17 SLINGSBY PLACE
LONDON | WC2E 9AB

London Borough of Hillingdon
3N/02 Civic Centre
High Street
Uxbridge
Middlesex
UB8 1UW

11th April 2023

Dear Sirs

RE: FORMER CANTEEN BUILDING AND BLOCK H, FORMER NESTLE FACTORY – INTERNAL DAYLIGHT AMENITY ADDENDUM

BDW Trading Limited (the 'Applicant') have appointed Point 2 to consider the implications of the full application in respect of the former Canteen Building and Block of the former Nestle Factory development in respect of the quality of light within the development.

Point 2 have reported on the internal quality of light in respect of the various extant planning consents. This was most recently undertaken for a 'drop-in' application (ref. 1331/APP/2019/2314) approved on the 28 June 2021 which included Block H. This approval was for:

> *"Development of 4no. new buildings comprising residential units (in addition to those approved under planning permission ref. 1331/APP/2017/1883) a basement extension to Block B, flexible commercial uses (Class E) and associated landscaping, access, car parking and other engineering works."* (the 'Additional Unit Scheme')."

Following the above consent, a Section 73 application was permitted on 10 November 2021 for:

> *"Section 73 application seeking a variation to Condition 61 (Approved Drawings) of planning permission ref: 1331/APP/2019/1666 dated 11-09-20 (Section 73 application to vary Condition 9 (Residential Condition - Approved Plans) of planning permission ref: 1331/APP/2017/1883 dated 28/06/2018 (Part demolition of existing factory buildings and associated structures, and redevelopment to provide residential dwellings (Use Class C3), office, retail, community and leisure uses (Use Class A1/A3/A4/B1/B8/D1/D2), commercial floorspace (Use Classes B1c/B2/B8) and Data Centre (Sui Generis), amenity and playspace, landscaping, allotments, access, service yards, associated car parking and other engineering works) (as amended by application ref: 1331/APP/2020/50 dated 06/02/20)). The amendments to the approved plan proposed: Alteration to the elevations of Unit 4 involving 4 no. new loading docks (totalling 12 no. with 8 loading docks permitted by planning permission ref: 1331/APP/2017/1883 (as amended)), 1 no. roller door and 2 no. pedestrian doors, and the alteration to the dock pit, and minor alteration to internal layout to office."* (the 'Operational Consent').

These permissions will herein collectively be referred to as the 'Extant Permissions'.

The Applicant is now seeking to approval for the following works:

"Partial demolition and redevelopment of the former canteen building to provide a new healthcare facility (Class E(e)), nursery (Class E(f)) and residential buildings (Block H) (Class C3) with a commercial unit at ground floor (Class E), including associated landscaping, access, car parking and other engineering works." (The 'Proposed Development')"

The drawings at Appendix 1 of this report illustrate the Proposed Development in plan and 3D. The Proposed Development has been shown in turquoise on these drawings and the Extant Permissions are shown in yellow. A revised internal daylight and sunlight assessment has been undertaken to determine whether those alterations will have any material bearing on the daylight availability to the proposed new residential accommodation within the development.

Method of Assessment

The technical assessments have been undertaken in accordance with the recognised assessment methodologies set out in both the Building Research Establishment document *'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice,* 2022 ('the BRE Guidelines') and also British Standard EN 17037:2018 ('the British Standard').

The internal daylight assessment criteria is based on the new CBDM methodology as set out in British Standard 'Daylight in Buildings' (BS EN17037), and more recently the BRE Guidelines, published in June 2022. This contains advice and guidance on interior daylighting for all buildings across Europe but also has a UK National Annex which provides suggested targets for dwellings in the UK.

This new guidance supersedes the old British Standard BS 8206 Part 2 and BRE Guidelines (2011) which was based on Average Daylight Factor.

The CBDM methodology is based on target illuminances from daylight. This is the Daylight Illuminance (DI) to be achieved over half the area of the room (measured on a reference plane at tabletop level) for at least half of the daylight hours in a typical year. The calculations are based on weather data files which cover different regions of the UK. The calculations are done for each hour of the day for every day of the year. There are 8760 hours in the year, of which 4380 are daylight hours, and therefore the targets should be achieved for 2190 hours in the year.

The methodology uses a more accurate sky model which simulates the movement of the sun throughout the day and accounts for the weather conditions at the time. As a result, CBDM accounts for the presence of sunlight and therefore the orientation of the rooms/windows is accounted for. A south facing room is likely to have access to higher levels of natural light than a north facing room and as a result, in order to comply a north facing room would typically need larger windows.

The BRE Guidelines gives illuminance recommendations of 100 Lux in bedrooms, 150 Lux in living rooms and 200 Lux in kitchens. These are median illuminances to be achieved over 50% of the assessment grid for at least half of the daylight hours.

Where a room has a shared use, the highest target should apply. However, it also says that Local Authorities could use discretion here and that a living room target of 150 Lux could be used for combined living/kitchen/dining room (LKD) if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in the design.

Throughout the entire design process, Point 2 have worked closely with the project architects to ensure that the internal daylight potential of the proposed dwellings is maximised, wherever possible. Despite this, there will invariably be areas where daylight will be more limited within large regenerative schemes of this nature. LBH previously recognised this and adopted a flexible approach in considering the Extant Permissions' daylight levels as acceptable, despite there being some rooms that were below the typical minimum recommendations.

