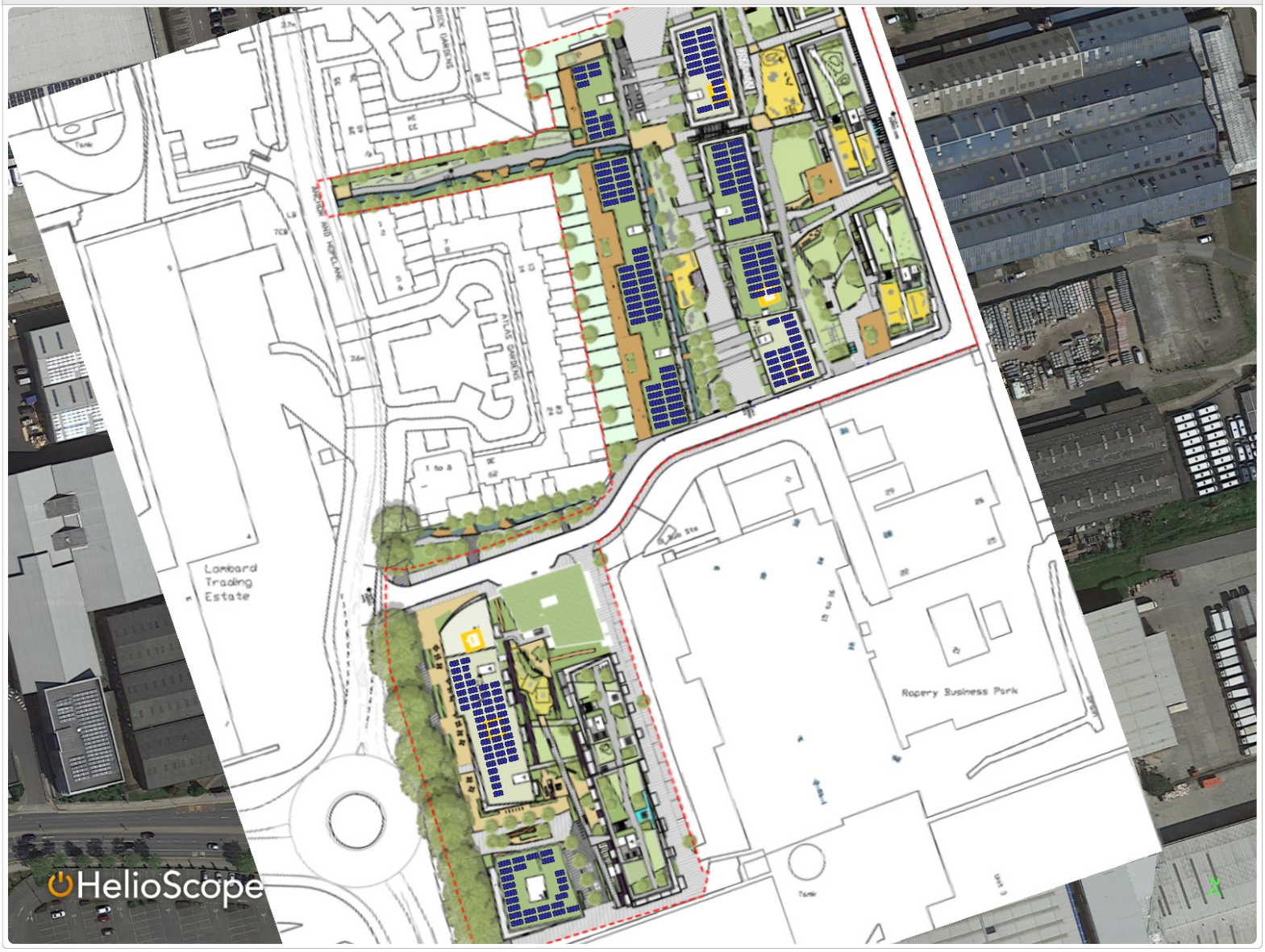
