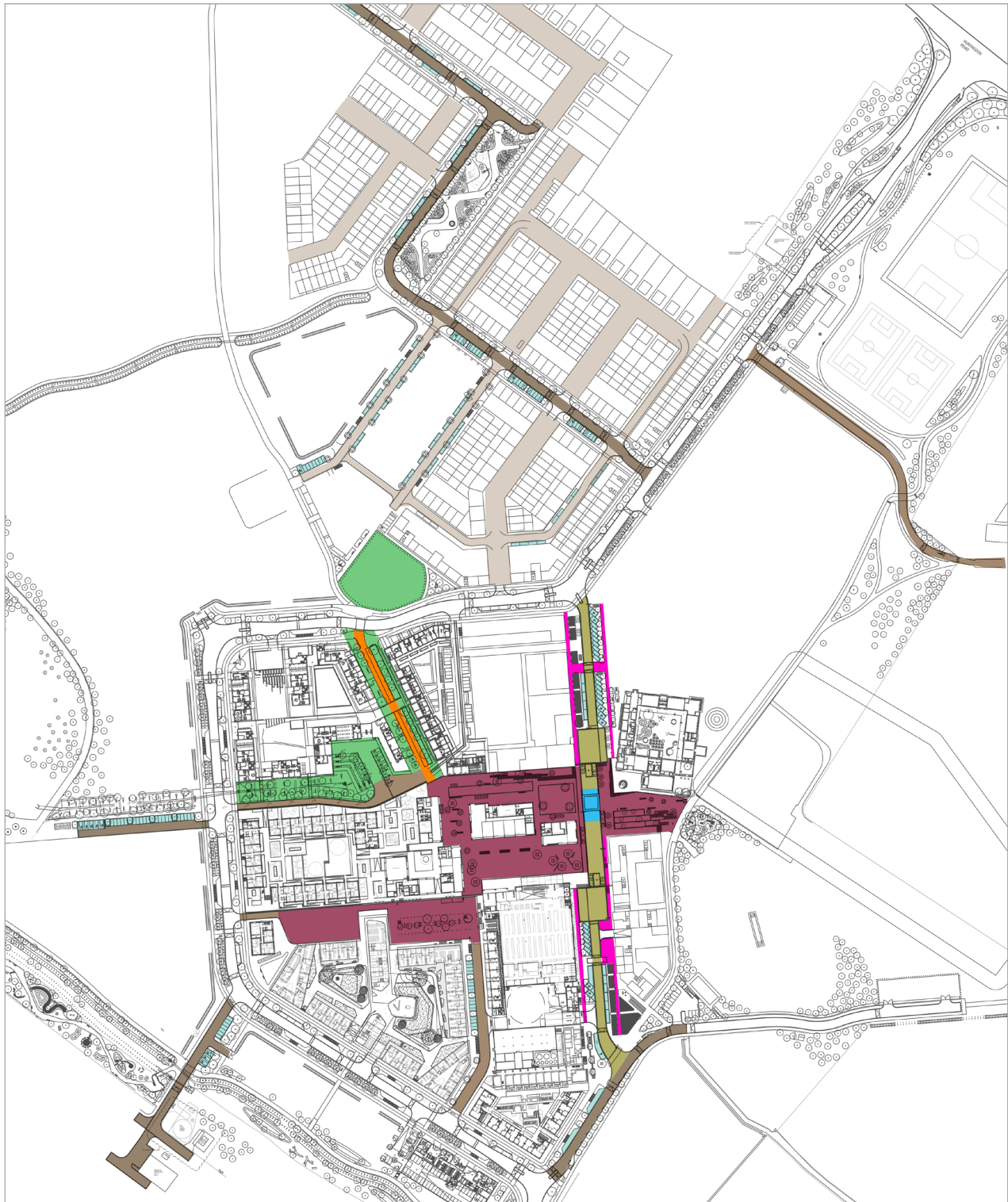


A diagram showing the lighting operation principles for Type 1 and Type 2 (Cartwright avenue and On plot street) lighting strategies



A diagram showing the lighting operation principles for Type 3 (Community lanes) lighting strategy

Existing illuminance levels - Phase 1 development



Legend

- Pedestrian crossing - 10.0 lx not falling below 2.0 lx
- Busgate Street - 7.5 lx not falling below 1.5 lx
- Secondary road - 5.0 lx not falling below 1.0 lx
- Tertiary road - 3.0 lx not falling below 0.6 lx
- Ridgeway - 3.0 lx not falling below 0.6 lx
- Community Square - 3.0 lx not falling below 0.6 lx
- Parking - 5.0 lx not falling below 1.0 lx
- Footpaths - 5.0 lx not falling below 1.0 lx
- Landscaping opportunities

Proposed illuminance levels for Future Phases (based on illustrative scheme layout)



Legend

- Type 1 - Primary routes: 7.5 lx not falling below 1.5 lx
- Type 2 - Secondary routes: 5.0 lx not falling below 1.0 lx (pre-curfew), 3.0 lx not falling below 0.6 lx (post-curfew)
- Type 3 - Pedestrian routes/ridgeway: 3.0 lx not falling below 0.6 lx (pre-curfew), 2.0 lx not falling below 0.4 lx (post-curfew)
- Type 4 - No lighting in woodland area / Accent lighting in Community Lanes or shared garden

Existing Cambridge precedents review



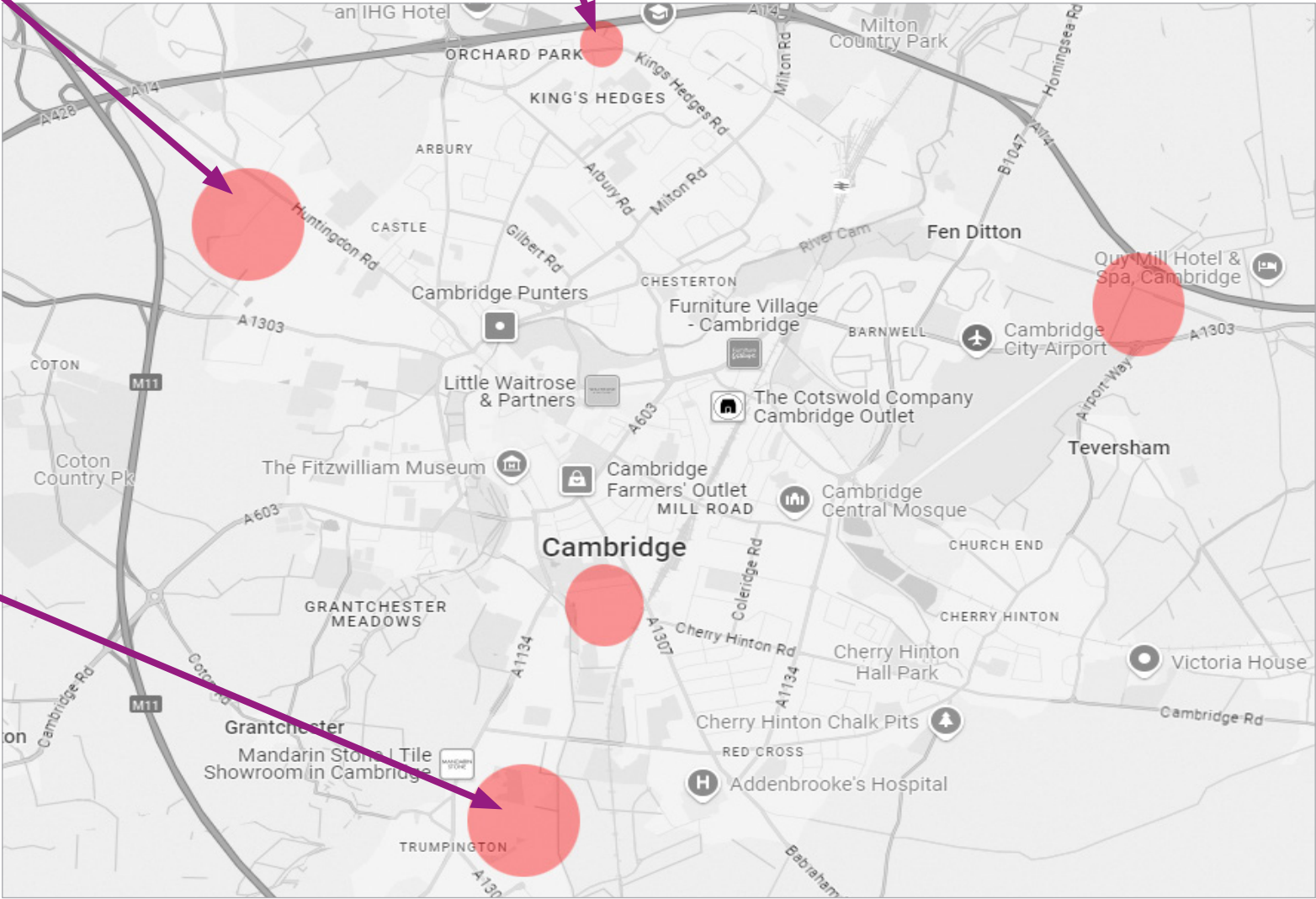
Type 0 - Eddington Phase 1



Type 3 - Marmalade Lane



Type 4 - Marmalade Lane



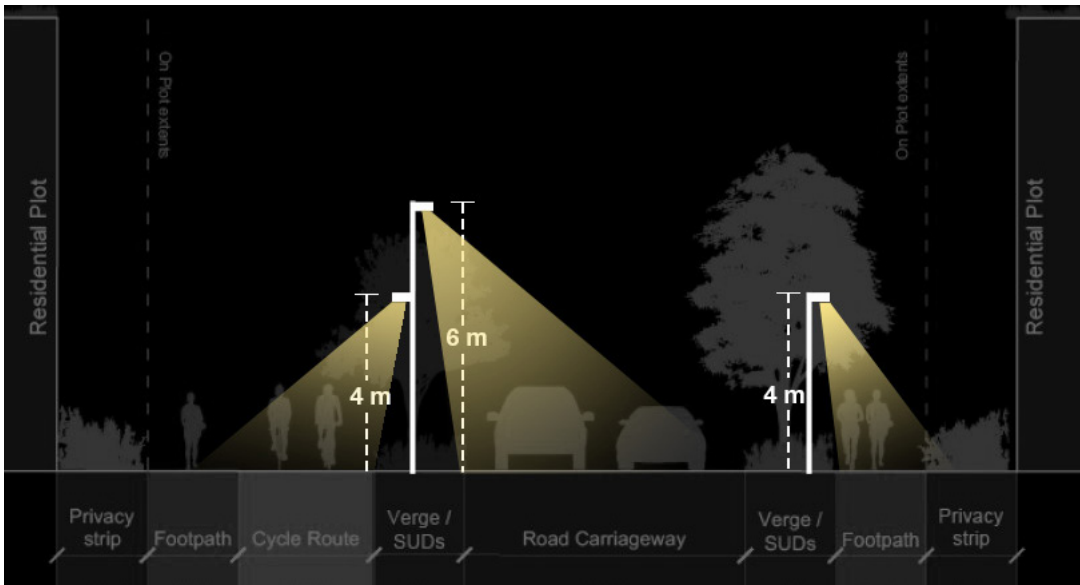
Type 1 - Great Kneighton



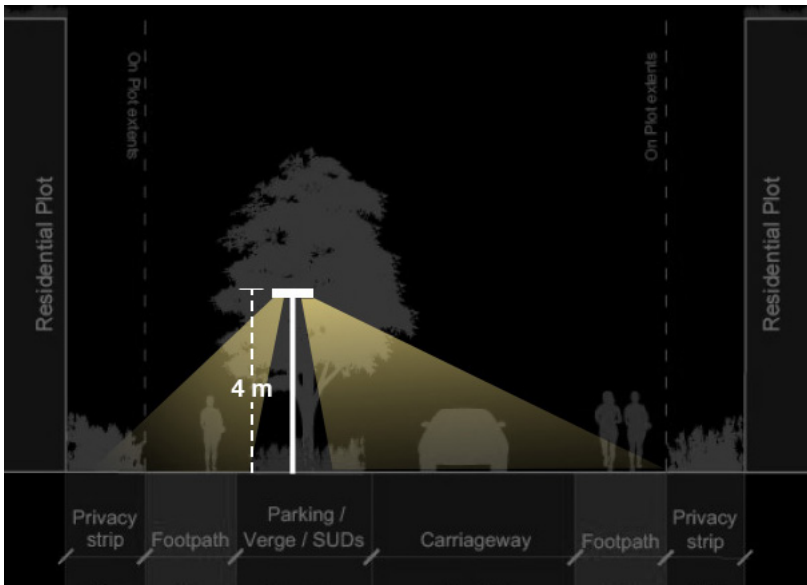
Type 2 - Great Kneighton

Scale analysis

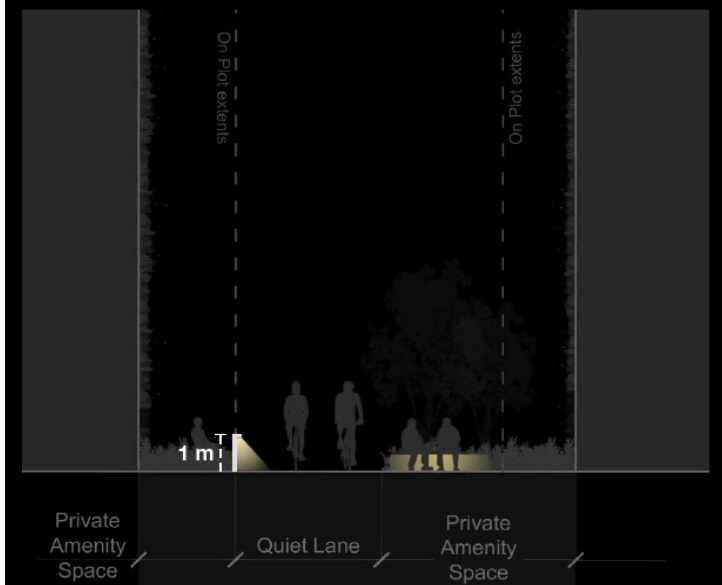
In NWC residential areas, light columns with a height of 6 meters are sufficient for road carriageways. For cycle routes, footpaths, and secondary roads, a height of 4 meters is ideal, providing adequate lighting for vehicles, pedestrians, and cyclists. Bollard and low-level lighting can be used for more focused illumination along pathways and in amenity spaces. The design should integrate with the surrounding landscape, minimising light pollution and ensuring a safe, sustainable environment for residents.



