

# DESIGN REPORT

Bursledon External Lighting



# LIGHTING APPLICATION NOTES

## DESIGN NOTES

This preliminary design is produced by the UK Lighting Design based on information supplied by the Customer for the purpose of identifying suitable products and costing the proposal. This design cannot be used for Construction. This design does not purport to eliminate health and safety risks as a CDM Regulation risk assessment has not been undertaken. Depending on the level of information received, several assumptions may have been applied in order to create an indicative lighting proposal and costing model, according to lighting industry guidelines and incorporating industry best practice methods. These assumptions are documented below and will require confirmation by the Principal Designer (which is not UK Lighting Design) during the detailed design phase.

## PROJECT SPECIFIC INFORMATION

Lighting Levels as per CIBSE Guidelines BS EN12464-1:2021 & BS 5266-1:2016 + BS EN1838:2013  
Surface reflectance values of 70/50/20 and Maintenance factor of 0.8 used  
Mounting Height: 4m & 1m Bollards

## TRANSPARENCY

All designs and information provided are based upon UK Lighting Design interpretation of information provided by the client. It remains the responsibility of the client to determine that the design is suitable for the purpose it is to be put. UK Lighting Design cannot accept responsibility in respect of the design provided and shall in no way be liable for any direct or consequential damage, loss or expense arising from any defect arising from the design provided.

This design and the information provided is done so in confidence, for the sole purpose of the recipient and may not be disclosed to any non-related third party or used for any other purpose without the express written permission of UK Lighting Design.

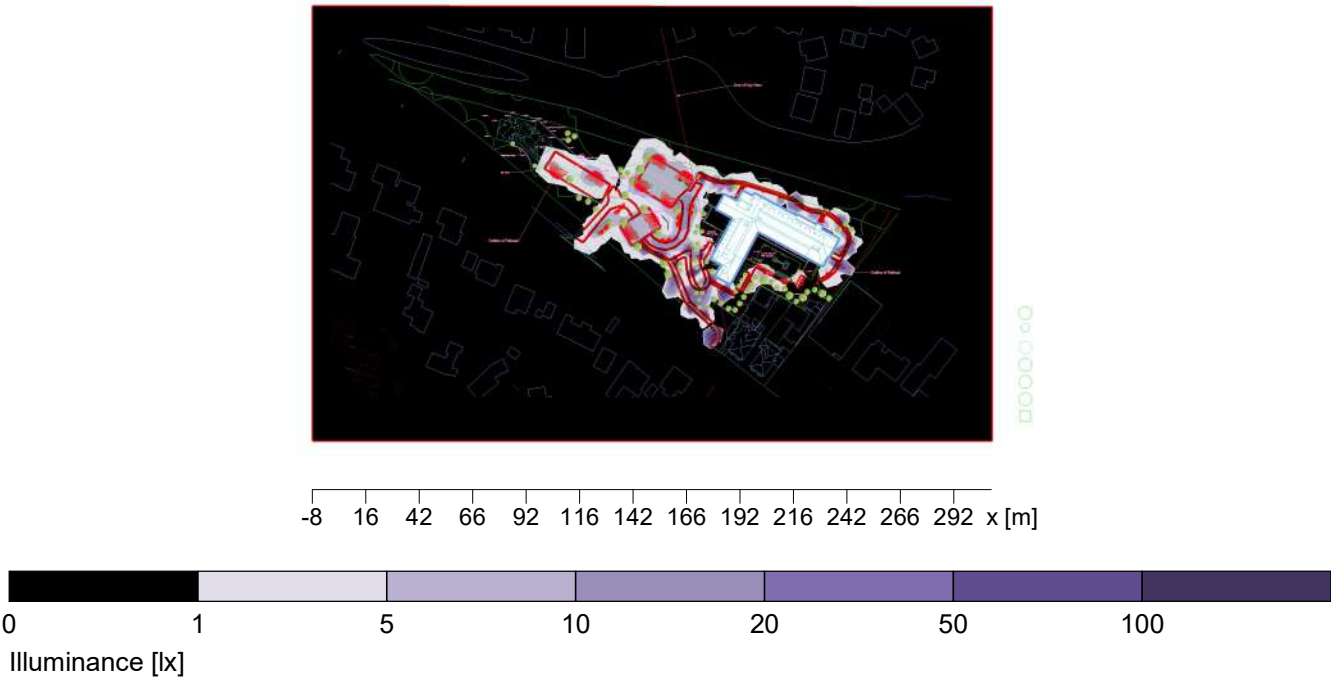
Unless stated otherwise the Preliminary Design proposals must not be treated as a fully compliant Emergency Lighting Design. Whilst the UK Lighting Design team will include Emergency Lighting luminaires to achieve >0.5 lux in Anti-panic areas (spaces over 60m<sup>2</sup>) and >1 lux in corridors & on stairs. A fully compliant emergency lighting design can be carried out on request, if all the necessary information is provided to do so.

Unless stated otherwise, UK Lighting Design has not visited site. Therefore, all proposed luminaire locations are indicative and are subject to an onsite verification arranged/performed by the Principal Designer. In the event a proposed luminaire location is not feasible, a revised calculation should be requested.

Exterior 1

Summary, Exterior 1

Result overview, Evaluation area 1



General

|                                    |                             |
|------------------------------------|-----------------------------|
| Calculation algorithm used         | Average indirect fraction   |
| Maintenance factor                 | 0.80                        |
| Luminaire luminous flux            | 57562.20 lm                 |
| Total power                        | 555.0 W                     |
| Total power per area (64214.38 m²) | 0.01 W/m² (1.17 W/m²/100lx) |

Evaluation area 1

Reference plane 1.1

|                           |            |
|---------------------------|------------|
| $\bar{E}_m$               | Horizontal |
| $E_{min}$                 | 0 lx       |
| $E_{min}/\bar{E}_m (U_o)$ | ---        |
| $E_{min}/E_{max} (U_d)$   | ---        |
| Position                  | 0.00 m     |

Type No.Make

Gemma Lighting ltd

1 5 x



|                |                                               |
|----------------|-----------------------------------------------|
| Order No.      | : N/A                                         |
| Luminaire name | : Vesper 15W - 2700K - Optic 1 - Rear Shield  |
| Equipment      | : 1 x VE15-A827-00GH-76-1 (RS) 15 W / 1691 lm |

2 8 x



|                |                                               |
|----------------|-----------------------------------------------|
| Order No.      | : N/A                                         |
| Luminaire name | : Vesper 15W - 2700K - Optic 3 - Rear Shield  |
| Equipment      | : 1 x VE15-A827-00GH-76-3 (RS) 15 W / 1691 lm |

Object : Bursledon External Lighting  
Installation : LED Lighting  
Project number : 43753  
Date : 22.10.2025



## Exterior 1

### Summary, Exterior 1

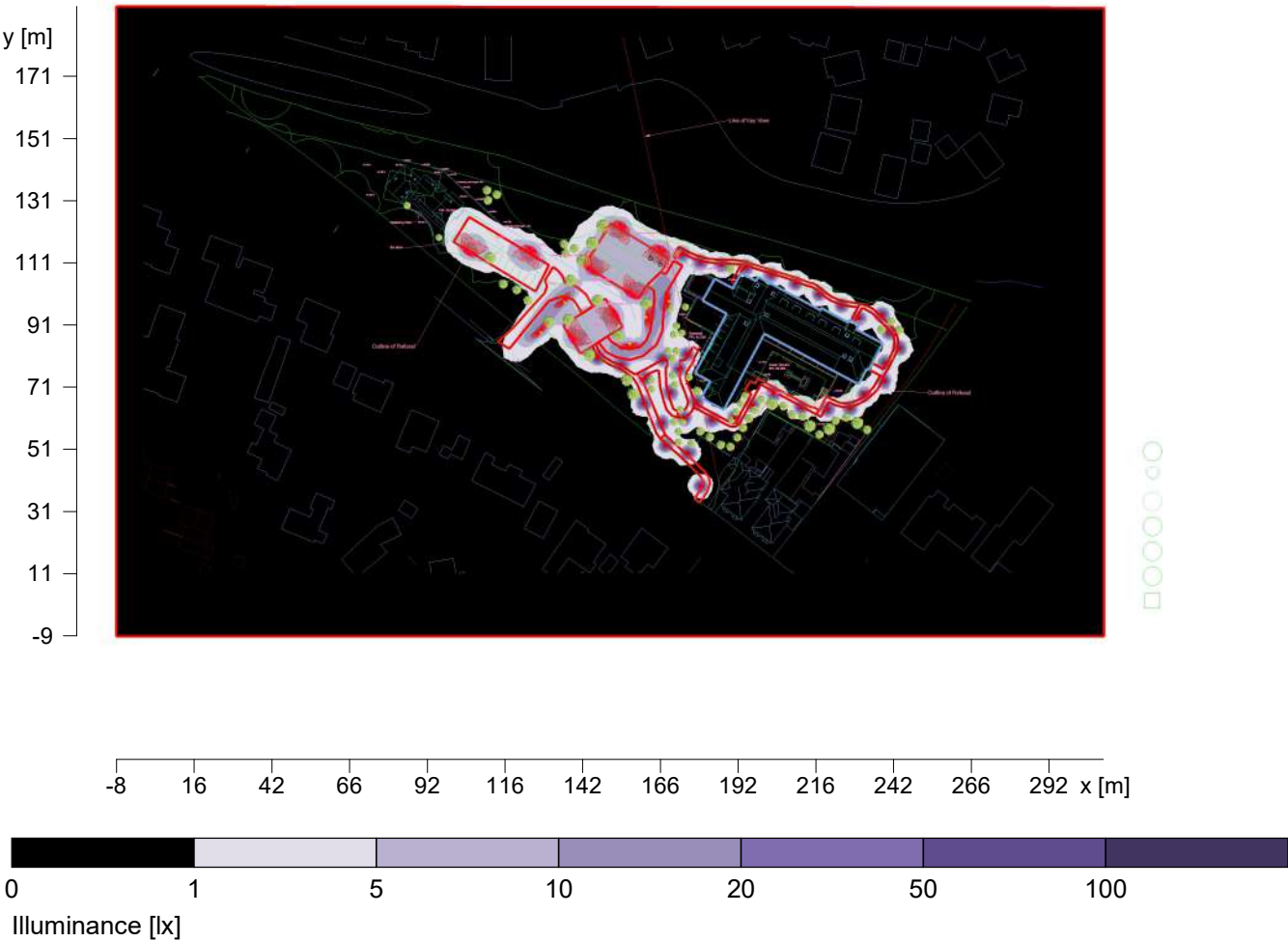
#### Result overview, Evaluation area 1

5 36 x **gemma lighting**  
 Order No. : 001  
Luminaire name : Havant 10W  
Equipment : 1 x HV10-A1W-00-B 10 W / 949 lm

