



Unlocking potential for a better built environment

DAYLIGHT & SUNLIGHT

INTERNAL DAYLIGHT, SUNLIGHT
AND OVERSHADOWING REPORT

29 Newport Road, Cardiff

MyS Living

06 August 2026

GIA No: **24257**

PROJECT DATA:

Client **MyS Living**
Architect **Fletcher Joseph**
Project Title **29 Newport Road, Cardiff**
Project Number **24257**

REPORT DATA:

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GIA Department **Daylight Department**
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1 EXECUTIVE SUMMARY

The purpose of this report is to ascertain whether the proposed development will provide student accommodation with acceptable levels of daylight and sunlight.

The scheme comprises a 23-storey purpose-built student accommodation building, including both self-contained studios and cluster units. Daylight and sunlight assessments have been undertaken for all studios, student bedrooms with a shared Living/Kitchen/Dining (LKD) spaces and external amenity areas in accordance with BRE Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice (2022) and EN 17037:2018, including the UK National Annex.

The assessment demonstrates strong daylight performance. Of the 399 rooms tested, 356 (89%) meet the recommended daylight targets. This is based on applying a 150 lux target to the self contained studios and communal LKDs, a commonly adopted and widely recognised approach in urban developments that is supported by BRE guidance.

In terms of sunlight, 106 of 154 studios and 107 of 196 cluster bedrooms meet or exceed the recommended sunlight criteria.

The development also provides two outdoor amenity spaces, both of which exceed the recommended solar exposure targets and will be well sunlit.

Overall, the proposed development has been optimised to maximise daylight, sunlight and amenity provision, ensuring future students benefit from good levels of natural light both within the accommodation and across the external amenity spaces.

2 INTRODUCTION

GIA has been instructed to provide a report upon the potential availability of Daylight and Sunlight to the proposed accommodation within the residential scheme prepared by Fletcher Joseph. GIA was specifically instructed to carry out the following:

- To create a 3D computer model of the proposal based upon drawings prepared by Fletcher Joseph;
- Carry out a Median Daylight Illuminance assessment as recommended by BRE;
- Carry out an assessment of sunlight exposure as recommended within the BRE guidance;
- Carry out an overshadowing assessment of communal open spaces using the methodology set out in the BRE guidance for Sun Hours On Ground (SHOG) for all relevant amenity areas; and
- Prepare a report setting out the analysis and our findings.

3 BRE GUIDELINES

The Building Research Establishment (BRE) have set out in their handbook 'Site Layout Planning for Daylight and Sunlight a Guide to Good Practice (BR 209 2022)', guidelines and methodology for the measurement and assessment of daylight and sunlight within proposed buildings.

3.1 INTRODUCTION

The BRE published the latest edition of 'Site layout planning for daylight and sunlight: a guide to good practice' in June 2022 (BR 209). This is to be read in conjunction with BS EN 17037:2018 "Daylight in buildings", the UK National Annex of the British Standard and the CIBSE publication LG 10 'Daylighting – a guide for designers'.

BR 209 contains methodologies for appraising the daylight and sunlight quality within new developments. Nonetheless, the main aim of the guidance is maintained: *"to help rather than constrain the designer"* as stated in Paragraph 1.5 of the new guidance.

The report provides advice, but also clearly states that it *"is not mandatory and the guide should not be seen as an instrument of planning policy."* The guidance also acknowledges in its introduction that *"Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."* (Paragraph 1.6)

3.2 BS EN 17037:2018 AND THE UK ANNEX

The latest European Standard on daylight is BS EN 17037:2018 "Daylight in buildings". Following a review by a dedicated commission of UK experts, the British Standard Institution appended a UK National Annex which noted that the new recommendations "may not be achievable for some buildings, particularly dwellings" and specifically mentions dwellings in a dense urban area or with tall trees outside. The annex goes on to suggest lower recommended light levels for dwellings, in line with those of the previous version of the British Standard, BS8206-2:2008.

BS EN 17037 includes four criteria: daylighting, views, sunlight access and glare. Daylighting and sunlight access are considered relevant for residential buildings and therefore discussed within this report.

View out and Glare are not solely but mostly relevant in offices and schools, where occupants are more fixed to a certain location within a room. In residential habitable rooms, occupants tend to move more freely and therefore view out and glare are not assessed within residential buildings.

In relation to sunlight access, BS EN 17037:2018 suggests that the hours of sunlight reaching a window is considered "on a selected date between February 1st and March 21st". BR209 recommends that this date is preferably the equinox (see section 3.4).

3.3 DAYLIGHT

The BRE set out the methods for assessing daylight within a proposed building within section 2.1 and Appendix C of the handbook. This is based on the methods detailed in the BS EN 17037.

BS EN 17037 suggests two possible methodologies for appraising daylight:

- Illuminance Method
- Daylight Factor Method

Illuminance method

Climate Based Daylight Modelling (CBDM) is used to predict daylight illuminance using sun and sky conditions derived from standard meteorological data (often referred to as climate or weather data). This analytical method allows the prediction of absolute daylight illuminance based on the location and building orientation, in addition to the building's daylight systems (shading systems, for example). Annex A within the BS EN 17037 proposes values of target illuminances and minimum target illuminances to exceed 50 % of daylight hours over 50% or more of the assessment area.

BS EN 17037 sets out minimum illuminance levels (300 lux) that should be exceeded over 50% of the space for more than half of the daylight hours in the year. It also includes recommendations for medium and high daylighting levels within a space (500 lux and 700 lux respectively). It should be noted here, however, that these targets are specified irrespective of a space's use or design.

The National Annex suggests that these targets can

be challenging to achieve within residential settings, particularly in areas of higher density and so suggests lower targets can be considered in this situation. It should be noted here that the reduced targets suggested within the BS EN 17037:2018 National Annex are provided so as to be comparable with the previous BR209's recommendations for ADF. These targets are:

- 100 lux for bedrooms
- 150 lux for living rooms
- 200 lux for living/kitchen/diners, kitchens, and studios.

It is however stated in paragraph C17 of the BRE that: *"Where a room has a shared use, the highest target should apply. For example in a bed sitting room in student accommodation, the value for a living room should be used if students would often spend time in their rooms during the day. Local authorities could use discretion here. For example, the target for a living room could be used for a combined living/dining/kitchen area if the kitchens are not treated as habitable spaces, as it may avoid small separate kitchens in a design".*

Daylight Factor method

This method involves calculating the median daylight factor on a reference plane (assessment grid).

"The daylight factor is the illuminance at a point on the reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. The CIE standard overcast sky is used, and the ratio is usually expressed as a percentage."

This method of assessments considers an overcast sky, and therefore the orientation and location of buildings is not relevant. In order to account for different climatic conditions, Annex A within the BS EN 17037 sets equivalent daylight factor targets (D) for various locations in Europe.

The median daylight factor (MDF) should meet or exceed the target daylight factor relative to a given illuminance for more than half of daylight hours, over 50% of the reference plane.

3.4 SUNLIGHT

The BRE provide guidance in respect of sunlight quality for new developments within section 3.1 of the handbook. It is generally acknowledged that the presence of sunlight is more significant in residential accommodation than it is in commercial properties, and this is reflected in the BRE document.

It states, "in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens where people prefer it in the morning rather than the afternoon."

The BRE guide considers the critical aspects of orientation and overshadowing in determining the availability of sunlight at a proposed development site.

The guide proposes minimising the number of dwellings whose living room face solely north unless there is some compensating factor such as an appealing view to the north, and it suggests a number of techniques to do so. Furthermore, it discusses massing solutions with a sensitive approach to overshadowing, so as to maximize access to sunlight.

At the same time, it acknowledges that the site's existing urban environment may impose orientation or overshadowing constraints which may not be possible to overcome.

To quantify sunlight access for interiors where sunlight is expected, it refers to the BS EN 17037 criterion that the minimum duration of sunlight exposure in at least one habitable room of a dwelling should be 1.5 h on March 21st. Table A.5 also establishes medium and high sunlight targets (3 and 4 hours).

This is to be checked at a reference point located centrally to the window's width and at the inner surface of the aperture (façade and/or roof). For multiple apertures in different façades it is possible to cumulate the time of sunlight availability if not occurring at the same time. The reference point is minimum 1.2 m above the floor and 0.3 m above the window sill if present.

The summary of section 3.1 of the guide states as follows:

"In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that:

- *At least one main window faces within 90 degrees of due south, and*
- *a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.. "*

3.5 OVERSHADOWING

The BRE guidance in respect of overshadowing of amenity spaces is set out in section 3.3 of the handbook. Here it states as follows:

"Sunlight in the spaces between and around buildings has an important impact on the overall appearance and ambience of a development. It is valuable for a number of reasons, to:

- *provide attractive sunlit views (all year)*
- *make outdoor activities like sitting out and children's play more pleasant (mainly warmer months)*
- *encourage plant growth (mainly spring and summer)*
- *dry out the ground, reducing moss and slime (mainly in colder months)*
- *melt frost, ice and snow (in winter)*
- *dry clothes (all year).*

Again, it must be acknowledged that in urban areas the availability of sunlight on the ground is a factor which is significantly controlled by the existing urban fabric around the site in question and so may have very little to do with the form of the development itself. Likewise, there may be many other urban design, planning and site constraints which determine and run contrary to the best form, siting and location of a proposed development in terms of availability

of sun on the ground.

The summary of section 3.3 of the guide states as follows:

"3. 3 .17 It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area that can receive two hours of sun on 21 March is less than 0.80 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March.."

3.6 FURTHER RELEVANT INFORMATION

CIBSE LG 10 'Daylighting – a guide for designers'.

This guide details the process of designing for daylighting. It outlines considerations of form, orientation, and other aspects involved in designing the building envelope to optimise natural light.

The guidance in this document is written primarily for buildings located within the UK, and will be most applicable to projects in northern hemisphere. However, the principles are universal, and can be applied to other locations if the appropriate weather data is used and local standards and regulations are respected

4 SIMULATION ASSUMPTIONS

In order to undertake the daylight and sunlight assessments set out in the previous pages, we have prepared a three dimensional computer model and used specialist lighting simulation software.

Calculation model

The three dimensional representation of the proposed development has been modelled using the drawings prepared by Fletcher Joseph, received by GIA in July 2026. These have been placed in the context of their surrounding buildings which have been modelled from survey information, photogrammetry, OS and site photographs. This allows for a precise model, which in turn ensures that analysis accurately represents the amount of daylight and sunlight available to the building façades, internal and external spaces, considering all of the surrounding obstructions and orientation.

The weather file recorded at Gatwick Airport was considered the most relevant for this assessment, as Gatwick's latitude (51.15°) is closer to that of the site location (51.48°).

Surfaces reflectance

In general, the reflectance value to be applied to surfaces in the computational modelling follows the BR 209 Annex C, unless specified by the design team. Assumptions applied are:

- Interior walls - 0.7
- Ceilings - 0.8
- Floors - 0.4
- Exterior ground and external obstructions - 0.2

Assessment Areas and Grids

For the daylight assessments, the bedrooms and studio rooms have been assessed excluding the rear portion of the space, which will be occupied by bathrooms and circulation areas.

An analysis 'grid' is located within each room at working plane height (850 mm from FFL) and offset by 0.3m from the walls as recommended by BR 209.

Grid points are spaced by 0.2m .

Assessment Resolution

The climate-based daylight assessments have been undertaken on an hourly basis whilst the sunlight exposure assessment has been undertaken for every minute on the relevant days.

Glazing transmittance

A glazing visible light transmittance (VLT) of 70% has been used as in agreement with the wider design team. A framing factor has been taken from the elevations supplied. Maintenance factors have been applied as per BR209 with 0.92 for windows not beneath an overhang.

5 CONCLUSIONS

5.1 CONCLUSION ON DAYLIGHT

The purpose of this report is to ascertain whether the Ty Cambria Scheme at 29 Newport Road will provide adequate levels of daylight for the enjoyment of future students.

To inform the assessments, all habitable rooms have been analysed for internal daylight performance using the Median Daylight Illuminance (MDI) metric, in accordance with the BRE Guidelines (2022) and the UK National Annex of BS EN 17037.

For daylight, the UKNA suggests an MDI of 100 lux in bedrooms, 150 lux in living rooms and 200 lux in kitchens or multi-use rooms which contain one.

The building comprises both cluster units, where multiple bedrooms share living, kitchen and dining (LKD) areas, and self-contained studios. These differ from conventional residential development in that residents make extensive use of shared communal facilities.

Although each studio includes a kitchenette, these units function primarily as combined living and sleeping spaces. Accordingly, they have been assessed against a 150 lux target, with the reported MDI values demonstrating performance against this benchmark.