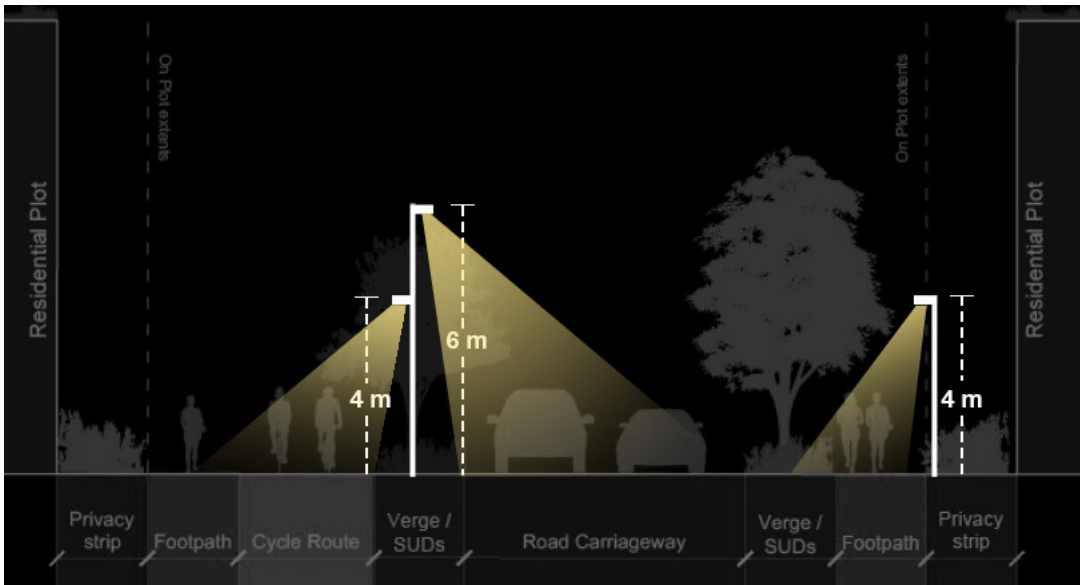
Type 1 - Cartwright Avenue corridor with 4 meters column by Verge/SUDs (primary route)



Type 2 - Typical on-plot street (secondary route)



Type 3 - Typical on-plot Community Lanes (pedestrian/ridgeway)



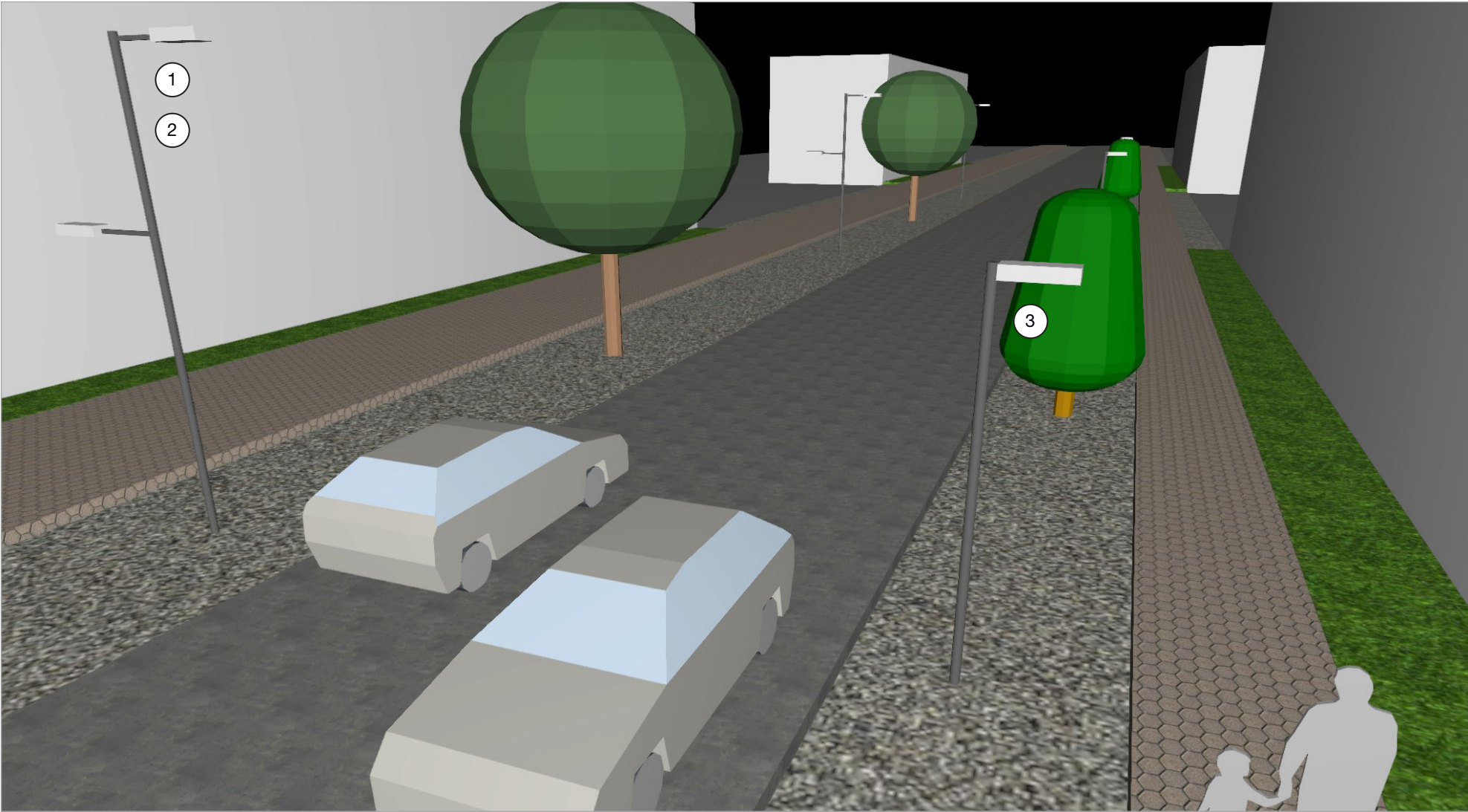
Type 1 - Cartwright Avenue corridor with 4 meters column by Privacy strip (primary route)

Type 1 lighting strategy - Cartwright avenue

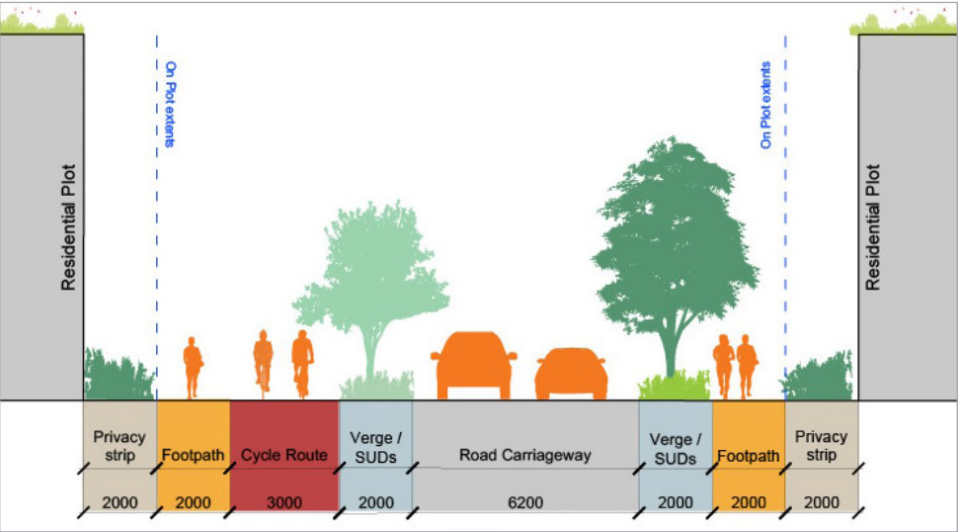
A lighting design approach for a combined corridor catering to drivers, cyclists, and pedestrians is outlined below,

Carriageway, cycle route & footpath

- **P3** class lighting for vehicular traffic, **P5** class lighting for pedestrians and cyclists;
- A very warm colour temperature (2700K) or amber light creates a welcoming and environmentally friendly areas;
- Double heads columns mounted with 6 meters and 4 meters fittings for combined routes;
- A single head column with 4 meters high for pedestrian route;
- Downward facing lights to minimise the glare.



