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Our ref: AJC/ROL7616

London Borough of Camden
Planning Department
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For the attention of Michael Cassidy

By email: planning@camden.gov.uk and michael.cassidy@camden.gov.uk

23 March 2017

Dear Sirs

RE: Planning Application Ref 2016/6891/P - 1 Centric Close, London NW1
Objection due to impact on daylight, sunlight and overshadowing to 19 and 23-29 Oval Road

We have been engaged by owner-occupiers of 19 and 23-29 Oval Road to make representations to you concerning the adverse impact that the proposed development at 1 Centric Close will have on daylight, sunlight and overshadowing to those properties.

The applicant, as part of the planning application, has commissioned a daylight and sunlight study and report dated 8 December 2016 ("the Report"), prepared by GIA, which includes details of their assessment. Our comments are based on a review of the Report and the planning application drawings by AHMM.

BRE assessment methodology and numerical guidelines

The applicant's daylight and sunlight assessment has largely been carried out in accordance with the methodology recommended in BRE Report 209, *Site Layout Planning for Daylight and Sunlight: A guide to good practice* (second edition, 2011) ("the BRE guide"). An explanation of the methodology and numerical guidelines is buried in Appendix 01 of the Report. There is no summary of the numerical guidelines within the body of the Report. Instead, section 3.0 merely lists the tests and concentrates on justifying deviation from the standard numerical guidelines.

Before I comment on the impacts highlighted by the data attached to the Report, I would first like to re-cap on the BRE numerical guidelines, which are as follows:

Daylight to dwellings

For daylight, Section 2.2 of the BRE guide states that:

"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more

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than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

- *the VSC [vertical sky component] measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value; [or]*
- *the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value."*

So, the BRE guide clearly states the diffuse daylighting of the existing neighbouring building will be adversely affected if either one or other criteria will not be met. In the final paragraph of page 3 of the Report, the author incorrectly argues that the primary method of assessment is the VSC test. I submit that it is important to understand the effects on daylight using both daylight tests.

London Borough of Camden's Planning Guidance on Amenity (CPG6, published in 2011) states, "*We will base our considerations on the Average Daylight Factor and Vertical Sky Component*". The Average Daylight Factor (ADF) is another form of daylight test, but the BRE guide advises against use of the ADF as a criterion for assessing impact on existing neighbouring properties because it tends to penalise well daylit existing buildings because they can take a much bigger and closer obstruction and still remain above the minimum ADFs recommended in BS8206-2, but of course, in doing so, they will nonetheless suffer an adverse loss of light.

Notwithstanding Camden's suggestion in CPG6, the Report does not contain ADF results. It sticks to the BRE guide by attaching VSC and no-sky line results. I make no criticism of that approach.

Sunlight to dwellings

For sunlight, Section 3.2 of the BRE states that:

"If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- *receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
- *receives less than 0.8 times its former sunlight hours during either period and*
- *has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours".*

Sunlight to gardens

The BRE guide recommends that:

“if, as a result of new development the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this further loss of sunlight is significant. The garden or amenity area will tend to look more heavily overshadowed”.

Accuracy of 3d modelling used in the technical study

The accuracy of any technical study is dependent to a large extent on the accuracy of the source information. It is therefore strongly preferable for such studies to be based on an accurate measured survey of the existing buildings and window apertures.

It is evident from the Report that the 3D computer model used in the technical study was built using photogrammetry and site photographs. This is inherently less accurate because it is based on aerial or satellite photography and software manipulation, plus estimations of window sizes and positions based on photographs, rather than accurate measured survey.

To illustrate the point, Figure 1 below shows the computer model of the lower ground floor windows of 19 Oval Road and Figure 2 shows a photograph of the same windows. Quite clearly window W1/1099 has not been modelled correctly.