Exterior 1

Calculation results, Exterior 1

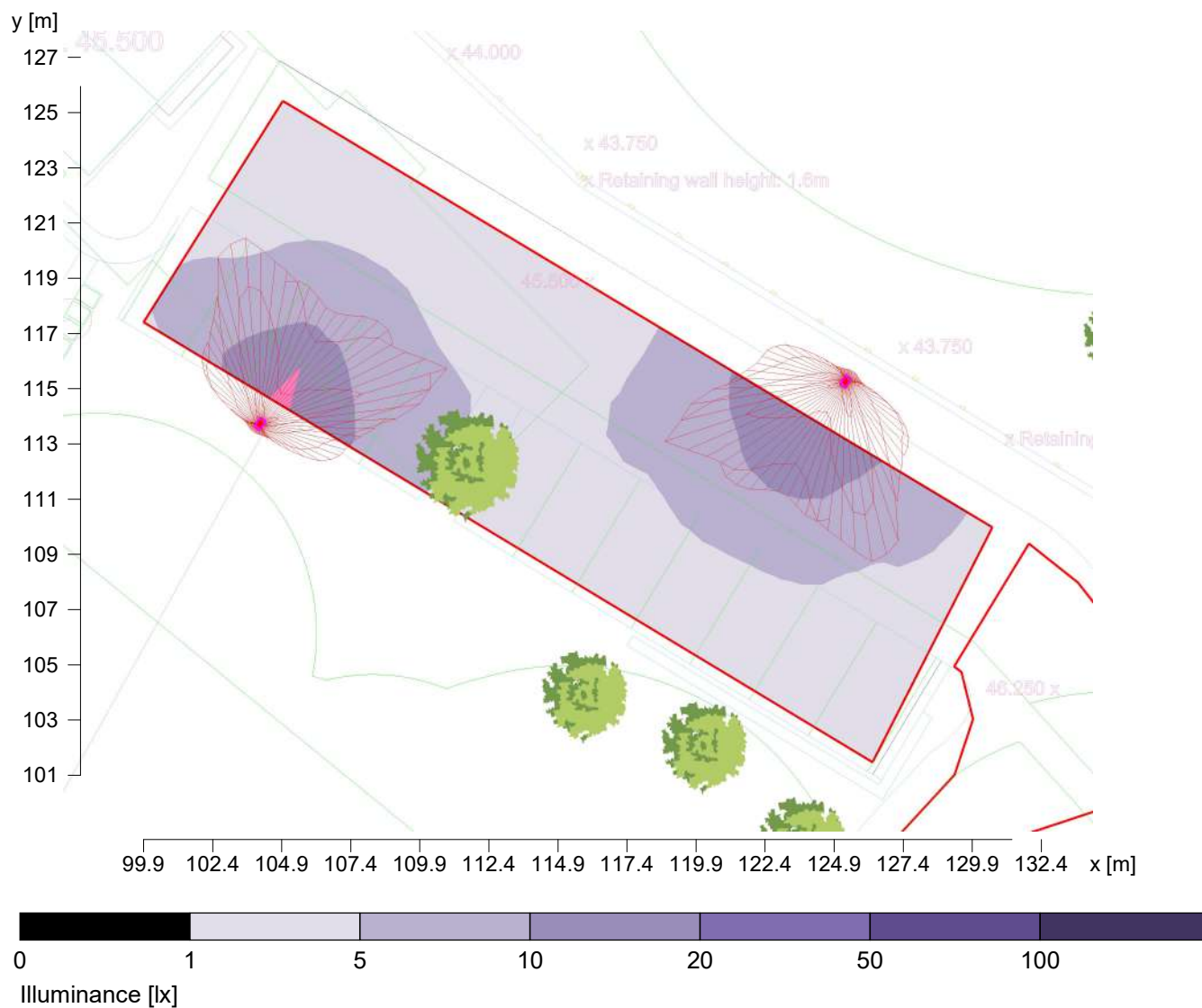
Pseudo colours, Floor (E)



|                     |                     |           |
|---------------------|---------------------|-----------|
| Average illuminance | $\bar{E}_m$         | : 0.9 lx  |
| Minimum illuminance | $E_{min}$           | : 0 lx    |
| Maximum illuminance | $E_{max}$           | : 85.9 lx |
| Uniformity $U_o$    | $E_{min}/\bar{E}_m$ | : ---     |

**UKLD** LIGHTING DESIGN

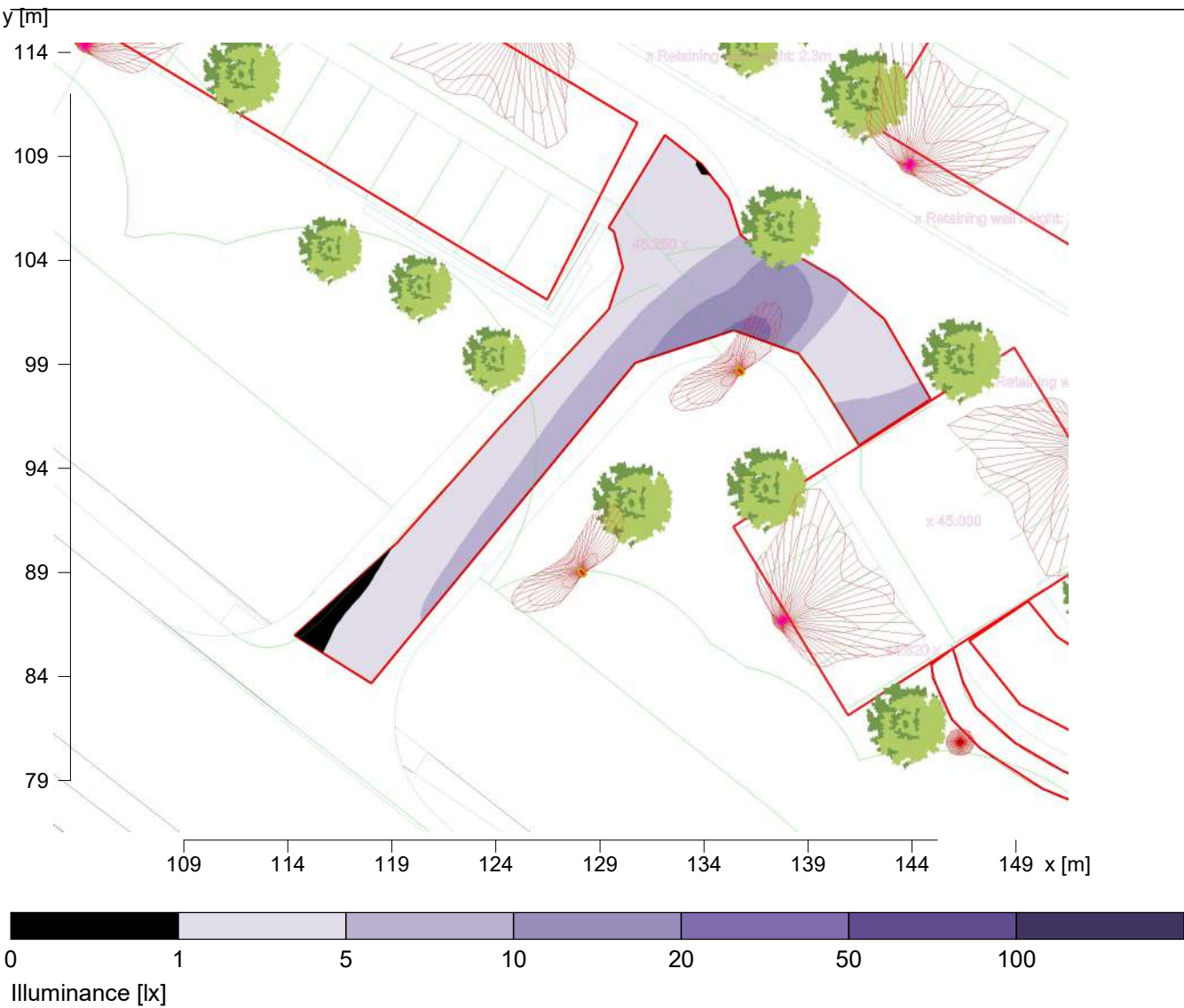
### Pseudo colours, Measuring area 1 (E)



|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 5.3 lx          |
| Minimum illuminance    | $E_{min}$           | : 1.2 lx          |
| Maximum illuminance    | $E_{max}$           | : 15.9 lx         |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 4.37 (0.23) |