In order to make the most of the available light, the design sought to locate circulation spaces and bathrooms towards the back of the rooms (Fig 01). The design also incorporates features that enhance daylight, including optimised window sizes to maximise daylight ingress while controlling overheating, and corner-located shared kitchen/dining rooms with dual-aspect windows to increase daylight where possible.

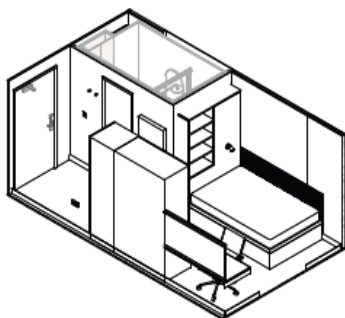


Fig. 01: Bedroom's conceptual isometric view

Owing to the considerable height of the building, excellent levels of light reach the windows located on the mid and upper levels. As is typical of schemes of this size, areas of reduced light potential are seen at the base of the building.

Overall, the building performs well. When adopting the commonly used approach to apply the 150 lux living room target also to combined LKDs, 356 (89%) of the 399 rooms assessed would achieve or exceed the minimum levels Median Daylight Illuminance (MDI) recommended within the UK National Annex.

When considering the higher 200 lux recommendation, then 344 rooms (86%) would meet the targets. The full assessment results are presented in Section 7 of this report.

Of the 46 rooms seeing lower levels of daylight, 37 are self-contained studios, three are cluster bedrooms and three are LKDs.

Inevitably, where larger rooms are provided (i.e. the self-contained studios), it is more difficult to light the entire room to the recommended median illuminance. However, the studio layouts have been arranged with the sleeping and living areas positioned at the front of the room and the kitchen towards the rear. As a result, the areas most frequently occupied benefit from higher daylight levels than those reported due to their proximity to the windows.

Where bedrooms have been found to fall short of guidance, this is a result of their relationship with Cardiff Sixth Form College directly West of the Scheme. However, these cluster units are linked to shared LKDs where good levels of light are available.

Of the three LKDs falling short of guidance, they do so only marginally, achieving at least 130 lux where 150 lux is recommended for living rooms.

Overall, the assessment demonstrates that the Scheme has been optimised for daylight, with the vast majority of rooms providing excellently lit accommodation for future students.

CONCLUSION ON SUNLIGHT

For traditional residential accommodation, BRE guidelines recommend 1.5 hours of sunlight on 21 March for at least one room in each unit. There is no specific guidance for care units with communal shared amenity spaces or cluster units. Therefore, all rooms have been tested for solar exposure as prompted by BRE guidelines, and results are interpreted based on professional judgement.

106 of the 154 studios and 107 of the 196 cluster bedrooms meet or exceed the suggested sunlight levels.

When looking at cluster units, 40 out of 49 (82%) exceed the minimum solar exposure within the shared living/kitchen/dinning space. A further four sees at least 1:00h of direct sunlinght. Therefore occupants of these units will have access to good levels of sunlight.

Overall, Ty Cambria is considered to perform well in terms sunlight. Occupants of the rooms that have been found to fall short of recommendations will still be able to enjoy good levels of natural light by using the shared amenities provided within their unit or within the building.

CONCLUSION ON OVERSHADOWING

The BRE recommend that for an open amenity space to be well sunlit throughout the year, at least 50% of its area should see two or more hours of sunlight on the equinox. An overshadowing assessment has therefore been undertaken for the areas of communal amenity provided within the scheme. The results of this assessment are shown in Section 8 of this report.

In addition, sun exposure assessments have also been undertaken for the equinox and summer solstice in order to provide a better understanding of the sunlight availability throughout the year.

The terraces at the seventh and twenty-third levels exceed the minimum recommendations set out in the BRE Guidelines and would be considered well sunlit throughout the year. Sunlight availability is particularly good during the summer months, when a significant proportion of each terrace is expected to receive in excess of six hours of direct sunlight.

As such, future residents will have access to excellent levels of sunlight in all open spaces.

6 SITE OVERVIEW

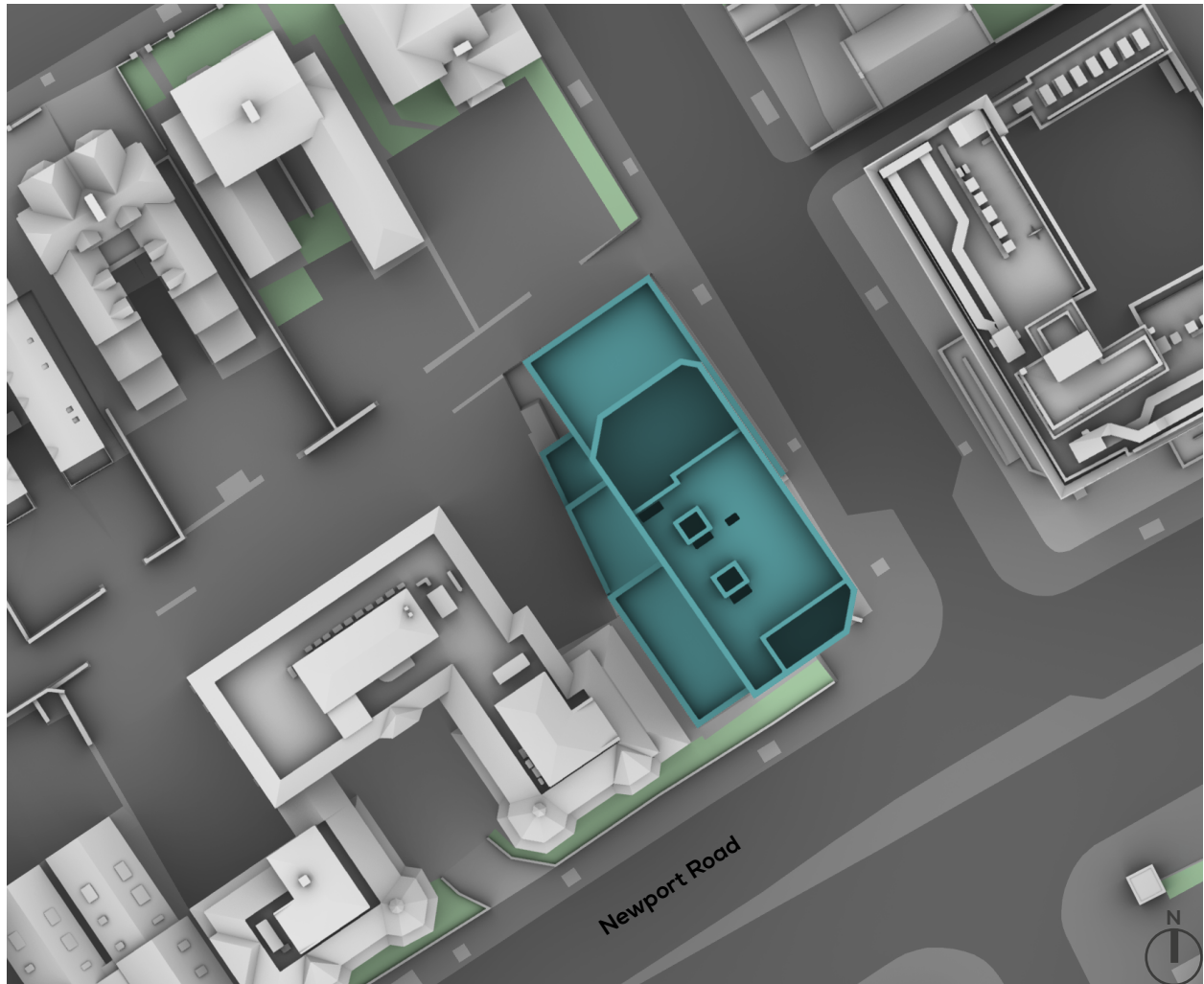


Fig. 02: Top view

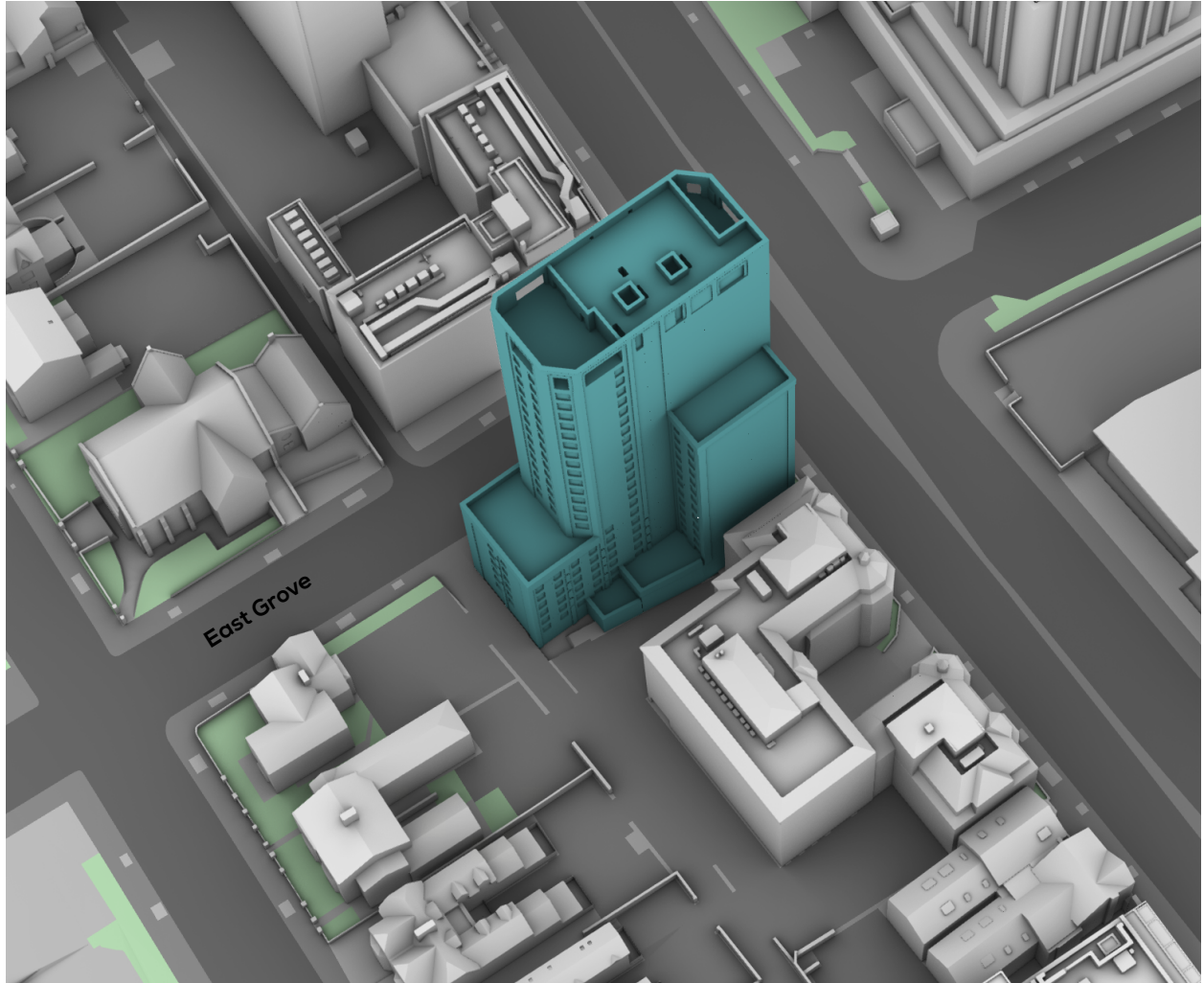


Fig. 03: Perspective view

7 INTERNAL DAYLIGHT AND SUNLIGHT ASSESSMENTS

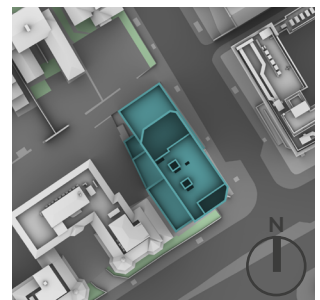
Level 01

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 01					
1	A	L/K/D	251	200	03:58
2	A	BEDROOM	185	100	03:31
3	A	BEDROOM	149	100	02:52
4	A	BEDROOM	86	100	01:48
5	A	BEDROOM	63	100	00:41
6	B	STUDIO	178	150	04:14
7	C	STUDIO	160	150	04:15
8	D	STUDIO	180	150	04:05
9	E	STUDIO	195	150	04:01
10	F	L/K/D	314	200	04:14
11	F	BEDROOM	154	100	00:10
12	F	BEDROOM	136	100	00:26
13	F	BEDROOM	120	100	00:39
14	F	BEDROOM	103	100	00:38
15	G	STUDIO	61	150	00:16
16	H	STUDIO	61	150	00:01
17	I	STUDIO	63	150	00:00
18	J	BEDROOM	101	100	00:00
19	J	BEDROOM	106	100	00:00
20	J	BEDROOM	127	100	00:00
21	J	BEDROOM	154	100	00:00
22	J	L/K/D	231	200	00:00