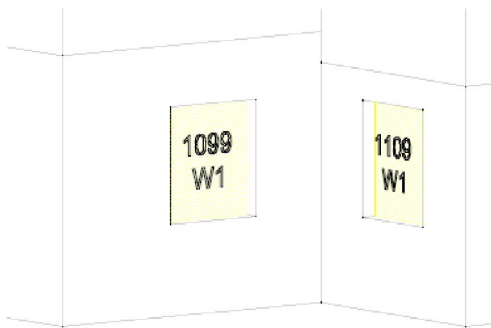


Figure 1 - 3D computer model of 19 Oval Road lower ground floor windows



Figure 2 - photograph of 19 Oval Road lower ground floor windows

Figure 3 shows a wider view of the 3D computer model used in the study. It is evident that the dividing walls between the back gardens of my clients' properties have not been modelled in. As you can see from the photograph in Figure 2, these walls have a bearing on the available daylight and sunlight to the windows on the lower ground floor. Their omission from the study model will therefore cause the amount of daylight and sunlight in the existing and proposed conditions to have been over-stated in the results appended to the Report. This is important, because the author of the

Report seeks to justify the significant adverse impacts by reference to the retained levels of daylight and sunlight in the proposed condition, arguing that they are reasonable for an urban area. Whether or not the Council consider that to be a reasonable argument, and my clients submit that it is not, if the actual retained values to the lower ground rooms - which contain kitchens, dining rooms, living rooms, studies and the like - will be lower than is stated in the data, then this argument should not be supported.



Figure 1 - wider view of the 3D computer model used in the study

Impacts on 19 and 23-29 Oval Road

Daylight to dwellings

The Report appends the results of the two daylight tests, VSC and no-sky line (also referred to as daylight distribution), at Appendix 03. The results for 23-29 Oval Road show that for VSC, the impacts on 28 out of 33 windows (85%) serving habitable rooms will fail the BRE numerical guidelines. Furthermore, 20 out of 27 habitable rooms (74%) will fail the BRE guidelines for no-sky line (daylight distribution). There are also a no-sky line transgression to 19 Oval Road.

In many instances the neighbours' windows/rooms will fail both daylight tests. For the avoidance of doubt, I attach the data for 19 and 23-29 Oval Road extracted from the Report on which I have highlighted in pink all the transgressions of the guidelines.

As you will see, the worst impacts will result in up to 34% loss of VSC (0.66 times former value) and up to 68% loss of daylight area (0.32 times former value). It is evident from the data that there will be widespread, noticeable, adverse loss of daylight to our client's properties. Some of the worst impacts will occur to reception rooms in the dwellings.

Section 8.0 of the Report contains some commentary on the daylight impacts. However, it only comments on the effects on VSC; no commentary is given on the results of the no-sky line test, which is a rather startling omission, in my view. One is left to wonder what the reason for that omission is. From my clients' point of view, it is the no-sky line results that highlight the greatest adverse impacts on their daylight. Unfortunately, the Report does not append no-sky line (daylight distribution) contour plans, because these would clearly show the parts of my clients' rooms that will lose a view of sky as a result of the development. Nevertheless, careful examination of the daylight distribution analysis data shows that significant portions of the rooms will lose their view of sky. For example:

- 27 Oval Road, reception R2/699 will reduce from 73% lit to 30% lit
- 27 Oval Road, reception R1/709 will reduce from 68% lit to 22% lit
- 25 Oval Road, reception R1/799 will reduce from 73% lit to 26% lit
- 25 Oval Road, reception R1/800 will reduce from 99% lit to 50% lit

The losses of daylight will be noticeable and much more of each room will appear poorly lit.

Sunlight to dwellings

The Report also appends the results of the sunlight tests – percentage of annual probable sunlight hours (APSH), both annually and in winter, at Appendix 03. Again, I attach the data for 19 and 23-29 Oval Road extracted from the Report on which I have highlighted in pink all the transgressions of the guidelines.

The results show that a number of windows which currently enjoy close to guidelines levels for winter sunlight will lose all their winter sunlight and that a number of windows will lose up to 50%+ of their annual sunlight. These adverse impacts will be noticeable to the occupiers.

Sunlight to gardens

19 and 23-29 Oval Road have west-facing main back gardens and the development site sits immediately to the west of the gardens. The proposed development will potentially reduce the amount of sunlight to my clients' main back gardens (some of which contain children's play areas) and increase the level of overshadowing.

The BRE guide recommends a method of assessing the effect on the amount of a garden that can receive at least two hours of sunlight on 21 March (the equinox). I have explained the numerical guidelines earlier in this letter.

The Report does not present any results for any assessment of the effects of the proposed development on sunlight to the main back gardens of my clients' properties. This is another surprising omission. Without the submission by the applicant of a suitable assessment of overshadowing, we would suggest that the overshadowing impact cannot be properly understood. To allow proper consideration, an accurate study of sunlight to the back gardens in accordance with the BRE methodology ought to be submitted by the applicant. It is important that the dividing walls and fences are included in the 3D CAD model, where these exceed 1.5 metres high above garden level, as they will affect the amount of sunlight on the ground.