In fact, a flexible and progressive approach to the guidance was agreed in a meeting with LBH held on the 17th November 2017, where it was advised that an ADF of 0.75% would be considered acceptable in respect of the bedrooms, with an ADF of 1.5% accepted in respect of the living kitchen dining rooms (LKDs). Adopting the same principle in the case of the new CBDM assessment criteria, we have sought to adopt a 150lux target to main LKDs.

Summary of Results

The latest tabulated internal daylight results are attached at Appendix 2 of this report. We have also included annotated plans showing the Medium Illuminance (Lux) Levels for each room.

Following discussions with LBH, it has been confirmed that the nursery element of the Canteen Building does not have any specific daylight and sunlight requirements so has not been considered within the analysis.

We have analysed the daylight amenity within all of the residential habitable rooms within the Proposed Development that have access to daylight. This totals 82 habitable rooms comprised of 41 bedrooms and 41 living/kitchen/dining rooms (LKDs). It should be noted, that we only assessed alternate floors for the Extant Permission given the scale of the full redevelopment.

The results of our internal daylight analysis confirm that 76/82 habitable rooms assessed (92.7%) across the Proposed Development will achieve the minimum recommended Lux targets for their relevant room uses. The Proposed Development therefore performs very well and comparably to the other buildings within the masterplan.

To enable a direct comparison between the current proposals and the Extant Permission, we have also run the CBDM results for the Extant Permission, the results of which are enclosed with Appendix 3. The analysis confirms that 62 of the 70 habitable rooms tested in the previously consented Block H (88.6%) would have achieved the recommended Lux targets based on their room uses.

It is therefore demonstrably the case that the current proposals for the Canteen Building (Block H) perform more favourably in terms of natural light amenity than the Extant Permission.

Conclusion

Overall, it is considered that the design and layout of the Proposed Development has been developed to maximise the daylight potential to the proposed new dwellings. In our opinion there continues to be an excellent rate of compliance that is comparable to the other blocks within the masterplan and within other large regeneration schemes within London.

The technical results have confirmed that the proposed alterations to the Proposed Development have resulted in an overall improved level of natural light amenity to the proposed dwellings within Block H, when assessed against the new Climate Based Daylight assessment criteria.

It is our view that the proposed habitable rooms will continue to retain a very good level of compliance with the BRE guidelines and demonstrate that the new dwellings have been designed to harness natural daylight availability wherever possible and that the position should continue to be considered acceptable.

Yours Sincerely

Matt Harris
Director
For and on behalf of Point 2

APPENDIX 1

Sources:
Point Cloud Data

Site Photos

Received (05/04/22)
F_dMFK_2260_NestleCanteen_A2000, A2001, A2005, A150, A151, A152,153 CAD DRAWINGS.