Table 01: Assessment Data



Fig. 04: Floor Plan



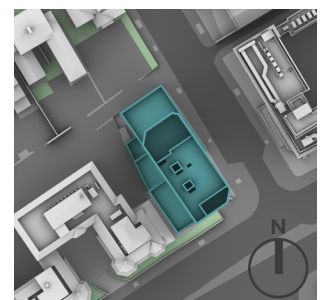
Level 02

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 02					
23	K	L/K/D	282	200	04:58
24	K	BEDROOM	205	100	04:24
25	K	BEDROOM	163	100	04:00
26	K	BEDROOM	114	100	03:19
27	K	BEDROOM	83	100	02:13
28	L	STUDIO	36	150	00:12
29	M	STUDIO	79	150	00:00
30	N	STUDIO	83	150	00:00
31	O	STUDIO	193	150	04:19
32	P	STUDIO	170	150	04:21
33	Q	STUDIO	189	150	04:13
34	R	STUDIO	205	150	04:09
35	S	L/K/D	328	200	04:38
36	S	BEDROOM	175	100	00:22
37	S	BEDROOM	162	100	00:33
38	S	BEDROOM	149	100	00:39
39	S	BEDROOM	133	100	00:38
40	T	STUDIO	66	150	00:16
41	U	STUDIO	66	150	00:01
42	V	STUDIO	70	150	00:00
43	W	BEDROOM	117	100	00:00
44	W	BEDROOM	126	100	00:00
45	W	BEDROOM	148	100	00:00
46	W	BEDROOM	176	100	00:00
47	W	L/K/D	262	200	00:00

Table 02: Assessment Data



Fig. 05: Floor Plan



Level 03

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 03					
48	X	L/K/D	312	200	06:04
49	X	BEDROOM	223	100	05:27
50	X	BEDROOM	185	100	04:50
51	X	BEDROOM	138	100	04:08
52	X	BEDROOM	100	100	03:21
53	Y	STUDIO	47	150	01:19
54	Z	STUDIO	92	150	00:00
55	AA	STUDIO	103	150	00:00
56	AB	STUDIO	196	150	04:29
57	AC	STUDIO	176	150	04:31
58	AD	STUDIO	198	150	04:28
59	AE	STUDIO	212	150	04:31
60	AF	L/K/D	343	200	05:19
61	AF	BEDROOM	207	100	00:26
62	AF	BEDROOM	198	100	00:33
63	AF	BEDROOM	186	100	00:39
64	AF	BEDROOM	167	100	00:39
65	AG	STUDIO	73	150	00:16
66	AH	STUDIO	74	150	00:01
67	AI	STUDIO	78	150	00:00
68	AJ	BEDROOM	150	100	00:00
69	AJ	BEDROOM	154	100	00:00
70	AJ	BEDROOM	178	100	00:00
71	AJ	BEDROOM	198	100	00:00
72	AJ	L/K/D	290	200	00:10

Table 03: Assessment Data

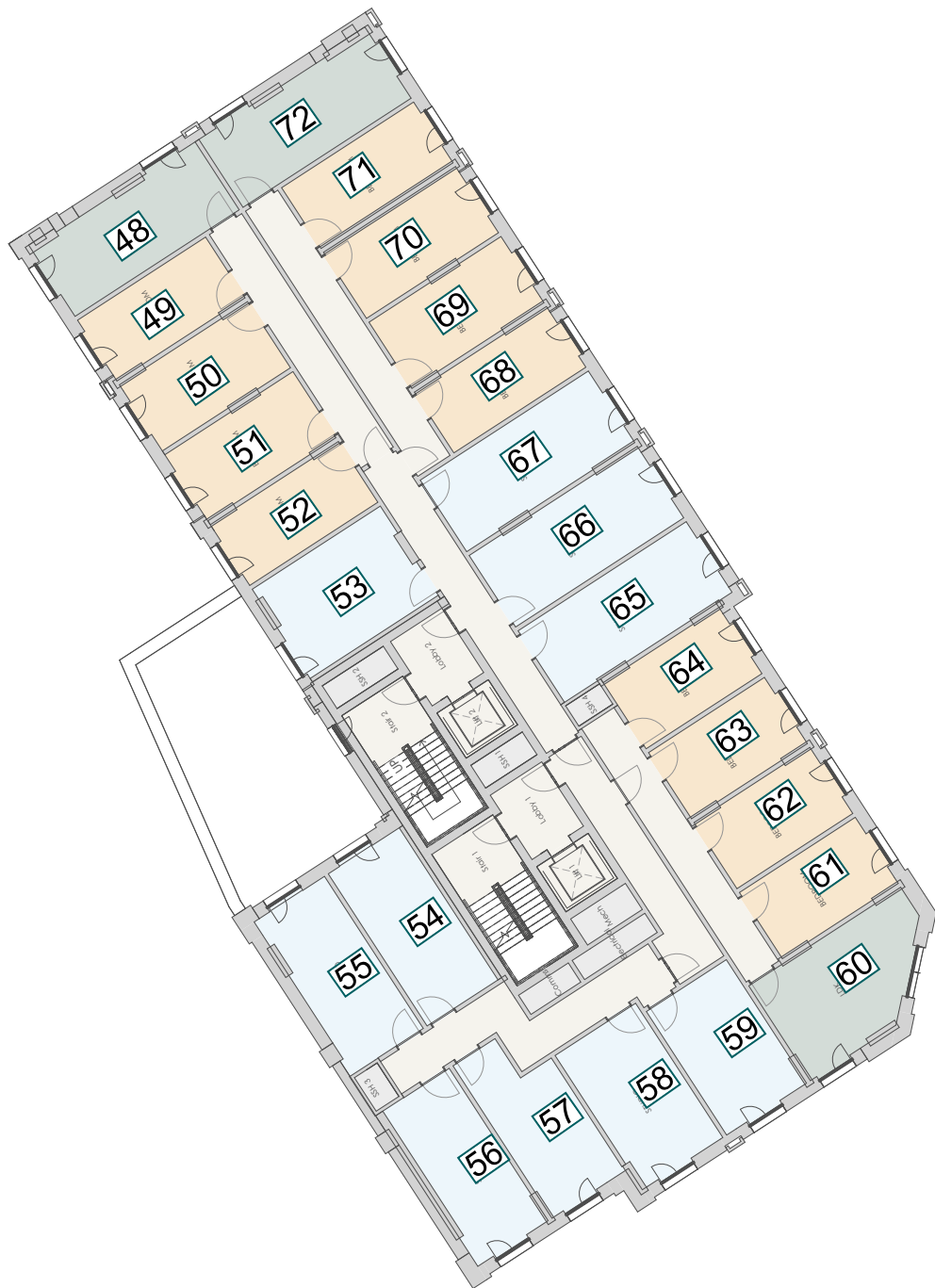
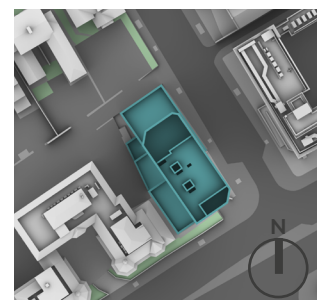


Fig. 06: Floor Plan



Level 04

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 04					
73	AK	L/K/D	345	200	06:04
74	AK	BEDROOM	255	100	06:04
75	AK	BEDROOM	218	100	05:52
76	AK	BEDROOM	181	100	05:02
77	AK	BEDROOM	150	100	04:15
78	AL	STUDIO	58	150	02:33
79	AM	STUDIO	103	150	00:00
80	AN	STUDIO	115	150	00:00
81	AO	STUDIO	204	150	04:44
82	AP	STUDIO	182	150	04:51
83	AQ	STUDIO	205	150	04:53
84	AR	STUDIO	223	150	04:58
85	AS	L/K/D	357	200	05:19
86	AS	BEDROOM	234	100	00:26
87	AS	BEDROOM	227	100	00:33
88	AS	BEDROOM	219	100	00:39
89	AS	BEDROOM	203	100	00:38
90	AT	STUDIO	95	150	00:16
91	AU	STUDIO	94	150	00:01
92	AV	STUDIO	100	150	00:00
93	AW	BEDROOM	184	100	00:00
94	AW	BEDROOM	186	100	00:00
95	AW	BEDROOM	202	100	00:02
96	AW	BEDROOM	225	100	00:00
97	AW	L/K/D	314	200	00:12

Table 04: Assessment Data

Level 05

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 05					
98	AX	L/K/D	383	200	06:04
99	AX	BEDROOM	291	100	06:04
100	AX	BEDROOM	260	100	06:04
101	AX	BEDROOM	238	100	06:05
102	AX	BEDROOM	219	100	05:18
103	AY	STUDIO	97	150	03:33
104	AZ	STUDIO	114	150	00:00
105	BA	STUDIO	130	150	00:00
106	BB	STUDIO	211	150	05:09
107	BC	STUDIO	188	150	05:20
108	BD	STUDIO	211	150	05:20
109	BE	STUDIO	229	150	05:13
110	BF	L/K/D	369	200	05:24
111	BF	BEDROOM	257	100	00:26
112	BF	BEDROOM	258	100	00:33
113	BF	BEDROOM	255	100	00:39
114	BF	BEDROOM	235	100	00:38
115	BG	STUDIO	115	150	00:16
116	BH	STUDIO	116	150	00:11
117	BI	STUDIO	122	150	00:18
118	BJ	BEDROOM	215	100	00:15
119	BJ	BEDROOM	214	100	00:13
120	BJ	BEDROOM	226	100	00:15
121	BJ	BEDROOM	243	100	00:20
122	BJ	L/K/D	334	200	00:33