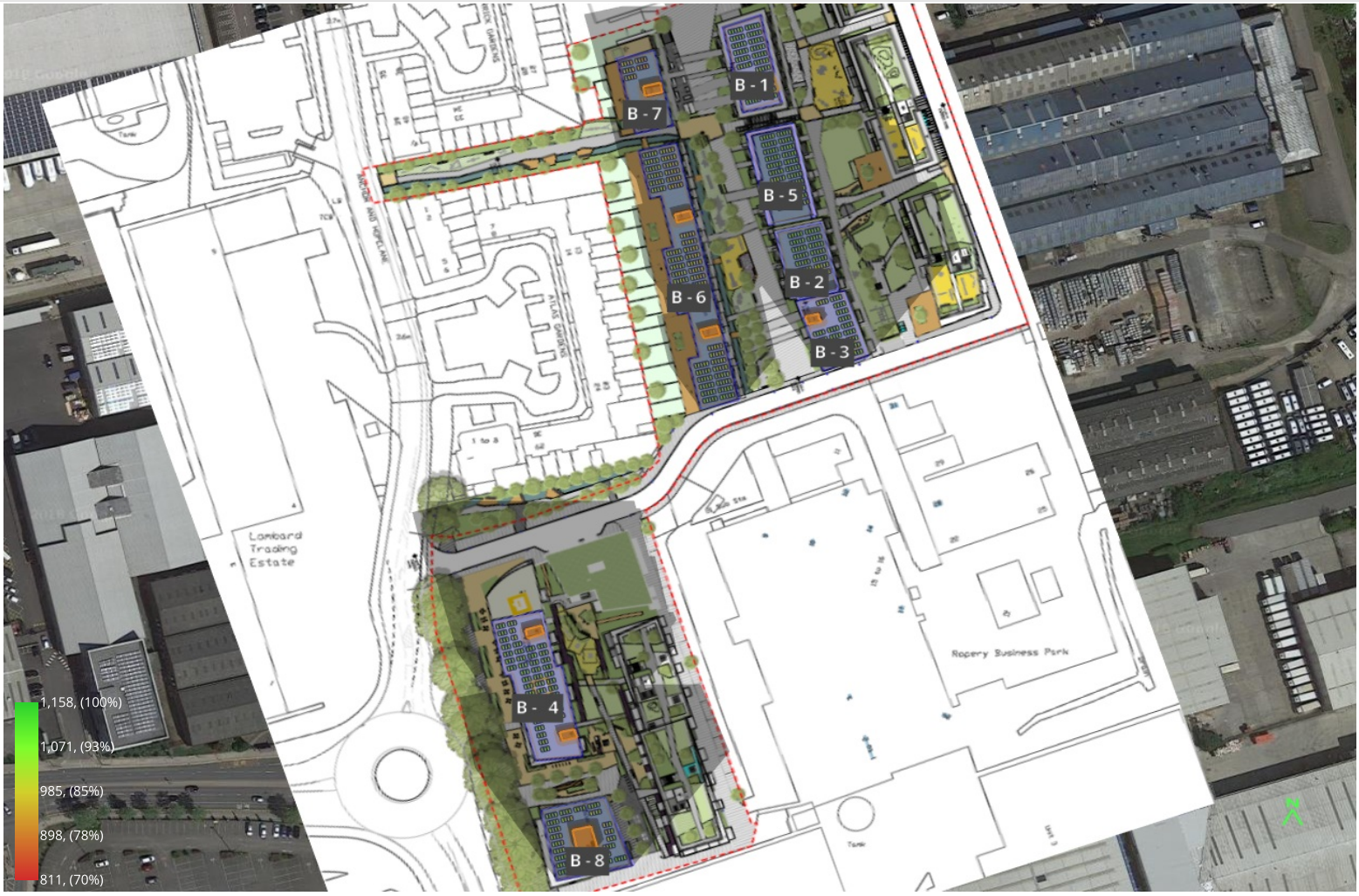
Detailed Layout