Key:
Existing Buildings
Proposed Scheme

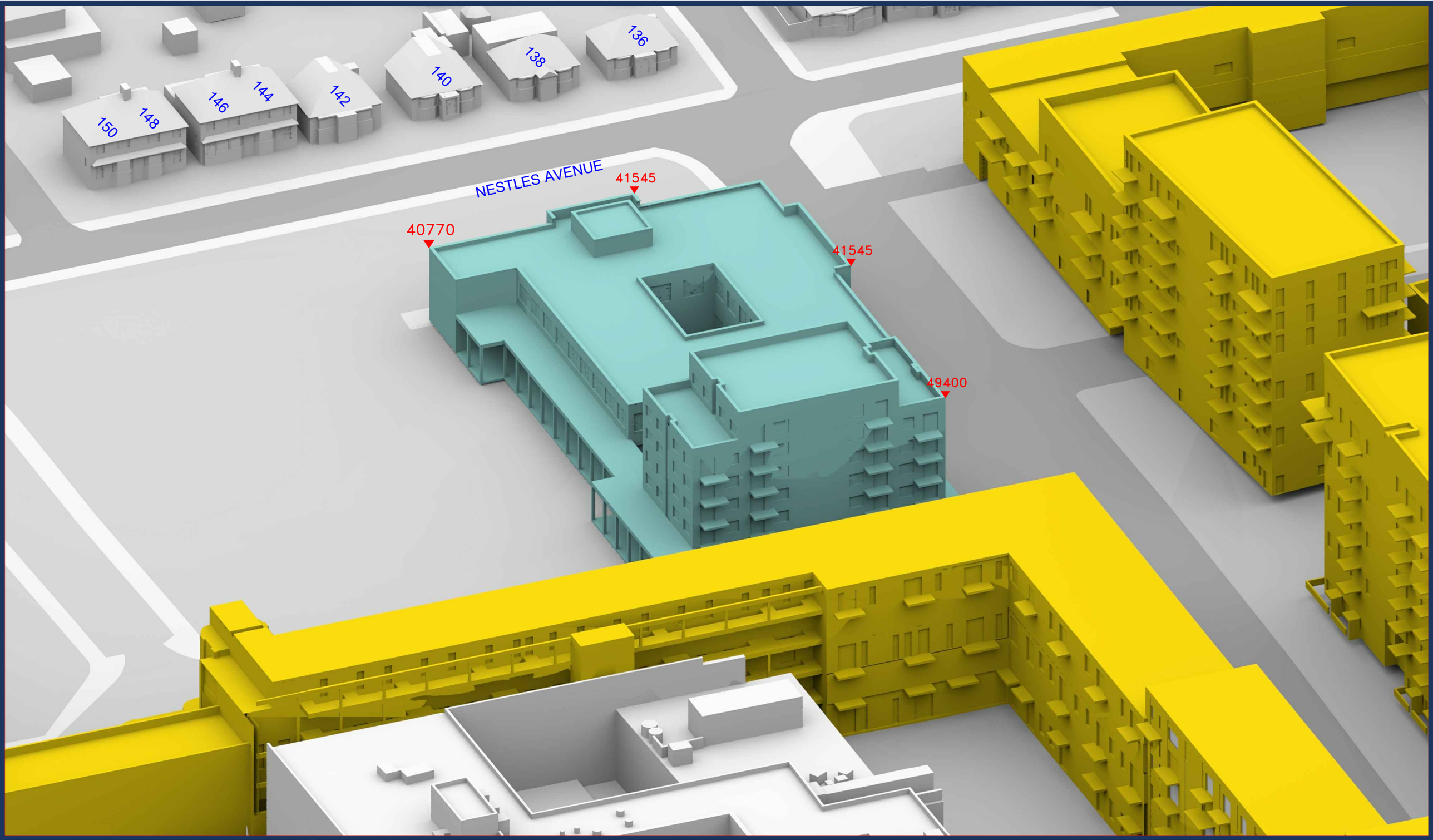
N

Project: Nestle Site, Hayes

Title: Site Plan
Proposed Scheme05/04/22

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
		BA/NB/EVJ	NS	APRIL 22	P774/148	22

Point 2 Surveyors Limited, 17 Slingsby Place, London, WC2E 9AB | 0207 836 5828 | point2.co.uk



Sources:
Point Cloud Data

Site Photos

Received (05/04/22)
F_dMFK_2260_NestleCanteen_A2000, A2001, A2005, A150, A151, A152,153 CAD DRAWINGS.

Key:
Existing Buildings
Proposed Scheme

All Heights in mm AOD

Project: Nestle Site, Hayes

Title: 3D View
Proposed Scheme 05/04/22

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
		BA/NB/EVJ	NS	APRIL 22	P774/150	22

Point 2 Surveyors Limited, 17 Slingsby Place, London, WC2E 9AB | 0207 836 5828 | point2.co.uk

APPENDIX 2

BRE CBDM ANALYSIS

NESTLE CANTEEN BUILDING, BLOCK H
SCHEME PR050422

BRE CBDM ANALYSIS

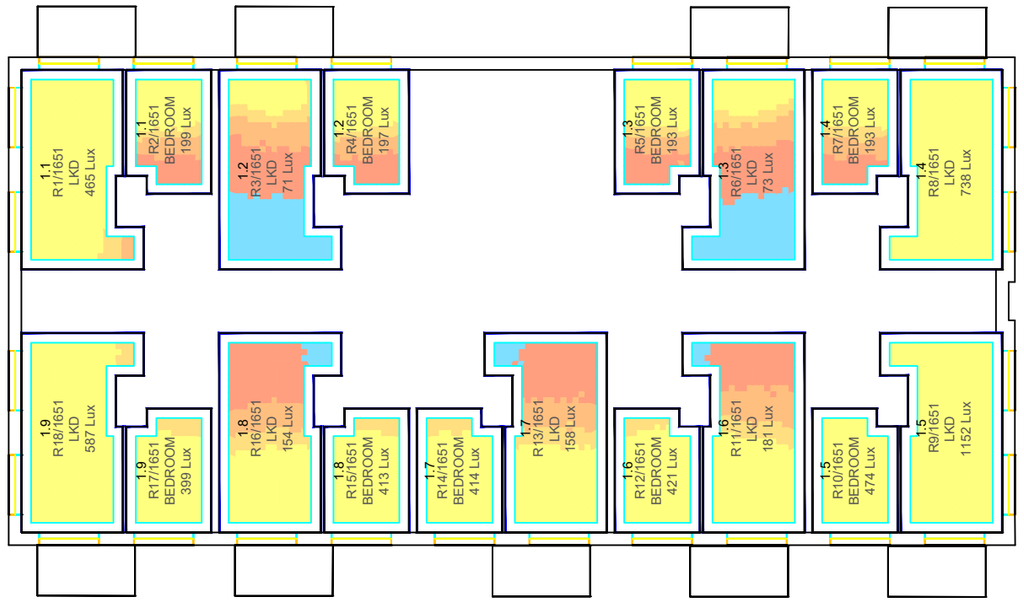
Room Label	Room Use	Room Use Target Illuminance Lux	Median Illuminance Lux	Fraction of Working Plane % Area
Block H				
R1/1651	LKD	150	465.4	98.1
R2/1651	BEDROOM	100	199.1	77.8
R3/1651	LKD	150	71.2	22.8
R4/1651	BEDROOM	100	196.7	77.8
R5/1651	BEDROOM	100	192.8	74.5
R6/1651	LKD	150	73.3	23.4
R7/1651	BEDROOM	100	193.3	78.9
R8/1651	LKD	150	737.9	100
R9/1651	LKD	150	1151.7	100
R10/1651	BEDROOM	100	473.7	100
R11/1651	LKD	150	181.3	55.8
R12/1651	BEDROOM	100	420.8	100
R13/1651	LKD	150	158	52.2
R14/1651	BEDROOM	100	414.5	100
R15/1651	BEDROOM	100	413.2	100
R16/1651	LKD	150	154	50.8
R17/1651	BEDROOM	100	398.7	100
R18/1651	LKD	150	586.8	100
R1/1652	LKD	150	535	98.6
R2/1652	BEDROOM	100	260.6	97.1
R3/1652	LKD	150	86.2	32.7
R4/1652	BEDROOM	100	258.2	97.5
R5/1652	BEDROOM	100	262.9	95.4
R6/1652	LKD	150	90.3	33.9
R7/1652	BEDROOM	100	259.3	95.9
R8/1652	LKD	150	822.6	100
R9/1652	LKD	150	1339.6	100
R10/1652	BEDROOM	100	601	100