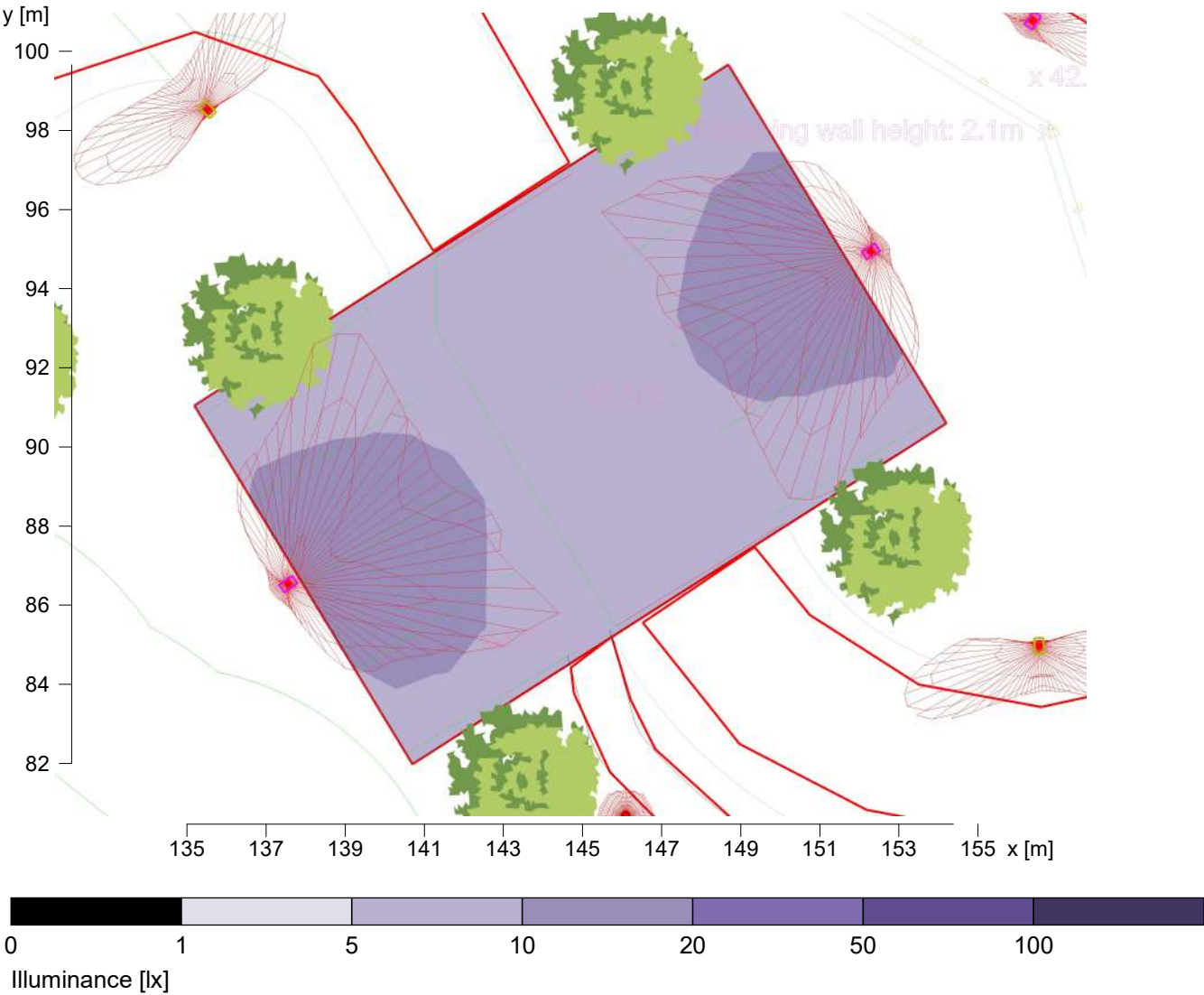
Calculation results, Exterior 1

Pseudo colours, Measuring area 2 (E)



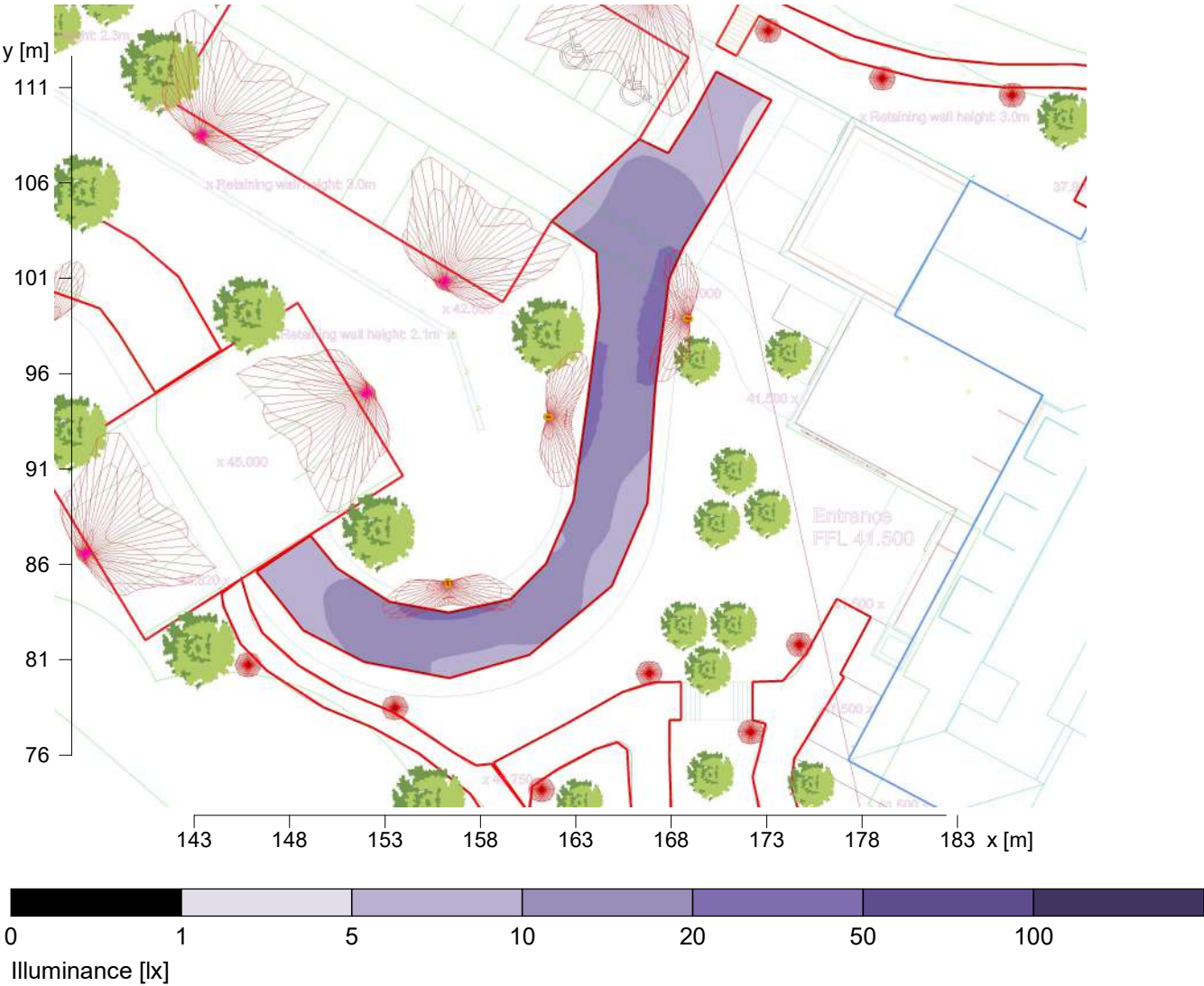
|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 5.1 lx          |
| Minimum illuminance    | $E_{min}$           | : 0.6 lx          |
| Maximum illuminance    | $E_{max}$           | : 24.3 lx         |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 9.34 (0.11) |

Calculation results, Exterior 1  
Pseudo colours, Measuring area 3 (E)



|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 9.4 lx          |
| Minimum illuminance    | $E_{min}$           | : 5.7 lx          |
| Maximum illuminance    | $E_{max}$           | : 17.5 lx         |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 1.63 (0.61) |

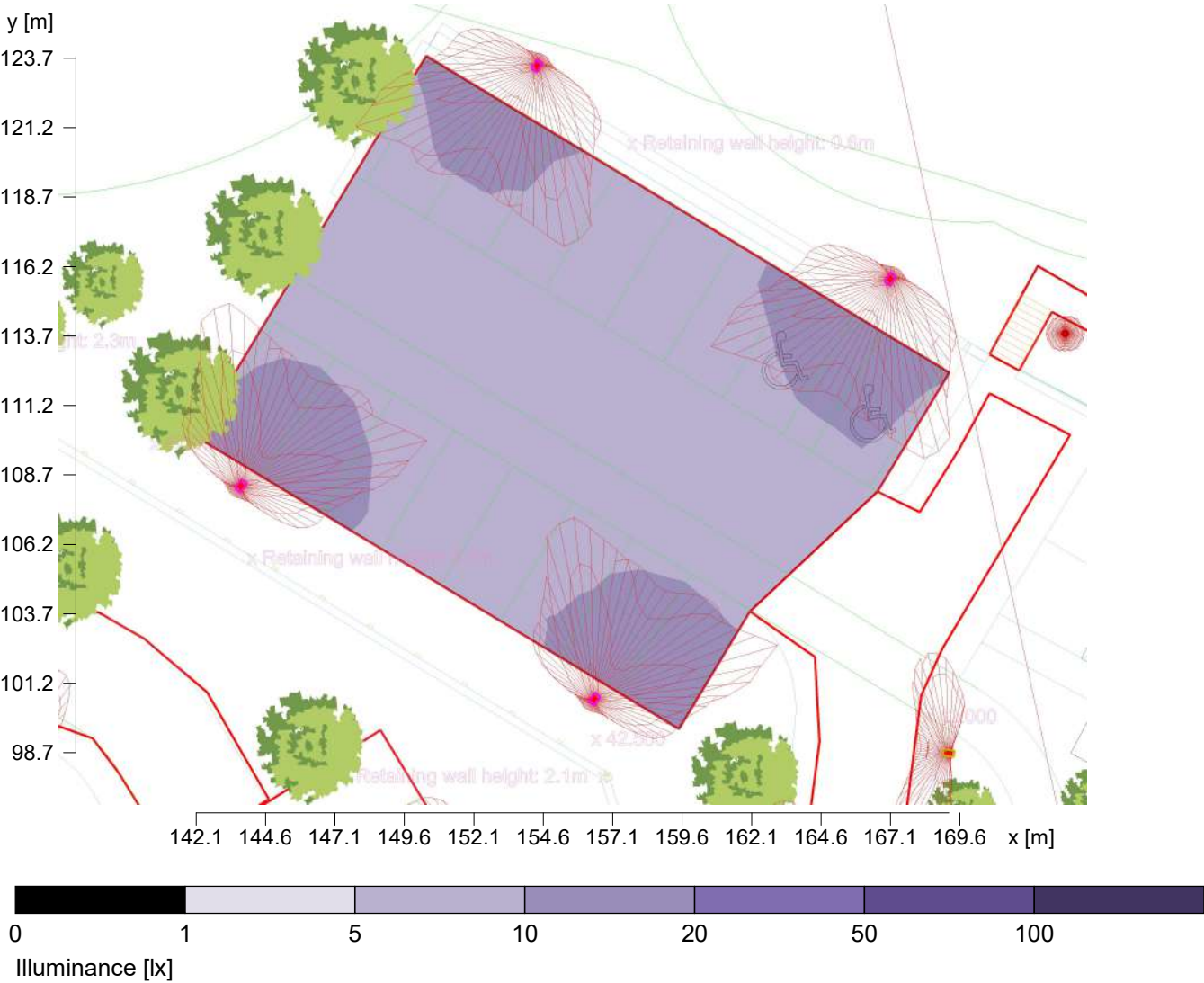
Calculation results, Exterior 1  
Pseudo colours, Measuring area 4 (E)



|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 13 lx           |
| Minimum illuminance    | $E_{min}$           | : 4.1 lx          |
| Maximum illuminance    | $E_{max}$           | : 32.3 lx         |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 3.17 (0.32) |

