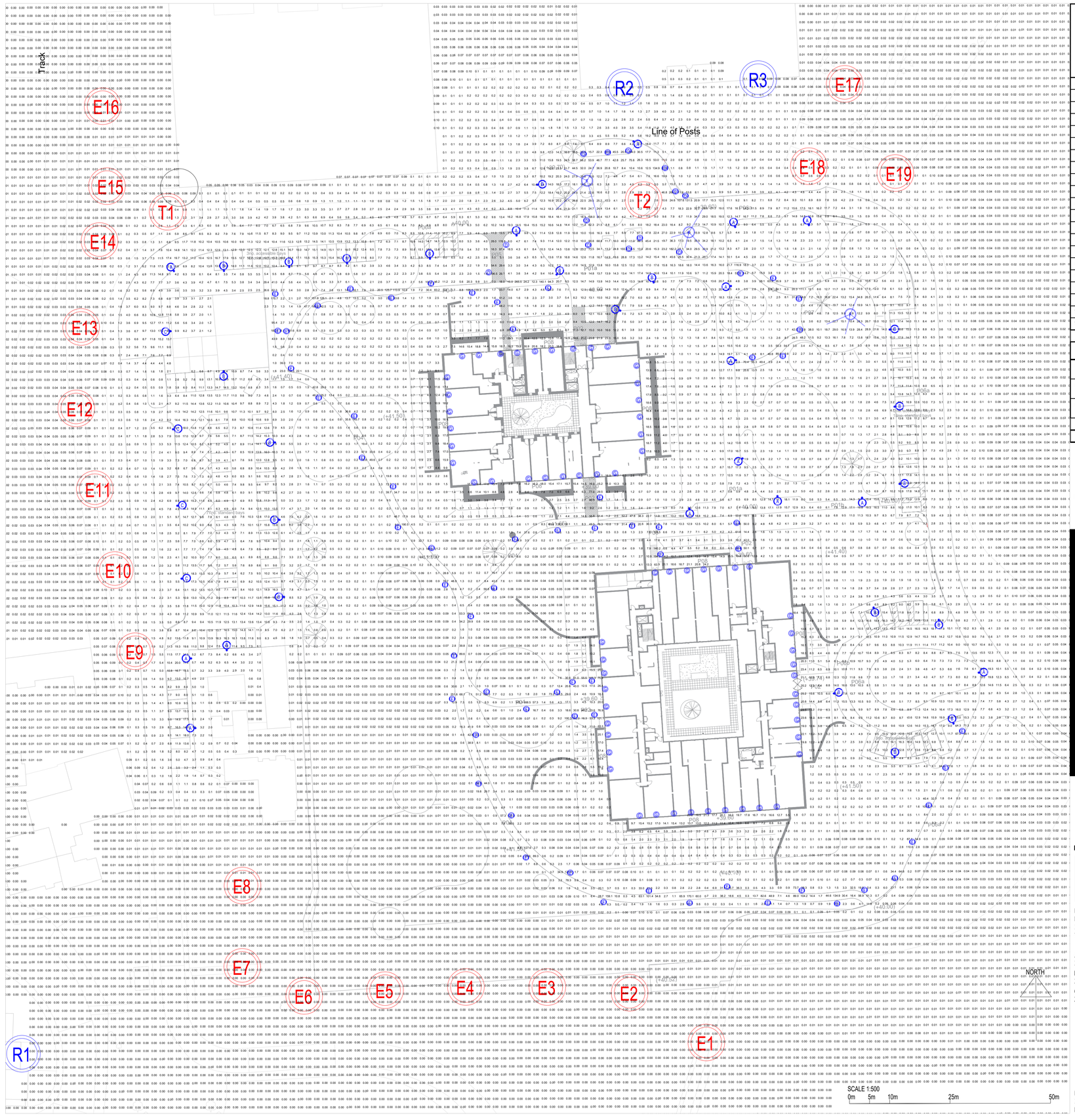
PRELIMINARY EXTERNAL LIGHTING PROPOSALS (DIRECT HORIZONTAL DESIGN ISOLUX CONTOURS ON A FLAT PLANE, MF = 0.84 (NOTE : FOR IMPACT AT UNITY OUTPUT MULTIPLY VALUE SHOWN BY 1.19)  SCALE 1:500




CALCULATED DIRECT LIGHT ASSESSMENT HORIZONTAL AND VERTICAL IMPACT VALUES (INCLUSIVE OF TERRAIN, MF = 1.0)