Charlton site V3 Charlton site, 51.491889, 0.031527

Shading Heatmap



Shading by Field Segment

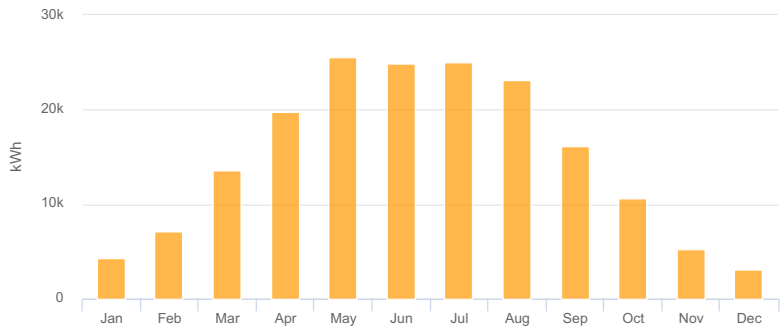
Description	Tilt	Azimuth	Modules	Nameplate	Shaded Irradiance	AC Energy	TOF[2]	Solar Access	TSRF [2]
B-1	10.0°	165.0°	88	21.6 kWp	1,040.1kWh/m^2	19.0 MWh[1]	91.0%	98.7%	89.8%
B-2	10.0°	166.0°	70	17.2 kWp	1,026.0kWh/m^2	14.9 MWh[1]	91.0%	97.3%	88.6%
B-3	10.0°	163.0°	80	19.6 kWp	1,042.3kWh/m^2	17.3 MWh[1]	90.9%	99.0%	90.0%
B- 4	10.0°	166.0°	142	34.8 kWp	1,040.9kWh/m^2	30.6 MWh[1]	91.0%	98.7%	89.9%
B-5	10.0°	166.0°	95	23.3 kWp	1,033.7kWh/m^2	20.4 MWh[1]	91.0%	98.1%	89.2%
B-6	10.0°	167.0°	220	53.9 kWp	995.7kWh/m^2	45.7 MWh[1]	91.0%	94.4%	86.0%
B-7	10.0°	166.0°	48	11.8 kWp	982.3kWh/m^2	9.87 MWh[1]	91.0%	93.2%	84.8%
B-8	10.0°	166.0°	97	23.8 kWp	1,027.6kWh/m^2	20.7 MWh[1]	91.0%	97.5%	88.7%
Totals, weighted by kWp			**840**	**205.8 kWp**	**1,022.2kWh/m^2**	**178.5 MWh**	**91.0%**	**97.0%**	**88.3%**

[1] approximate, varies based on inverter performance
[2] based on location Optimal POA Irradiance of 1,158.2kWh/m^2 at 38.2° tilt and 180.9° azimuth

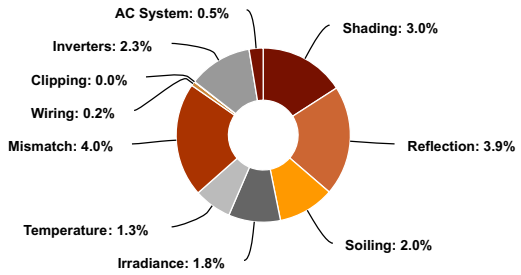
Solar Access by Month

Description	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
B-1	94%	98%	99%	99%	99%	99%	99%	99%	99%	99%	96%	88%
B-2	84%	97%	98%	99%	99%	99%	99%	99%	99%	98%	88%	75%
B-3	94%	98%	99%	100%	100%	99%	99%	100%	100%	99%	95%	92%
B- 4	95%	99%	99%	99%	99%	99%	99%	99%	99%	99%	96%	90%
B-5	91%	98%	99%	99%	99%	99%	99%	99%	99%	98%	93%	83%
B-6	93%	95%	94%	95%	94%	95%	95%	94%	95%	95%	94%	88%
B-7	89%	94%	95%	94%	93%	93%	92%	94%	93%	95%	92%	87%
B-8	92%	96%	98%	98%	98%	98%	98%	98%	98%	97%	93%	87%
Solar Access, weighted by kWp	92.1%	96.8%	97.3%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.1%	94.0%	86.8%
AC Power (kWh)	4,251.4	7,185.9	13,601.1	19,735.8	25,556.9	24,885.5	25,088.2	23,081.0	16,118.4	10,629.0	5,288.7	3,076.7