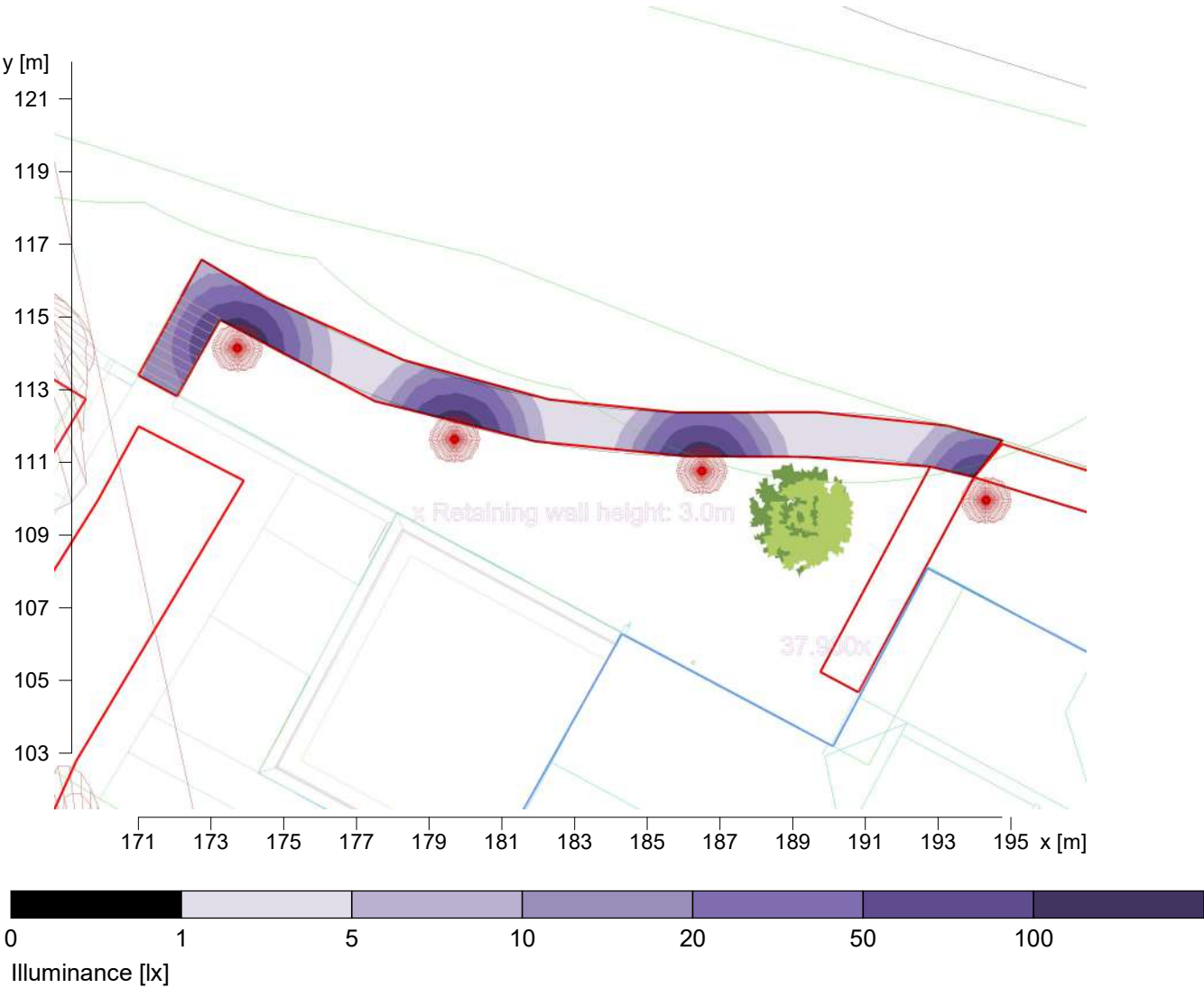
Calculation results, Exterior 1

Pseudo colours, Measuring area 5 (E)



|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 8.8 lx          |
| Minimum illuminance    | $E_{min}$           | : 5.9 lx          |
| Maximum illuminance    | $E_{max}$           | : 16.7 lx         |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 1.48 (0.68) |

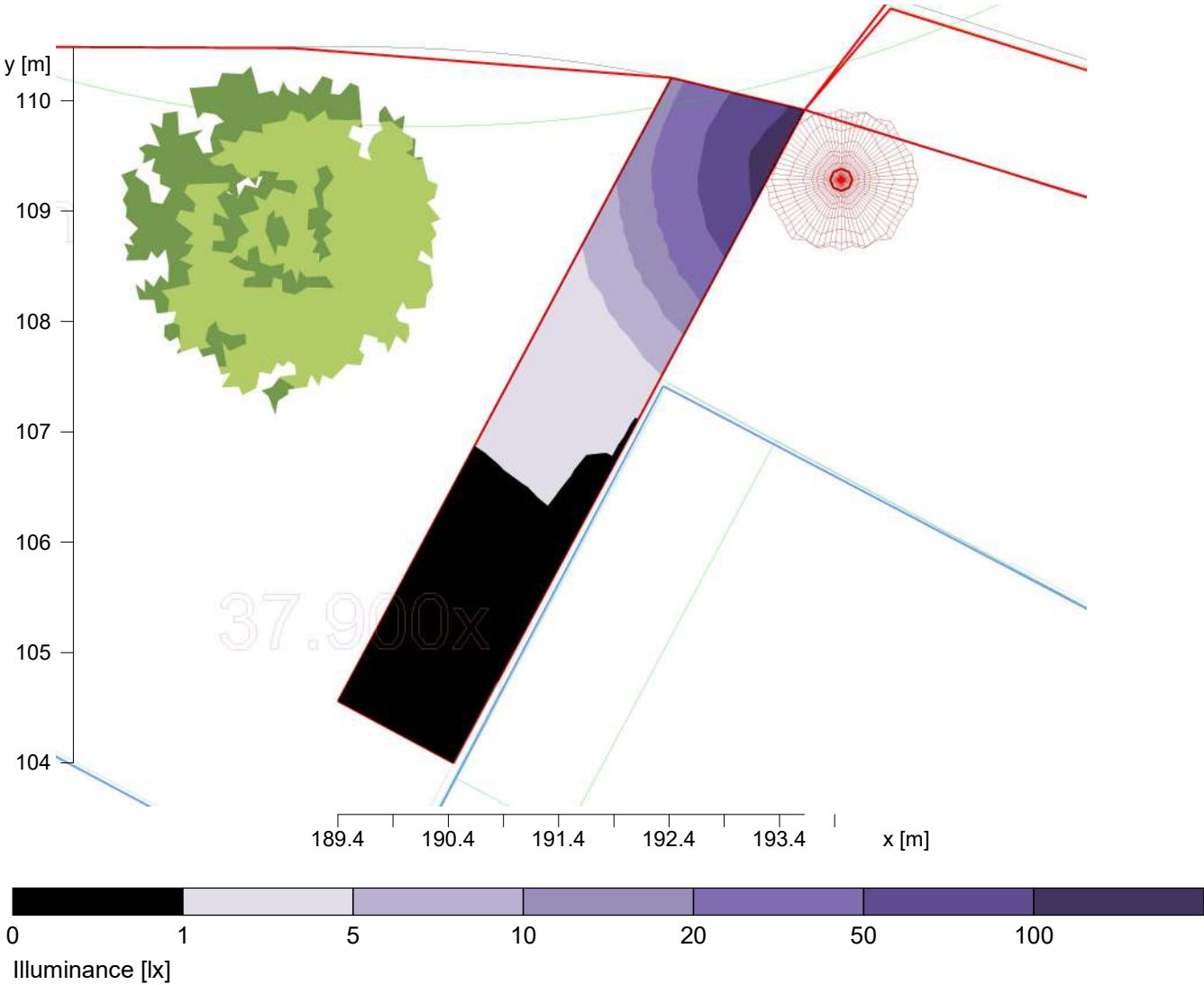
Calculation results, Exterior 1  
Pseudo colours, Measuring area 6 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 25 lx            |
| Minimum illuminance    | $E_{min}$           | : 1 lx             |
| Maximum illuminance    | $E_{max}$           | : 138 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 19.48 (0.05) |