Conclusions

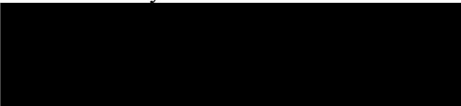
There appear to be inaccuracies in the 3D CAD model used in the study for the Report submitted by the applicant. Some of the windows in the model do not match what is evident upon inspection and the dividing garden walls appear to have been missed from the model. Given that the tops of these walls are notably higher than the tops of the lower ground floor windows, this is likely to have resulted in over-stated daylight and sunlight values in some lower ground floor rooms and windows. In reality, the daylight and sunlight levels to some of these windows/rooms is likely to be worse.

Notwithstanding these observations on accuracy and taking the data at face value, the results appended to the Report show that the proposed development will cause numerous daylight and sunlight impacts that will be in excess of the BRE guidelines and will result in widespread, noticeable, adverse loss of light to my clients' properties at 19 and 23-29 Oval Road. This will result in a material reduction in residential amenity.

Furthermore, the proposed development will result in a reduction of sunlight (increased overshadowing) to the main back gardens and play areas of the properties concerned. Unfortunately, the Report fails to present any assessment of these effects, which we suggest should be addressed by the applicant.

My clients have already submitted objections to the planning application on various grounds, including loss of light. The findings of my review support and add to their concerns. They have therefore asked me to repeat their strong objections to the proposed development and request that the Council acts to safeguard their residential amenity by refusing planning permission for the proposed development in its current form.

Yours sincerely

A large black rectangular redaction box covering the signature area.

Aidan Cosgrave
Director

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Enc. GIA's daylight and sunlight data for 19 & 23-29 highlighted to show BRE failures

Vertical Sky Component						
Room	Window	Room Use	Existing	Proposed	Loss	%
R2/405	W3/405	L/D	28.1	27.4	0.7	2.5
R2/405	W10/405	L/D	33.4	32.4	1	3.0
R3/405	W11/405	Kitchen	38.2	37.4	0.8	2.1
R4/405	W8/405	Bedroom	38.8	38.1	0.7	1.8
R5/405	W9/405	Bedroom	38.6	38.1	0.5	1.3
R6/405	W7/405	Bedroom	38.3	37.9	0.4	1.0
R7/405	W6/405	Bedroom	37.6	37.3	0.3	0.8
R8/405	W5/405	Bedroom	35.3	35	0.3	0.8
R9/405	W4/405	Living Room	33.6	33.4	0.2	0.6
R1/406	W9/406	Bedroom	30.7	30.7	0	0.0
R2/406	W1/406	L/D	39.2	39.1	0.1	0.3
R3/406	W2/406	Kitchen	39.3	39.3	0	0.0
R4/406	W3/406	Bedroom	39.4	39.3	0.1	0.3
R5/406	W4/406	Bedroom	39.4	39.4	0	0.0
R6/406	W8/406	Bedroom	39.5	39.5	0	0.0
R7/406	W7/406	Bedroom	39.5	39.5	0	0.0
R8/406	W6/406	Bedroom	39.6	39.5	0.1	0.3
R9/406	W5/406	Living Room	39.6	39.5	0.1	0.3
R7/451	W1/451	L/D	13.8	10.2	3.6	26.1
R8/451	W3/451	Bedroom	21.9	17.6	4.3	19.6
R10/451	W4/451	Bedroom	27	21.5	5.5	20.4
R11/451	W2/451	Kitchen	28.1	22.2	5.9	21.0
R12/451	W5/451	L/D	29.6	23	6.6	22.3
29 OVAL ROAD						
R1/599	W1/599	Unknown	24.5	17.6	6.9	28.2
R1/599	W2/599	Unknown	27.9	19.2	8.7	31.2
R2/599	W3/599	WC	13.6	9.3	4.3	31.6
R1/600	W3/600	Unknown	25.4	17.4	8	31.5
R2/600	W2/600	Living Room	33.1	23.7	9.4	28.4
R1/601	W1/601	Bedroom	35.1	26.5	8.6	24.5
R1/602	W1/602	Bedroom	31.9	24.8	7.1	22.3
R1/610	W1/610	Stairwell	32.4	23	9.4	29.0
R1/611	W1/611	Stairwell	34.3	25.2	9.1	26.5