BRE CBDM ANALYSIS

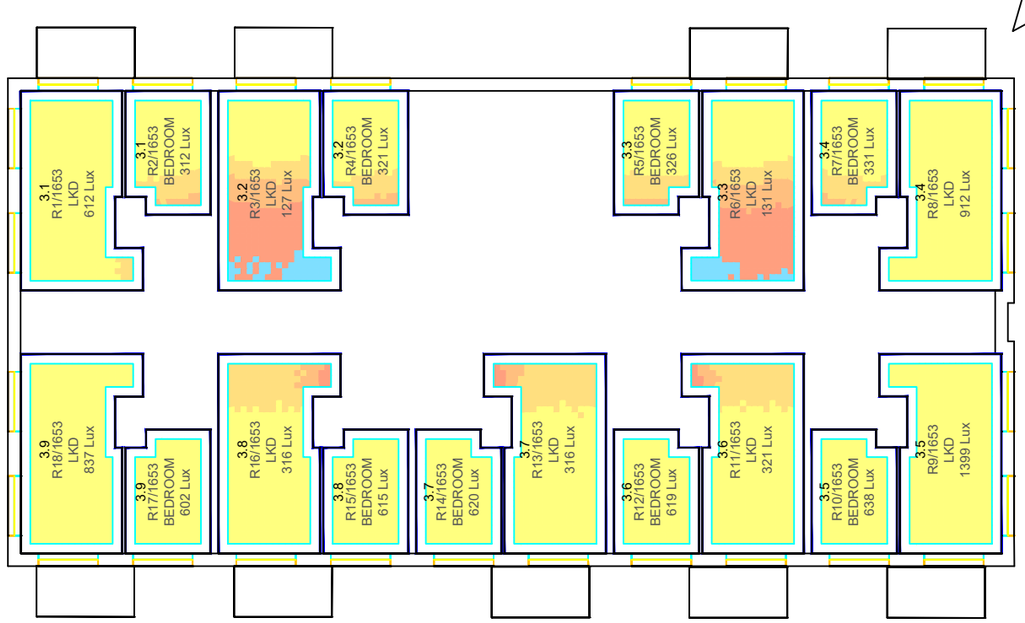
R11/1652	LKD	150	289.8	89.5
R12/1652	BEDROOM	100	583.2	100
R13/1652	LKD	150	280.9	84
R14/1652	BEDROOM	100	594.3	100
R15/1652	BEDROOM	100	587.5	100
R16/1652	LKD	150	272	80.9
R17/1652	BEDROOM	100	560.5	100
R18/1652	LKD	150	753.8	100
R1/1653	LKD	150	611.7	100
R2/1653	BEDROOM	100	312.2	100
R3/1653	LKD	150	127.2	43.5
R4/1653	BEDROOM	100	320.7	100
R5/1653	BEDROOM	100	326.1	100
R6/1653	LKD	150	130.9	45.6
R7/1653	BEDROOM	100	331.2	100
R8/1653	LKD	150	912.1	100
R9/1653	LKD	150	1398.8	100
R10/1653	BEDROOM	100	637.7	100
R11/1653	LKD	150	321.4	96.2
R12/1653	BEDROOM	100	619.5	100
R13/1653	LKD	150	316.4	95.7
R14/1653	BEDROOM	100	620	100
R15/1653	BEDROOM	100	615.5	100
R16/1653	LKD	150	315.7	95
R17/1653	BEDROOM	100	602.2	100
R18/1653	LKD	150	837.2	100
R1/1654	LKD	150	762.4	100
R2/1654	BEDROOM	100	407.1	100
R3/1654	LKD	150	169.9	54.9
R4/1654	BEDROOM	100	370.8	100
R5/1654	BEDROOM	100	387.1	100
R6/1654	LKD	150	173.4	56.9
R7/1654	BEDROOM	100	418.5	100
R8/1654	LKD	150	1066.6	100