Table 05: Assessment Data

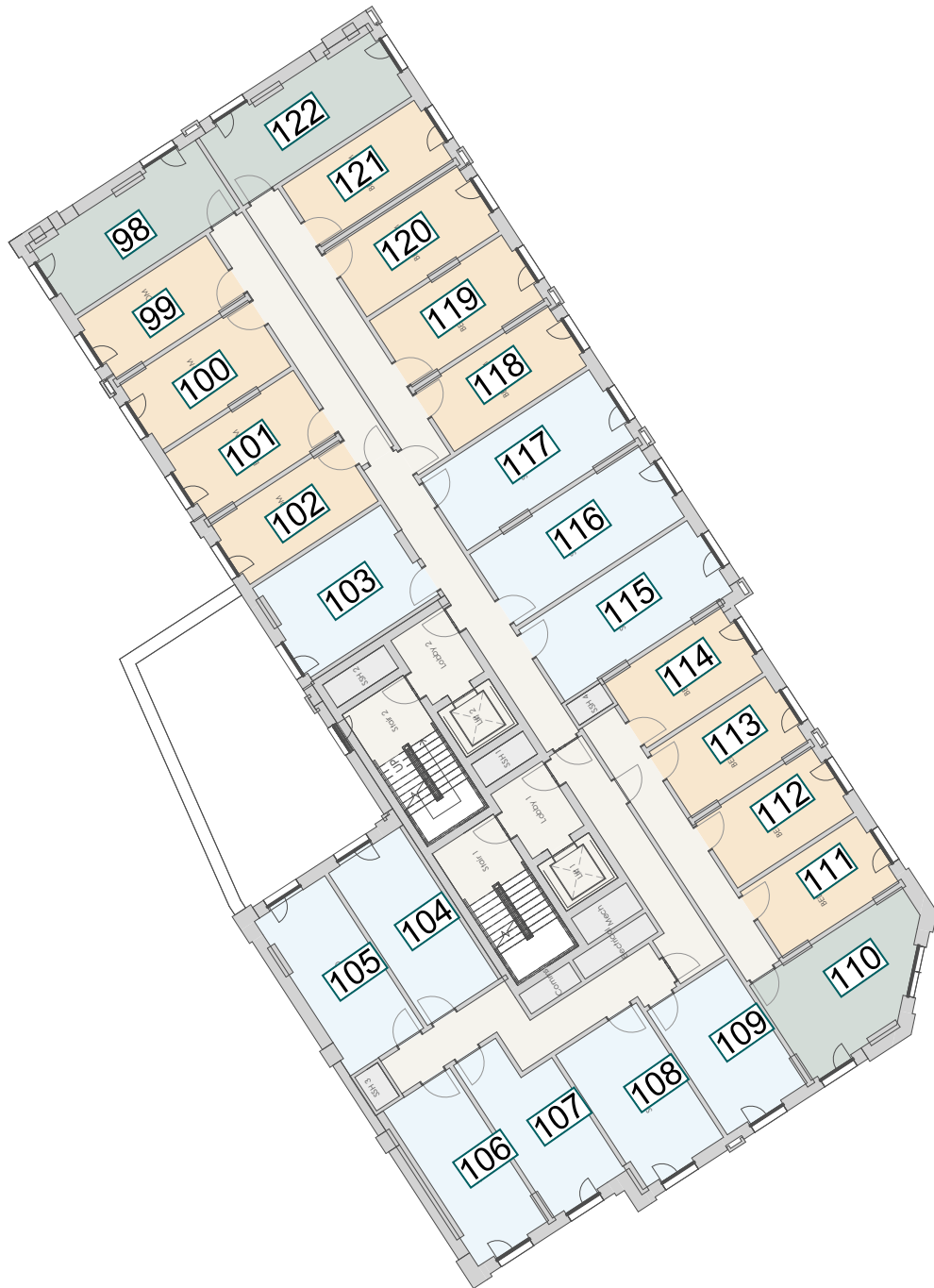


Fig. 08: Floor Plan



Level 06

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 06					
123	BK	L/K/D	411	200	06:04
124	BK	BEDROOM	324	100	06:04
125	BK	BEDROOM	298	100	06:04
126	BK	BEDROOM	288	100	06:05
127	BK	BEDROOM	281	100	06:05
128	BL	STUDIO	142	150	04:39
129	BM	STUDIO	128	150	00:00
130	BN	STUDIO	148	150	00:00
131	BO	STUDIO	219	150	05:32
132	BP	STUDIO	196	150	05:29
133	BQ	STUDIO	217	150	05:23
134	BR	STUDIO	242	150	05:19
135	BS	L/K/D	383	200	05:29
136	BS	BEDROOM	277	100	00:26
137	BS	BEDROOM	277	100	00:33
138	BS	BEDROOM	278	100	00:39
139	BS	BEDROOM	263	100	00:39
140	BT	STUDIO	138	150	00:40
141	BU	STUDIO	135	150	00:36
142	BV	STUDIO	141	150	00:38
143	BW	BEDROOM	240	100	00:33
144	BW	BEDROOM	232	100	00:36
145	BW	BEDROOM	246	100	00:43
146	BW	L/K/D	356	200	01:02
147	BW	BEDROOM	262	100	00:43

Table 06: Assessment Data

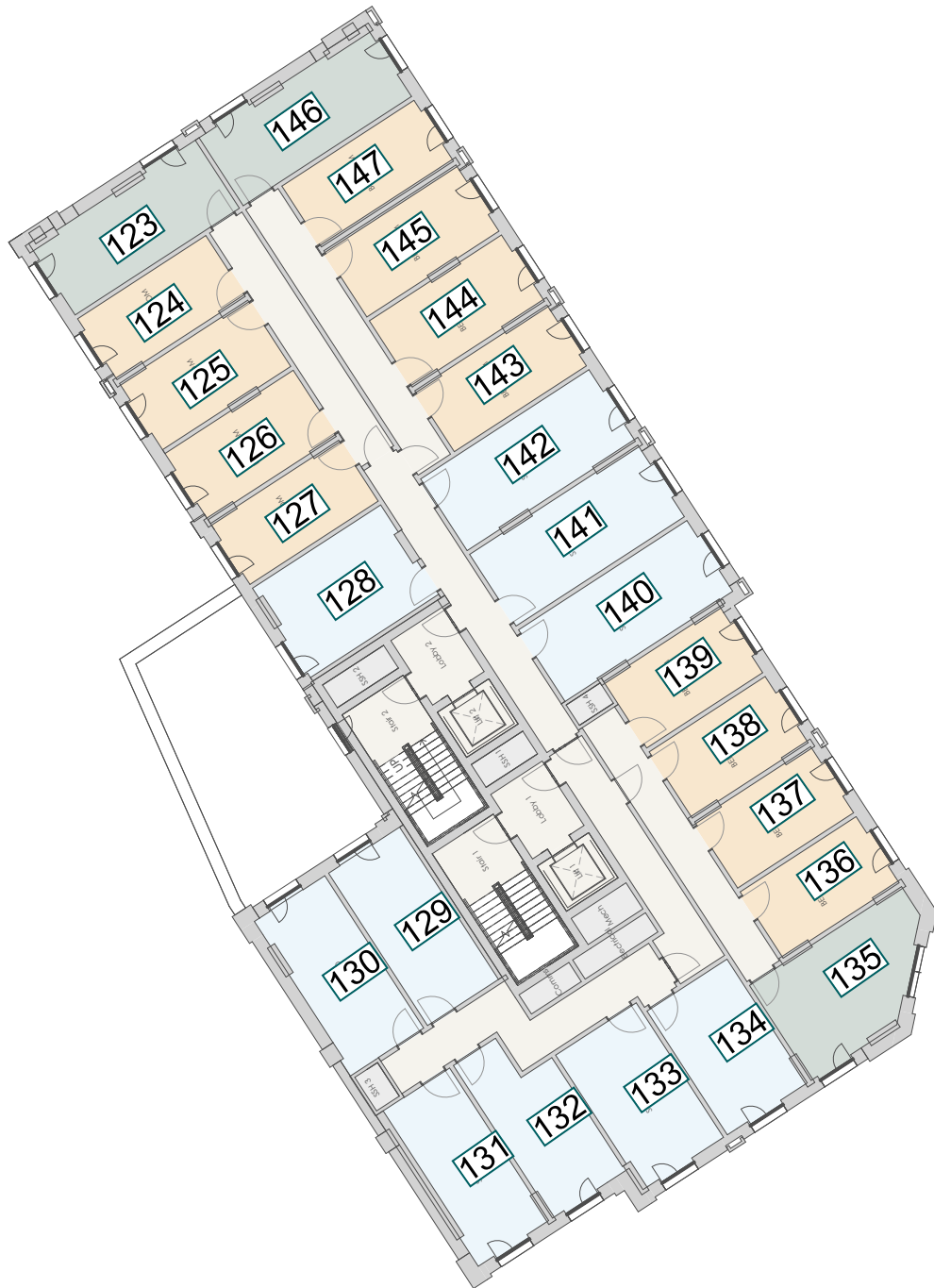


Fig. 09: Floor Plan



Level 07

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 07					
148	BX	STUDIO	176	150	05:24
149	BY	STUDIO	144	150	00:07
150	BZ	STUDIO	167	150	00:00
151	CA	STUDIO	226	150	05:37
152	CB	STUDIO	205	150	05:36
153	CC	STUDIO	226	150	05:31
154	CD	STUDIO	251	150	05:27
155	CE	L/K/D	398	200	05:37
156	CE	BEDROOM	296	100	00:26
157	CE	BEDROOM	298	100	00:33
158	CE	BEDROOM	298	100	00:41
159	CE	BEDROOM	295	100	00:45
160	CF	STUDIO	98	150	00:00
161	CG	STUDIO	97	150	00:00

Table 07: Assessment Data

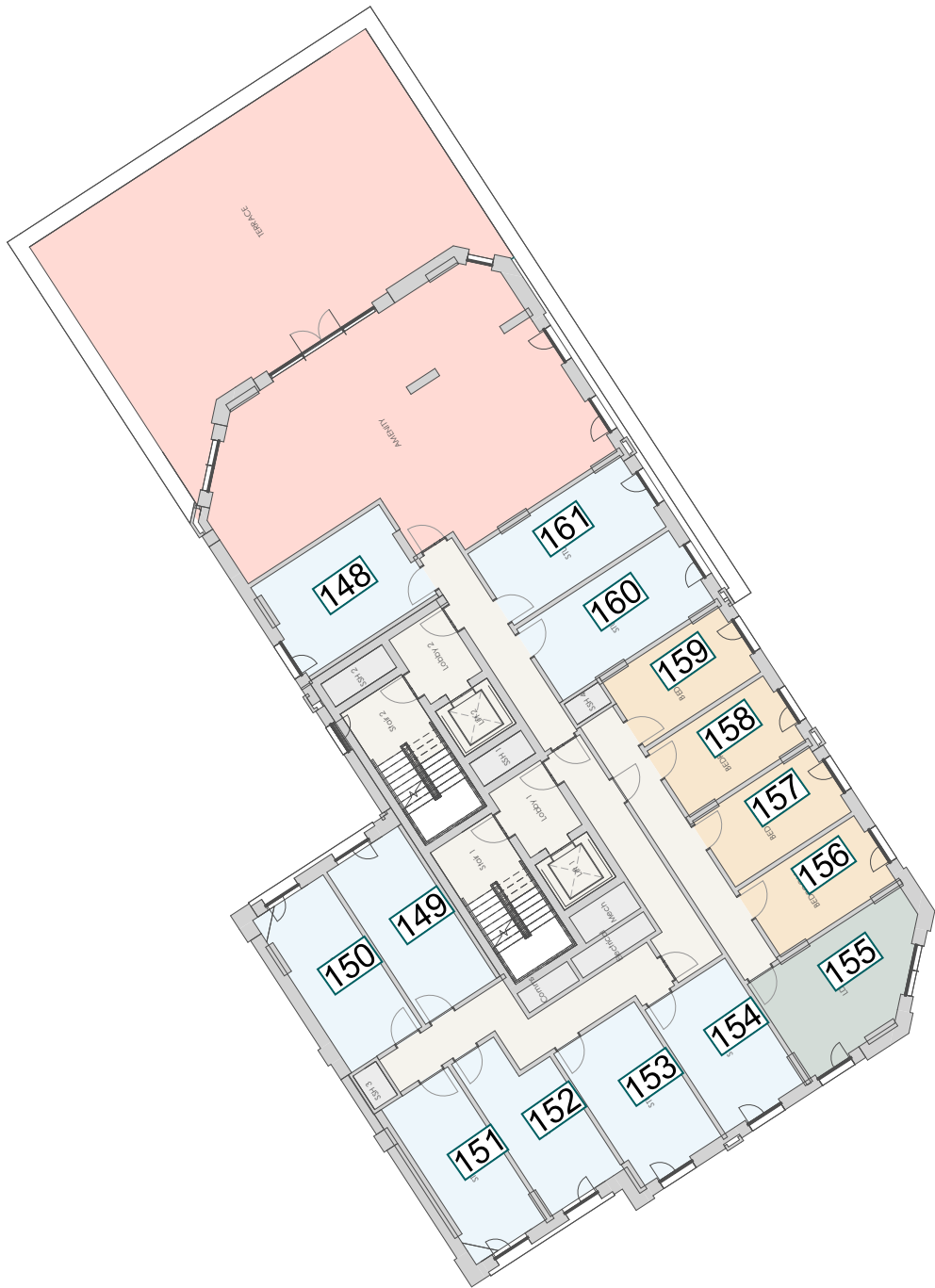
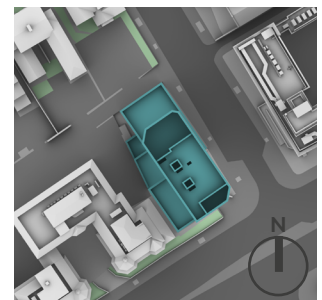


Fig. 10: Floor Plan



Level 08

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 08					
162	CH	STUDIO	413	150	04:02
163	CI	STUDIO	143	150	05:23
164	CJ	STUDIO	156	150	00:07
165	CK	STUDIO	183	150	00:07
166	CL	STUDIO	236	150	05:45
167	CM	STUDIO	213	150	05:44
168	CN	STUDIO	236	150	05:39
169	CO	STUDIO	260	150	05:35
170	CP	L/K/D	413	200	05:47
171	CP	BEDROOM	311	100	00:33
172	CP	BEDROOM	311	100	00:40
173	CP	BEDROOM	311	100	00:50
174	CP	BEDROOM	314	100	00:53
175	CQ	L/K/D	130	200	01:01
176	CQ	BEDROOM	315	100	01:10
177	CQ	BEDROOM	319	100	01:18
178	CQ	BEDROOM	319	100	01:29
179	CQ	BEDROOM	299	100	00:07