Vertical Sky Component						
Room	Window	Room Use	Existing	Proposed	Loss	%
R1/612	W1/612	Stairwell	34.5	26.8	7.7	22.3
27 OVAL ROAD						
R1/699	W1/699	Bathroom	27.9	17.9	10	35.8
R2/699	W2/699	Reception	20.5	14.3	6.2	30.2
R1/700	W1/700	Reception	32	23.2	8.8	27.5
R1/701	W1/701	Unknown	35.2	26.8	8.4	23.9
R1/702	W1/702	Unknown	32	25.1	6.9	21.6
R1/709	W1/709	Reception	24.8	17.8	7	28.2
R1/710	W1/710	Unknown	34.6	25.7	8.9	25.7
R1/711	W1/711	Unknown	34.7	27.5	7.2	20.7
25 OVAL ROAD						
R1/799	W2/799	Reception	14.8	9.9	4.9	33.1
R2/799	W1/799	Bathroom	28.4	18.4	10	35.2
R1/800	W2/800	Reception	31.6	21	10.6	33.5
R1/800	W3/800	Reception	13	11.3	1.7	13.1
R2/800	W1/800	Kitchen	22.4	16.9	5.5	24.6
R1/801	W1/801	Unknown	35.4	27.5	7.9	22.3
R1/802	W1/802	Unknown	32.2	25.9	6.3	19.6
R1/811	W1/811	Unknown	34.7	25.9	8.8	25.4
R1/812	W1/812	Unknown	34.8	27.8	7	20.1
23 OVAL ROAD						
R1/899	W1/899	Unknown	21.9	14.4	7.5	34.2
R1/899	W2/899	Unknown	25.8	17.5	8.3	32.2
R1/900	W2/900	Unknown	28.8	20.4	8.4	29.2
R2/900	W1/900	Unknown	32.4	23	9.4	29.0
R1/901	W1/901	Bedroom	35.4	27.9	7.5	21.2
R1/902	W1/902	Unknown	32.4	26.5	5.9	18.2
R1/912	W1/912	Unknown	36.2	30.4	5.8	16.0
23 OVAL ROAD - COACH HOUSE						
R1/899	W1/899	Bedroom	25.5	17.7	7.8	30.6
R1/910	W3/910	LK	32.3	24	8.3	25.7
R1/910	W4/910	LK	32.5	23.5	9	27.7
R1/910	W2/910	LK	48.7	47.7	1	2.1
R1/910	W1/910	LK	75.5	73.3	2.2	2.9

Vertical Sky Component						
Room	Window	Room Use	Existing	Proposed	Loss	%
21 OVAL ROAD						
R1/999	W1/999	LKD	26.3	21.9	4.4	16.7
R1/999	W3/999	LKD	26	26	0	0.0
R1/999	W4/999	LKD	24.8	24.8	0	0.0
R1/999	W5/999	LKD	20.1	20.1	0	0.0
R1/999	W2/999	LKD	29.5	24.4	5.1	17.3
R1/1000	W1/1000	Bathroom	25.7	22.5	3.2	12.5
R2/1000	W2/1000	Bedroom	32.9	27.8	5.1	15.5
R1/1001	W1/1001	Bathroom	35.7	31.1	4.6	12.9
R1/1002	W1/1002	Bedroom	31.9	29.2	2.7	8.5
R1/1010	W1/1010	Stairwell	35.5	29.7	5.8	16.3
R1/1011	W1/1011	Stairwell	35.8	32	3.8	10.6
19 OVAL ROAD						
R1/1099	W1/1099	Kitchen	21.5	18.3	3.2	14.9
R1/1100	W1/1100	Reception	25.1	20.9	4.2	16.7
R1/1101	W1/1101	Bedroom	27.5	23.9	3.6	13.1
R1/1102	W1/1102	Bedroom	30.2	28	2.2	7.3
R1/1109	W1/1109	Living Room	16	13.9	2.1	13.1
R1/1110	W1/1110	Living Room	35.1	31.3	3.8	10.8
R1/1111	W1/1111	WC	37.1	33.5	3.6	9.7
R1/1112	W1/1112	WC	24.5	22.8	1.7	6.9
17 OVAL ROAD						
R1/1199	W1/1199	Unknown	28.2	25.6	2.6	9.2
R1/1199	W2/1199	Unknown	33.7	32	1.7	5.0
R1/1199	W3/1199	Unknown	24.2	24	0.2	0.8
R1/1200	W1/1200	Unknown	30.5	27.9	2.6	8.5
R1/1200	W2/1200	Unknown	36.3	34.6	1.7	4.7
R1/1200	W3/1200	Unknown	29.7	29.5	0.2	0.7
R1/1201	W2/1201	Unknown	37.4	36.3	1.1	2.9
R2/1201	W1/1201	Unknown	37.4	36.1	1.3	3.5
R1/1202	W1/1202	Unknown	34.1	33.4	0.7	2.1
R2/1202	W3/1202	Unknown	30.2	29.4	0.8	2.6
R3/1202	W2/1202	Unknown	34.1	33.5	0.6	1.8
R1/1210	W1/1210	Unknown	15.9	15.4	0.5	3.1
R1/1211	W1/1211	Unknown	23.2	22.8	0.4	1.7