Calculation results, Exterior 1

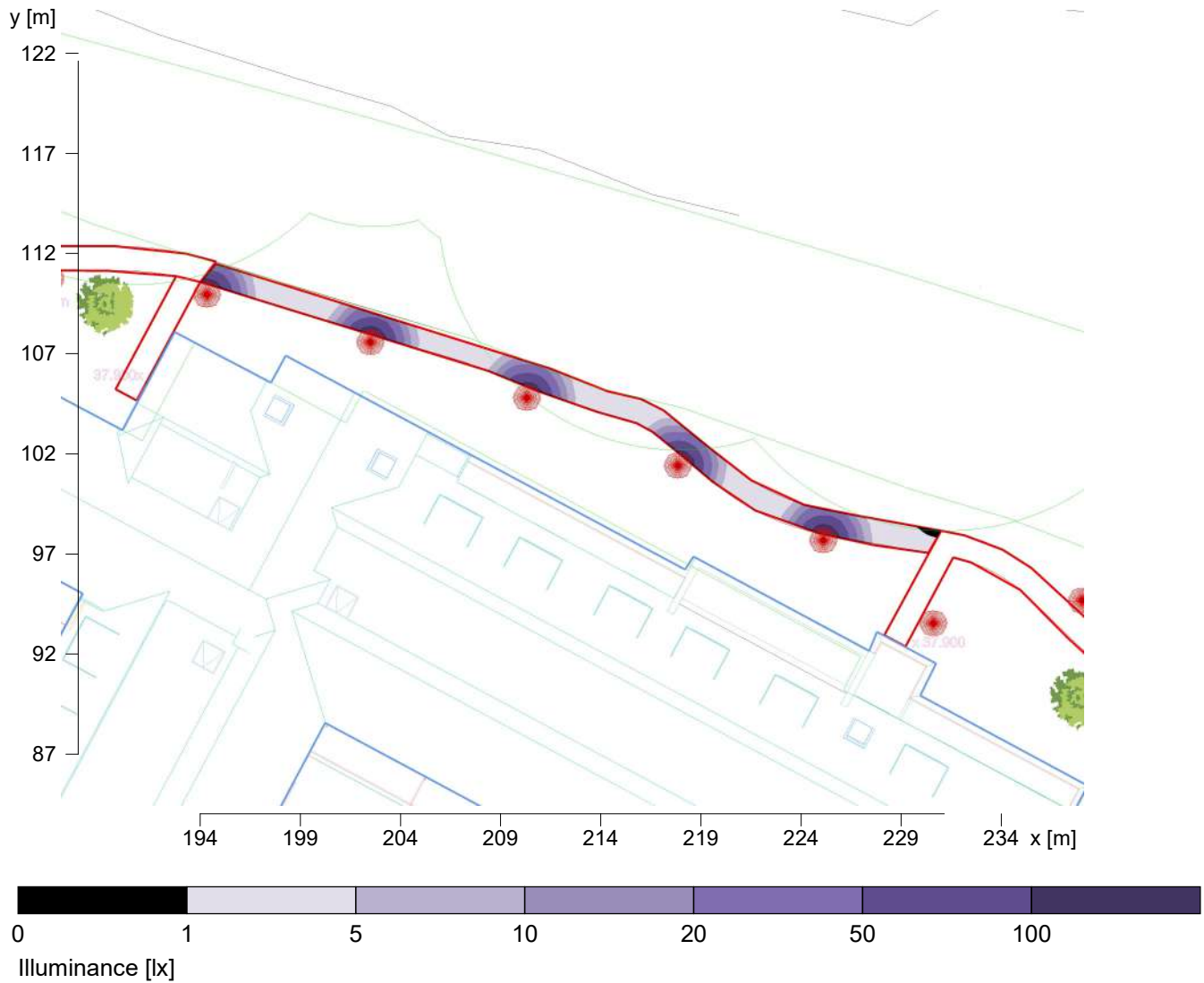
Pseudo colours, Measuring area 7 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 14 lx            |
| Minimum illuminance    | $E_{min}$           | : 0 lx             |
| Maximum illuminance    | $E_{max}$           | : 117 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 91.55 (0.01) |

## Calculation results, Exterior 1

### Pseudo colours, Measuring area 8 (E)

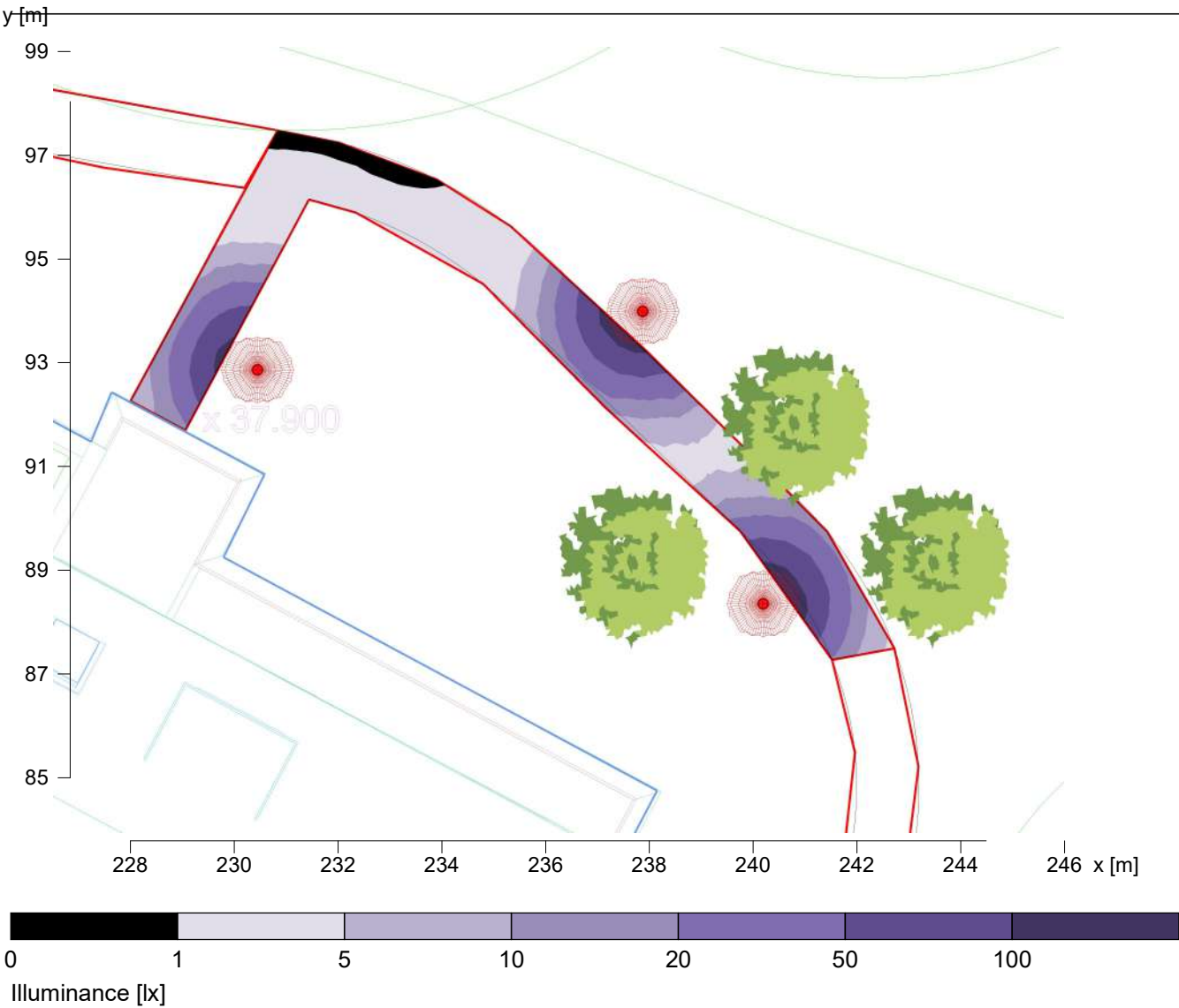


Average illuminance  
 Minimum illuminance  
 Maximum illuminance  
 Uniformity  $U_0$

$\bar{E}_m$  : 21 lx  
 $E_{min}$  : 1 lx  
 $E_{max}$  : 134 lx  
 $E_{min}/\bar{E}_m$  : 1 : 23.42 (0.04)

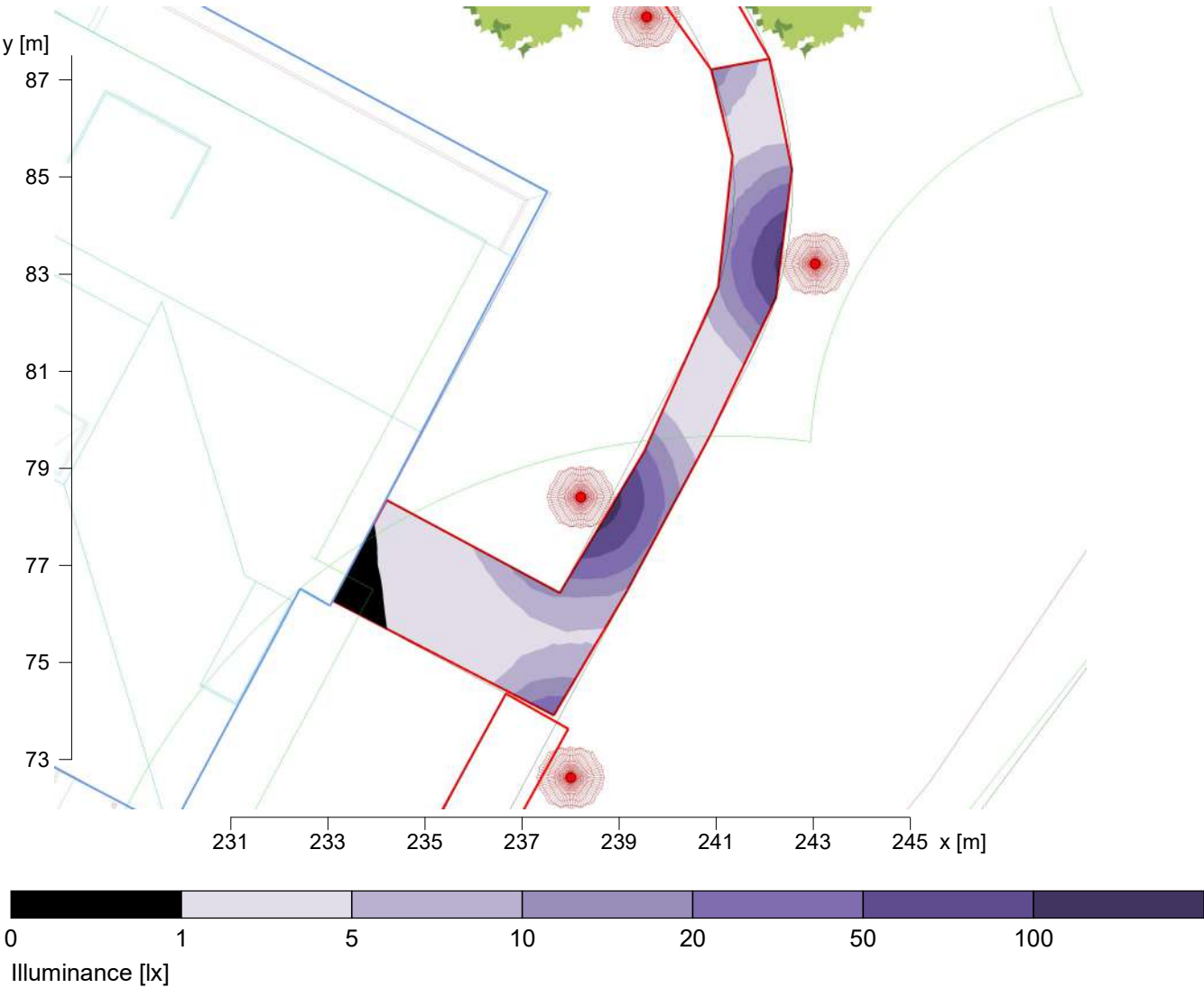
Calculation results, Exterior 1

Pseudo colours, Measuring area 9 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 22 lx            |
| Minimum illuminance    | $E_{min}$           | : 1 lx             |
| Maximum illuminance    | $E_{max}$           | : 131 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 24.83 (0.04) |