Table 08: Assessment Data

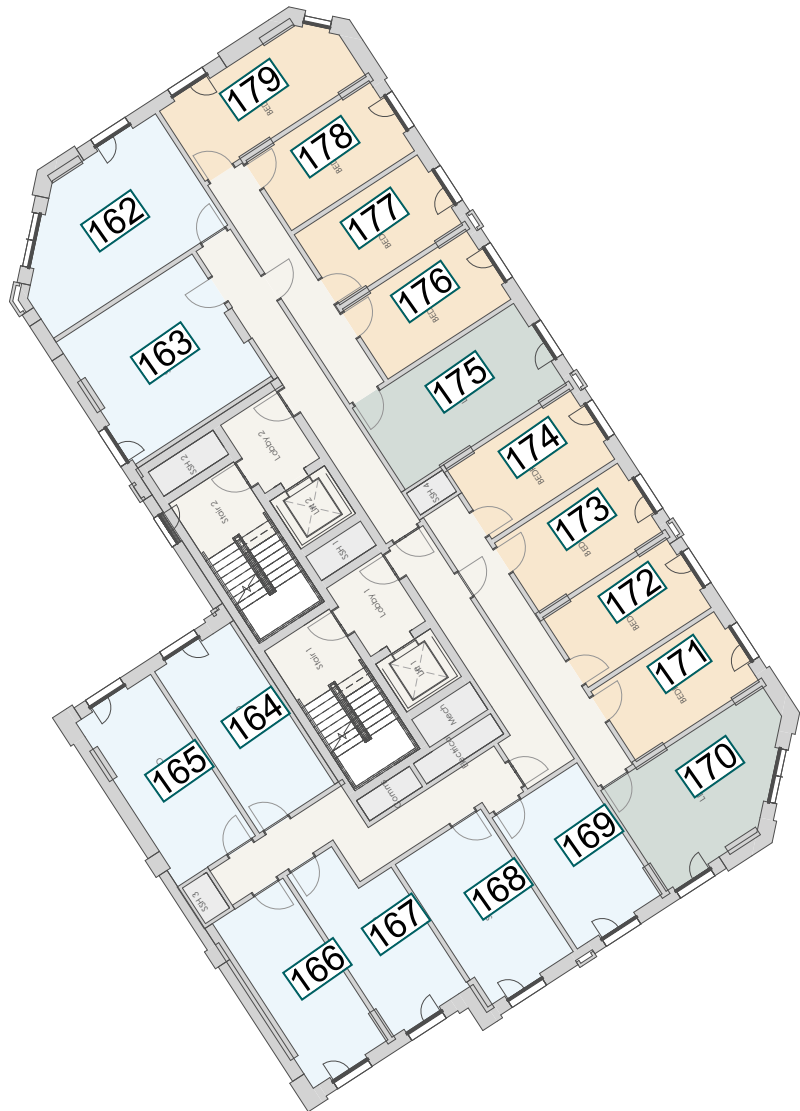
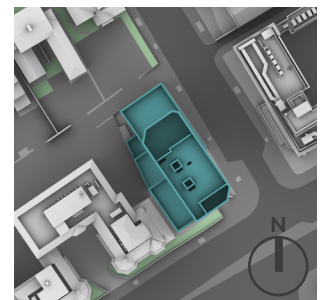


Fig. 11: Floor Plan



Level 09

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 09					
180	CR	STUDIO	442	150	04:02
181	CS	STUDIO	155	150	05:23
182	CT	STUDIO	165	150	00:07
183	CU	STUDIO	192	150	00:07
184	CV	STUDIO	242	150	05:52
185	CW	STUDIO	221	150	05:52
186	CX	STUDIO	243	150	05:47
187	CY	STUDIO	267	150	05:44
188	CZ	L/K/D	429	200	05:54
189	CZ	BEDROOM	317	100	00:42
190	CZ	BEDROOM	321	100	00:49
191	CZ	BEDROOM	323	100	00:58
192	CZ	BEDROOM	323	100	01:02
193	DA	L/K/D	139	200	01:11
194	DA	BEDROOM	328	100	01:26
195	DA	BEDROOM	328	100	01:33
196	DA	BEDROOM	329	100	01:44
197	DA	BEDROOM	318	100	00:07

Table 09: Assessment Data

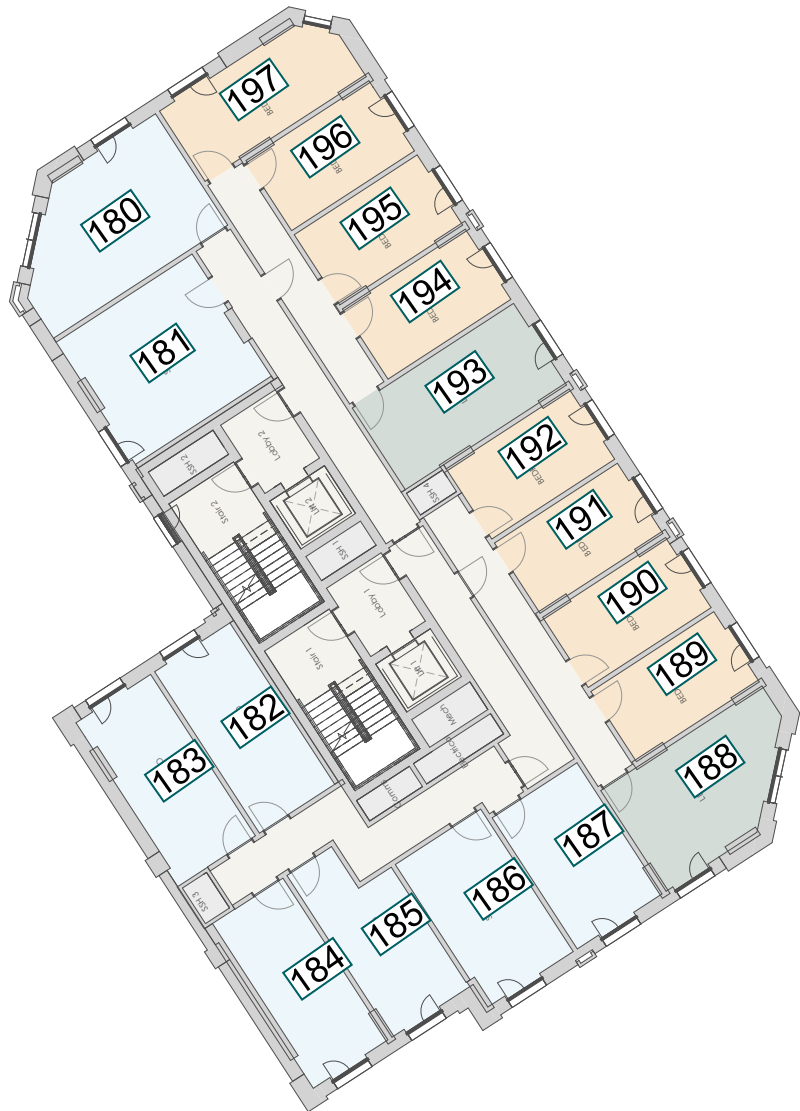
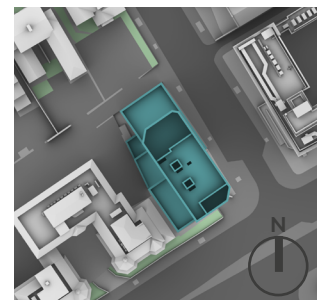


Fig. 12: Floor Plan



Level 10

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 10					
198	DB	STUDIO	457	150	04:02
199	DC	STUDIO	164	150	05:23
200	DD	STUDIO	170	150	00:07
201	DE	STUDIO	199	150	00:07
202	DF	STUDIO	251	150	06:01
203	DG	STUDIO	229	150	06:00
204	DH	STUDIO	255	150	05:56
205	DI	STUDIO	277	150	05:53
206	DJ	L/K/D	446	200	06:03
207	DJ	BEDROOM	326	100	00:51
208	DJ	BEDROOM	330	100	00:58
209	DJ	BEDROOM	329	100	01:08
210	DJ	BEDROOM	333	100	01:15
211	DK	L/K/D	146	200	01:28
212	DK	BEDROOM	335	100	01:41
213	DK	BEDROOM	338	100	01:49
214	DK	BEDROOM	339	100	01:49
215	DK	BEDROOM	328	100	00:07

Table 10: Assessment Data

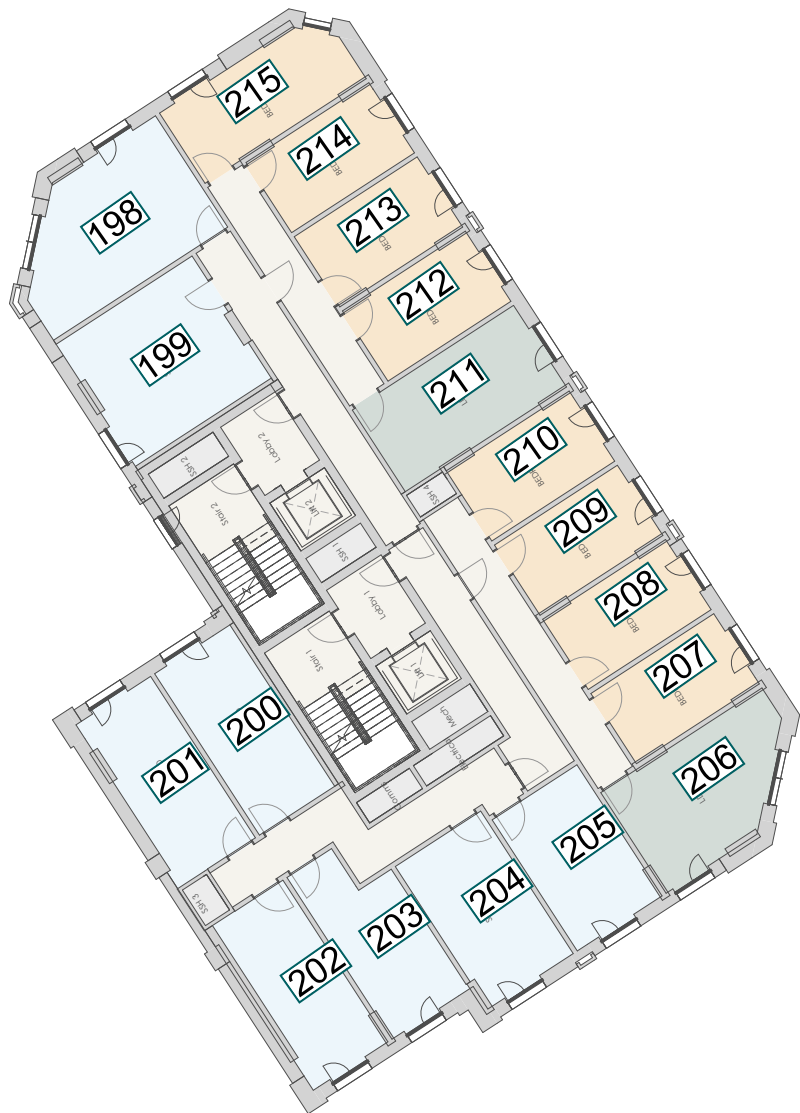
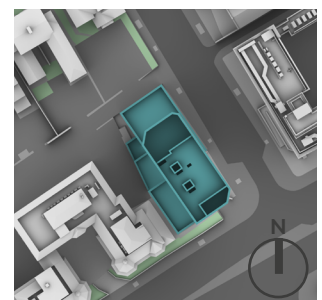


Fig. 13: Floor Plan



Level 11

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 11					
216	DL	STUDIO	471	150	04:02
217	DM	STUDIO	173	150	05:23
218	DN	STUDIO	178	150	00:07
219	DO	STUDIO	209	150	00:07
220	DP	STUDIO	259	150	06:09
221	DQ	STUDIO	237	150	06:09
222	DR	STUDIO	264	150	06:05
223	DS	STUDIO	286	150	06:02
224	DT	L/K/D	462	200	06:13
225	DT	BEDROOM	334	100	01:01
226	DT	BEDROOM	336	100	01:09
227	DT	BEDROOM	340	100	01:24
228	DT	BEDROOM	339	100	01:31
229	DU	L/K/D	151	200	01:42
230	DU	BEDROOM	344	100	01:52
231	DU	BEDROOM	346	100	01:49
232	DU	BEDROOM	348	100	01:49
233	DU	BEDROOM	337	100	00:07