Room/ Floor	Room Use	Flat Number	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
R11/403	LD		165.97	153.36	153.36	0.00	0.00
R12/403	KITCHEN		82.84	80.35	80.35	0.00	0.00
R1/404	Bedroom		154.28	94.59	93.08	1.51	1.59
R2/404	L/D		239.57	235.01	235.01	0.00	0.00
R3/404	Kitchen		88.68	86.15	86.15	0.00	0.00
R4/404	Bedroom		130.62	126.63	126.63	0.00	0.00
R5/404	Bedroom		153.76	146.04	146.03	0.01	0.01
R6/404	Bedroom		131.53	103.30	103.30	0.00	0.00
R7/404	L/D		172.21	150.36	150.36	0.00	0.00
R8/404	Bedroom		147.92	102.40	102.40	0.00	0.00
R9/404	KD		160.52	155.86	155.86	0.00	0.00
R10/404	Bedroom		91.53	89.65	89.65	0.00	0.00
R1/405	Bedroom		154.28	131.33	131.19	0.13	0.10
R2/405	L/D		239.57	235.80	235.80	0.00	0.00
R3/405	Kitchen		88.68	86.36	86.36	0.00	0.00
R4/405	Bedroom		130.62	126.67	126.67	0.00	0.00
R5/405	Bedroom		153.76	146.04	146.04	0.00	0.00
R6/405	Bedroom		127.39	122.82	122.82	0.00	0.00
R7/405	Bedroom		89.54	88.22	88.22	0.00	0.00
R8/405	Bedroom		123.92	122.05	122.05	0.00	0.00
R9/405	Living Room		168.99	156.89	156.88	0.01	0.01
R1/406	Bedroom		154.28	124.57	124.57	0.00	0.00
R2/406	L/D		239.57	236.96	236.96	0.00	0.00
R3/406	Kitchen		88.68	86.56	86.56	0.00	0.00
R4/406	Bedroom		130.62	126.68	126.68	0.00	0.00
R5/406	Bedroom		153.76	146.04	146.04	0.00	0.00
R6/406	Bedroom		127.39	122.83	122.83	0.00	0.00
R7/406	Bedroom		89.54	88.22	88.22	0.00	0.00
R8/406	Bedroom		123.92	122.05	122.05	0.00	0.00
R9/406	Living Room		168.99	156.89	156.89	0.00	0.00
R7/451	L/D		299.77	213.56	171.10	42.46	19.88
R8/451	Bedroom		160.13	111.63	95.91	15.72	14.08
R10/451	Bedroom		135.41	116.54	100.72	15.83	13.58
R11/451	Kitchen		95.66	77.26	73.68	3.58	4.63
R12/451	L/D		207.75	195.42	170.14	25.28	12.94
29 OVAL ROAD							
R1/599	Unknown		227.59	216.99	102.45	114.53	52.78
R2/599	WC		21.59	14.41	11.86	2.54	17.66
R1/600	Unknown		13.99	11.87	11.87	0.00	0.00
R2/600	Living Room		113.00	110.35	84.21	26.13	23.68
R1/601	Bedroom		123.58	120.09	100.32	19.77	16.47
R1/602	Bedroom		123.58	120.02	84.67	35.35	29.46
R1/610	Stairwell		64.05	55.93	27.42	28.52	50.99
R1/611	Stairwell		70.17	69.69	47.06	22.64	32.48
R1/612	Stairwell		70.17	69.67	50.49	19.19	27.54
27 OVAL ROAD							
R1/699	Bathroom		55.39	54.30	28.52	25.78	47.48
R2/699	Reception		136.44	99.90	40.62	59.29	59.34
R1/700	Reception		102.27	99.55	75.58	23.97	24.08
R1/701	Unknown		112.13	109.38	91.94	17.44	15.95
R1/702	Unknown		112.13	109.32	79.93	29.40	26.89
R1/709	Reception		99.78	67.97	22.03	45.94	67.59
R1/710	Unknown		79.99	78.57	45.42	33.15	42.19
R1/711	Unknown		79.99	78.53	57.83	20.70	26.36
25 OVAL ROAD							
R1/799	Reception		127.74	93.29	33.58	59.71	64.00
R2/799	Bathroom		59.88	58.78	37.13	21.66	36.84
R1/800	Reception		84.37	83.34	41.78	41.56	49.87
R2/800	Kitchen		127.74	124.28	90.86	33.42	26.89
R1/801	Unknown		127.74	124.38	109.10	15.28	12.29
R1/802	Unknown		127.74	124.27	96.54	27.74	22.32
R1/811	Unknown		75.55	74.58	40.13	34.45	46.19
R1/812	Unknown		75.55	74.56	56.11	18.45	24.75
23 OVAL ROAD							
R1/899	Unknown		183.39	112.91	44.34	68.57	60.73
R1/900	Unknown		111.59	109.59	58.79	50.80	46.35
R2/900	Unknown		119.97	117.83	56.95	60.88	51.67