3D model exported from lighting calculation software



Cartwright Avenue section



Example of double heads column

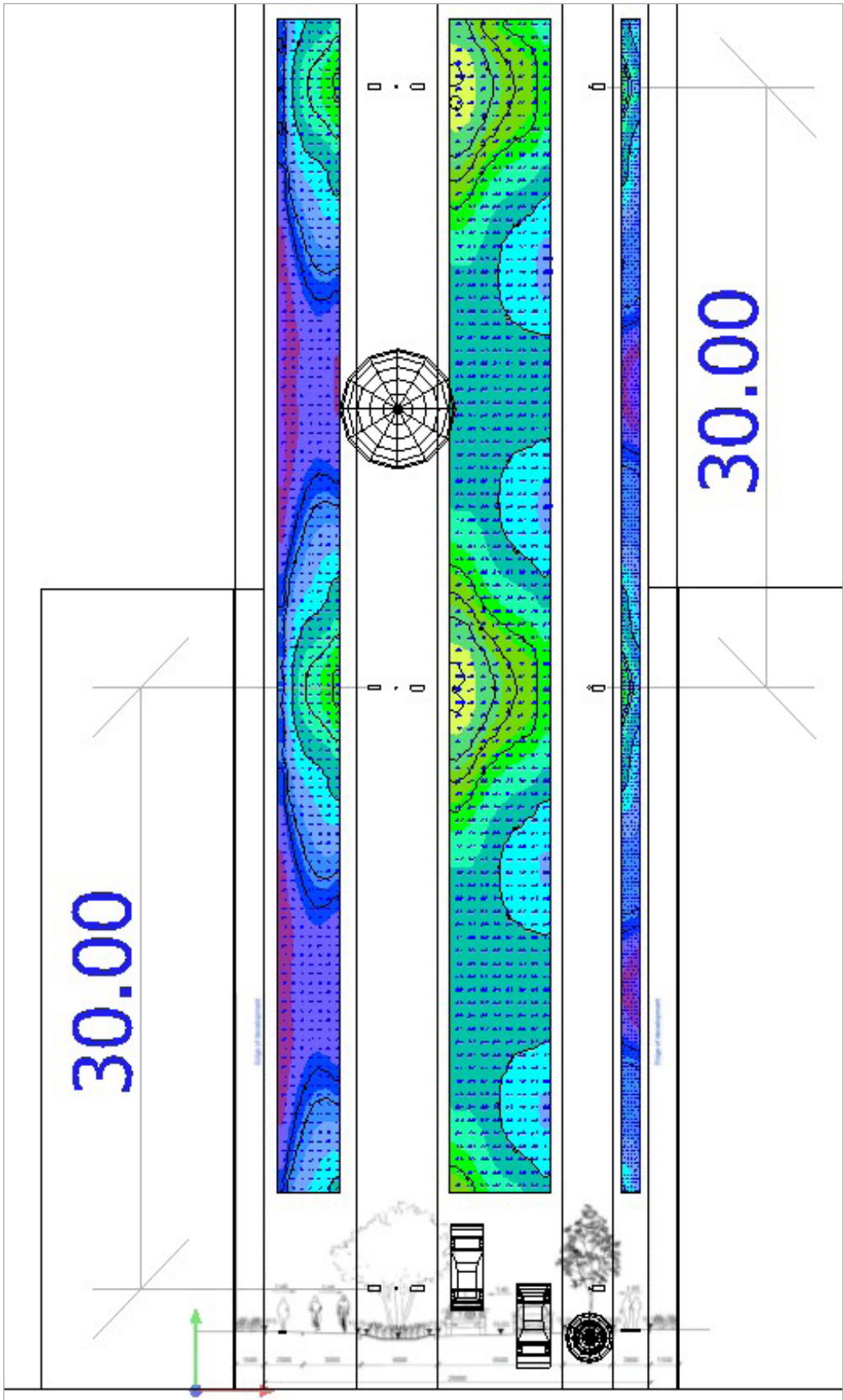


Example to show double heads columns for combined road

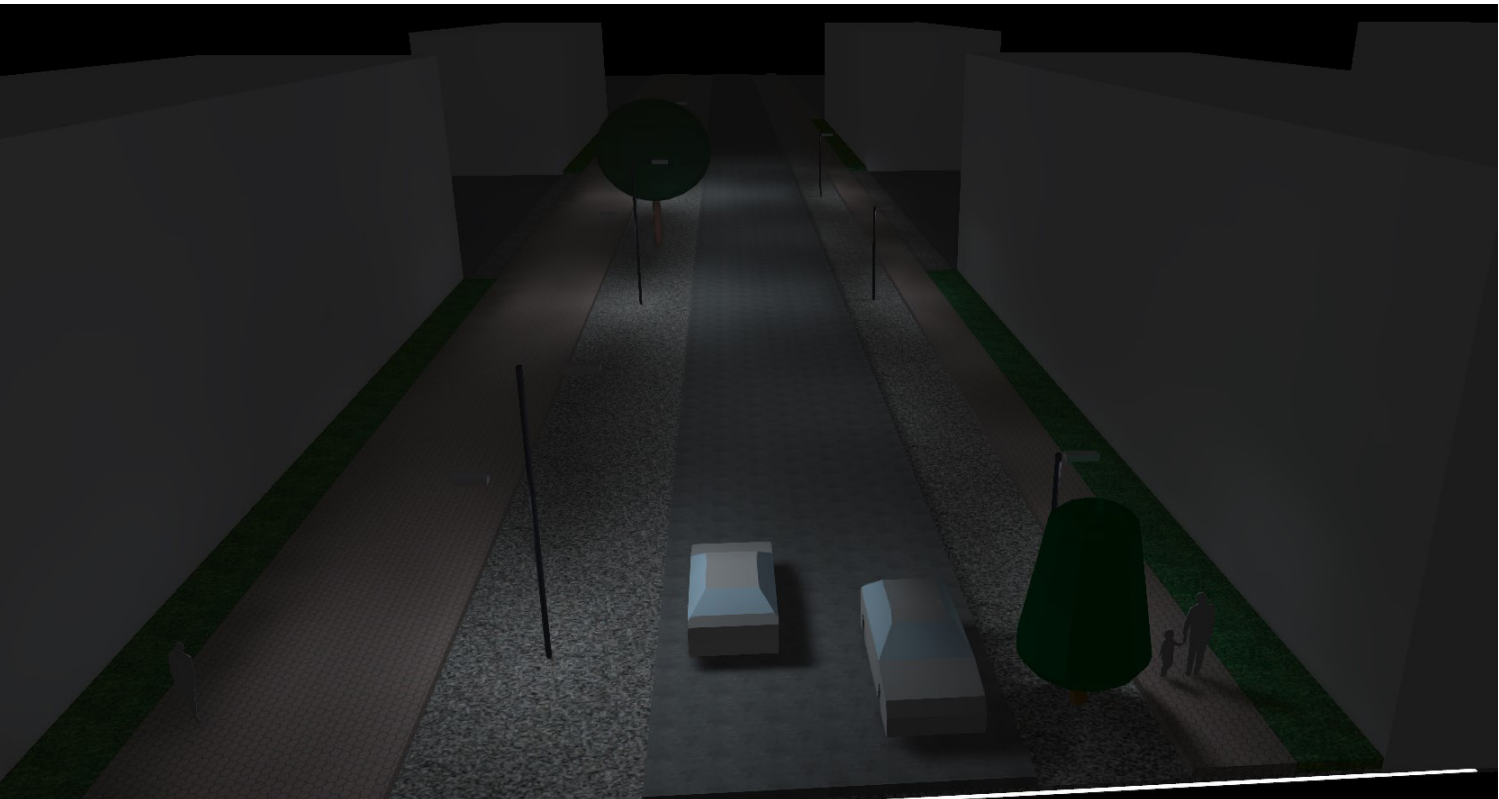


Single pole mounted column for pedestrian route

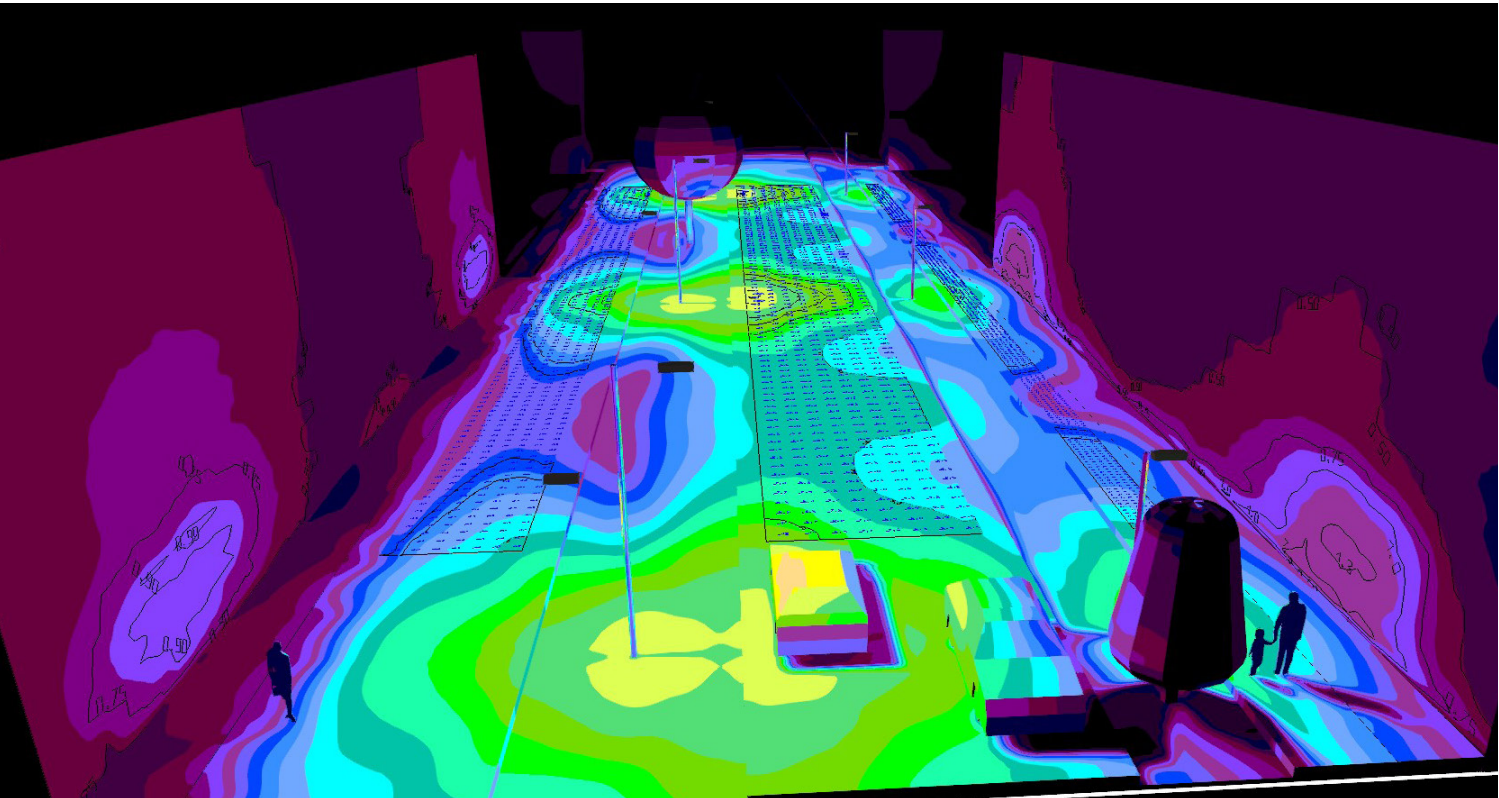
Type 1 lighting strategy - Calculation result 1



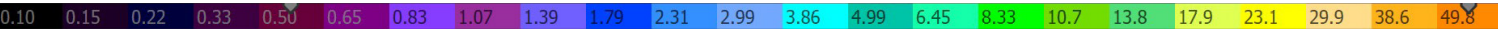
30 meters spacing on both sides of columns by manufacturer 1 products



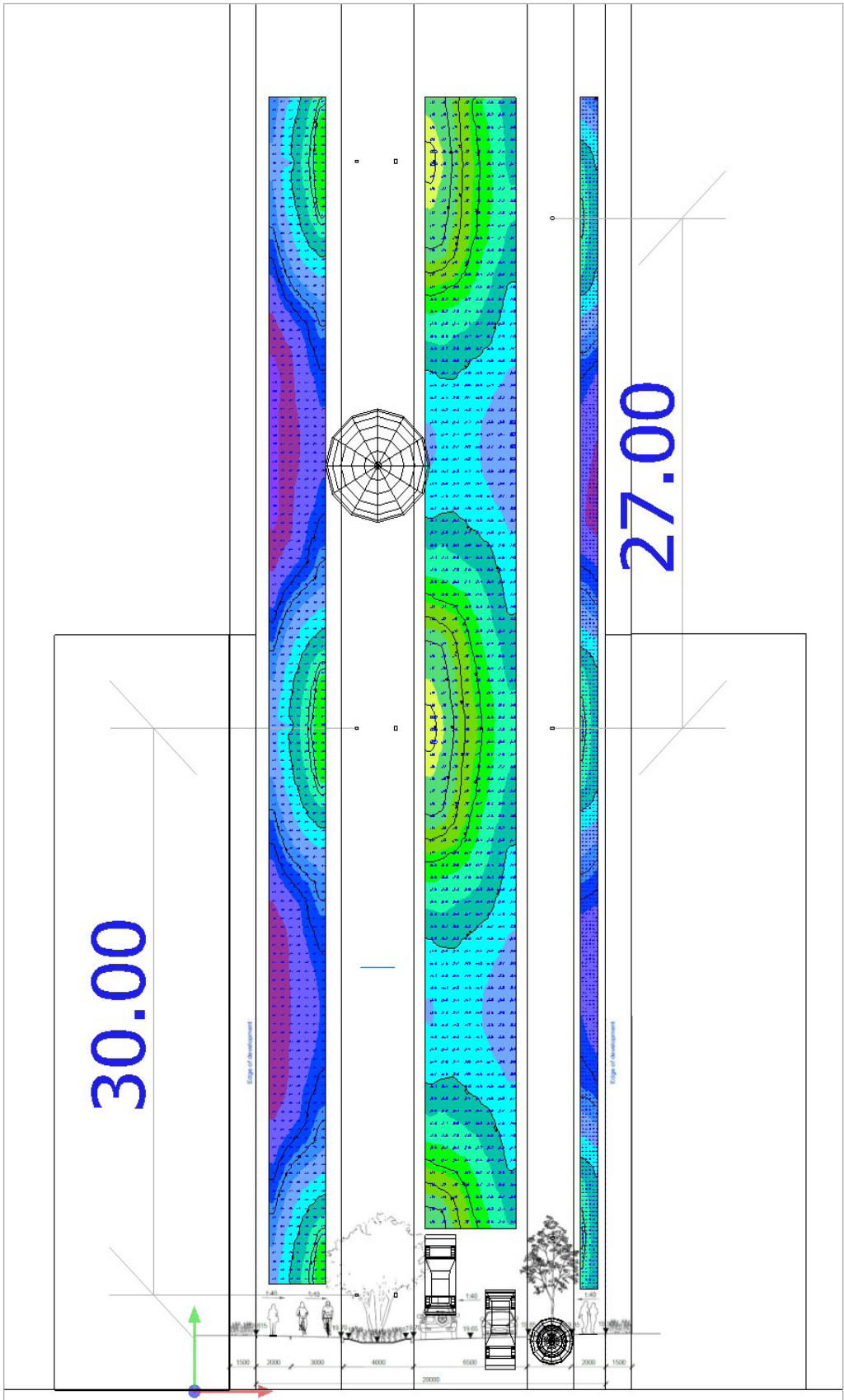
3D rendering from lighting calculation software by manufacturer 1 products



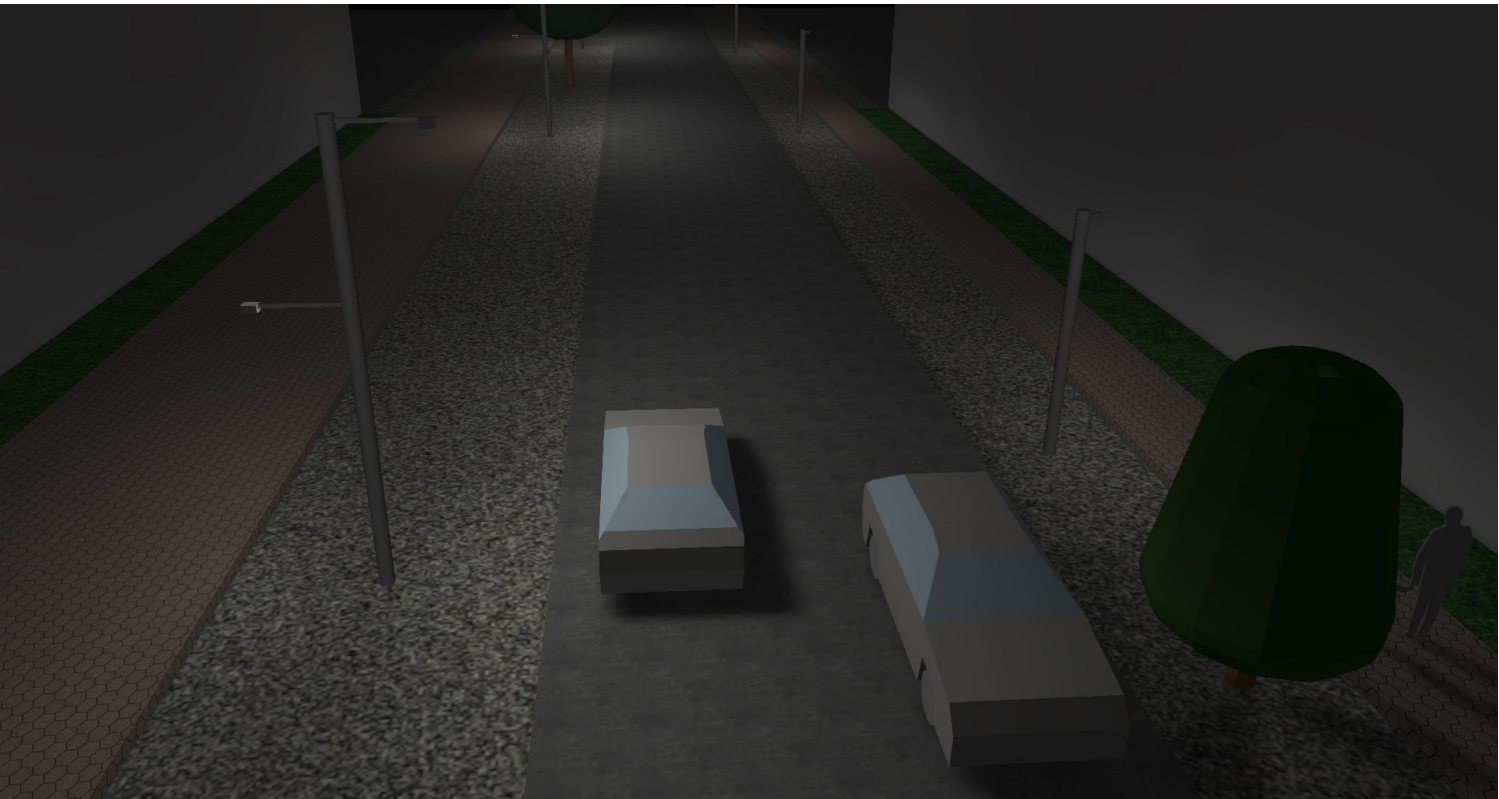
3D rendering with false colour from lighting calculation software by manufacturer 1 products