BRE CBDM ANALYSIS

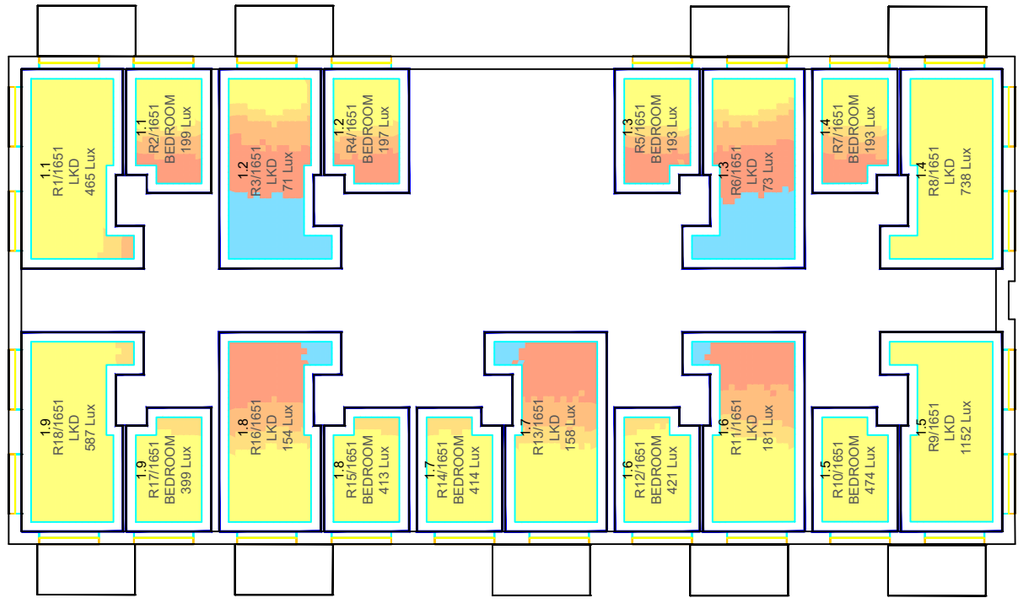
R9/1654	LKD	150	1614.8	100
R10/1654	BEDROOM	100	705.4	100
R11/1654	LKD	150	337.7	96.9
R12/1654	BEDROOM	100	642.9	100
R13/1654	LKD	150	328.6	95.8
R14/1654	BEDROOM	100	649.5	100
R15/1654	BEDROOM	100	637.2	100
R16/1654	LKD	150	330.4	96.5
R17/1654	BEDROOM	100	685.5	100
R18/1654	LKD	150	980.4	100
R1/1655	LKD	150	803.6	100
R2/1655	BEDROOM	100	458	100
R3/1655	BEDROOM	100	470.2	100
R4/1655	LKD	150	994.2	100
R5/1655	LKD	150	1436.8	100
R6/1655	BEDROOM	100	707.8	100
R7/1655	LKD	150	398.8	97.4
R8/1655	BEDROOM	100	713	100
R9/1655	BEDROOM	100	708.9	100
R10/1655	LKD	150	975.7	100



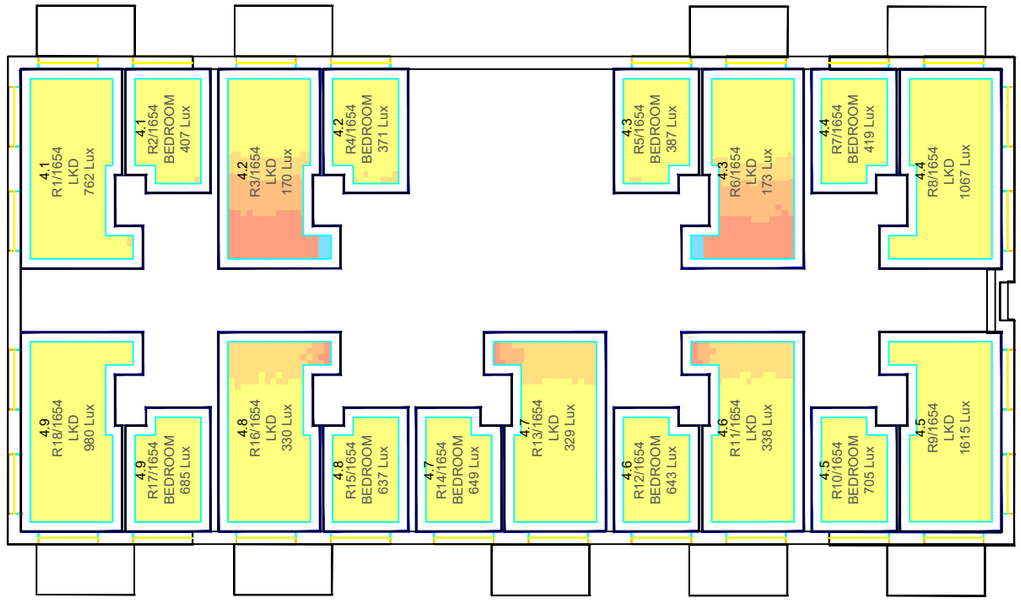
FIRST FLOOR



THIRD FLOOR



SECOND FLOOR



FOURTH FLOOR

Sources:
Point Cloud Data

Site Photos

Received (05/04/22)
F_dMFK_2260_NestleCanteen_A2000, A2001, A2005, A150, A151, A152,153 CAD DRAWINGS.

Key: Daylight Illuminance
(achieved for 50% of daylight hours)

- <50 Lux
- >50 Lux
- >100 Lux
- >150 Lux
- >200 Lux

Median Illuminance (Lux) Levels shown for each room.

Recommended Targets:
Bedroom 100 Lux
Living Room 150 Lux
Kitchen 200 Lux

Project: Nestle Site, Hayes

Title: Plan View
Internal Room Layout and Daylight Illuminance Study
Block H

Scheme Confirmed:

Date:

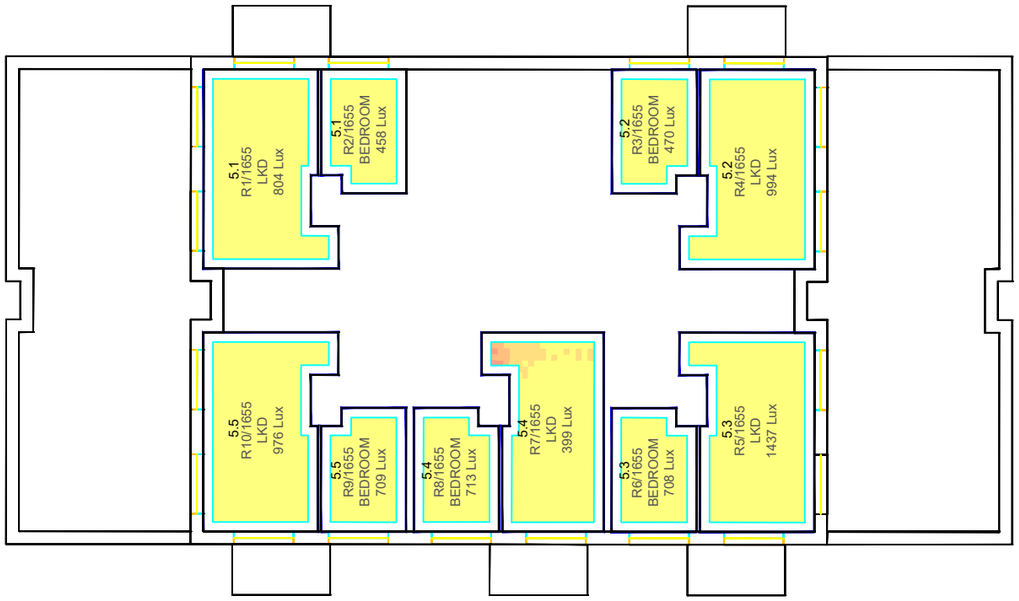
Drawn By: BA/NB/EVJ

Scale: 1:200

Date: SEPT 22

Dwg No: P774/CBDM 192

Rel: 24



FIFTH FLOOR

N

Sources:
Point Cloud Data

Site Photos

Received (05/04/22)
F_dMFK_2260_NestleCanteen_A2000, A2001, A2005, A150, A151, A152,153 CAD DRAWINGS.

Key: Daylight Illuminance
(achieved for 50% of daylight hours)

- <50 Lux
- >50 Lux
- >100 Lux
- >150 Lux
- >200 Lux

Median Illuminance (Lux) Levels shown for each room.

Recommended Targets:
Bedroom 100 Lux
Living Room 150 Lux
Kitchen 200 Lux

Project: Nestle Site,
Hayes

Title: Plan View
Internal Room Layout and Daylight Illuminance Study
Block H

Scheme Confirmed:	Date:	Drawn By:	Scale:	Date:	Dwg No:	Rel:
		BA/NB/EVJ	1:200	SEPT 22	P774/CBDM 193	24

APPENDIX 3

BRE CBDM ANALYSIS

NESTLE CANTEEN BUILDING, BLOCK H
SCHEME PR231020

BRE CBDM ANALYSIS

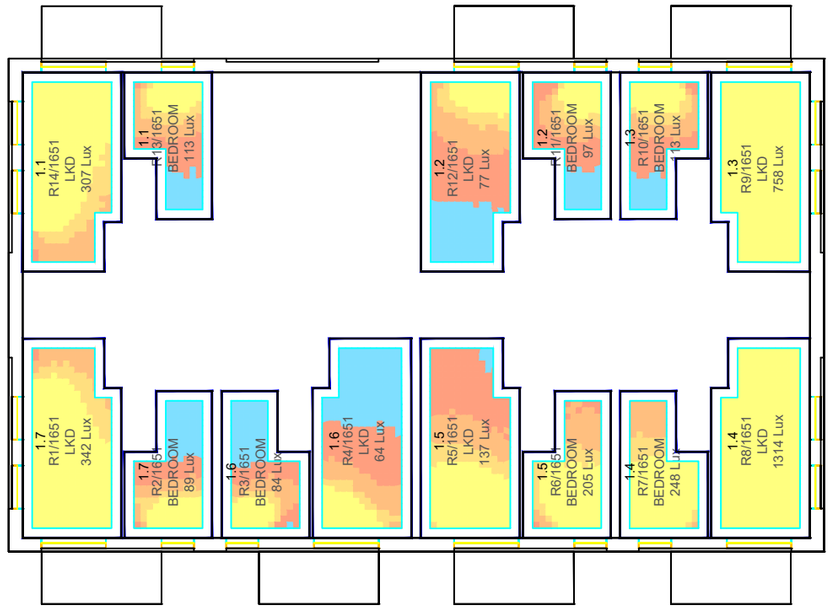
Room Label	Room Use	Room Use Target Illuminance Lux	Median Illuminance Lux	Fraction of Working Plane % Area
Block H				
R13/1651	BEDROOM	100	113.1	55.1
R14/1651	LKD	200	306.9	73
R11/1651	BEDROOM	100	96.8	46.8
R12/1651	LKD	200	77.4	12.8
R9/1651	LKD	200	758.3	100
R10/1651	BEDROOM	100	112.8	54
R7/1651	BEDROOM	100	248.3	100
R8/1651	LKD	200	1314	100
R5/1651	LKD	200	137.3	36
R6/1651	BEDROOM	100	205.4	95.6
R3/1651	BEDROOM	100	83.5	41.8
R4/1651	LKD	200	63.9	13.1
R1/1651	LKD	200	342.4	77.4
R2/1651	BEDROOM	100	89.1	46.8
R13/1652	BEDROOM	100	144.3	67.7
R14/1652	LKD	200	521.8	94.1
R11/1652	BEDROOM	100	120.5	65.4
R12/1652	LKD	200	95.1	23.2
R9/1652	LKD	200	839.4	100
R10/1652	BEDROOM	100	146.1	67.2
R7/1652	BEDROOM	100	319.1	100
R8/1652	LKD	200	1446.3	100
R5/1652	LKD	200	286.1	72.4
R6/1652	BEDROOM	100	266.5	100
R3/1652	BEDROOM	100	201.6	84.6
R4/1652	LKD	200	216.2	53.7
R1/1652	LKD	200	747.8	100
R2/1652	BEDROOM	100	247.8	97.3