Table 11: Assessment Data

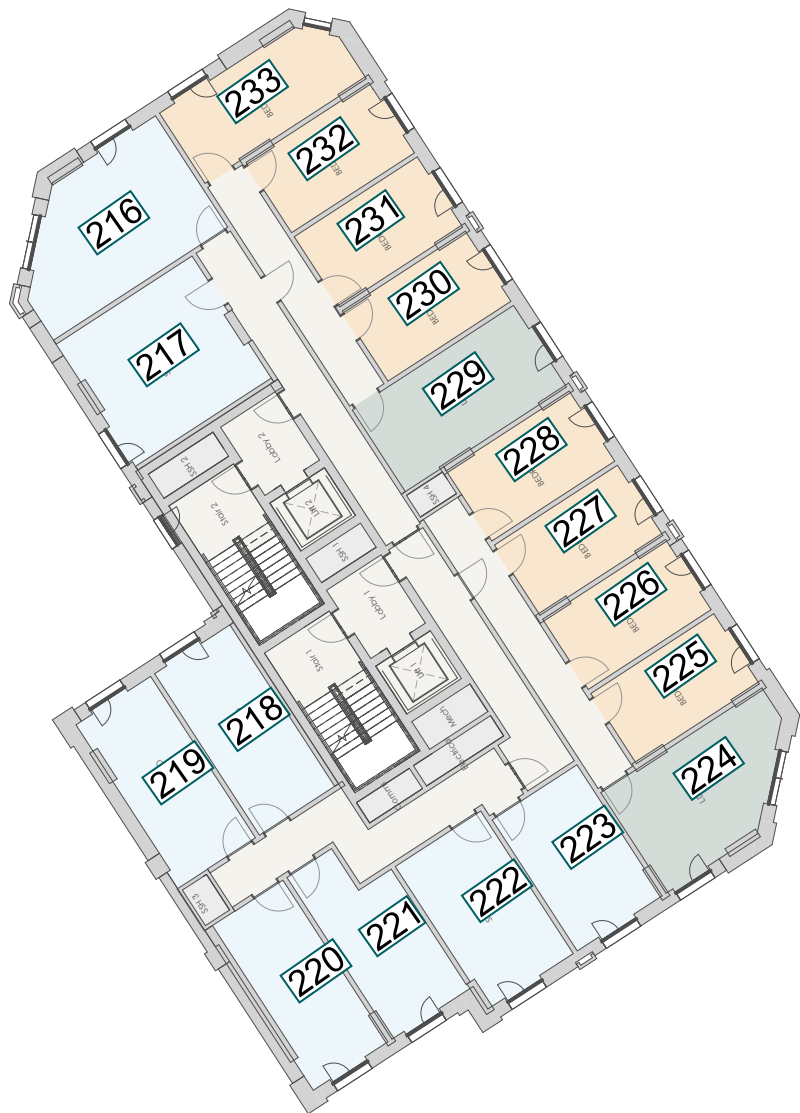
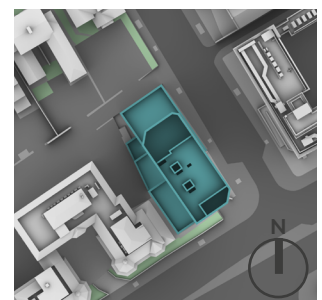


Fig. 14: Floor Plan



Level 12

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 12					
234	DV	STUDIO	485	150	04:02
235	DW	STUDIO	179	150	05:20
236	DX	STUDIO	181	150	00:07
237	DY	STUDIO	216	150	00:07
238	DZ	STUDIO	268	150	06:19
239	EA	STUDIO	247	150	06:19
240	EB	STUDIO	269	150	06:15
241	EC	STUDIO	295	150	06:14
242	ED	L/K/D	477	200	06:23
243	ED	BEDROOM	344	100	01:16
244	ED	BEDROOM	345	100	01:27
245	ED	BEDROOM	346	100	01:39
246	ED	BEDROOM	348	100	01:48
247	EE	L/K/D	157	200	01:49
248	EE	BEDROOM	350	100	01:52
249	EE	BEDROOM	352	100	01:49
250	EE	BEDROOM	354	100	01:49
251	EE	BEDROOM	347	100	00:07

Table 12: Assessment Data

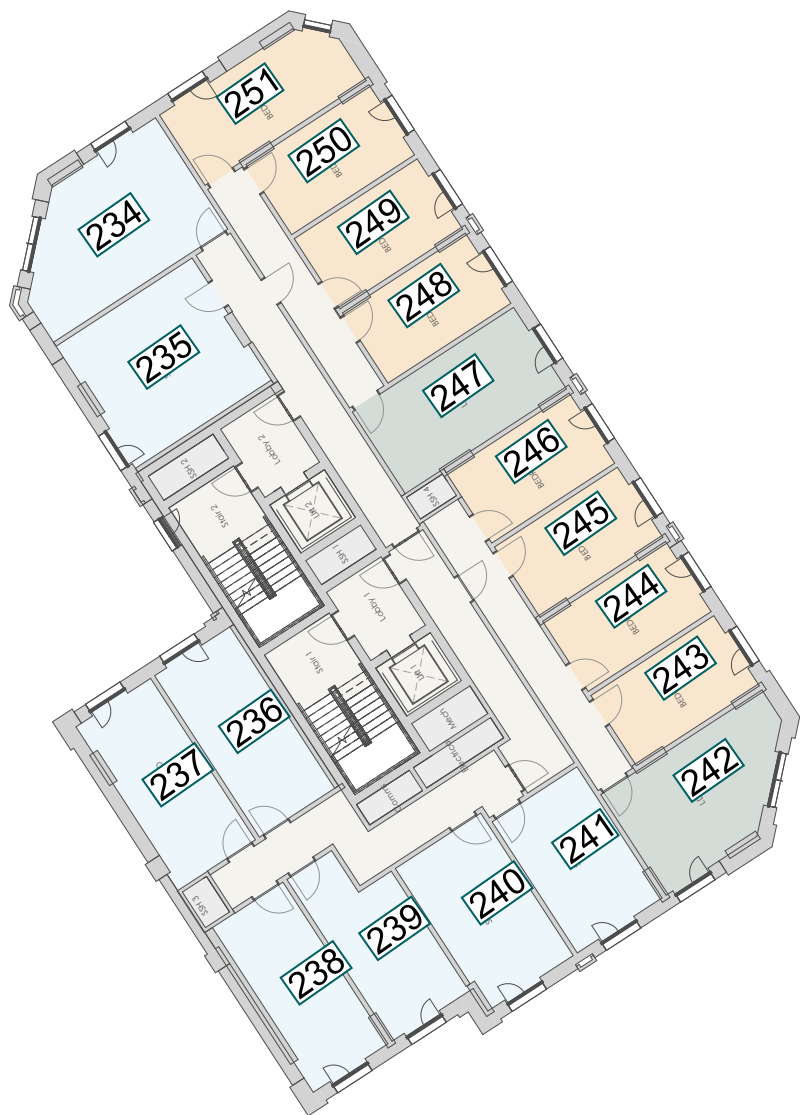
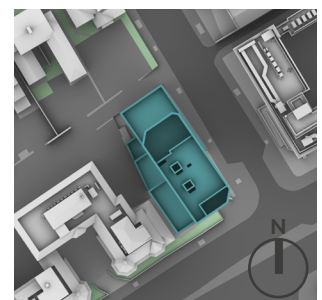


Fig. 15: Floor Plan



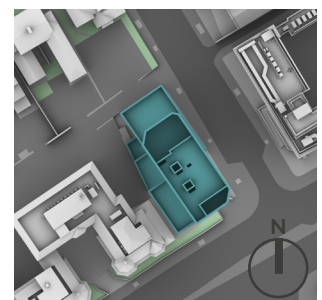
Level 13

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 13					
252	EF	STUDIO	495	150	04:02
253	EG	STUDIO	185	150	06:06
254	EH	STUDIO	188	150	00:07
255	EI	STUDIO	224	150	00:07
256	EJ	STUDIO	275	150	06:29
257	EK	STUDIO	254	150	06:19
258	EL	STUDIO	278	150	06:25
259	EM	STUDIO	300	150	06:23
260	EN	L/K/D	493	200	06:36
261	EN	BEDROOM	352	100	01:32
262	EN	BEDROOM	354	100	01:42
263	EN	BEDROOM	354	100	01:52
264	EN	BEDROOM	358	100	01:49
265	EO	L/K/D	163	200	01:49
266	EO	BEDROOM	357	100	01:52
267	EO	BEDROOM	361	100	01:52
268	EO	BEDROOM	363	100	01:49
269	EO	BEDROOM	355	100	00:07

Table 13: Assessment Data



Fig. 16: Floor Plan



Level 14

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 14					
270	EP	STUDIO	506	150	04:02
271	EQ	STUDIO	200	150	06:06
272	ER	STUDIO	195	150	00:07
273	ES	STUDIO	232	150	00:07
274	ET	STUDIO	280	150	06:39
275	EU	STUDIO	261	150	06:19
276	EV	STUDIO	286	150	06:33
277	EW	STUDIO	311	150	06:31
278	EX	L/K/D	505	200	06:52
279	EX	BEDROOM	360	100	01:49
280	EX	BEDROOM	360	100	01:49
281	EX	BEDROOM	362	100	01:52
282	EX	BEDROOM	364	100	01:49
283	EY	L/K/D	168	200	01:49
284	EY	BEDROOM	363	100	01:52
285	EY	BEDROOM	368	100	01:52
286	EY	BEDROOM	368	100	01:49
287	EY	BEDROOM	365	100	00:07

Table 14: Assessment Data

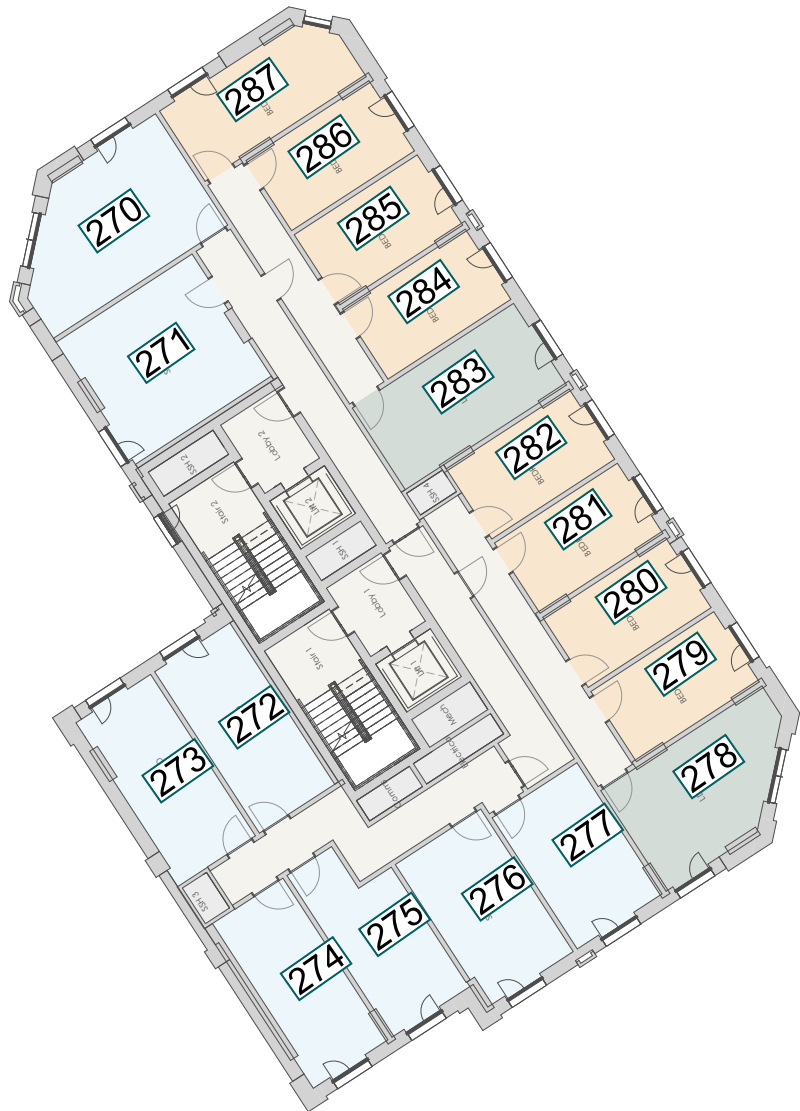
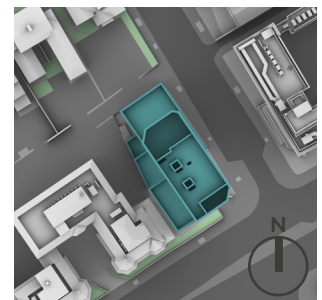


Fig. 17: Floor Plan



Level 15

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 15					
288	EZ	STUDIO	516	150	04:02
289	FA	STUDIO	214	150	06:06
290	FB	STUDIO	293	150	06:47
291	FC	STUDIO	316	150	06:49
292	FD	L/K/D	520	200	07:03
293	FD	BEDROOM	365	100	01:49
294	FD	BEDROOM	366	100	01:49
295	FD	BEDROOM	367	100	01:52
296	FD	BEDROOM	368	100	01:49
297	FE	L/K/D	172	200	01:49
298	FE	BEDROOM	374	100	01:52
299	FE	BEDROOM	373	100	01:49
300	FE	BEDROOM	376	100	01:49
301	FE	BEDROOM	368	100	00:07