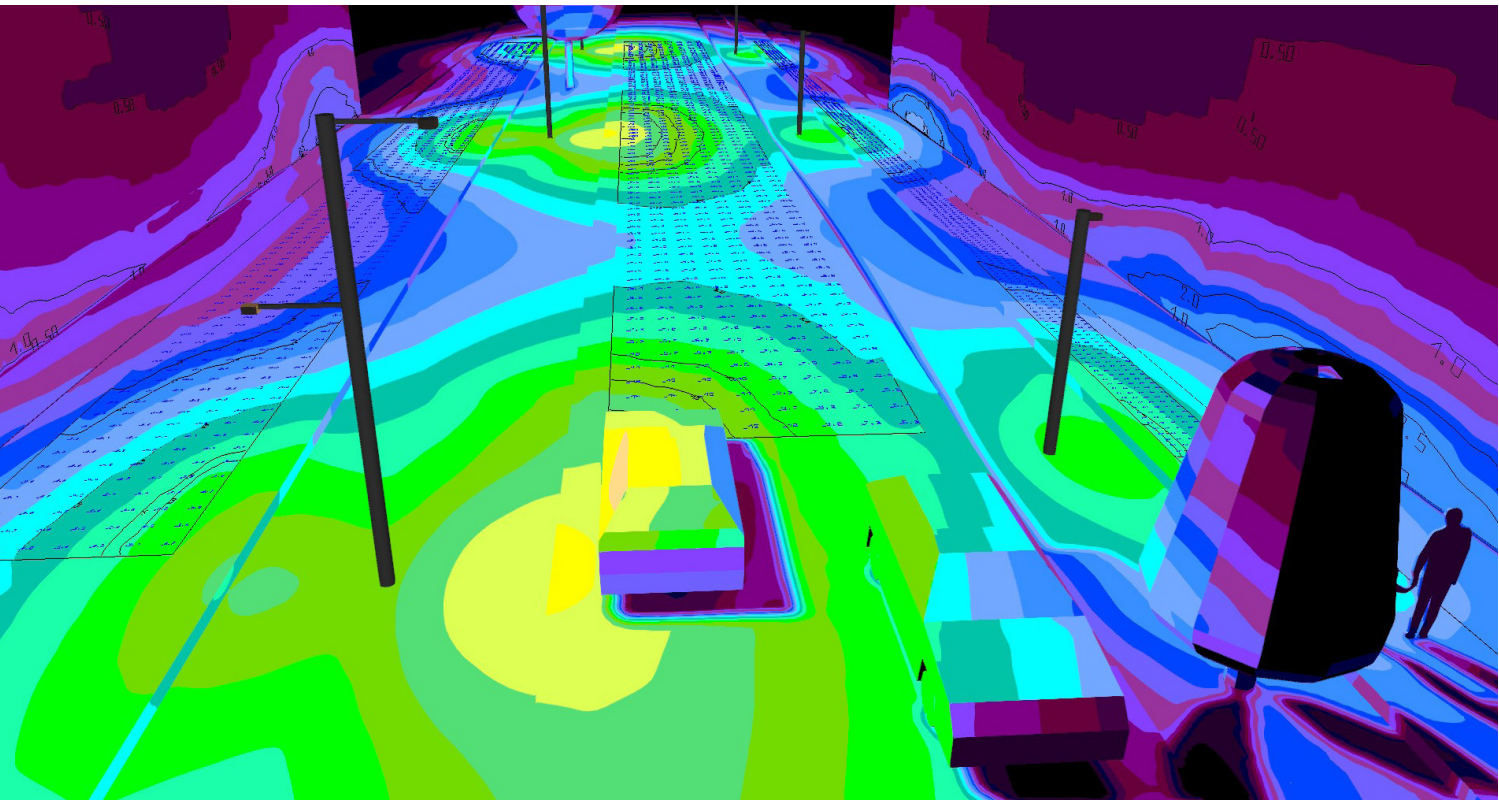
Type 1 lighting strategy - Calculation result 2



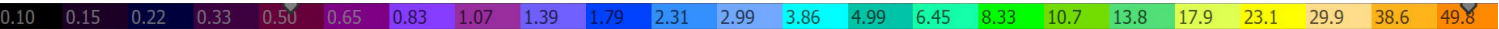
30m spacing for double heads columns and 27m spacing for single head columns result by manufacturer 2 products



3D rendering from lighting calculation software by manufacturer 2 products



3D rendering with false colour from lighting calculation software by manufacturer 2 products

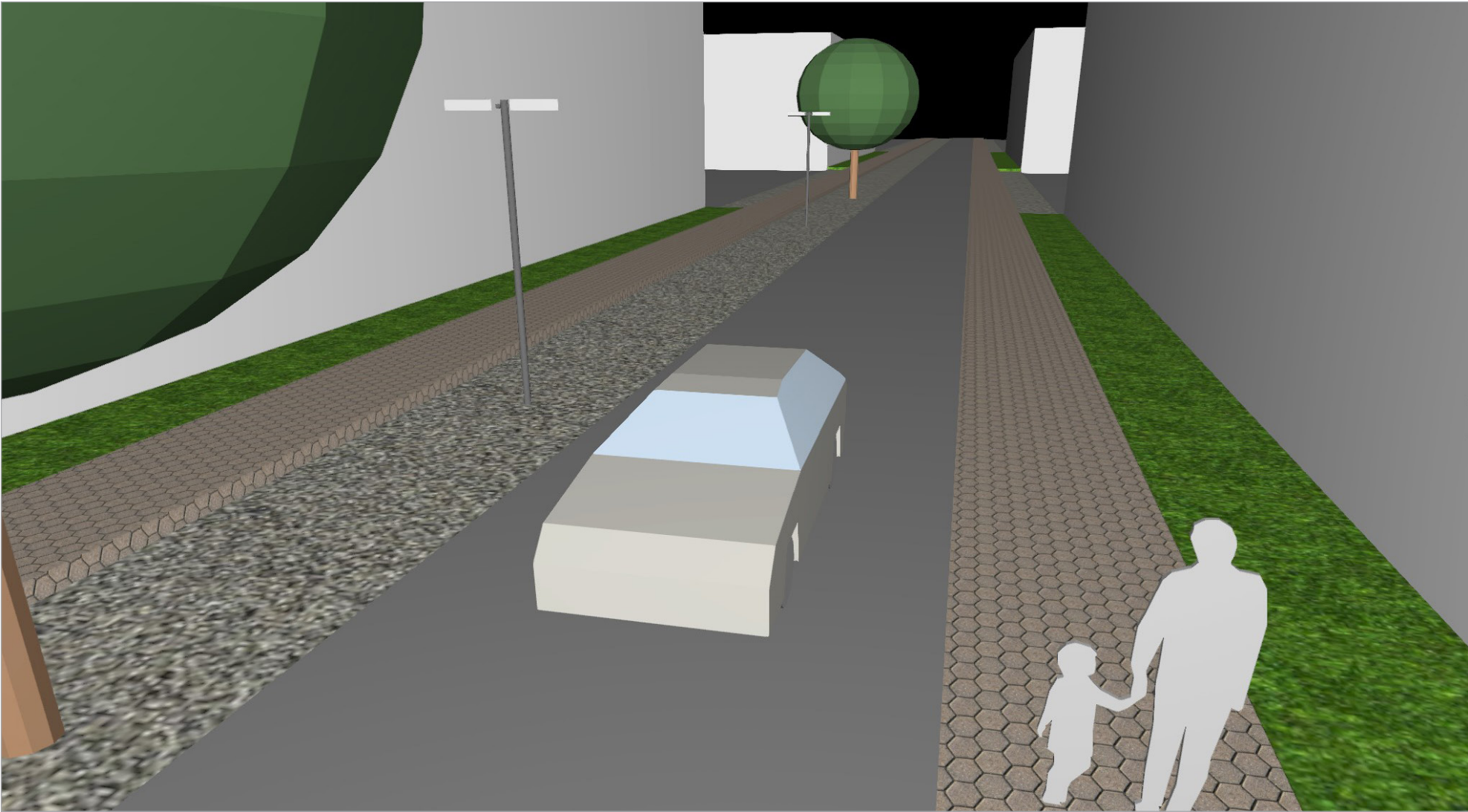


Type 2 lighting strategy - On plot street

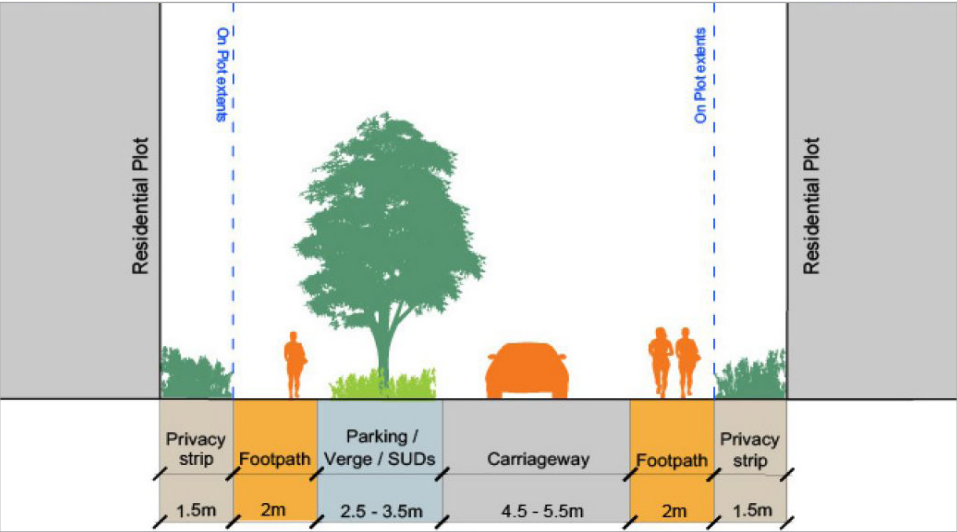
As approaching to residential areas, traffic volume typically decreases, but it remains crucial to provide adequate lighting to ensure safety and functionality. Even with less vehicular traffic, lighting must still be sufficient for parking areas, pedestrian pathways, and cycling routes.

Carriageway and footpath

- **P4** class lighting for vehicular traffic, **P5** class lighting for pedestrian;
- A very warm colour temperature (2700K) or amber colour;
- Pole mounted lighting to provide adequate illumination level;
- Double heads columns with 4 meters high to illuminate all the pathways;
- Downward facing lights to minimise the glare.