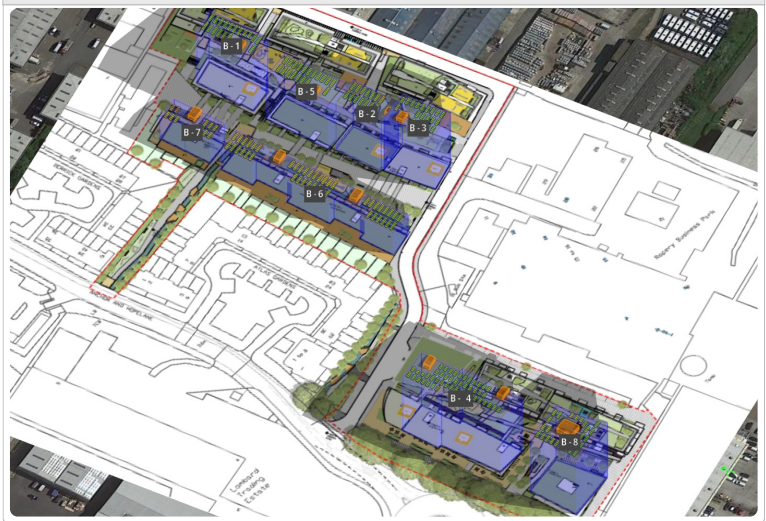
Monthly Production



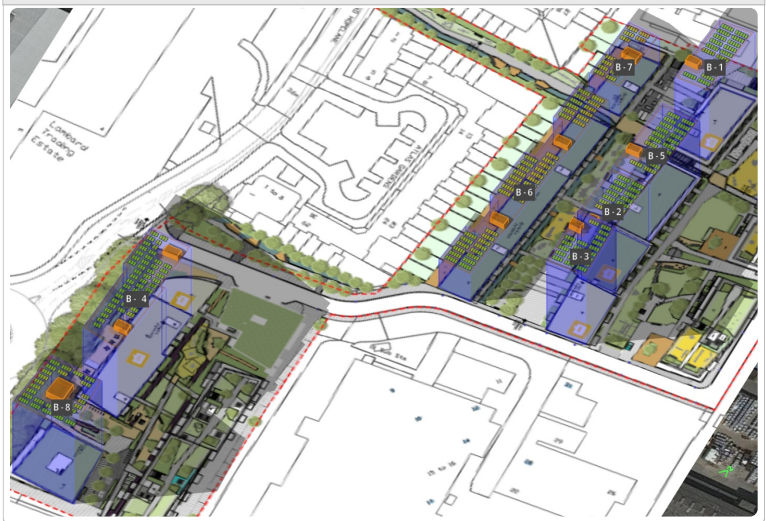
Sources of System Loss



Southwestern Angle



Southeastern Angle



APPENDIX 6 - OVERHEATING RISK ANALYSIS

Intended for

Leopard Guernsey Anchor Propco Limited

Document type

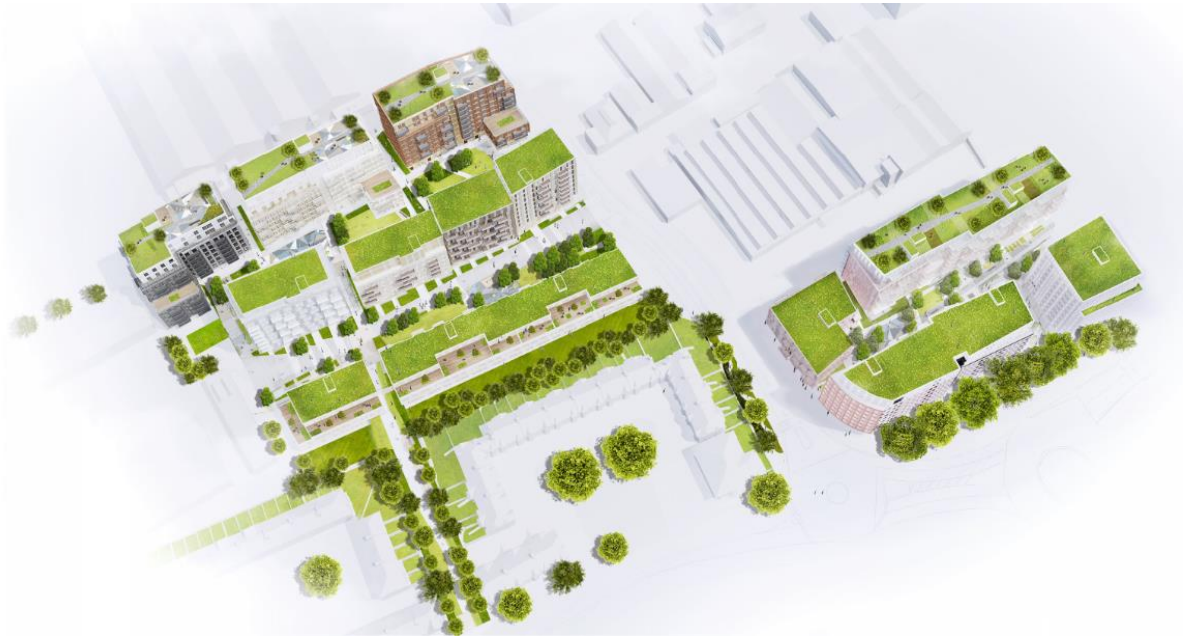
Report

Date

December 2018

CHARLTON RIVERSIDE

OVERHEATING RISK ANALYSIS



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EXECUTIVE SUMMARY

This report has been developed by Ramboll UK who have carried out an overheating assessment for the residential part of the Charlton Riverside development in accordance with the GLA requirements and the methodology outlined in the CIBSE TM 59 (April 2017): *Design methodology for the assessment of overheating risk in homes*[11].

This report summarises the results of the overheating study undertaken for several representative residential units within the proposed Charlton Riverside development.

The study has been carried out using dynamic simulation software package IES VE 2018.

Three different weather scenarios were tested for the 2020s, High emissions, 50% case (DSY1, DSY2 and DSY3).

The results indicate that all the residential units meet the criteria set out within CIBSE TM 59 for the DSY1 test and therefore pass the overheating requirements.

The tests for the DSY2 and DS3 weather files indicate that there is a risk of overheating, however a pass with this weather file is not a requirement by CIBSE TM59 for the development.