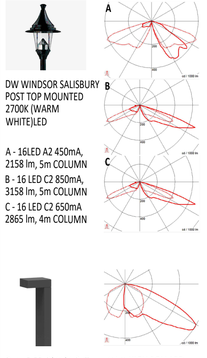
| Ecology Locations (Centre line of location) | Proposed Development Direct Illuminance (Lux) – ALL FUNCTIONAL (ACCESS) EXTERNAL LIGHTING OPERATIONAL, EXCLUDES TREE/ FOLIAGE SCREENING. SUBJECT TO ECOLOGIST INPUT, A STANDARD OF 1.0 LUX IS TAKEN AS THE THRESHOLD, THE KEY INDICATORS BEING AT HEIGHTS OF 2m UPWARDS IN THE VERTICAL PLANE (* CONSIDERED PRIMARILY RELEVANT TO BAT ACTIVITY) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Horizontal (ground) | Peak Vertical | | | | | |
| | | 0m | 2m (*) | 4m (*) | 6m (*) | 8m (*) | 10m (*) |
| E1 | 0.00 | 0.07 | 0.04 | 0.02 | 0.01 | 0.00 | 0.00 |
| E2 | 0.00 | 0.08 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 |
| E3 | 0.00 | 0.05 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 |
| E4 | 0.00 | 0.04 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 |
| E5 | 0.00 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 |
| E6 | 0.00 | 0.02 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 |
| E7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| E8 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.00 |
| E9 | 0.47 | 1.32 | 0.56 | 0.15 | 0.04 | 0.04 | 0.04 |
| E10 | 0.17 | 0.84 | 0.84 | 0.14 | 0.04 | 0.04 | 0.04 |
| E11 | 0.11 | 0.74 | 0.75 | 0.09 | 0.04 | 0.03 | 0.03 |
| E12 | 0.06 | 0.48 | 0.42 | 0.04 | 0.01 | 0.02 | 0.02 |
| E13 | 0.04 | 0.32 | 0.29 | 0.06 | 0.03 | 0.03 | 0.03 |
| E14 | 0.07 | 0.38 | 0.24 | 0.09 | 0.03 | 0.03 | 0.03 |
| E15 | 0.62 | 1.51 | 0.29 | 0.13 | 0.00 | 0.00 | 0.00 |
| E16 | 0.01 | 0.05 | 0.04 | 0.02 | 0.02 | 0.02 | 0.04 |
| E17 | 0.07 | 0.20 | 0.16 | 0.13 | 0.10 | 0.08 | 0.06 |
| E18 | 0.59 | 1.71 | 0.98 | 0.66 | 0.38 | 0.27 | 0.20 |
| E19 | 0.24 | 1.35 | 0.97 | 0.75 | 0.51 | 0.36 | 0.28 |
| T1 – Tree with high potential for roosting | 0.64 | 1.0 | 0.23 | 0.12 | 0.05 | 0.04 | 0.04 |
| T2 – Tree with Roosting Features | 2.23 | 4.54 | 0.79 | 0.55 | 0.33 | 0.25 | 0.20 |

| Residential | Vertical Limit for E3 Environmental Zone (Lux) | Peak Vertical (Lux) |
|---|---|---|
| R1 | 10 PRE CURFEW<br>2 POST CURFEW | 0.02 - COMPLIANT |
| R2 | 10 PRE CURFEW<br>2 POST CURFEW | 1.99 - COMPLIANT |
| R3 | 10 PRE CURFEW<br>2 POST CURFEW | 1.12 - COMPLIANT |

DIRECT LIGHTING ASSESSMENT (NTS) (INCLUSIVE OF TERRAIN), MF = 1.0

HORIZONTAL IMPACT ILLUMINANCE CONTOURS (LUX)

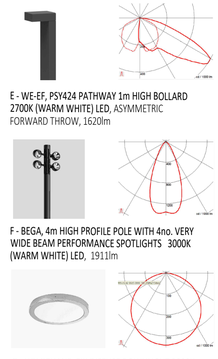
PRELIMINARY LUMINAIRE TYPES (EXACT LUMINAIRE TYPES TO BE CONFIRMED BY CONDITION)




DW WINDSOR SALISBURY POST TOP MOUNTED 2700K (WARM WHITE)LED

A - 16LED A2 450mA, 2158 lm, 5m COLUMN
B - 16 LED C2 850mA, 3158 lm, 5m COLUMN
C - 16 LED C2 650mA 2865 lm, 4m COLUMN