3D model exported from lighting calculation software



Typical on-plot street section

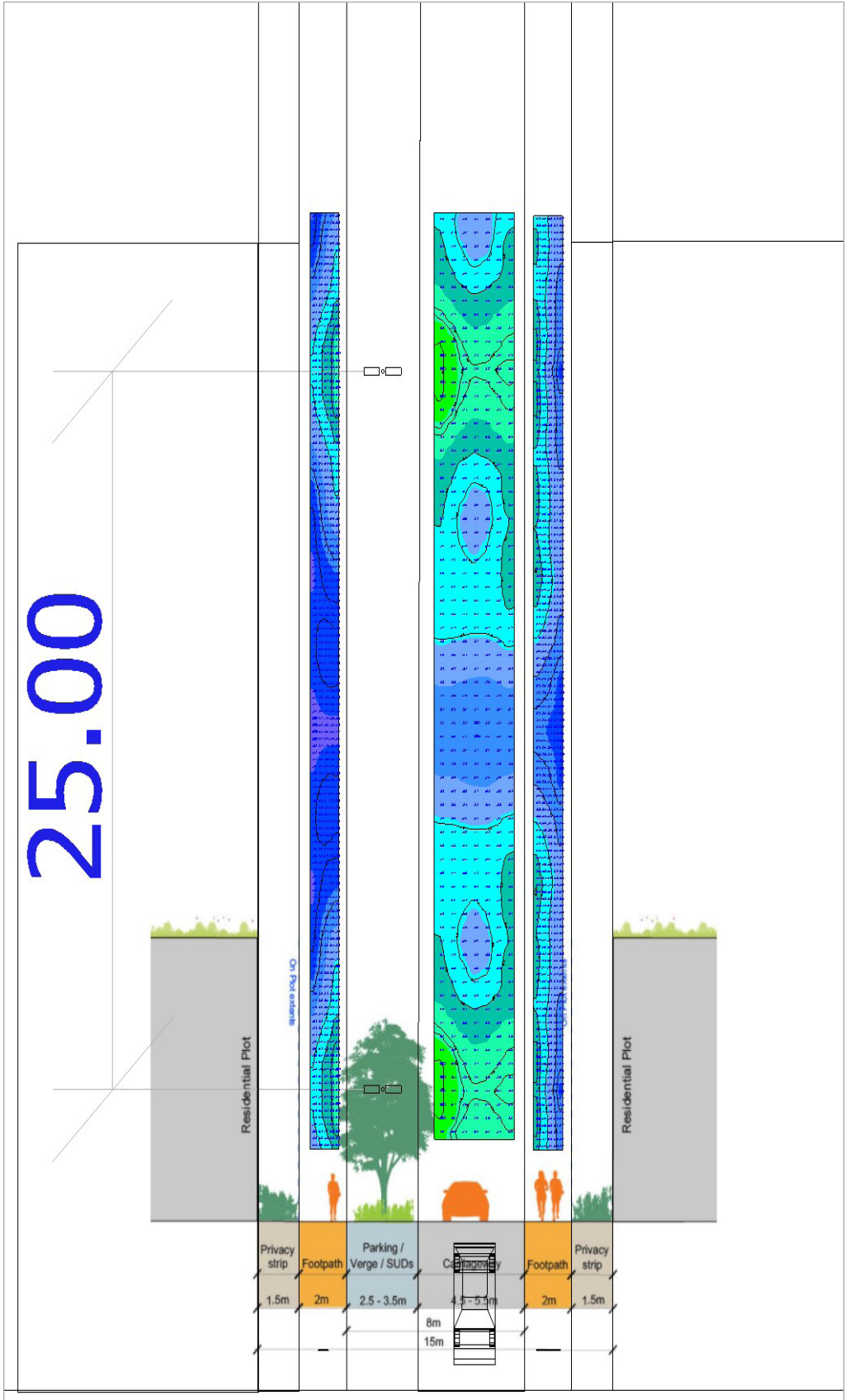


Example to show the double heads columns in residential area

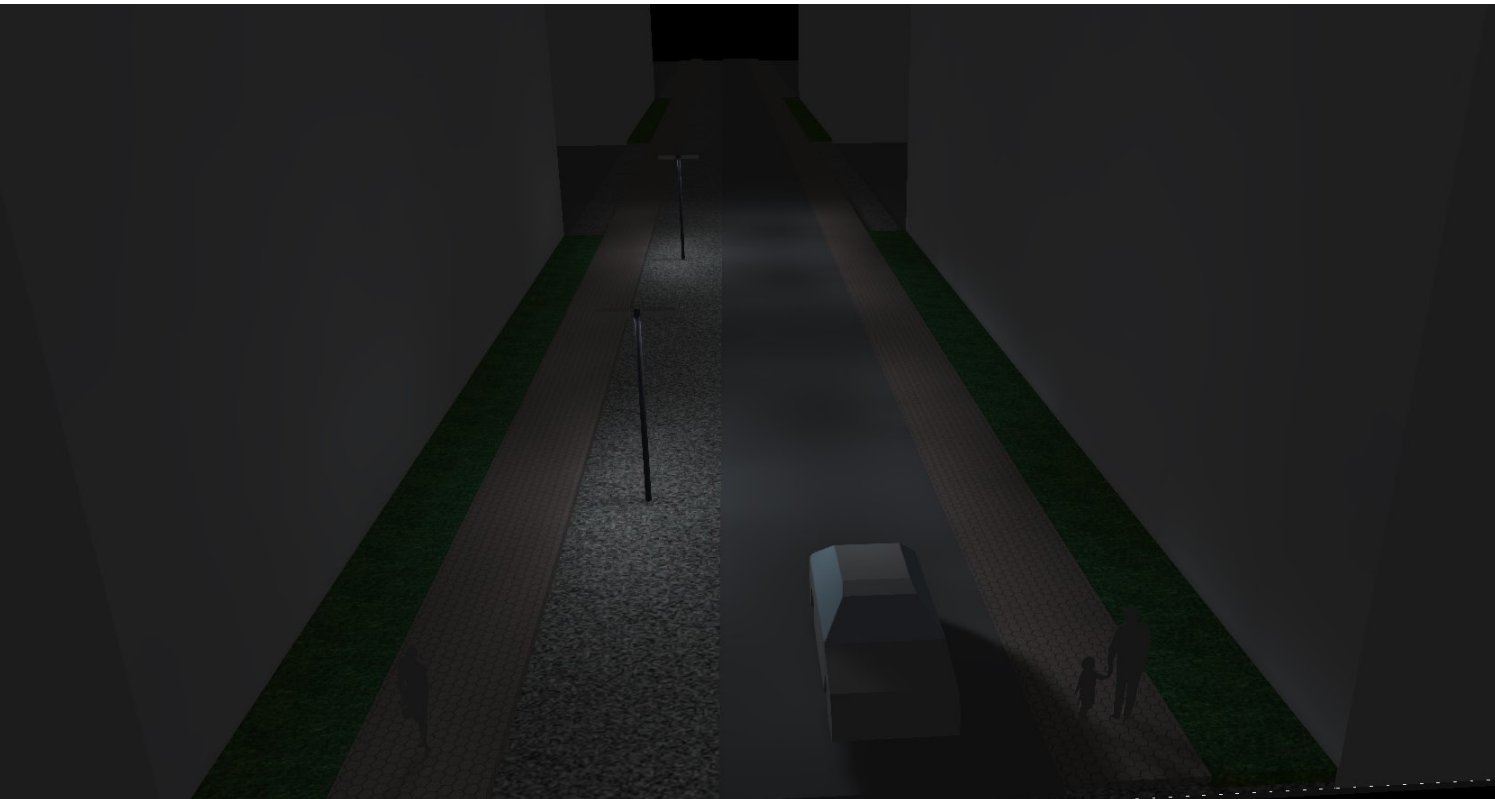


Example to show the double heads columns for both road and pedestrian route

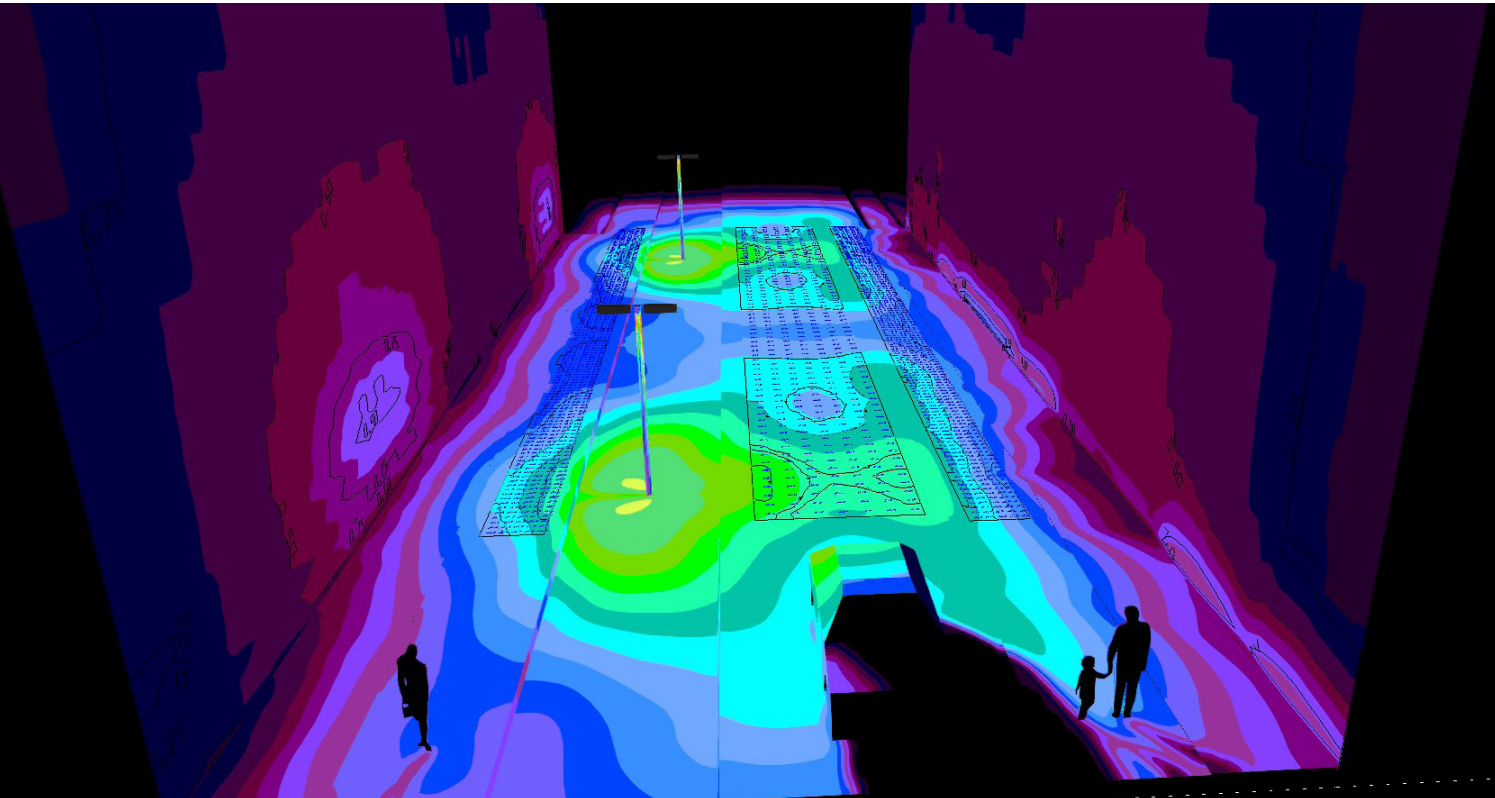
Type 2 lighting strategy - Calculation result



25 meters spacing of double heads columns for Type 2 strategy



3D rendering from lighting calculation software



3D rendering with false colour from lighting calculation software

Type 3 lighting strategy - Community lanes



Indicative lighting layout plan for Community Lanes

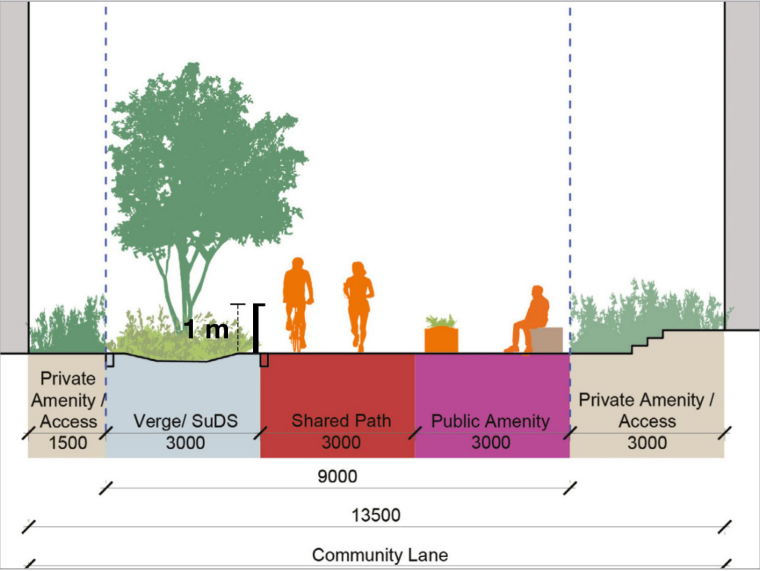
The community lanes run through the residential area, connecting key public amenities. The lighting design along this path is deliberately understated, providing enough visibility for users without disrupting the natural environment. This low level lighting ensures safety while maintaining a calm, discreet ambiance that blends with the surroundings.

Carriageway and footpath

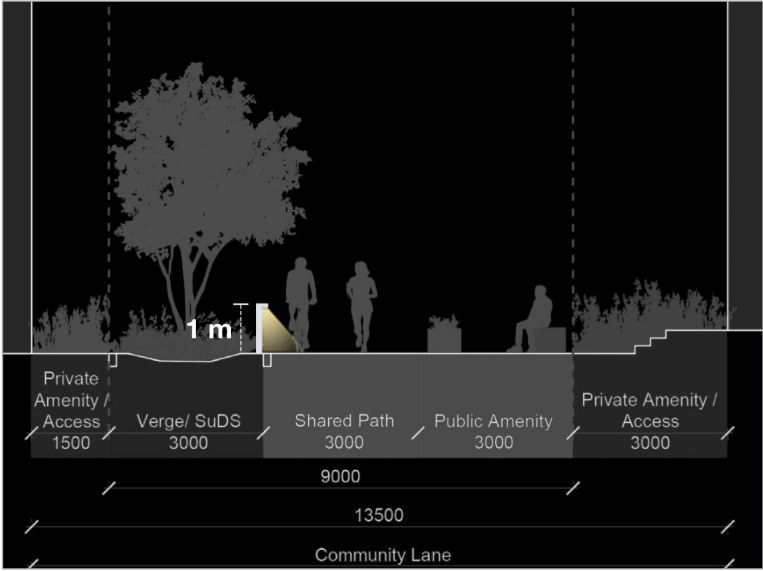
- P5 class lighting for both cyclists and pedestrians;
- A very warm colour temperature (2700K) or amber colour;
- Bollard lighting and low level lighting under bench to provide adequate illumination level.



Example image for bollards



Example of a bollard on typical community lanes (daytime)

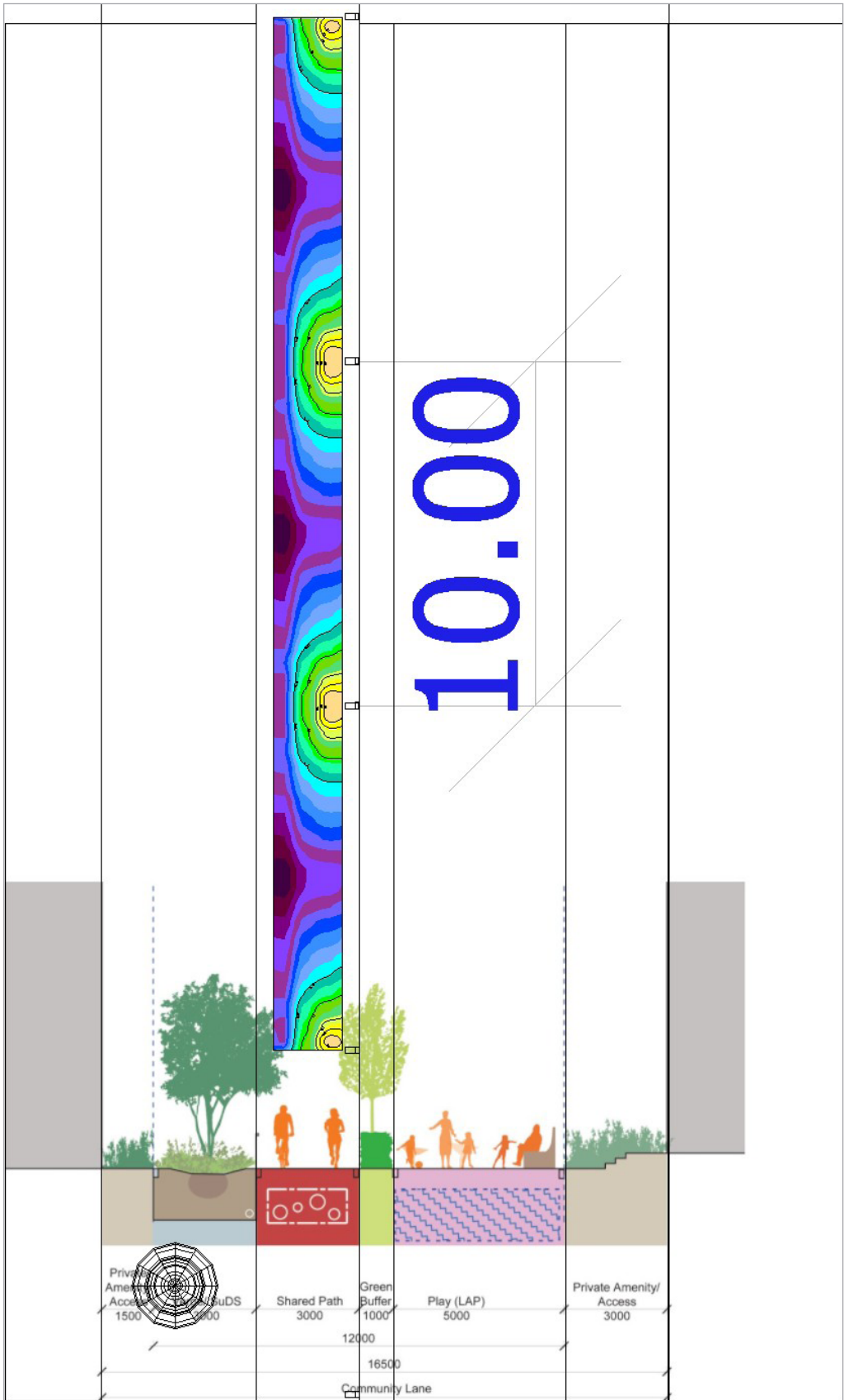


Example of a bollard on typical community lanes (night time)