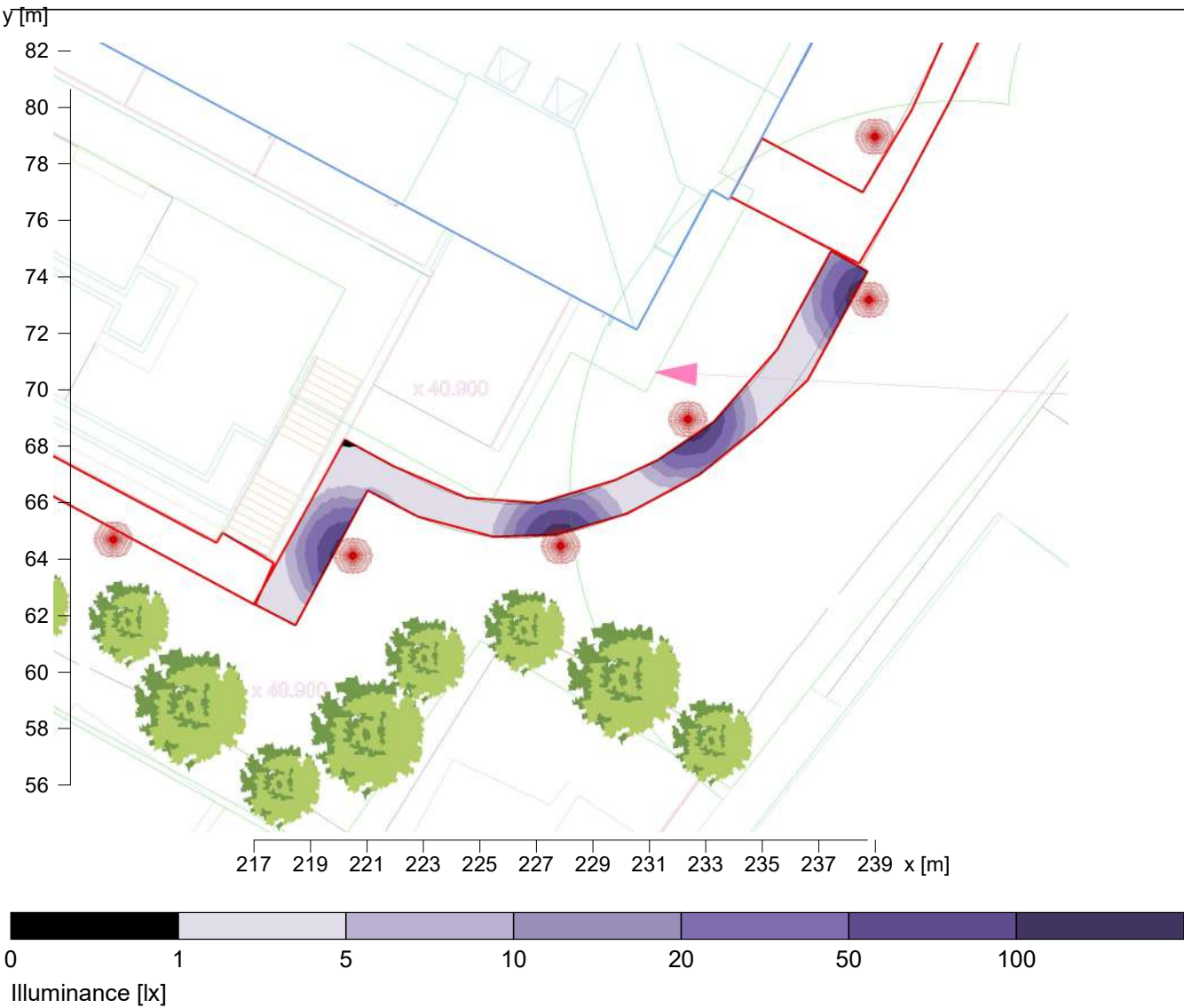
Calculation results, Exterior 1  
Pseudo colours, Measuring area 10 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 13 lx            |
| Minimum illuminance    | $E_{min}$           | : 1 lx             |
| Maximum illuminance    | $E_{max}$           | : 107 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 18.04 (0.06) |

Calculation results, Exterior 1

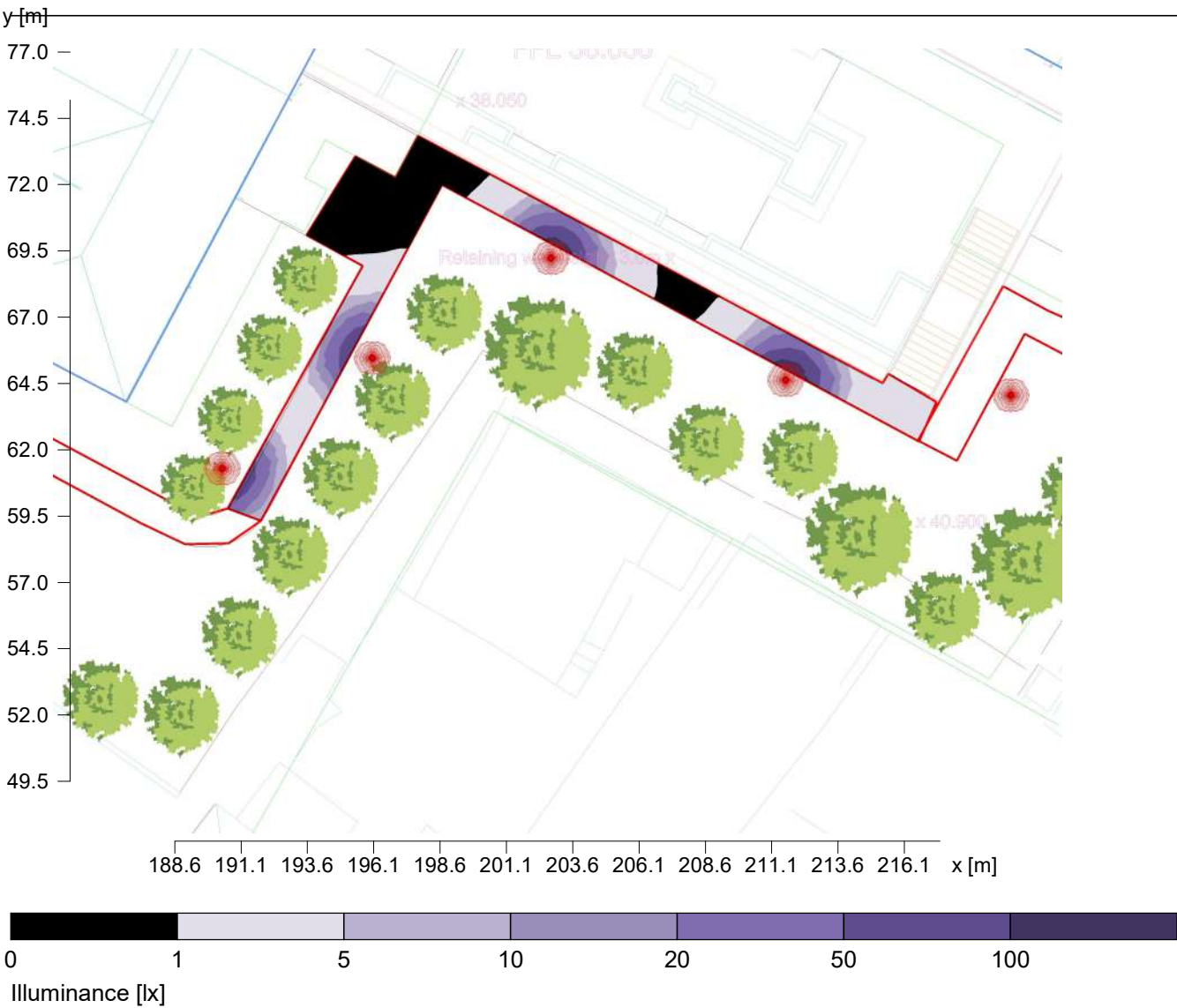
Pseudo colours, Measuring area 11 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 18 lx            |
| Minimum illuminance    | $E_{min}$           | : 1 lx             |
| Maximum illuminance    | $E_{max}$           | : 113 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 18.66 (0.05) |