In both DSY2 and DSY3 weather scenarios most of the spaces have a potential to present overheating however the reported percentages show that the performance is not significantly worse than what the criteria in CIBSE TM59 define as a pass.

More specifically, the kitchen/living room spaces do not comply with criterion 1 as they exceed the percentage limit of occupied hours that the indoor temperature will be more than one degree higher than the outdoor temperature.

The bedroom spaces pass criterion 1 but fail for criterion 2.

It is expected that by implementing a series of design measures the overheating risk can be mitigated further for the DSY2 and DSY3 tests. Such measures may include:

- Utilise internal shading elements (blinds or curtains) that shall not obstruct the windows when open;

- Mechanical ventilation. Incorporated boosted/ enhanced mechanical ventilation during periods of prolonged heatwave.

[11] CIBSE (2017) Design methodology for the assessment of overheating risk in homes, CIBSE TM59, (London: Chartered Institution of Building Services Engineers)

1. INTRODUCTION

Ramboll has been commissioned by Leopard Guernsey Anchor Propco Limited to carry out an overheating assessment for the residential part of the proposed Charlton Riverside development in London.

This document is prepared in support of the Energy Strategy assessment report[12] as per the Greater London Authority Guidance (GLA) on preparing energy assessments, March 2016 requirements[13].