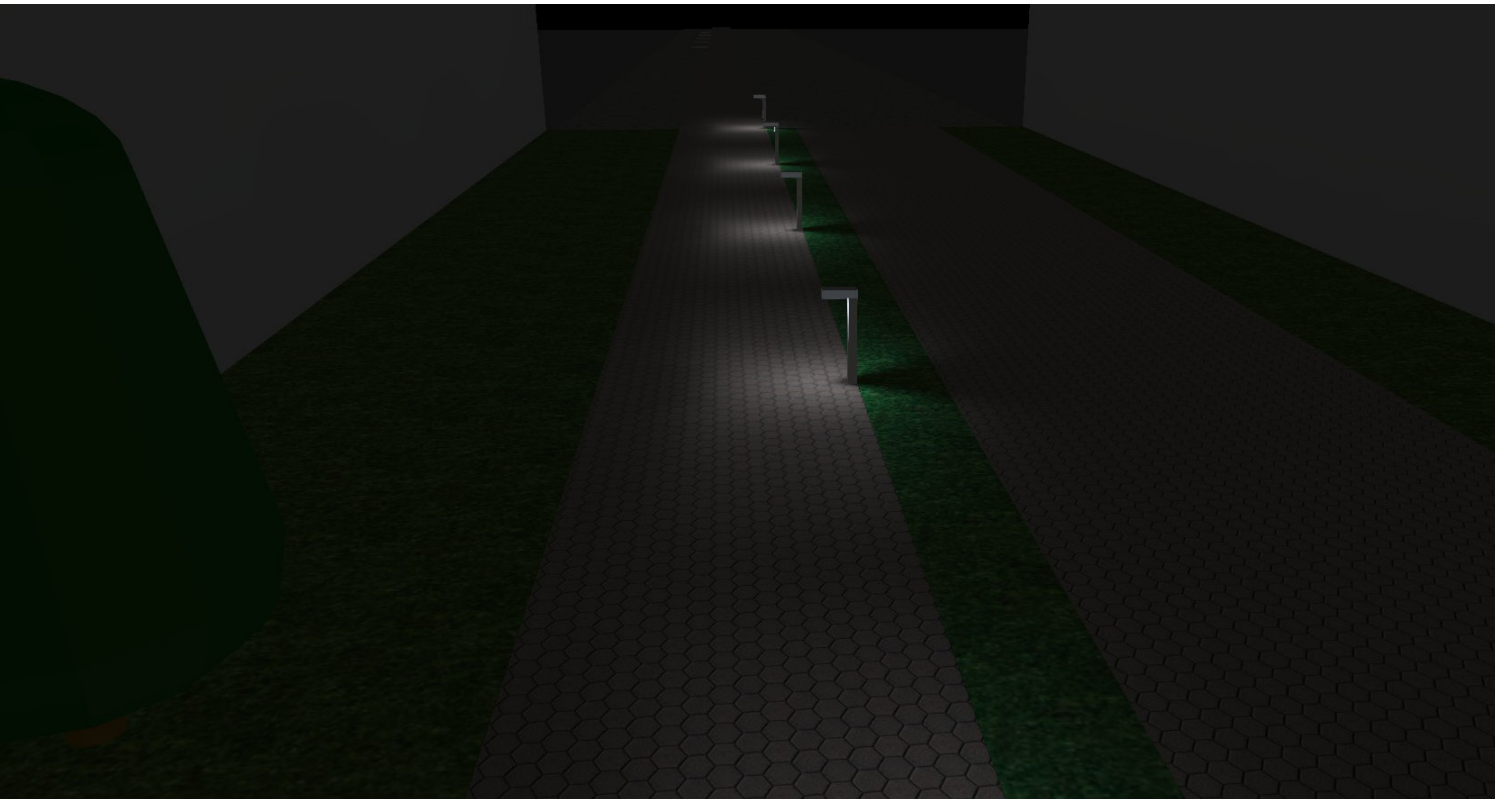


Example image for low level lighting under benches

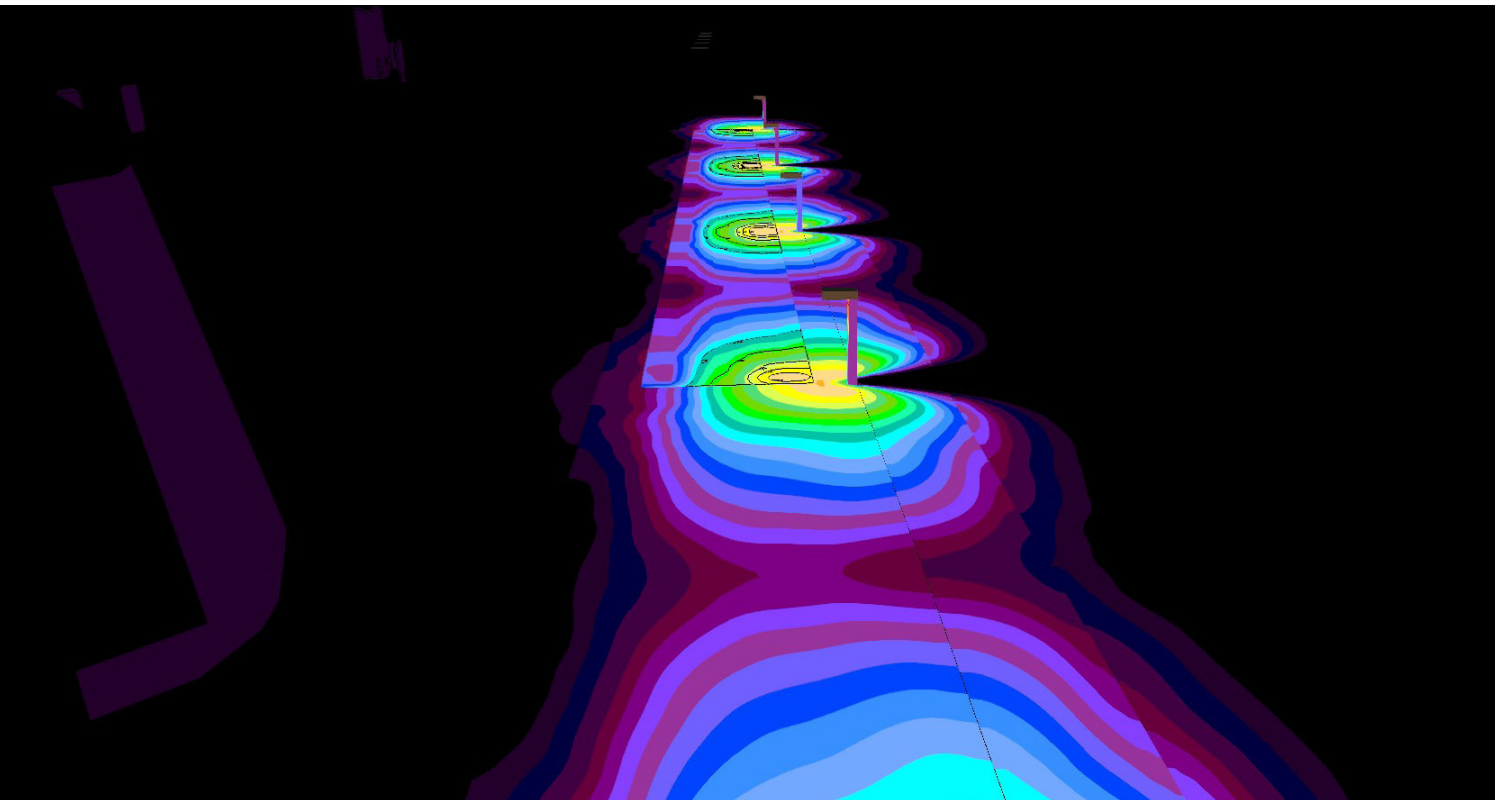
Type 3 lighting strategy - Calculation result



10 meters spacing of bollards for Type 3 strategy

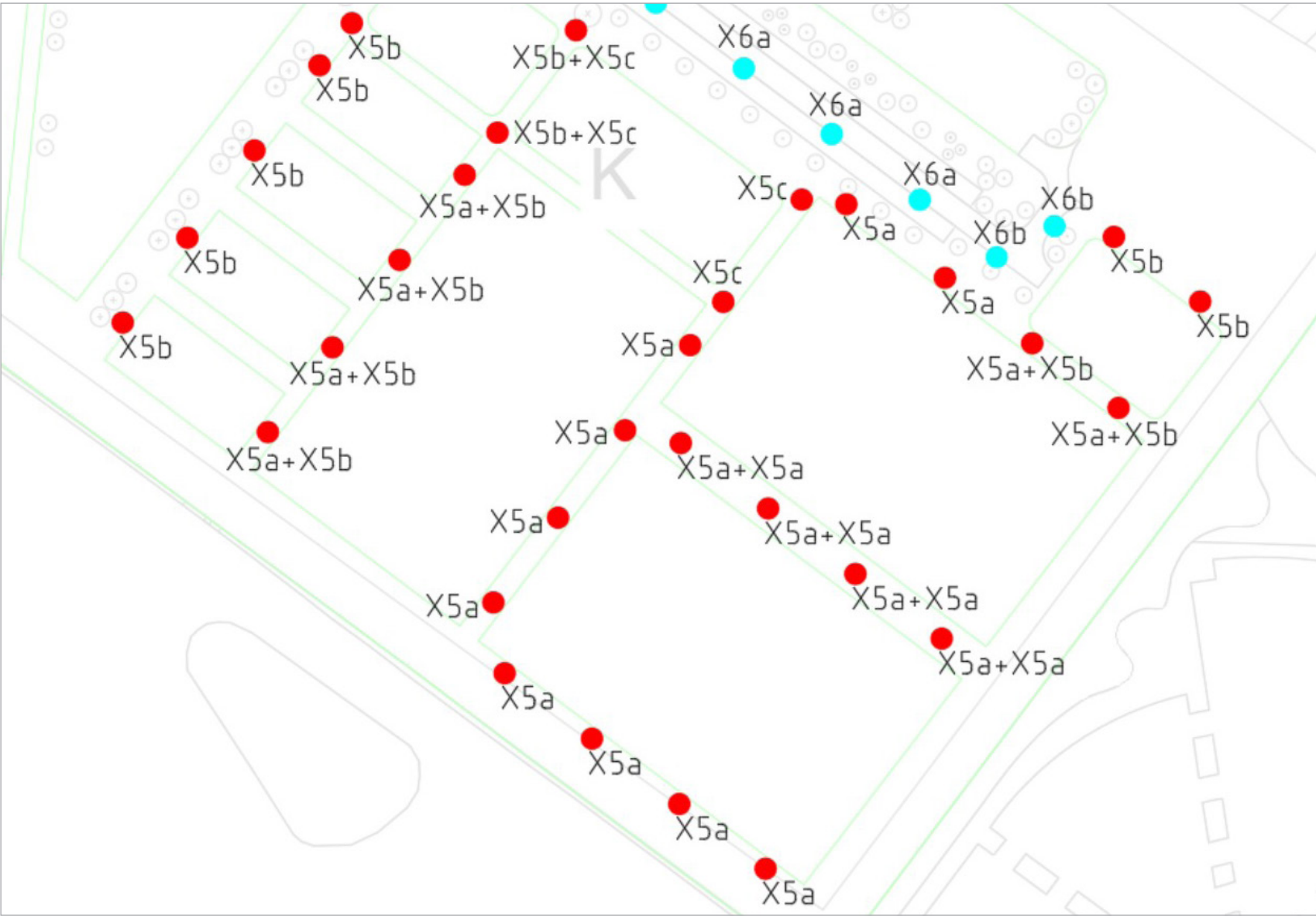


3D rendering from lighting calculation software



3D rendering with false colour from lighting calculation software

Type 4 lighting strategy - Sports lighting



Indicative lighting layout plan for Cluster C sport fields

Sports lighting plays a vital role in enhancing the functionality, safety, and accessibility of recreational sport areas, particularly during evening hours or in low light conditions. The lighting strategy is carefully designed to balance performance with environmental sensitivity. It priorities minimising light spill into ecologically sensitive areas, reducing glare towards nearby residential zones, and ensuring compliance with the specific illumination standards required for a variety of sports.

The integration of sustainable lighting technologies, such as LED fittings and smart time clock management systems—optimise energy use while supporting extended community engagement. By ensuring lighting is only used when necessary, the approach not only conserves energy but also helps to preserve the natural night time environment, maintaining dark skies and reducing disruption to local wildlife.

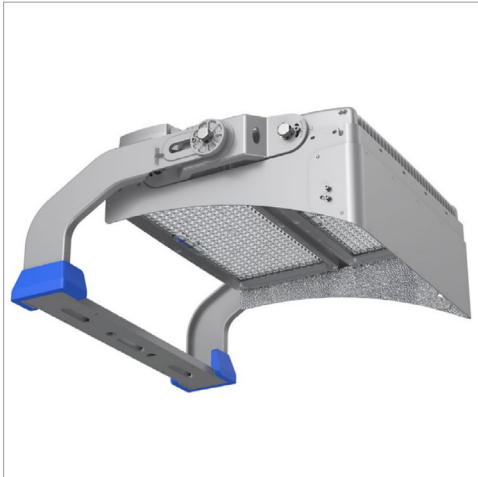
- Sport lighting approaches,**
- 75 lx for football pitches, 200 lx for tennis courts;
 - A warm colour temperature (3000K) or very warm colour (2700K);
 - 12 meters high column with multiple luminaires on a bracket mounted system;
 - Adjustable luminaire and hood accessories to minimise the light spill