BRE CBDM ANALYSIS

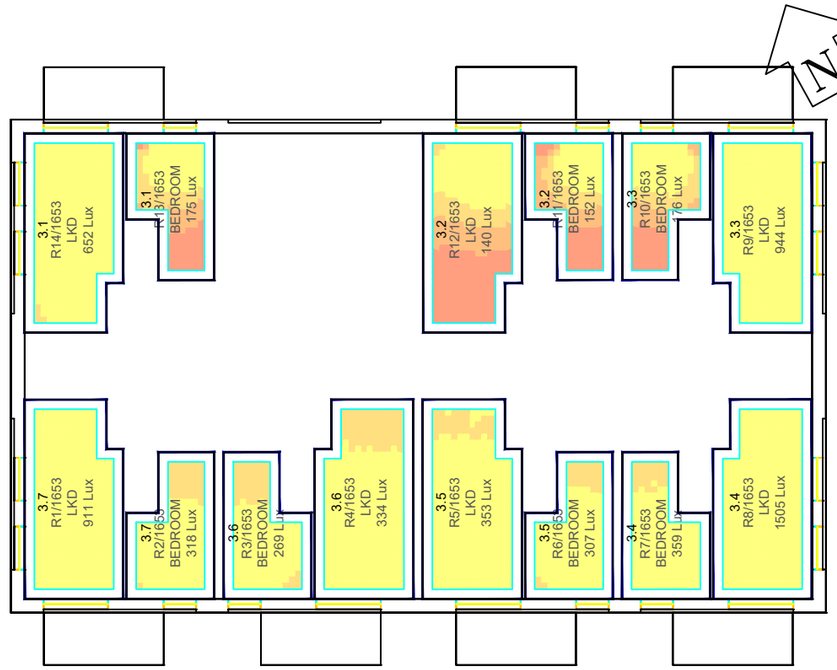
R13/1653	BEDROOM	100	175.1	76.9
R14/1653	LKD	200	652.2	98.9
R11/1653	BEDROOM	100	152.3	74.2
R12/1653	LKD	200	140	34.6
R9/1653	LKD	200	944.3	100
R10/1653	BEDROOM	100	176.5	77
R7/1653	BEDROOM	100	359.5	100
R8/1653	LKD	200	1504.7	100
R5/1653	LKD	200	353.1	89.6
R6/1653	BEDROOM	100	307	100
R3/1653	BEDROOM	100	269.5	100
R4/1653	LKD	200	334.4	81.9
R1/1653	LKD	200	911.1	100
R2/1653	BEDROOM	100	317.7	100
R13/1654	BEDROOM	100	209.9	88.5
R14/1654	LKD	200	766.1	100
R11/1654	BEDROOM	100	179.8	86.3
R12/1654	LKD	200	187.1	47.2
R9/1654	LKD	200	1027.4	100
R10/1654	BEDROOM	100	207.6	88.5
R7/1654	BEDROOM	100	378.4	100
R8/1654	LKD	200	1540.9	100
R5/1654	LKD	200	372.1	93.3
R6/1654	BEDROOM	100	313.1	100
R3/1654	BEDROOM	100	295.4	100
R4/1654	LKD	200	374.2	95.2
R1/1654	LKD	200	989.4	100
R2/1654	BEDROOM	100	352.9	100
R13/1655	BEDROOM	100	253.9	100
R14/1655	LKD	200	950.3	100
R11/1655	BEDROOM	100	212.9	100
R12/1655	LKD	200	291.3	69.3
R9/1655	LKD	200	1188.9	100
R10/1655	BEDROOM	100	254.4	100

BRE CBDM ANALYSIS

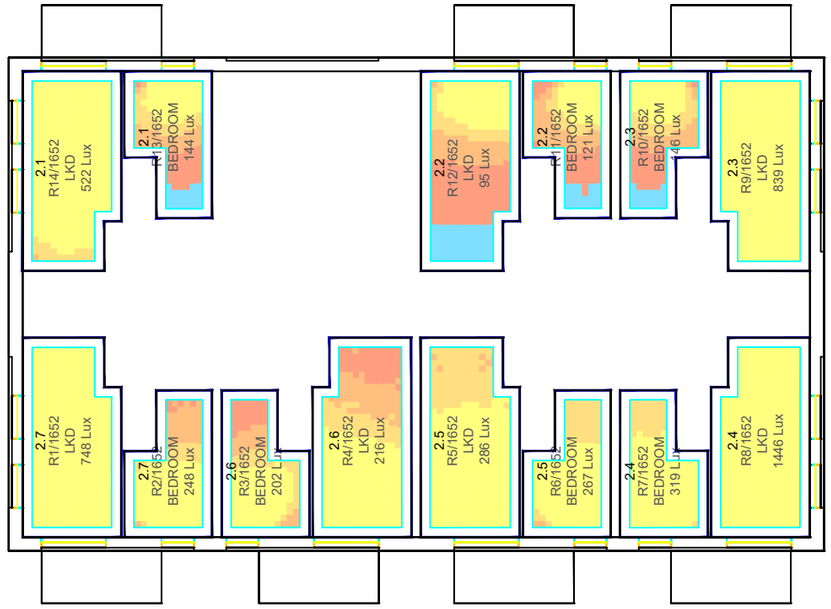
R7/1655	BEDROOM	100	409.6	100
R8/1655	LKD	200	1746.3	100
R5/1655	LKD	200	455.1	100
R6/1655	BEDROOM	100	345	100
R3/1655	BEDROOM	100	331.1	100
R4/1655	LKD	200	458	100
R1/1655	LKD	200	1176.5	100
R2/1655	BEDROOM	100	392.2	100