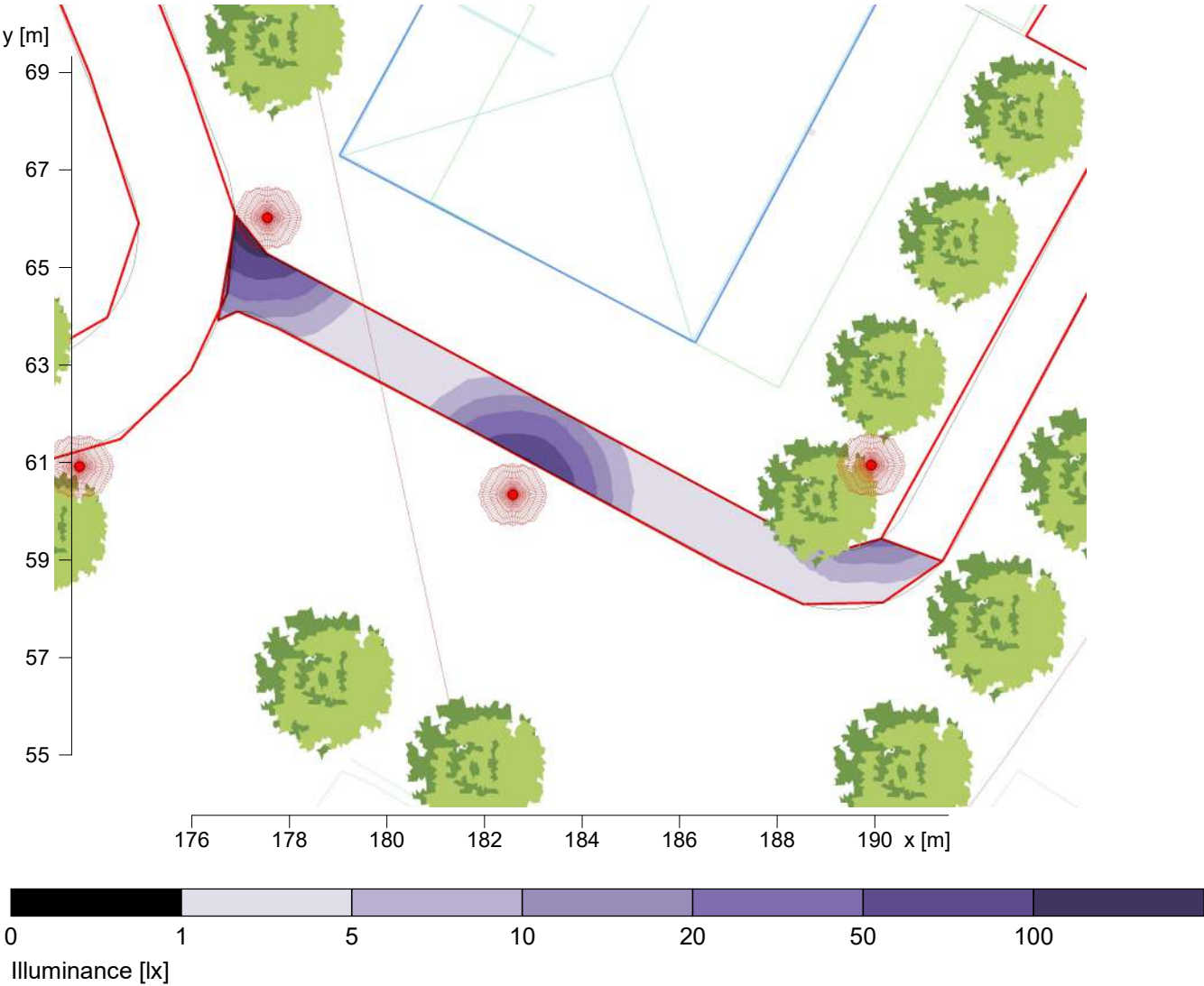
Calculation results, Exterior 1

Pseudo colours, Measuring area 12 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 12 lx            |
| Minimum illuminance    | $E_{min}$           | : 0 lx             |
| Maximum illuminance    | $E_{max}$           | : 120 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 58.25 (0.02) |

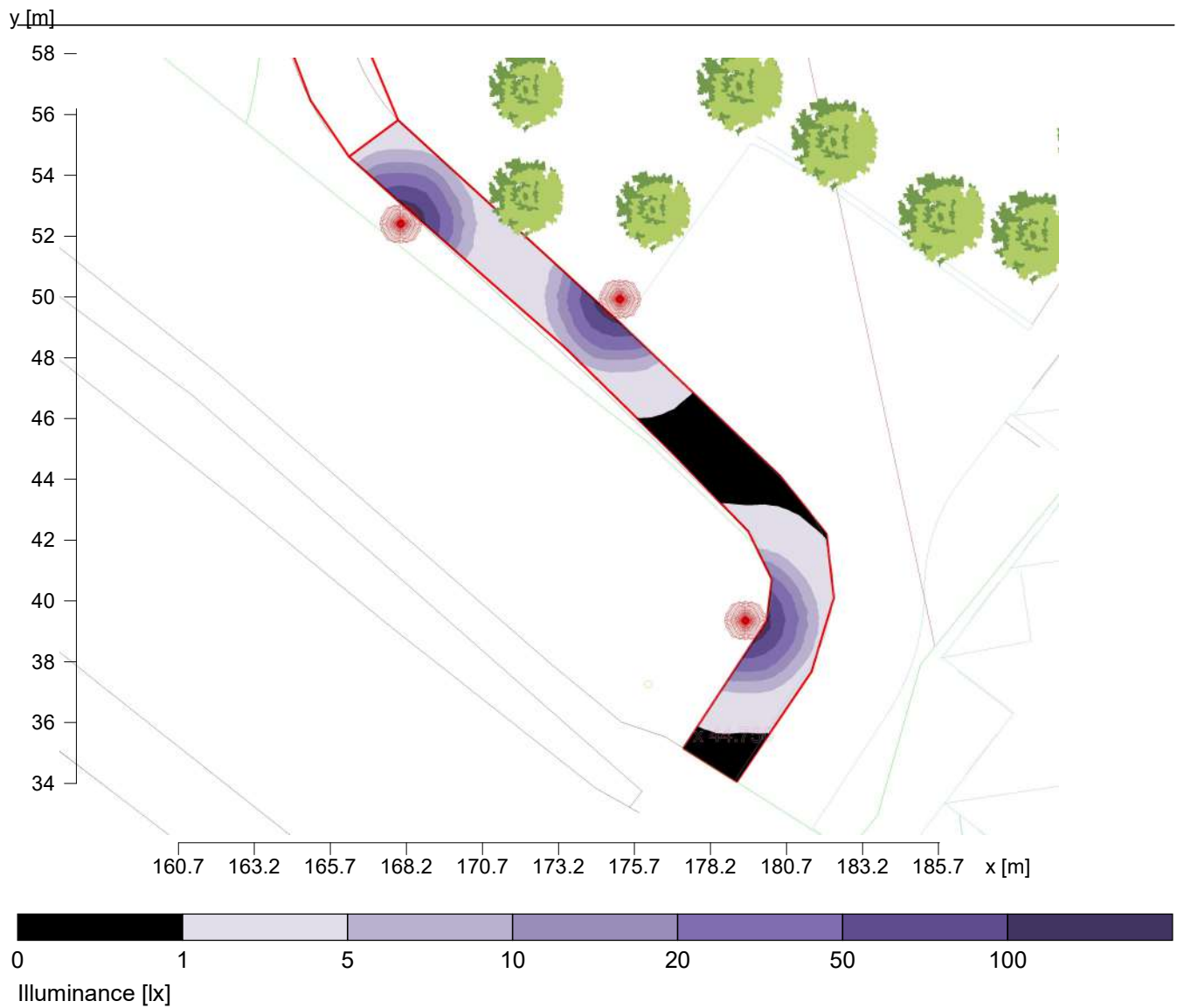
Calculation results, Exterior 1  
Pseudo colours, Measuring area 13 (E)



|                        |                     |                   |
|------------------------|---------------------|-------------------|
| Height reference plane |                     | : 0.00 m          |
| Average illuminance    | $\bar{E}_m$         | : 15 lx           |
| Minimum illuminance    | $E_{min}$           | : 2 lx            |
| Maximum illuminance    | $E_{max}$           | : 111 lx          |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 8.93 (0.11) |

## Calculation results, Exterior 1

### Pseudo colours, Measuring area 14 (E)

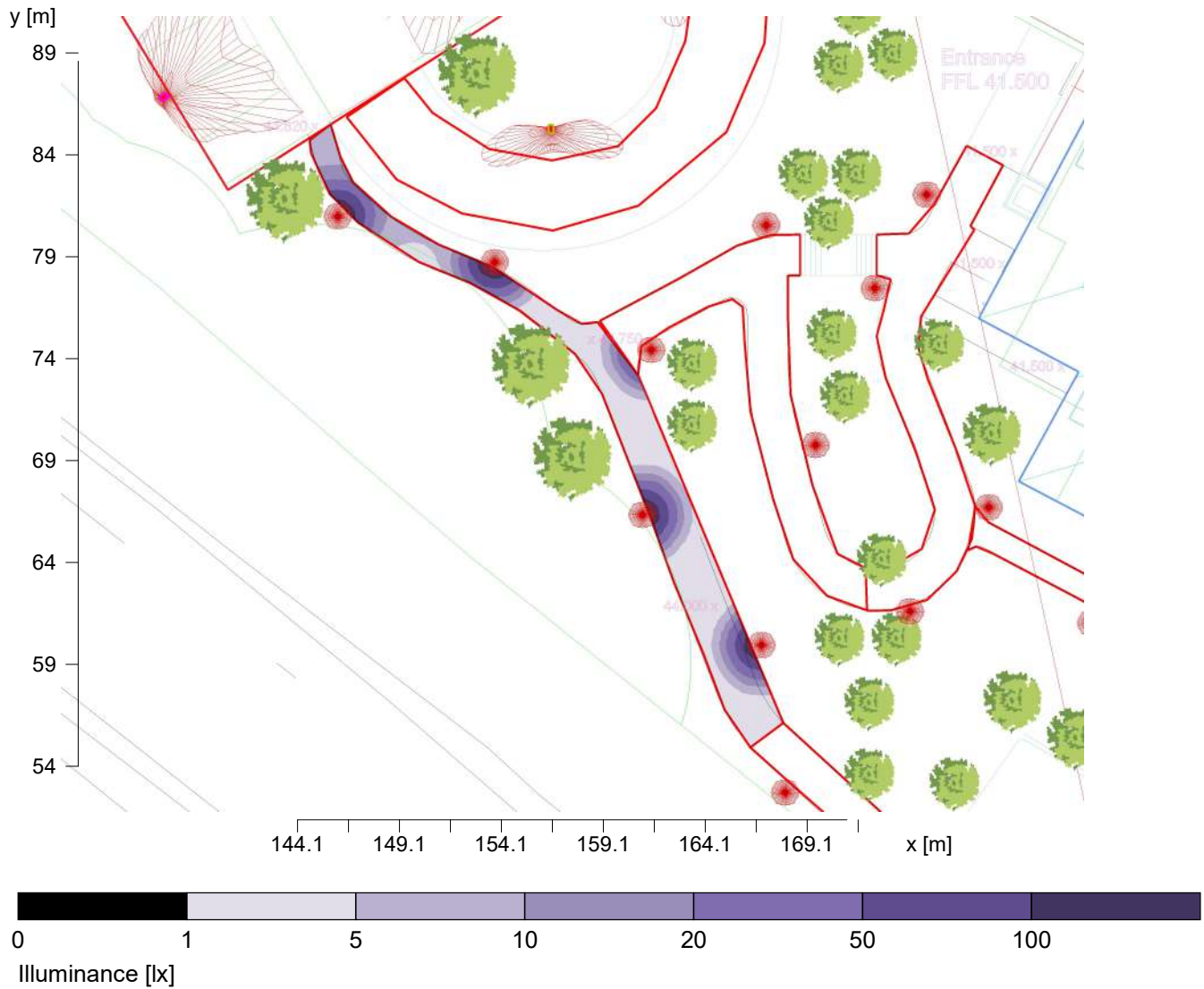


Average illuminance  
 Minimum illuminance  
 Maximum illuminance  
 Uniformity  $U_0$