Table 15: Assessment Data



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Level 16

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 16					
302	FF	STUDIO	524	150	04:02
303	FG	STUDIO	221	150	06:06
304	FH	STUDIO	300	150	07:02
305	FI	STUDIO	325	150	07:02
306	FJ	L/K/D	536	200	07:09
307	FJ	BEDROOM	372	100	01:49
308	FJ	BEDROOM	371	100	01:49
309	FJ	BEDROOM	374	100	01:52
310	FJ	BEDROOM	374	100	01:49
311	FK	L/K/D	176	200	01:49
312	FK	BEDROOM	377	100	01:52
313	FK	BEDROOM	380	100	01:52
314	FK	BEDROOM	383	100	01:49
315	FK	BEDROOM	374	100	00:07

Table 16: Assessment Data

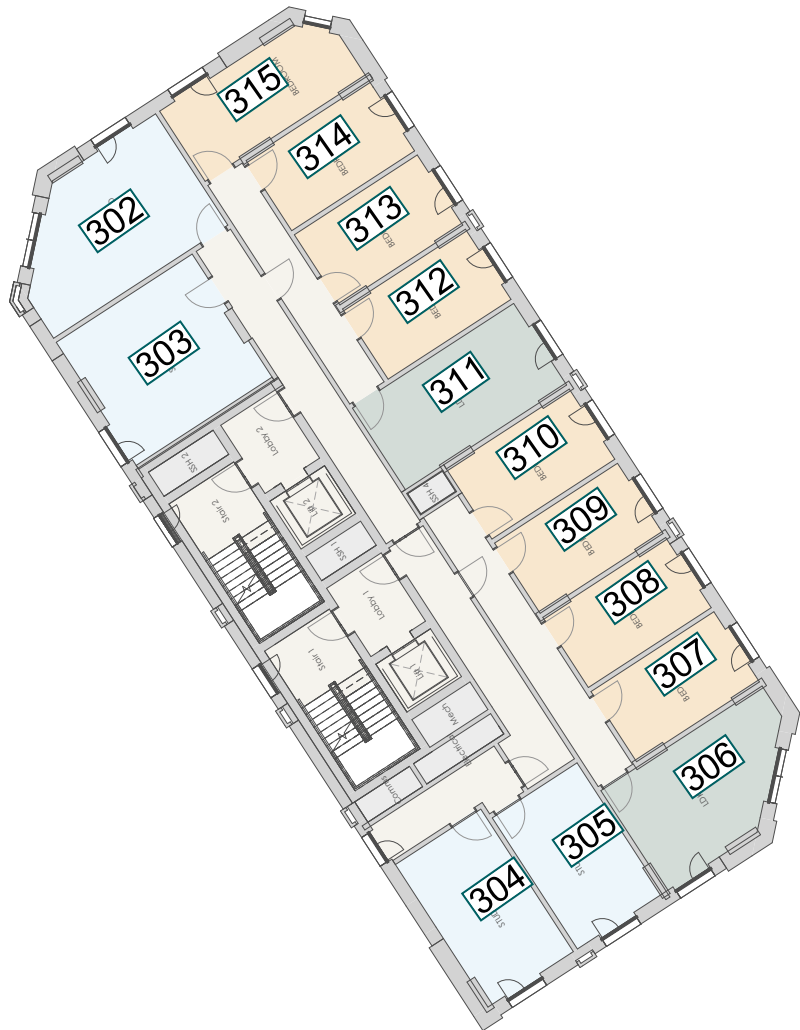
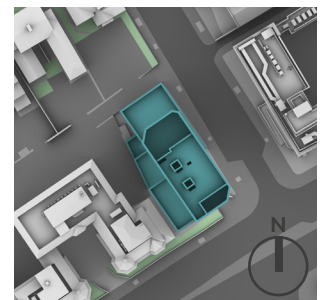


Fig. 19: Floor Plan



Level 17

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 17					
316	FL	STUDIO	533	150	04:02
317	FM	STUDIO	226	150	06:06
318	FN	STUDIO	302	150	07:09
319	FO	STUDIO	328	150	07:09
320	FP	L/K/D	548	200	07:09
321	FP	BEDROOM	380	100	01:49
322	FP	BEDROOM	378	100	01:52
323	FP	BEDROOM	381	100	01:52
324	FP	BEDROOM	380	100	01:49
325	FQ	L/K/D	179	200	01:49
326	FQ	BEDROOM	384	100	01:52
327	FQ	BEDROOM	387	100	01:49
328	FQ	BEDROOM	388	100	01:49
329	FQ	BEDROOM	379	100	00:07

Table 17: Assessment Data

Level 18

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 18					
330	FR	STUDIO	537	150	04:02
331	FS	STUDIO	230	150	06:06
332	FT	STUDIO	312	150	07:09
333	FU	STUDIO	335	150	07:09
334	FV	L/K/D	559	200	07:09
335	FV	BEDROOM	385	100	01:49
336	FV	BEDROOM	385	100	01:49
337	FV	BEDROOM	389	100	01:52
338	FV	BEDROOM	387	100	01:49
339	FW	L/K/D	183	200	01:49
340	FW	BEDROOM	389	100	01:52
341	FW	BEDROOM	390	100	01:49
342	FW	BEDROOM	392	100	01:49
343	FW	BEDROOM	383	100	00:07

Table 18: Assessment Data

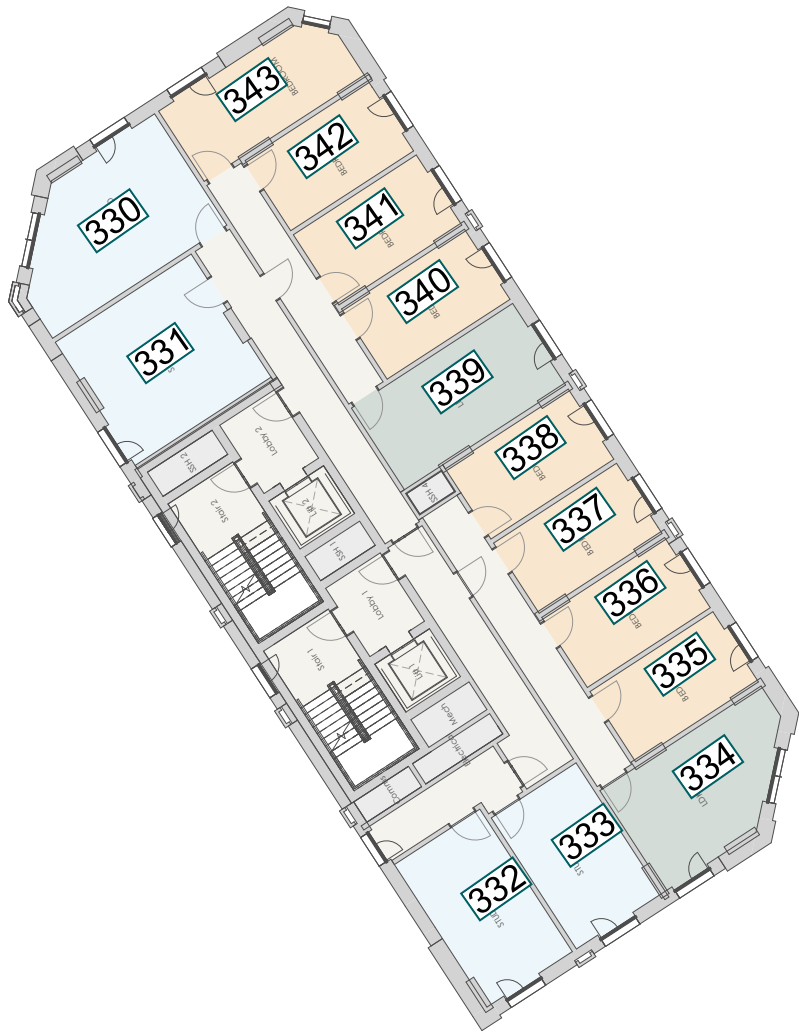
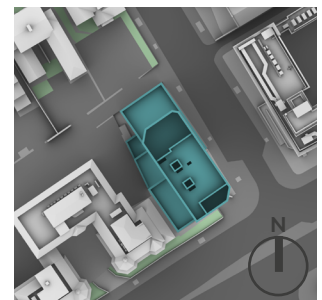


Fig. 21: Floor Plan



Level 19

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 19					
344	FX	STUDIO	544	150	04:02
345	FY	STUDIO	235	150	06:06
346	FZ	STUDIO	318	150	07:09
347	GA	STUDIO	344	150	07:09
348	GB	L/K/D	567	200	07:09
349	GB	BEDROOM	388	100	01:49
350	GB	BEDROOM	388	100	01:49
351	GB	BEDROOM	391	100	01:52
352	GB	BEDROOM	392	100	01:49
353	GC	L/K/D	187	200	01:49
354	GC	BEDROOM	391	100	01:52
355	GC	BEDROOM	396	100	01:49
356	GC	BEDROOM	400	100	01:49
357	GC	BEDROOM	385	100	00:07

Table 19: Assessment Data

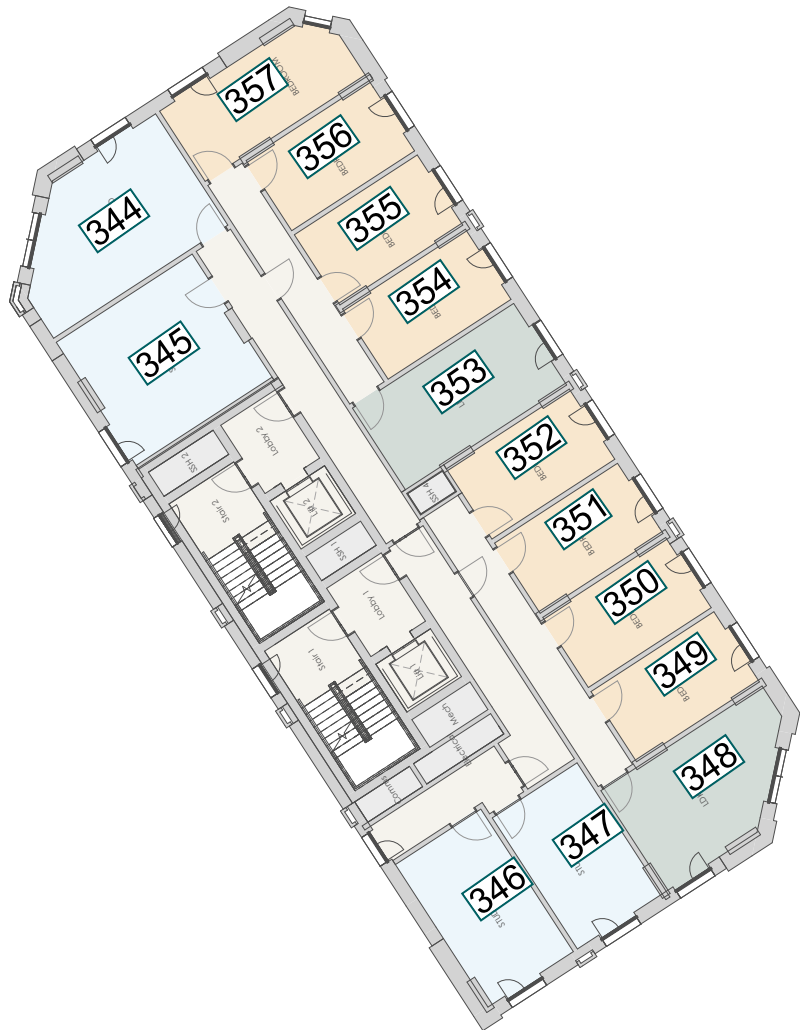
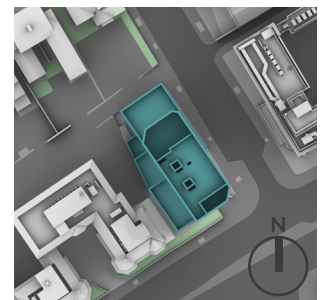


Fig. 22: Floor Plan



Level 20

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 20					
358	GD	STUDIO	550	150	04:02
359	GE	STUDIO	239	150	06:06
360	GF	STUDIO	324	150	07:09
361	GG	STUDIO	347	150	07:11
362	GH	L/K/D	576	200	07:09
363	GH	BEDROOM	392	100	01:49
364	GH	BEDROOM	395	100	01:49
365	GH	BEDROOM	397	100	01:52
366	GH	BEDROOM	396	100	01:49
367	GI	L/K/D	188	200	01:49
368	GI	BEDROOM	397	100	01:52
369	GI	BEDROOM	402	100	01:52
370	GI	BEDROOM	401	100	01:49
371	GI	BEDROOM	390	100	00:07