D - WE-EF, PSY424 PATHWAY 1m HIGH BOLLARD 2700K (WARM WHITE) LED, ASYMMETRIC FORWARD THROW, 1620lm




E - WE-EF, PSY424 PATHWAY 1m HIGH BOLLARD 2700K (WARM WHITE) LED, ASYMMETRIC FORWARD THROW, 1620lm

F - BEGA, 4m HIGH PROFILE POLE WITH 4no. VERY WIDE BEAM PERFORMANCE SPOTLIGHTS 3000K (WARM WHITE) LED, 1911lm

G - HOLOPHANE, PIX DIFFUSE DOWNLIGHT 3000K (WARM WHITE) LED, MOUNTED TO CONCEALED PERIMETER SOFFIT OVERHANG, 620lm

PRELIMINARY PROPOSED OPERATION

AUTOMATIC TIME CLOCK CONTROLLED
DUSK UNTIL CLIENT DIRECTED AUTOMATED OFF

EMBEDDED MITIGATION IN THE CONTROL OF OBTRUSIVE LIGHT ADVERSE EFFECTS

- LOW GLARE LANTERNS
- DOWNLIGHT ONLY
- CONSIDERED / REDUCED LUMINAIRE HEIGHTS, AIMING AND PLACEMENT
- WARM WHITE LIGHT COLOUR TEMPERATURE (2700 / 3000K) INLINE WITH BAT CONSERVATION TRUST GUIDANCE

NOTE:
ADJACENT PRELIMINARY LUMINAIRE TYPES ARE CONSIDERED TO BE THE MOST ONEROUS IN TERMS OF THE POTENTIAL FOR OBTRUSIVE LIGHT.
WITH RESPECT TO LOWER INTENSITY FEATURE LIGHTING AND OTHER POTENTIAL FUTURE LANDSCAPE LIGHTING ELEMENTS (E.G. - LOCALISED INTEGRATED HANDRAIL / BIKE RACK LIGHTING, SMALL SCALE STRUCTURE UPLIGHTING AND OPEN COURTYARD LIGHTING), THESE ARE CONSIDERED TO BE MINIMAL IN TERMS OF THE POTENTIAL FOR OBTRUSIVE LIGHT WHEN DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH ILP GUIDANCE FOR OBTRUSIVE LIGHT AND ARE THEREFORE EXCLUDED FROM THIS ASSESSMENT STAGE (SUBJECT TO CONSIDERED FUTURE DESIGN DEVELOPMENT STAGES).

GENERAL NOTES

1. THIS DRAWING IS COPYRIGHT AND SHALL NOT BE REPRODUCED WITHOUT PERMISSION
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DISCIPLINES, DRAWINGS, SCHEDULES AND SPECIFICATIONS, LEGENDS AND STANDARD DETAILS
3. DIMENSIONS GOVERN ON ALL DRAWINGS AND DETAILS. SHOULD ANY DISCREPANCIES BE FOUND ON THIS DRAWING AND ANY ASSOCIATED DRAWINGS OR SPECIFICATIONS, THIS SHOULD BE BROUGHT TO THE ATTENTION OF LIGHT PLANNING AND DESIGN LTD IMMEDIATELY
4. CONTRACTORS MUST CHECK AND VERIFY ALL INFORMATION / DIMENSIONS / LEVELS IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND ACTUAL SITE CONDITIONS BEFORE COMPLETING ANY MANUFACTURING / INSTALLATION DRAWINGS OR COMMENCING SITE INSTALLATION WORK
5. DO NOT SCALE FROM THIS DRAWING. PRELIMINARY AND FOR PLANNING SUPPORT INFORMATION ONLY

NOTES

DESIGN INTENT SUMMARY AND ASSESSMENT SUMMARY

BEING A SUBURBAN ENVIRONMENT THE ENVIRONMENTAL ZONE IS CONSIDERED TO BE E3.
THE EXTERNAL LIGHTING INTENT IS PRINCIPALLY BASED ON ACHIEVING THE PRELIMINARY USER REQUIREMENTS OF :-
CARPARKING - AVERAGE 10 LUX, 25% UNIFORMITY
ACCESS ROADWAYS - P4 - 5 LUX min ave / 1 LUX min
CONFLICT AREAS - C3 - 15 LUX / 40% UNIFORMITY
PATHWAYS - WAYFINDING
BUILDING PERIMETERS / SUNKEN TERRACES - 10 to 20 LUX AVE