$\bar{E}_m$  : 11 lx  
 $E_{min}$  : 0 lx  
 $E_{max}$  : 108 lx  
 $E_{min}/\bar{E}_m$  : 1 : 31.93 (0.03)

## Calculation results, Exterior 1

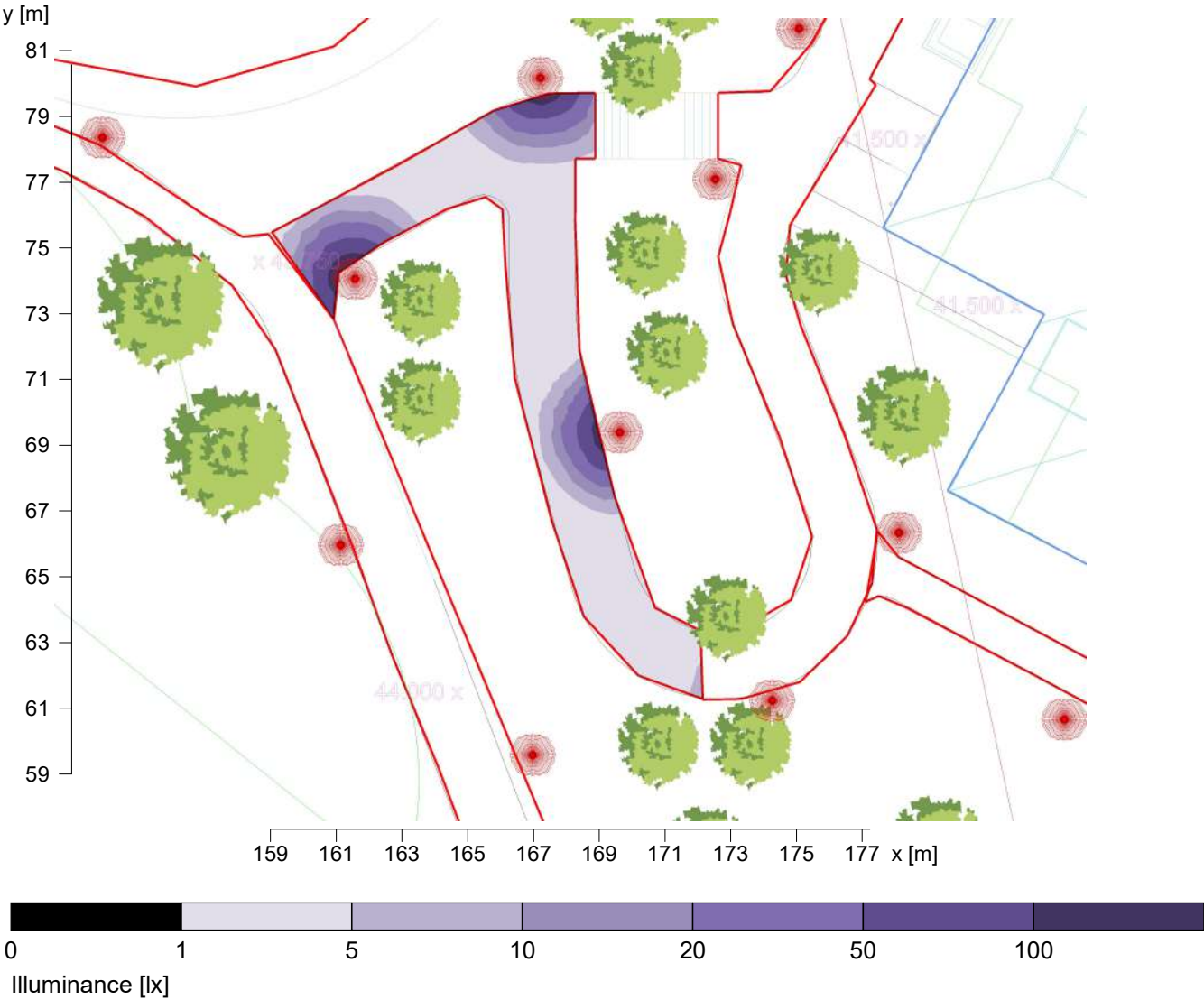
### Pseudo colours, Measuring area 15 (E)



Average illuminance  
 Minimum illuminance  
 Maximum illuminance  
 Uniformity  $U_0$

$\bar{E}_m$  : 16 lx  
 $E_{min}$  : 1 lx  
 $E_{max}$  : 132 lx  
 $E_{min}/\bar{E}_m$  : 1 : 12.62 (0.08)

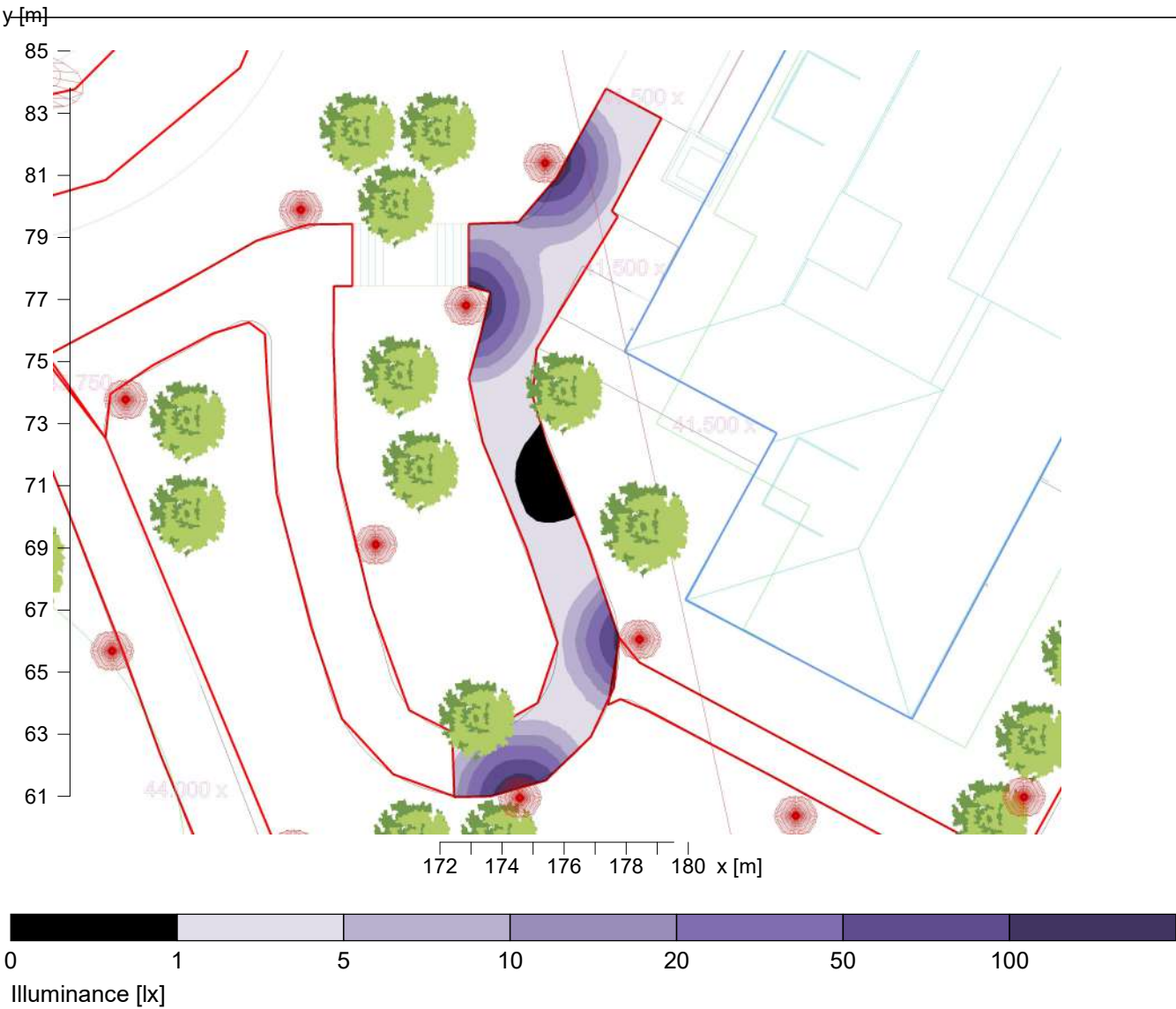
Calculation results, Exterior 1  
Pseudo colours, Measuring area 16 (E)



|                     |                     |                    |
|---------------------|---------------------|--------------------|
| Average illuminance | $\bar{E}_m$         | : 12 lx            |
| Minimum illuminance | $E_{min}$           | : 1 lx             |
| Maximum illuminance | $E_{max}$           | : 133 lx           |
| Uniformity $U_o$    | $E_{min}/\bar{E}_m$ | : 1 : 10.43 (0.10) |

Calculation results, Exterior 1

Pseudo colours, Measuring area 17 (E)



|                        |                     |                    |
|------------------------|---------------------|--------------------|
| Height reference plane |                     | : 0.00 m           |
| Average illuminance    | $\bar{E}_m$         | : 15 lx            |
| Minimum illuminance    | $E_{min}$           | : 1 lx             |
| Maximum illuminance    | $E_{max}$           | : 132 lx           |
| Uniformity $U_o$       | $E_{min}/\bar{E}_m$ | : 1 : 18.88 (0.05) |

# THANK YOU

Please don't hesitate to contact your appointed project  
manager with any questions.

**UKLED** LIGHTING DESIGN