1.1 Policies and Guidance

In line with **the Greenwich Royal Greenwich Local Plan: Core Strategy**[14], new developments should demonstrate implementation of the London Plan policies, including Policy 5.9 – Overheating and cooling.

The GLA also requires that the risk of overheating has been demonstrably mitigated through passive measures.

Policy 5.9 – *Overheating and cooling of the London Plan* (LP[15]) sets out the strategic targets for all developments and requires that major development[16] proposals should reduce reliance on air conditioning systems and demonstrate this is in accordance with the suggested cooling hierarchy:

1. minimise internal heat generation through energy efficient design;
2. reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls;
3. manage the heat within the building through exposed internal thermal mass and high ceilings;
4. passive ventilation;
5. mechanical ventilation; AND
6. active cooling systems (ensuring they are the lowest carbon options).

For the residential part of the proposed development, CIBSE TM 59 (April 2017)[17]: *Design methodology for the assessment of overheating risk in homes,* was adopted.

The document has been prepared by the Chartered Institute of Building Services Engineers (CIBSE) and is based on *CIBSE TM52:2013 -The limits of thermal comfort: Avoiding overheating in European buildings* and *CIBSE Guide A:2016 - Environmental design,* guidance documents and provides a standardised approach to predicting overheating risk for both naturally and mechanically ventilated residential buildings.

[12] Ramboll UK, Charlton Riverside –Outline Energy Strategy, December 2018

[13] Greater London Authority, Energy Planning – Greater London Authority Guidance on Preparing Energy Assessments, March 2016

[14] Royal Greenwich Local Plan: Core Strategy, July 2014.

[15] Greater London Authority, 2016. The London Plan. Spatial Development Strategy for Greater London. Consolidated with Alterations Since 2011.

[16] Major Developments are defined as these: 1) For dwellings: where 10 or more are to be constructed. 2)For all other uses: where the floor space will be 1000 sq metres or more (or the site area is 1 hectare or more). The site area is that directly involved in some aspect of the development. Floor space is defined as the sum of floor area within the building measured externally to the external wall faces at each level. Basement car parks, rooftop plant rooms, caretakers' flats etc. should be included in the floor space figure. https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-annexes/annex-six-glossary

[17] CIBSE (2017) Design methodology for the assessment of overheating risk in homes, CIBSE TM59, (London: Chartered Institution of Building Services Engineers)

TM59 is a standardised approach to predicting overheating risk for residential buildings and compliance is measured against different criteria on the basis of whether the home is considered to be predominantly naturally or predominantly mechanically ventilated.

The performance of the buildings is assessed against the 2020s Design Summer Year, high emissions, 50% percentile scenario weather scenario as the guidance itself recommends.

It is worth highlighting that this is advisory guidance and compliance with it represents best practice in the industry.

1.2 Project Description

The proposed mixed used development is located at Greenwich Peninsula in London. It comprises 771 new residential units, as well as a mix of non-residential uses such as offices, industrial uses, leisure spaces and other community facilities. The proposed development is shown in Figure 31.

Figure 31: Charlton Riverside development. (Image by Simpson Haugh and Partners Architects)

2. METHODOLOGY

2.1 Modelling assumptions

The study was carried out using the IES VE 2018 dynamic simulation software package.

IES VE complies with CIBSE AM 11 and Dynamic Simulation Modelling software (DSM) approved by the Department for Communities and Local Government (DCLG).

A thermal model has been created for 12 sample flats from 3 separate blocks (Blocks C, H and O) within the proposed development to assess their potential for overheating. The sample selection follows CIBSE TM59 guidance and is representative of the flats with the higher risk of overheating including the following cases:

- Top floor flats of South, Eastern and Western orientation;
- Flats with less shading;
- Single sided and corner flats;
- Flats with large sun-facing windows.

The selected residential units are subjected to high solar gains from the south and/or west-east elevations. Marked-up drawings of the selected units for the overheating risk analysis can be founded in **Appendix A1**.

The thermal model was based on the latest drawings received by Simpson Haugh and Partners Architects on December 2018.