Project No:9333 (REL08)
 EvP_IR24
 AHMM

CENTRIC CLOSE
 IR24 RECEIVED 24.11.16
 DAYLIGHT DISTRIBUTION ANALYSIS

Nov 2016

Room/ Floor	Room Use	Flat Number	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
R1/901	Bedroom		125.21	117.57	86.24	31.33	26.65
R1/902	Unknown		121.18	119.33	101.86	17.48	14.65
R1/912	Unknown		27.80	27.53	27.00	0.52	1.90
23 OVAL ROAD - COACH HOUSE							
R1/899	Bedroom		151.74	122.10	56.04	66.06	54.10
R1/910	LK		254.48	254.40	234.19	20.21	7.94
21 OVAL ROAD							
R1/999	LKD		651.46	603.61	637.13	-33.53	-5.55
R1/1000	Bathroom		31.97	29.89	29.68	0.21	0.70
R2/1000	Bedroom		125.73	123.25	109.26	13.99	11.35
R1/1001	Bathroom		96.68	94.03	94.03	0.00	0.00
R1/1002	Bedroom		107.30	104.21	104.13	0.07	0.07
R1/1010	Stairwell		102.30	83.64	83.64	0.00	0.00
R1/1011	Stairwell		70.31	69.48	69.48	0.00	0.00
19 OVAL ROAD							
R1/1099	Kitchen		117.43	93.87	84.29	9.58	10.21
R1/1100	Reception		117.43	105.19	99.97	6.22	5.85
R1/1101	Bedroom		117.43	108.19	108.19	0.00	0.00
R1/1102	Bedroom		121.86	117.74	117.74	0.00	0.00
R1/1109	Living Room		140.67	105.59	78.78	26.80	25.38
R1/1110	Living Room		140.67	136.51	119.26	17.25	12.64
R1/1111	WC		69.29	66.06	66.06	0.00	0.00
R1/1112	WC		69.29	68.11	68.11	0.00	0.01
17 OVAL ROAD							
R1/1199	Unknown		335.87	315.35	292.64	22.71	7.20
R1/1200	Unknown		335.87	332.26	329.69	2.57	0.77
R1/1201	Unknown		162.52	158.29	158.29	0.00	0.00
R2/1201	Unknown		139.81	136.25	136.25	0.00	0.00
R1/1202	Unknown		92.66	88.81	88.81	0.00	0.00
R2/1202	Unknown		27.00	25.35	25.35	0.00	0.00
R3/1202	Unknown		162.52	158.11	158.11	0.00	0.00
R1/1210	Unknown		63.04	20.00	19.98	0.02	0.09
R1/1211	Unknown		63.04	62.80	62.80	0.00	0.00
R1/1212	Unknown		64.58	64.32	64.32	0.00	0.00
15 OVAL ROAD							
R1/1300	Unknown		174.34	142.92	142.92	0.00	0.00
R1/1301	Unknown		174.34	169.40	169.40	0.00	0.00
R1/1302	Unknown		174.34	169.28	169.28	0.00	0.00
R2/1302	Unknown		125.44	122.49	122.49	0.00	0.00
R1/1309	Unknown		65.27	62.76	62.75	0.00	0.01
R1/1310	Unknown		32.29	27.10	27.10	0.00	0.00
R1/1311	Unknown		125.44	123.30	123.30	0.00	0.00
85 JAMESTOWN ROAD							
R1/1401	Unknown		151.97	113.96	113.96	0.00	0.00
R2/1401	Unknown		143.29	105.67	105.67	0.00	0.00
R1/1402	Unknown		143.29	108.32	108.32	0.00	0.00
R2/1402	Unknown		151.97	116.16	116.12	0.04	0.03
R1/1403	Unknown		143.29	106.91	106.91	0.00	0.00
R2/1403	Unknown		151.97	112.37	112.18	0.19	0.17
18 OVAL ROAD							
R1/1499	Dining Room		177.17	65.04	65.04	0.00	0.00
R1/1500	Bedroom		117.19	85.90	85.90	0.00	0.00
R2/1500	Hallway		29.54	21.17	21.17	0.00	0.00
R1/1501	Living Room		177.17	141.50	141.50	0.00	0.00
R1/1502	Bedroom		177.17	153.08	153.08	0.00	0.00
16 OVAL ROAD							
R1/1599	Unknown		179.03	48.21	48.21	0.00	0.00
R1/1600	Unknown		116.92	102.48	102.48	0.00	0.00
R2/1600	Unknown		29.54	25.38	25.38	0.00	0.00