Example image of football pitches

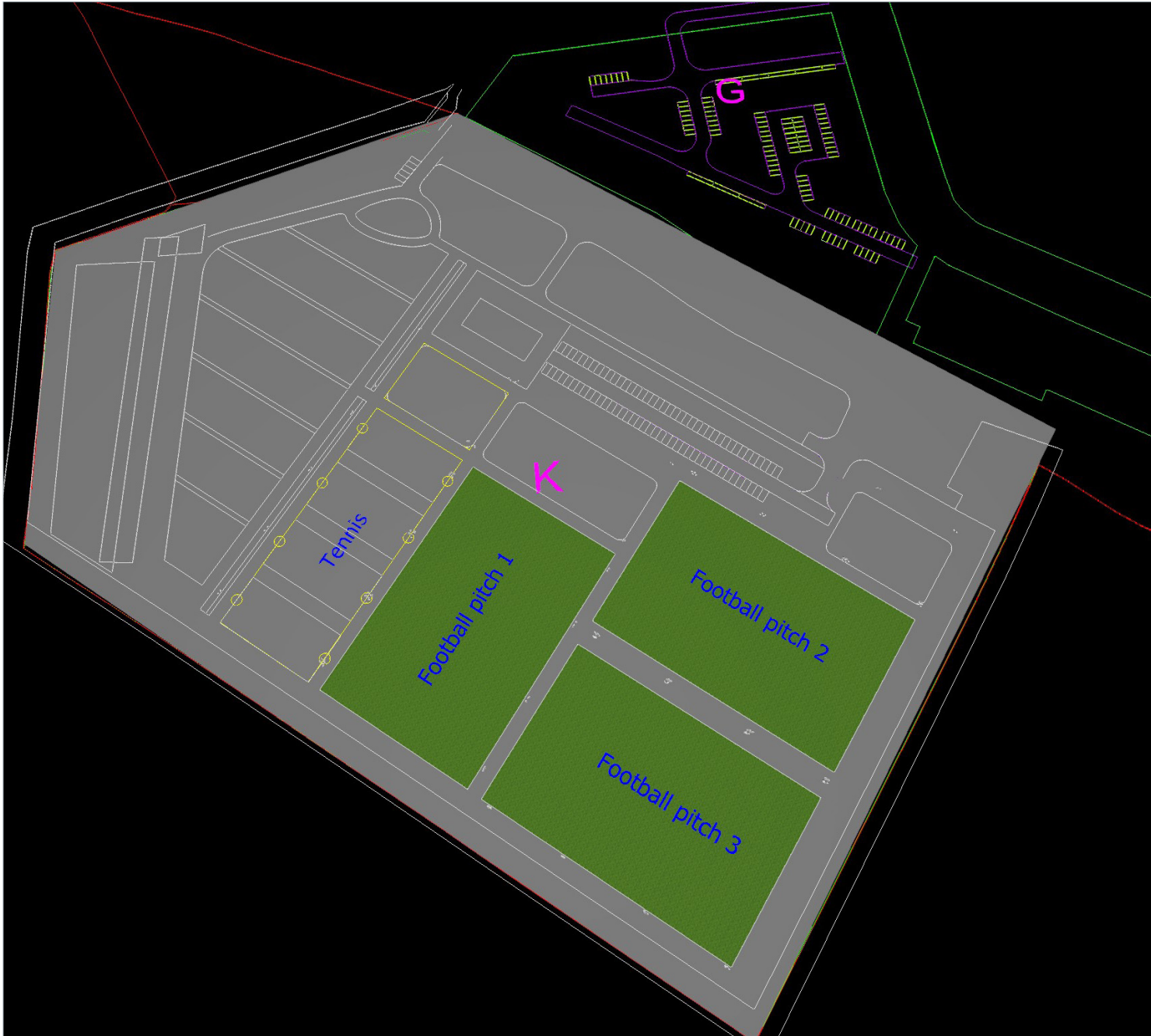


Example image of column mounted sport lighting

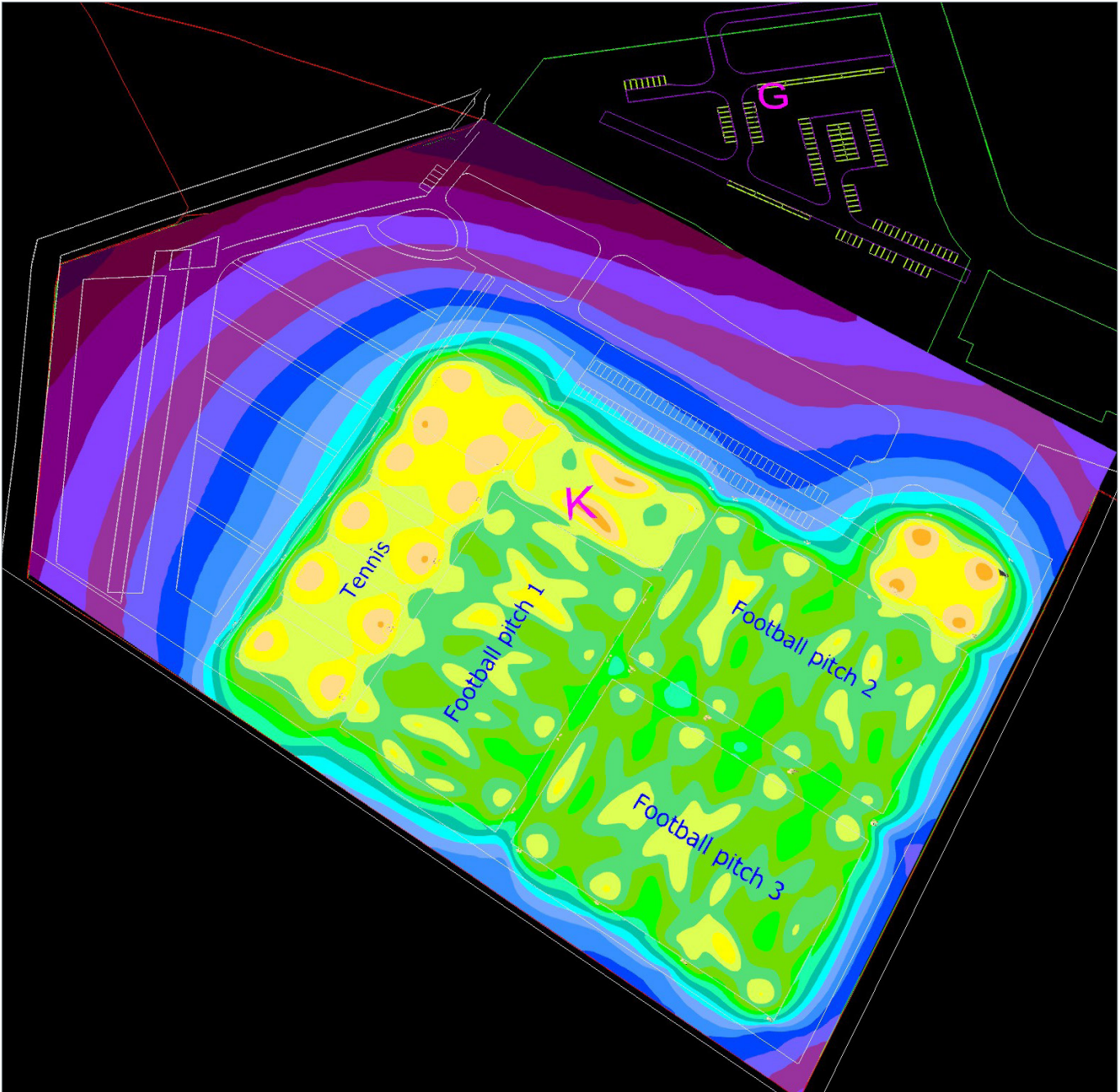


Example image of luminaire with hood accessories

Type 4 lighting strategy - Calculation result



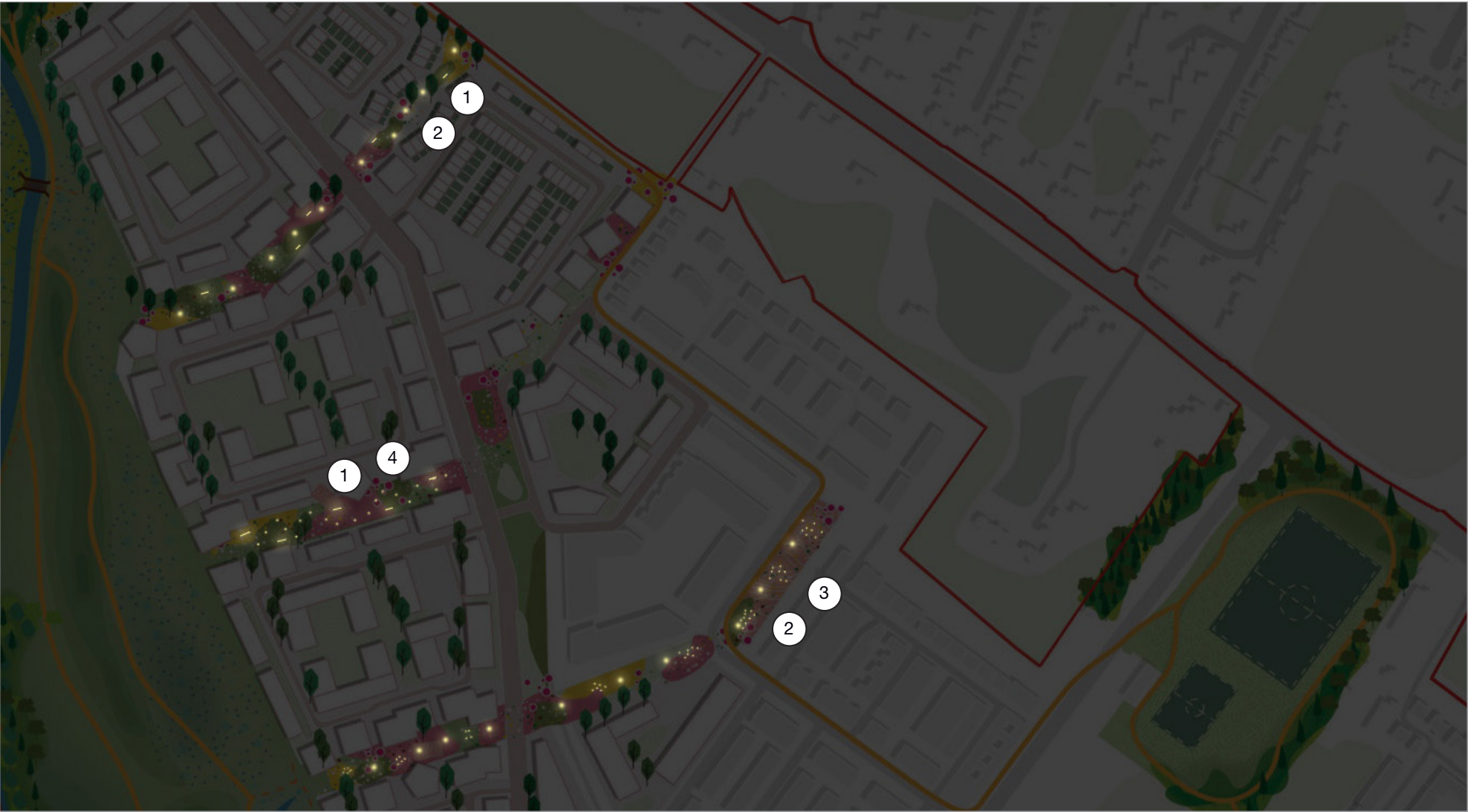
3D rendering from lighting calculation software



3D rendering with false colour from lighting calculation software



Optional community accent lighting strategy - Shared garden

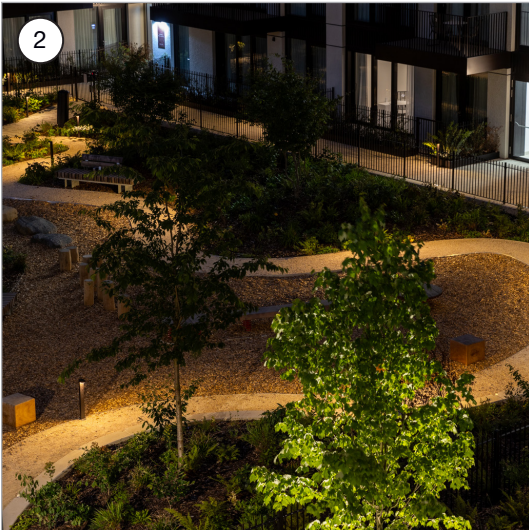


The shared garden are located between the residential buildings. The main priority is to minimise light disturbance to residents' windows. Low-level lighting is recommended to illuminate the pathway. Additionally, decorative lighting can be used to enhance the ambience of the garden.

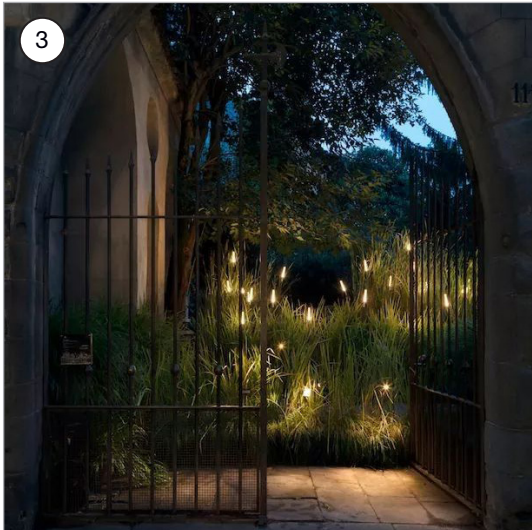
Indicative lighting markup for shared garden



Low-level lighting under benches



Bollard to provide illumination on pedestrian route

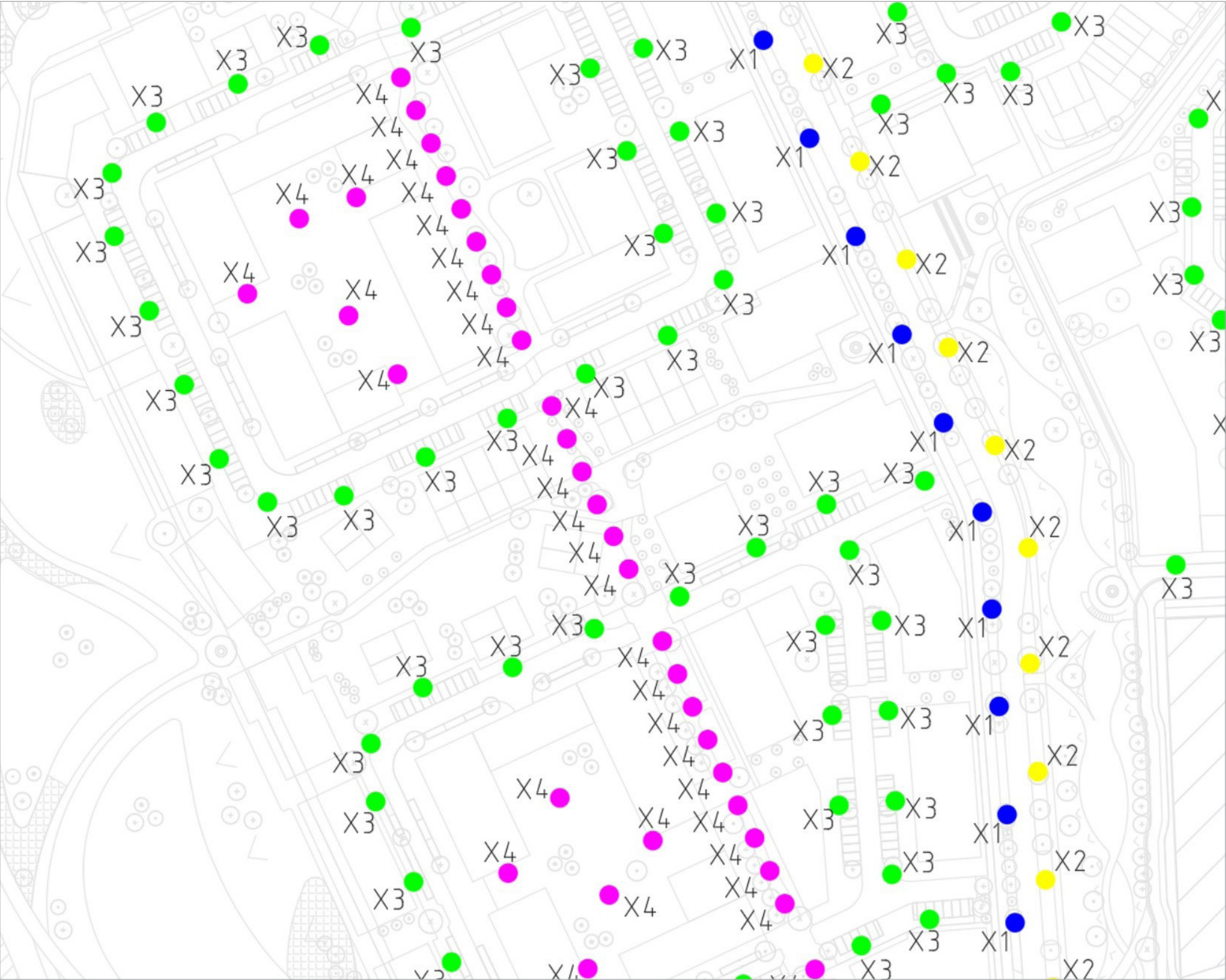


Decorative lighting in planting around shared garden



Festoon lighting hanging around the shared garden

Proposed luminaire types



Key lighting layout for Cartwright Avenue and On-plot areas

Luminaire type: Bracket mounted double heads fitting on a single column, with each head at a different height. Medium optics (5166) on 6 meters for road lighting; and medium optics (5179) on 4 meters for cycle/ pedestrian pathway. Aluminium housing with IP66 and IK08 protection.