Table 20: Assessment Data

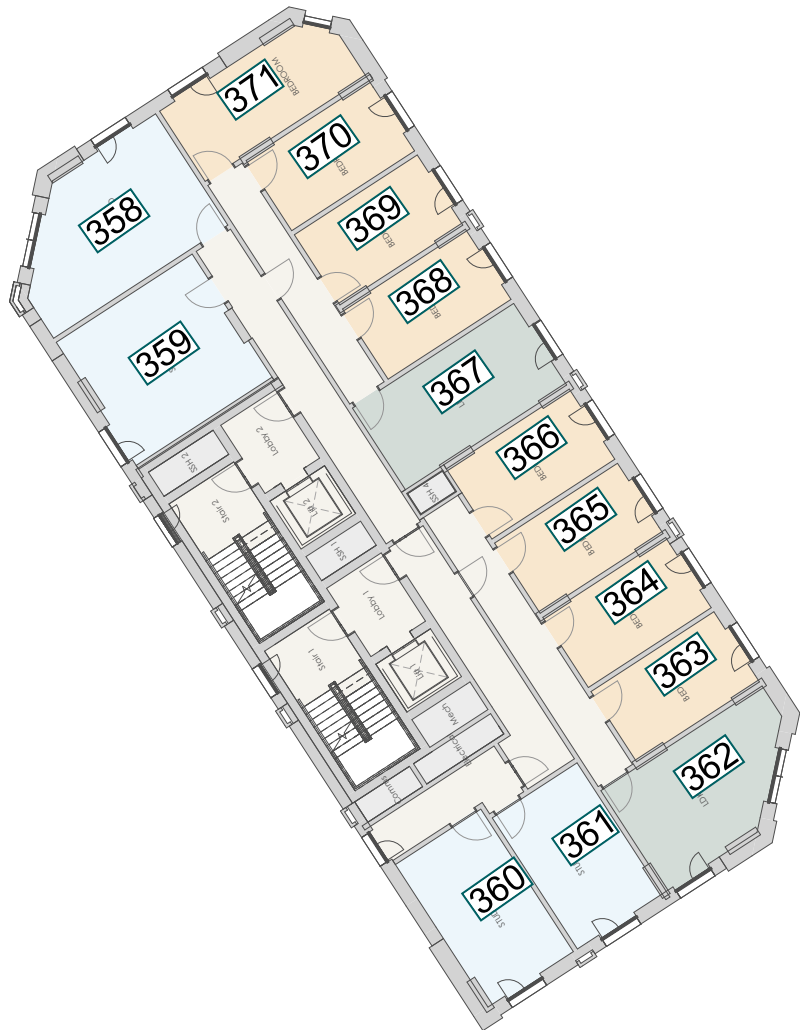
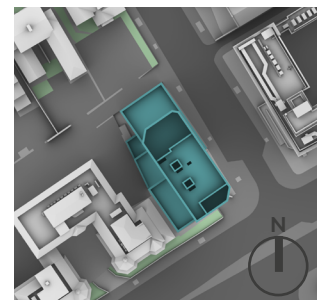


Fig. 23: Floor Plan



Level 21

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 21					
372	GJ	STUDIO	557	150	04:02
373	GK	STUDIO	242	150	06:06
374	GL	STUDIO	332	150	07:09
375	GM	STUDIO	354	150	07:09
376	GN	L/K/D	587	200	07:09
377	GN	BEDROOM	396	100	01:49
378	GN	BEDROOM	399	100	01:49
379	GN	BEDROOM	399	100	01:52
380	GN	BEDROOM	397	100	01:49
381	GO	L/K/D	192	200	01:49
382	GO	BEDROOM	405	100	01:52
383	GO	BEDROOM	404	100	01:52
384	GO	BEDROOM	407	100	01:49
385	GO	BEDROOM	391	100	00:07

Table 21: Assessment Data

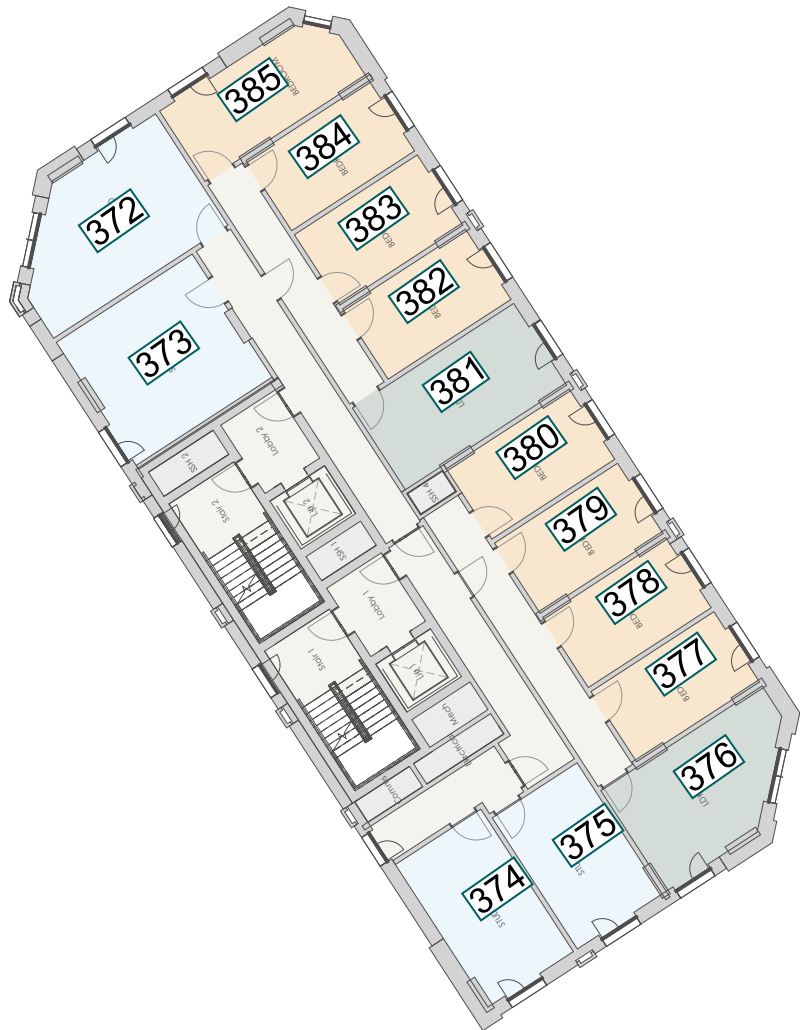
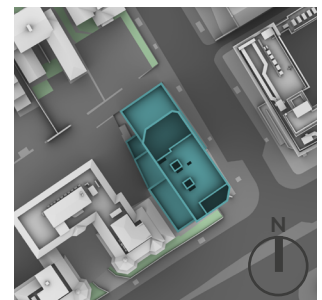


Fig. 24: Floor Plan



Level 22

			DAYLIGHT		SUNLIGHT
ROOM REF.	FLAT	ROOM USE	MEDIAN DAYLIGHT ILLUMINANCE (lux)	TARGET (lux)	BY ROOM
					21 MAR
TY CAMBRIA - LEVEL 22					
386	GP	STUDIO	557	150	04:02
387	GQ	STUDIO	244	150	06:06
388	GR	STUDIO	335	150	07:09
389	GS	STUDIO	360	150	07:09
390	GT	L/K/D	594	200	07:09
391	GT	BEDROOM	403	100	01:49
392	GT	BEDROOM	403	100	01:49
393	GT	BEDROOM	405	100	01:52
394	GT	BEDROOM	405	100	01:49
395	GU	L/K/D	194	200	01:49
396	GU	BEDROOM	408	100	01:52
397	GU	BEDROOM	410	100	01:49
398	GU	BEDROOM	408	100	01:49
399	GU	BEDROOM	394	100	00:07

Table 22: Assessment Data



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8 OVERSHADOWING ASSESSMENTS

OPEN SPACE

BRE TEST - 21ST MARCH (Spring Equinox)



(BRE RECOMMENDS 2+ HOURS OF SUNLIGHT ON 21ST MARCH FOR AT LEAST 50% OF THE OPEN SPACE)

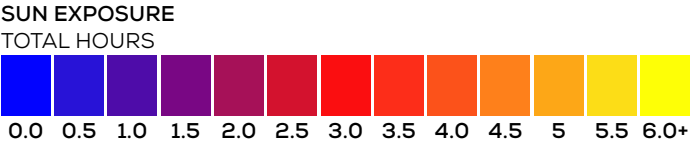
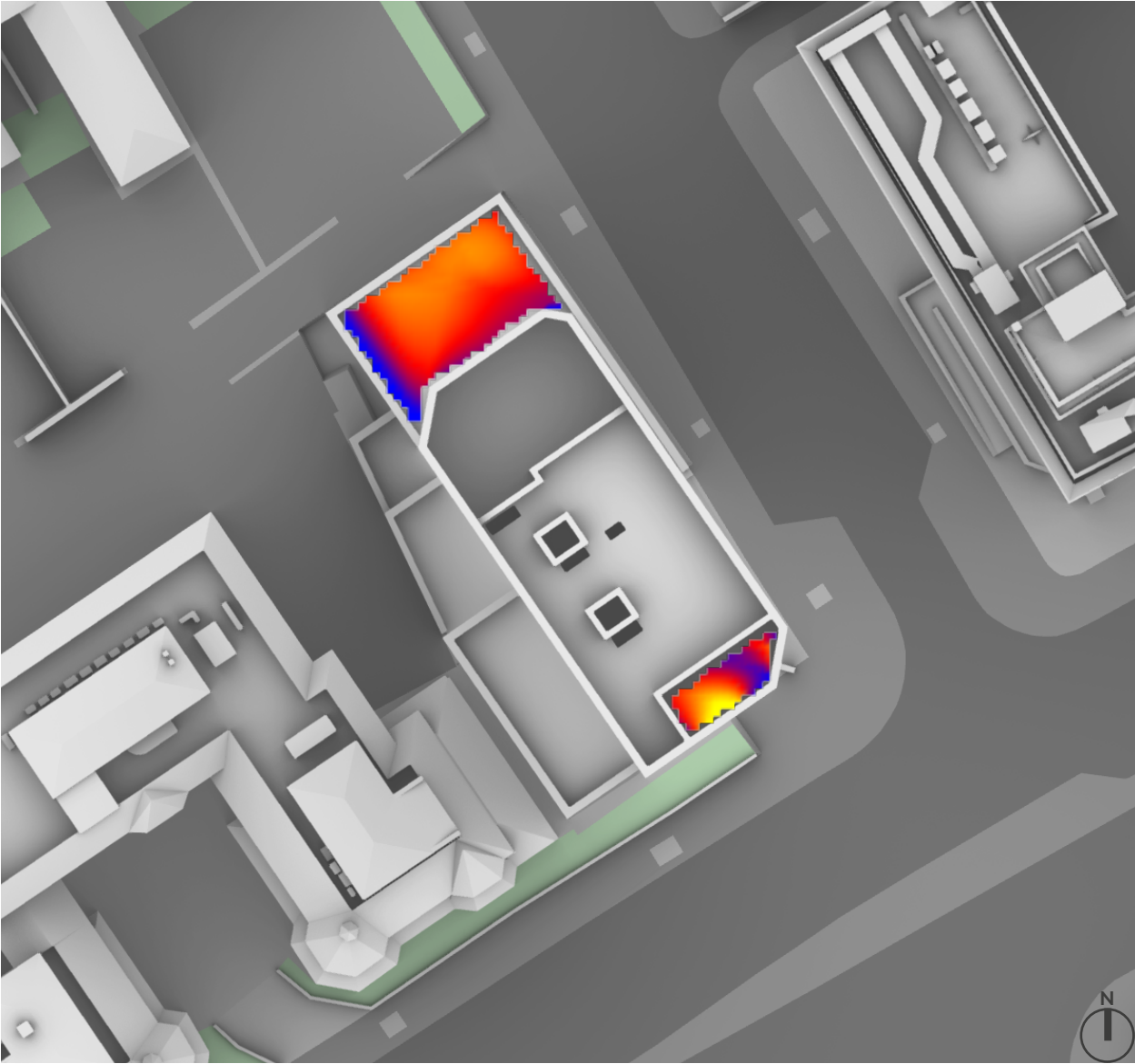
COMBINED AREAS: 77%

SUN HOURS ON GROUND

BRE TEST - 21ST MARCH



OPEN SPACE
SUN EXPOSURE - 21ST MARCH (SPRING EQUINOX)



OPEN SPACE
SUN EXPOSURE - 21ST JUNE (SUMMER SOLSTICE)



SUN EXPOSURE
TOTAL HOURS



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What we do:

Climate & Resilience
Daylight & Sunlight
Flood Risk & Drainage
Light Obstruction Notices
Measured Surveys
Party Wall & Neighbourly Matters
Rights of Light
Solar PV
Wind Analysis

Where we are:

Belfast
Birmingham
Bristol
Dublin
London
Manchester