The following figure shows the IES model which considers the building shape, orientation, fabric performance and the resulting solar gains.

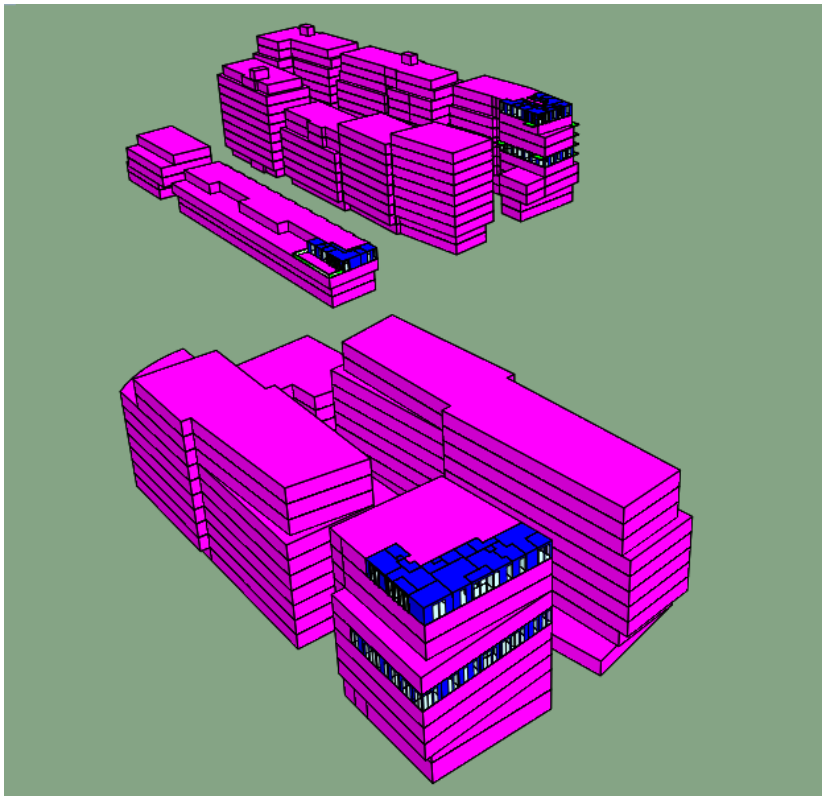


Figure 32: IES Thermal Model

2.2 Weather and Climate

The study has been carried out using the latest CIBSE design summer year for the 2020s, high emissions, 50% percentile scenario as indicated by CIBSE TM59:

"*Developments should refer to the latest CIBSE design summer year (DSY) weather files and be required to pass using the DSY1 file most appropriate to the site location, for the 2020s, high emissions, 50% percentile scenario".*

TM59 also encourages the design teams to use more extreme weather scenarios to explore performance of the development and identify any potential measures to mitigate overheating, however a pass is not mandatory for the purposes of the TM59 guidance.

For this study three design weather years are explored for the 2020s, high emissions, 50% percentile scenario. Compliance against the overheating criteria is only examined for weather file DSY1.

- **DSY1**: (1989) a moderately warm summer (current design year for London).
- **DSY 2**: (2003) a year with a very intense single warm spell.
- **DSY 3**: (1976) a year with a prolonged period of sustained warmth.

2.3 Assessment Criteria

The new CIBSE TM59 guidance suggests that the following two criteria must be met to demonstrate compliance:

- For living rooms, kitchens and bedrooms: the number of hours during which the operative temperature exceeds the threshold temperature by one degree (K) during the period May to September inclusive shall not be more than 3 per cent of occupied hours. (CIBSE TM52 Criterion 1: Hours of exceedance);

- For bedrooms only: to guarantee comfort during the sleeping hours the operative temperature in the bedroom from 10 pm to 7 am shall not exceed 26 °C for more than 1% of annual hours. (Note: 1% of the annual hours between 22:00 and 07:00 for bedrooms is 32 hours, so 33 or more hours above 26 °C will be recorded as a fail).

2.4 Building Fabric

The following assumptions have been made for the building fabric elements as per the Energy strategy report.