Product spec: Schröder | AXIA 2.1

Colour Temperature: 2700K

Light output from fitting: 2750 lm(6m); 1039 lm(4m)

Power consumption: 27 W(6m); 9 W(4m)

Control: DALI control

Spacing: About 30 meters, varying spacing depends on the details of the road



Luminaire type: Pole mounted single head fitting at 4 meters high. Ultra narrow optics (5165) for cycle/ pedestrian pathway. To be supplied with back shield glare accessories for sensitive areas. Aluminium housing with IP66 and IK08 protection.

Product spec: Schröder | AXIA 2.1

Colour Temperature: 2700K

Light output from fitting: 608 lm

Power consumption: 6 W

Control: DALI control

Spacing: About 30 meters, varying spacing depends on the details of the road



Luminaire type: Bracket mounted double heads fitting on a single column both at 4 meters high. Narrow optics (5167) for road; and ultra narrow optics (5165) for cycle/ pedestrian pathway. To be supplied with back shield glare accessories for sensitive areas. Aluminium housing with IP66 and IK08 protection.

Product spec: Schröder | AXIA 2.1

Colour Temperature: 2700K

Light output from fitting: 1611 lm(road); 529 lm(pathway)

Power consumption: 18 W(road); 5 W(pathway)

Control: DALI control

Spacing: About 25 meters, varying spacing depends on the details of the road



Luminaire type: 1 meter high bollard with medium (5112) optics. Galvanised steel housing with IP66 and IK08 protection. Integrated with PIR sensors.

Product spec: Schröder | RIVARA

Colour Temperature: 2700K

Light output from fitting: 891 lm

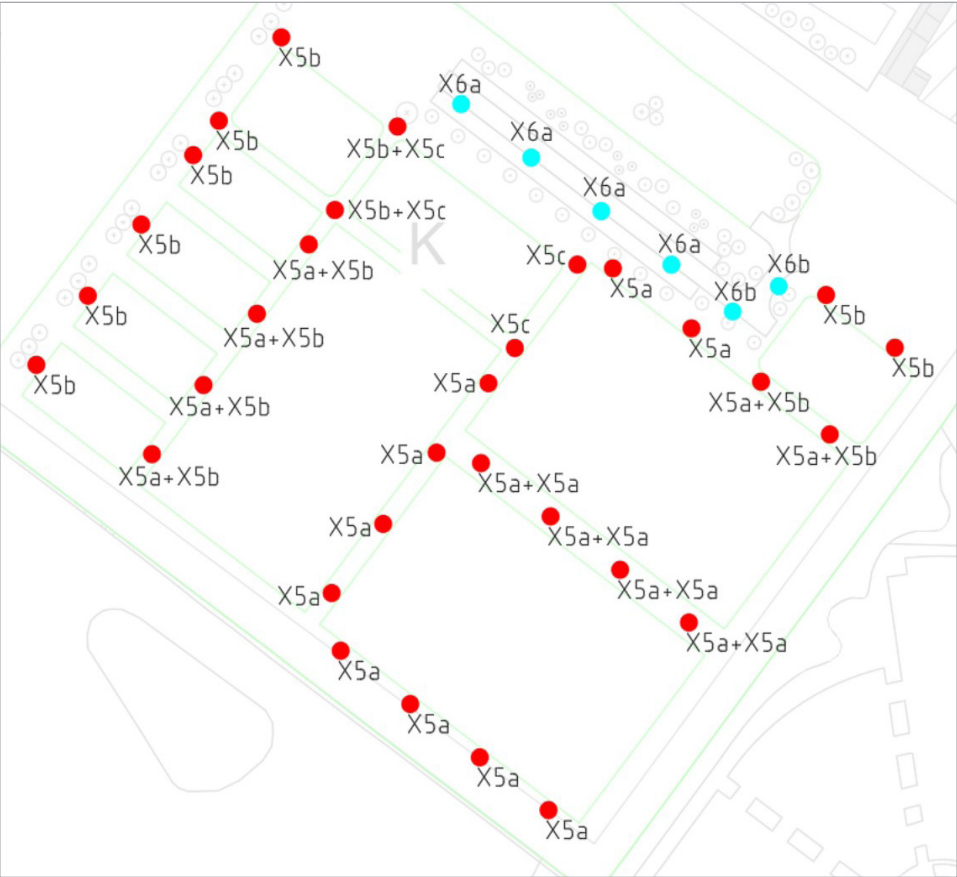
Power consumption: 9.7 W

Control: DALI control

Spacing: About 10 meters, varying spacing depends on the details of the road



Proposed luminaire types



Key lighting layout for Cluster C

Luminaire type: Bracket mounted with 2 x Gen2.2 fittings on a 12 meters high column. 2 x ultra narrow optics (5450) and 2 x wide optics (5455). To be supplied with hoods for glare control. Aluminium housing with IP66 and IK10 protection.

Product spec: Schröder | Briteline Gen 2.2 (648 LEDs)

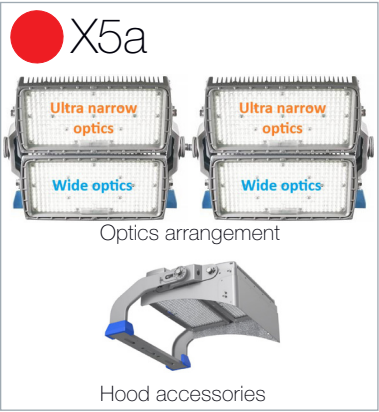
Colour Temperature: 3000K

Light output from fitting: 2 x 183600 lm

Power consumption: 2 x 1361 W

Control: DALI control

Note: Mounting bracket is available for installing up to 4 luminaires in a back-to-back arrangement, to be confirmed by manufacturer.



Luminaire type: Bracket mounted with a Gen2.2 fitting on a 12 meters high column. 2 x wide optics (5455). To be supplied with hoods for glare control. Aluminium housing with IP66 and IK10 protection.

Product spec: Schröder | Briteline Gen 2.2 (648 LEDs)

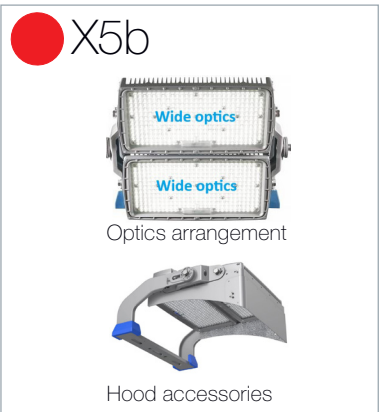
Colour Temperature: 3000K

Light output from fitting: 183600 lm

Power consumption: 1361 W

Control: DALI control

Note: Mounting bracket is available for installing up to 4 luminaires in a back-to-back arrangement, to be confirmed by manufacturer.



Luminaire type: Bracket mounted with a Gen2.2 fitting on a 12 meters high column. 1 x wide optics (5455) and 1 x ultra narrow optics (5450) on a Gen2.2 fitting. To be supplied with hoods for glare control. Aluminium housing with IP66 and IK10 protection.

Product spec: Schröder | Briteline Gen 2.2 (648 LEDs)

Colour Temperature: 3000K

Light output from fitting: 183600 lm

Power consumption: 1361 W

Control: DALI control

Note: Mounting bracket is available for installing up to 4 luminaires in a back-to-back arrangement, to be confirmed by manufacturer.



Luminaire type: Bracket mounted double heads fitting on a single column both at 8 meters high. Wide optics (5221) for car park. Aluminium housing with IP66 and IK08 protection.

Product spec: Schröder | AXIA 2.1 (16 LEDs)

Colour Temperature: 2700K

Light output from fitting: 2051 lm @ 300mA

Power consumption: 16 W @ 300mA

Control: DALI control



Luminaire type: Pole mounted single head fitting at 8 meters high. Wide optics (5221) with rear louvres for back spill control. Aluminium housing with IP66 and IK08 protection.

Product spec: Schröder | AXIA 2.1 (16 LEDs)

Colour Temperature: 2700K

Light output from fitting: 1772 lm @ 300mA

Power consumption: 16 W @ 300mA

Control: DALI control



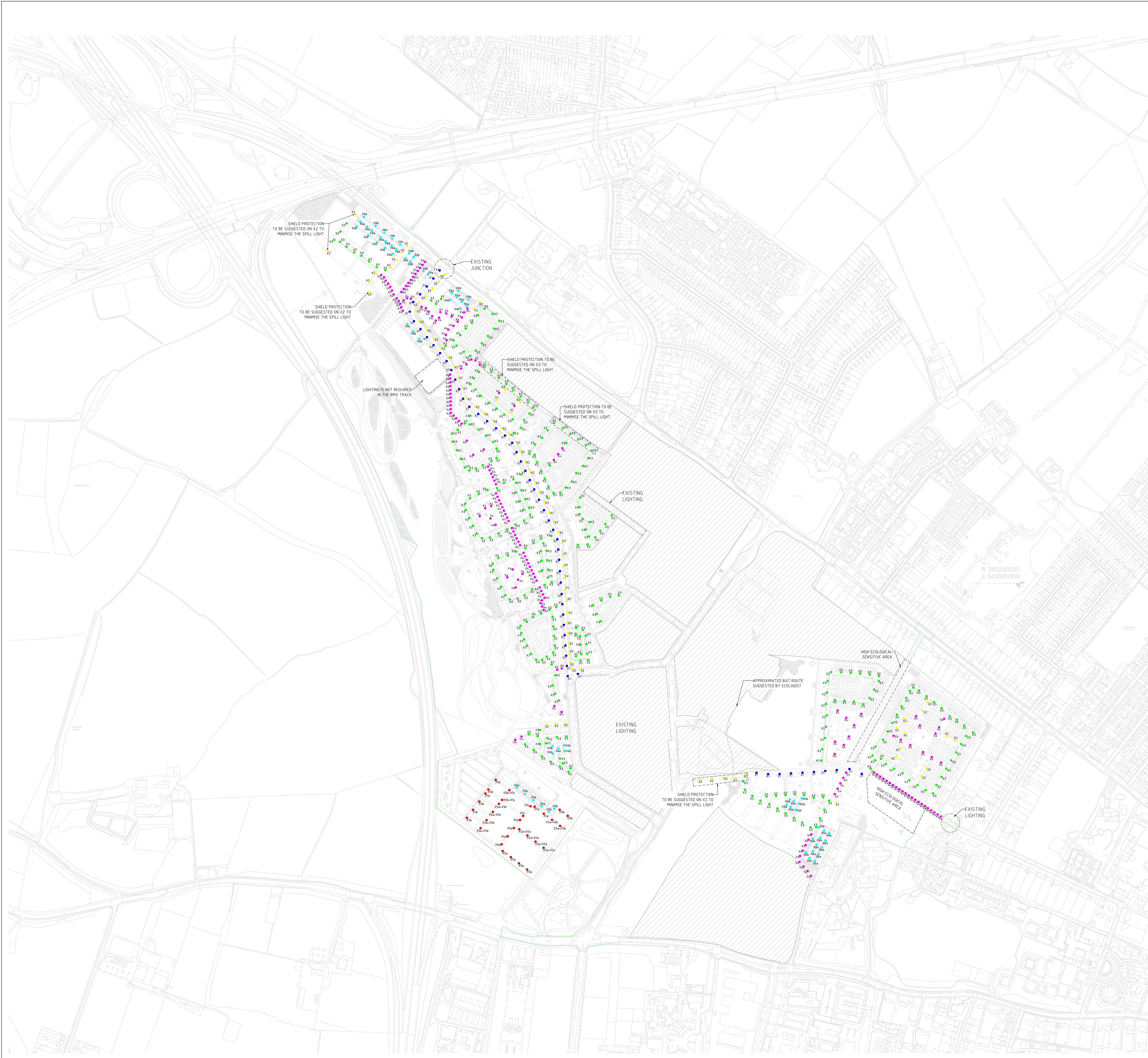
Conclusion

The proposed lighting strategy for the future phases of the Eddington development has been designed to meet both functional requirements and policy expectations, while supporting the University of Cambridge's vision for a high-quality, sustainable neighbourhood.

The design complies with Policy 34 of the Cambridge Local Plan (2018), Policy SC/9 of the South Cambridgeshire Local Plan (2018), and Policy 3.6 of the Greater Cambridge Sustainable Design and Construction SPD (2020) by:

- Ensuring lighting levels are the minimum necessary for public safety and amenity;
- Minimising light spill, glare, and upward illumination through careful directional control and shielding of luminaires;
- Reducing adverse impacts on residential amenity, local wildlife, and the surrounding landscape through the use of very warm colour temperatures and appropriately selected luminaire mounting heights;
- Avoiding dazzle or distraction to road users through stringent glare control optics and positioning of fittings;
- Incorporating an adaptive control system, including dimming after curfew and motion detection, to limit illumination to periods of actual use and ensure minimal disruption overnight.

This approach helps create a safe, welcoming, public environment while also supporting environmental goals and protecting the quality of life for future residents and the wider community.



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NOTES

- LIGHTING LAYOUTS SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DOCUMENTS: BDP LIGHTING CONCEPT PROPOSAL(NWC-MP2024-BDP-XX-RP-00001)

LEGEND	
● X1	TOTAL COLUMNS NUMBER: 56
● X2	TOTAL COLUMNS NUMBER: 79
● X3	TOTAL COLUMNS NUMBER: 293
● X4	TOTAL COLUMNS NUMBER: 180
● X5a/X5b/X5c	TOTAL COLUMNS NUMBER: 32
● X6a	TOTAL COLUMNS NUMBER: 31
● X6b	TOTAL COLUMNS NUMBER: 34
—	SITE BOUNDARY

P07 - FINAL DOCUMENT	KL	CB	28.07.2025
P06 - FINAL DRAFT FOR LEGAL REVIEW	KL	CB	28.07.2025
P05 - PLANNING APPLICATION FINAL DRAFT	KL	CB	30.06.2025
P04 - PLANNING APPLICATION DRAFT	KL	CB	23.05.2025
WIP - FOR INFORMATION ONLY	KL	CB	30.04.2025
P03	KL	CB	24.03.2025
P02	KL	CB	14.03.2025
P01	KL	CB	14.02.2025

REVISION / DESCRIPTION	DRAWN	AUTHORED	DATE
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16 Brewhouse Yard
Clerkenwell
London EC1V 4LJ
T +44 (0)20 7812 8000
www.bdp.com

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PROJECT		NORTH WEST CAMBRIDGE MASTERPLAN FUTURE PHASES	
DRAWING TITLE		PROPOSED EXTERIOR LIGHTING PLAN - ILLUSTRATIVE SCHEME	
JOB NUMBER		DRAWING NO.	SCALE
P3004544		NWC-MP2024-BDP-SW-DR-00001	1:5000
REVISION		DATE	18.08.2025
P07			