**NOTE:**

- DESIGN ILLUMINANCE BASED ON A 0.84 MAINTENANCE FACTOR.
- ASSESSMENT ILLUMINANCE BASED ON A 1.0 MAINTENANCE FACTOR.
- ASSESSMENT UNDERTAKEN BASED ON TERRAIN AND WITH THE EXCLUSION OF THE POTENTIAL LIGHT SCREENING BENEFITS OF TREES AND FLORA.
- ASSESSMENT VALUES ILLUSTRATED ARE BASED ON SIMULATION, WHILST EVERY ATTEMPT HAS BEEN MADE WITH RESPECT TO THE ACCURACY OF THESE PREDICTED RESULTS, DUE TO POSSIBLE UNKNOWN VARIANCES IN CALCULATION PARAMETERS, THERE COULD BE NOMINAL DEVIATION BETWEEN CALCULATED AND ACTUAL POST MEASURED VALUES.
- AS PER STANDARD PRACTICE AND UNLESS OTHERWISE INDICATED ALL CALCULATIONS ARE BASED ON THE DIRECT LIGHT COMPONENT.
- WHEREVER POSSIBLE THIS LIGHTING STRATEGY FOLLOWS PUBLISHED GUIDANCE PROVIDED BY THE INSTITUTE OF LIGHTING PROFESSIONALS (ILP) AND BAT CONSERVATION TRUST (BCT) GUIDANCE NOTE 08 / 18 - BATS AND ARTIFICIAL LIGHTING IN THE UK

ASSESSMENT CONCLUSION

AS CAN BE SEEN FROM THE ADJACENT ASSESSMENT TABLE:

ECOLOGY E1 TO E19 AND TREES T1 / T2 -

IN THE ABSENCE OF PUBLISHED LIMITING THRESHOLDS, LIGHT SPILL IS LIMITED TO BE BELOW 1.0 LUX ON THE VERTICAL PLANE (2m - 10m), NO FURTHER DESIGN MITIGATION REQUIRED

RESIDENTIAL R1 TO R3-
BEING BASED ON A E3 ZONE - SUBURBAN ENVIRONMENT, ILP GUIDANCE FOR OBTRUSIVE LIGHT 2021 PROVIDES LIMITING VALUES IN TERMS OF OBTRUSIVE LIGHT.

VERTICAL LIGHT SPILL TO FACING ELEVATIONS -
ALL ASSESSMENT VALUES RELATING TOWARDS LIGHT SPILL TO SURROUNDING RESIDENTIAL PREMISES ARE COMPLIANT TO THIS GUIDANCE
- NO FURTHER DESIGN MITIGATION REQUIRED

LUMINOUS INTENSITY (GLARE) -
DUE TO LUMINAIRES BEING OF LIMITED INTENSITY, CONSIDERED ANGLE OF DIRECTION AND SUITED FOR PUBLIC REALM APPLICATIONS (ROADWAYS / PEDESTRIAN), GLARE IS NOT CONSIDERED TO BE APPLICABLE - NO FURTHER DESIGN MITIGATION REQUIRED

DIRECT SKYGLOW -
DUE TO ALL LUMINAIRES BEING DOWNLIGHT ONLY, DIRECT SKYGLOW IS NOT CONSIDERED TO BE AN ISSUE - NO FURTHER DESIGN MITIGATION REQUIRED

| Rev | Date | Description | Dwn | Chk |
|---|---|---|---|---|
| B | APR 23 | REDLINE REMOVED | LG | LG |
| A | APR 23 | AMENDED TEXT | LG | LG |
| - | MAR 23 | DRAFT ISSUE | LG | LG |

Light PaD

LIGHT PLANNING AND DESIGN LTD
ASSESSMENT / INTERIOR / EXTERIOR / DAYLIGHT / ECOLOGY

CLIENT
SHALL DO HAYES DEVELOPMENTS LIMITED

PROJECT
HAYES PARK

DRAWING TITLE
PRELIMINARY EXTERNAL LIGHTING AND ASSESSMENT

DRAWING STATUS
PLANNING

DRAWN BY: LG | CHK BY: LG | DATE: MAR 23 | SCALE: 1:500 @A1
DRAWING No: P0308EXT001 | REVISION: B