Room	Window	Room Use	Flat Number	Orientation	Existing		Window Proposed		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss	Room		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss
					Winter APSH	Annual APSH	Winter APSH	Annual APSH					Existing APSH	Proposed APSH				
R7/451	W1/451	I/D		+111.5557774	19	35	13	29	6	6	31.58	17.14	19	35	13	29	31.58	17.14
R8/451	W3/451	Bedroom		+111.5557774	19	46	12	39	7	7	36.84	15.22	19	46	12	39	36.84	15.22
R10/451	W4/451	Bedroom		+111.5557774	20	49	13	42	7	7	35.00	14.29	20	49	13	42	35.00	14.29
R11/451	W2/451	Kitchen		+111.5557774	20	51	12	42	8	9	40.00	17.65	20	51	12	42	40.00	17.65
R12/451	W5/451	I/D		+111.5557774	20	51	11	40	9	11	45.00	21.57	20	51	11	40	45.00	21.57
29 OVAL ROAD																		
R1/599	W1/599	Unknown		-110.0511173	11	43	6	29	5	14	45.45	32.56						
R1/599	W2/599	Unknown		-110.0511173	7	40	5	26	2	14	28.57	35.00	11	45	7	30	36.4	33
R2/599	W3/599	WC		-109.178008	2	18	0	11	2	7	100.00	38.89	2	18	0	11	100.0	39
R1/600	W3/600	Unknown		-109.179008	4	28	0	14	4	14	100.00	50.00	4	28	0	14	100.0	50
R2/600	W2/600	Living Room		-110.0511173	18	55	11	37	7	18	38.89	32.73	18	55	11	37	38.9	33
R1/601	W1/601	Bedroom		-110.0511173	18	55	14	44	4	11	22.22	20.00	18	55	14	44	22.2	20
R1/602	W1/602	Bedroom		-110.0511173	16	46	12	36	4	10	25.00	21.74	16	46	12	36	25.0	22
R1/610	W1/610	Stairwell		-110.0511173	17	54	11	36	6	18	35.29	33.33	17	54	11	36	35.3	33
R1/611	W1/611	Stairwell		-110.0511173	18	55	13	41	5	14	27.78	25.45	18	55	13	41	27.8	25
R1/612	W1/612	Stairwell		-110.0511173	19	54	15	44	4	10	21.05	18.52	19	54	15	44	21.1	19
27 OVAL ROAD																		
R1/699	W1/699	Bathroom		-107.4179708	12	45	7	25	5	20	41.67	44.44	12	45	7	25	41.7	44
R2/699	W2/699	Reception		-110.0511173	0	18	0	8	0	10	0.00	55.56	0	18	0	8	0.0	56
R1/700	W1/700	Reception		-110.0511173	14	50	9	34	5	16	35.71	32.00	14	50	9	34	35.7	32
R1/701	W1/701	Unknown		-110.0511173	18	55	14	44	4	11	22.22	20.00	18	55	14	44	22.2	20
R1/702	W1/702	Unknown		-110.0511173	15	45	12	36	3	9	20.00	20.00	15	45	12	36	20.0	20
R1/709	W1/709	Reception		-110.0511173	0	27	0	16	0	11	0.00	40.74	0	27	0	16	0.0	41
R1/710	W1/710	Unknown		-110.0511173	18	55	13	41	5	14	27.78	25.45	18	55	13	41	27.8	25
R1/711	W1/711	Unknown		-110.0511173	18	53	15	44	3	9	16.67	16.98	18	53	15	44	16.7	17
25 OVAL ROAD																		