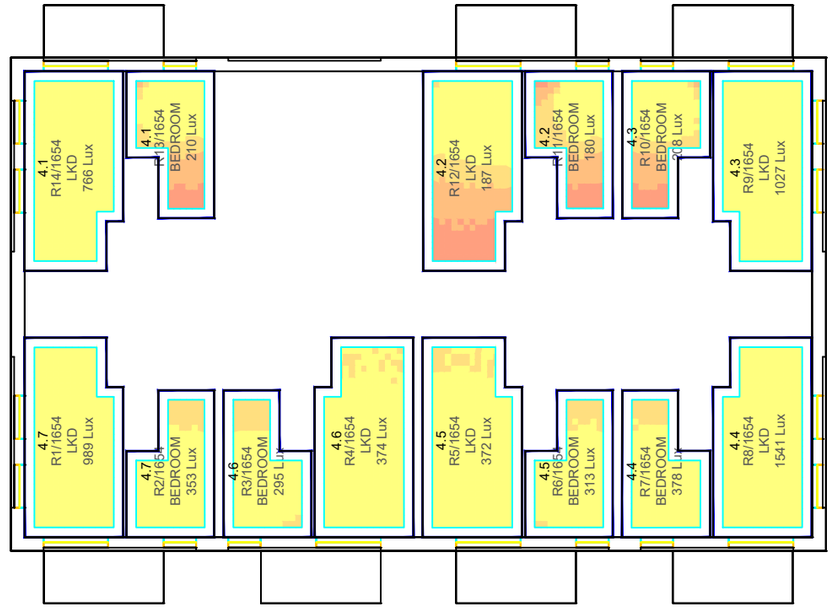
FIRST FLOOR



THIRD FLOOR



SECOND FLOOR



FOURTH FLOOR

Sources:
Point Cloud Data

Site Photos

Received (20/10/20)
F_dMFK_2052_Nestle 3d model_AUS__MA CLEAN_30-05-ifc - 3D View - {3D}.dwg
H.dwg
B_FNF-A-B-MKWR-M3-Facade_V2_detached.dwg
C_065_NFH_HPK-HBA-00-ZZ-M3-A-015_BLOCK C_PRS_Detached.dwg

Key: Daylight Illuminance
(achieved for 50% of daylight hours)

- <50 Lux
- >50 Lux
- >100 Lux
- >150 Lux
- >200 Lux

Median Illuminance (Lux) Levels shown for each room.

Recommended Targets:

Bedroom	100 Lux
Living Room	150 Lux
Kitchen	200 Lux

Project: Nestle Site,
Hayes

Title: Plan View
Internal Room Layout and Daylight Illuminance Study
Block H

Scheme Confirmed:

Date:

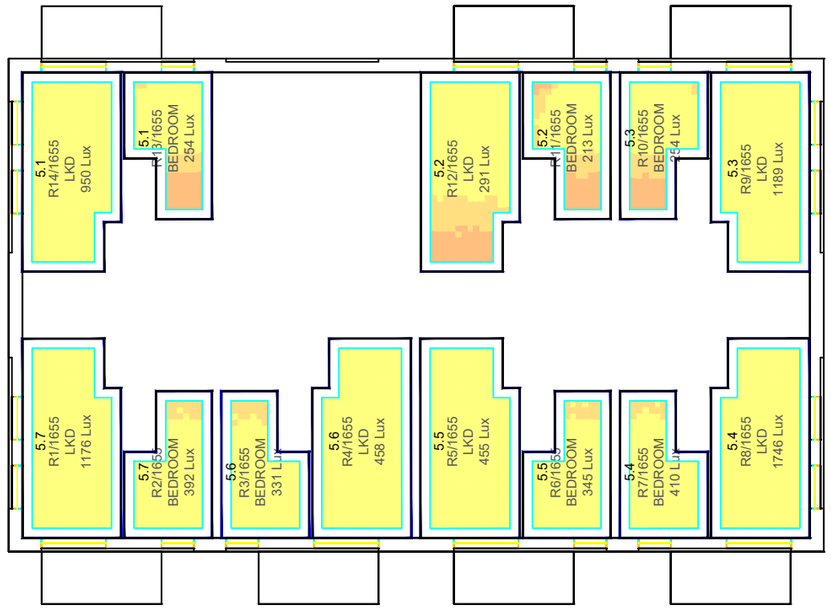
Drawn By: BA/NB/EVJ

Scale: 1:200

Date: SEPT 2022

Dwg No: P774/CBDM 190

Rel: 23



FIFTH FLOOR

N

Sources:
Point Cloud Data

Site Photos

Received (20/10/20)
F_dMFK_2052_Nestle 3d model_AUS__MA CLEAN_30-05-ifc - 3D View - {3D}.dwg
H.dwg
B_FNF-A-B-MKWR-M3-Facade_V2_detached.dwg
C_065_NFH_HPK-HBA-00-ZZ-M3-A-015_BLOCK C_PRS_Detached.dwg

Key: Daylight Illuminance
(achieved for 50% of daylight hours)

- <50 Lux
- >50 Lux
- >100 Lux
- >150 Lux
- >200 Lux

Median Illuminance (Lux) Levels shown for each room.

Recommended Targets:
Bedroom 100 Lux
Living Room 150 Lux
Kitchen 200 Lux

Project: Nestle Site,
Hayes

Title: Plan View
Internal Room Layout and Daylight Illuminance Study
Block H

Scheme Confirmed:

Date:

Drawn By: BA/NB/EVJ

Scale: 1:200

Date: SEPT 2022

Dwg No: P774/CBDM 191

Rel: 23