R1/799	W2/799	Reception		-110.0511173	2	18	0	11	2	7	100.00	38.89	2	18	0	11	100.0	39
R2/799	W1/799	Bathroom		-111.2276512	13	47	8	30	5	17	38.46	36.17	13	47	8	30	38.5	36
R1/800	W2/800	Reception		-111.2276512	17	55	12	35	5	20	29.41	36.36						
R1/800	W3/800	Reception		160.1958676	10	38	6	31	4	7	40.00	18.42	17	56	13	39	23.5	30
R2/800	W1/800	Kitchen		-110.0511173	6	34	2	24	4	10	66.67	29.41	6	34	2	24	66.7	29
R1/801	W1/801	Unknown		-110.0511173	18	55	15	45	3	10	16.67	18.18	18	55	15	45	16.7	18
R1/802	W1/802	Unknown		-110.0511173	16	46	13	37	3	9	18.75	19.57	16	46	13	37	18.8	20
R1/811	W1/811	Unknown		-110.0511173	18	55	14	42	4	13	22.22	23.64	18	55	14	42	22.2	24
R1/812	W1/812	Unknown		-110.0511173	18	53	16	45	2	8	11.11	15.09	18	53	16	45	11.1	15
23 OVAL ROAD																		
R1/899	W1/899	Unknown		-110.107764	0	23	0	12	0	11	0.00	47.83						
R1/899	W2/899	Unknown		-110.107764	1	35	1	28	0	12	0.00	34.29	1	35	1	23	0.0	34
R1/900	W2/900	Unknown		-108.4824184	4	39	0	24	4	15	100.00	38.46	4	39	0	24	100.0	38
R2/900	W1/900	Unknown		-110.107764	16	54	13	39	3	15	18.75	27.78	16	54	13	39	18.8	28
R1/901	W1/901	Bedroom		-110.0511173	18	55	15	45	3	10	16.67	18.18	18	55	15	45	16.7	18
R1/902	W1/902	Unknown		-110.0511173	15	45	13	37	2	8	13.33	17.78	15	45	13	37	13.3	18
R1/912	W1/912	Unknown		-110.0511173	19	58	16	50	3	8	15.79	13.29	19	58	16	50	15.8	14
23 OVAL ROAD - COACH HOUSE																		
R1/899	W1/899	Bedroom		-111.2219954	13	43	11	29	2	14	15.38	32.56	13	43	11	29	15.4	33
R1/910	W1/910	LK		0	6	46	5	39	1	7	16.67	15.22						
R1/910	W2/910	LK		0	8	42	6	39	2	3	25.00	7.14						
R1/910	W3/910	LK		-110.107764	16	54	14	40	2	14	12.50	25.93						
R1/910	W4/910	LK		-110.107764	16	54	14	40	2	14	12.50	25.93	17	64	15	55	11.8	14
21 OVAL ROAD																		
R1/999	W1/999	LKD		-110.7753528	15	45	15	37	0	8	0.00	17.78						
R1/999	W2/999	LKD		-111.055219	16	49	14	40	2	9	12.50	18.37						
R1/999	W3/999	LKD		68.94919735	5	23	5	23	0	0	0.00	0.00						
R1/999	W4/999	LKD		68.94919735	6	27	6	27	0	0	0.00	0.00						
R1/999	W5/999	LKD		68.94919735	8	29	8	29	0	0	0.00	0.00	25	80	23	71	8.0	11
R1/1000	W1/1000	Bathroom		-110.7153637	13	43	10	37	3	6	23.08	13.95	13	43	10	37	23.1	14
R2/1000	W2/1000	Bedroom		-110.7753528	12	46	13	40	-1	6	-8.33	13.04	12	46	13	40	-8.3	13
R1/1001	W1/1001	Bathroom		-110.7753528	15	52	14	46	1	6	6.67	11.54	15	52	14	46	6.7	12

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