Table 13: Building Fabric Thermal Properties for the Proposed Development

Building Fabric U-Value	
External Walls	0.18 W/(m^2.K)
Roof	0.13 W/(m^2.K)
Ground / Exposed floor	0.13 W/(m^2.K)
Glazing properties	
Windows U-value (including frame)-	1.4 W/(m^2.K)
g-value	0.40
Air Tightness	
Air permeability at 50Pa	3 m^3/(h.m^2)

2.5 Internal Heat Gains

The internal gains and profiles for the residential units are modelled as per TM59 guidance.

Unless stated otherwise, the lighting gain has been modelled as 2 W/m² from 6pm -11pm.

Table 14: Internal Gains Summary

Room		Profile
Double Bedroom	Occupancy	2 people at 70% gains from 11pm to 8am 2 people at full gains from 8am to 9am and from 10am to 11pm 1 person at full gain in the bedroom from 9am to 10pm
	Misc. (Equipment etc.)	Peak load of 80W from 8am to 11pm Base load of 10W during the sleeping hours
1-Bedroom Apartment – Living and dining room	Occupancy	1 person at 100% of the gains from 9am to 10pm. The room is unoccupied for the rest of the day
	Misc. (Equipment etc.)	Peak load of 450W from 6pm to 8pm 200W from 8pm to 10pm 110W from 9am to 6pm Base load of 85W for the rest of the day
2-Bedroom Apartment – Living and dining room	Occupancy	2 people at 100% of the gains from 9am to 10pm. The room is unoccupied for the rest of the day
	Misc. (Equipment etc.)	Peak load of 450W from 6pm to 8pm 200W from 8pm to 10pm 110W from 9am to 6pm Base load of 85W for the rest of the day

Further details about the templates for the internal gains and profiles are shown in **Appendix A2**.

2.6 Adjacent Spaces

For modelling purposes all spaces adjacent to the modelled residential units have been assigned adiabatic conditions, i.e. no heat transfer is assumed between the tested spaces and the neighbouring spaces. This setting assumes no heat losses from the tested spaces toward adjacent areas which represent a worst-case scenario for the purpose of an overheating risk assessment.

2.7 Ventilation Strategy

For the purposes of this report, it is assumed that units will utilize openable windows as the primary means of ventilation.

Each of the residential units will also have a background mechanical ventilation system with heat recovery (MVHR) of high efficiency running constantly assisting in the overheating risk mitigation.

The MVHR units shall have summer bypass to prevent the heat recovery from contributing to overheating during summer period.

The system will run continuously on a normal setting compliant with Approved Document Part F (ADF). The whole flat ventilation rate should be 2 ACH.

Figure 33 Typical MVHR

The window opening pattern is set based on TM59 guidance and depends on internal and outdoor temperature conditions.
Windows are set to open when both of the following conditions below are satisfied:

- When operative indoor temperature of each room exceeds 22°C; and
- The outdoor temperature is lower than the indoor temperature.

Table 15 shows the natural ventilation opening settings and operation profiles assumed for this overheating study. The equivalent openable areas have been calculated based on the information provided by the Architect. Further information has been provided in **Appendix A1.**

Table 15: IES Natural Ventilation Settings

	IES overheating model - MacroFlo inputs- Base Case Summary					
Opening Reference	**Opening type**	**Window restrictor opening**	**Max angle open (°)**	**Equivalent opening area**	**Proportions (Length/ Height)**	**Window opening profile**
Bedroom & Livingroom window	Top hung	Yes	5	21.77%	<0.5	0:00 - 24:00: (Tdr >= 22) & (tdr>to) open
Winter garden window	Side hung	Yes	90	92.90%	<0.5	0:00 - 24:00: (Tdr >= 22) & (tdr>to) open
Internal door (bedroom)	n/a	n/a	n/a	n/a	n/a	7:00 – 22:00: open 22:00 – 7:00: closed
Internal door (other rooms)	n/a	n/a	n/a	n/a	n/a	0:00 – 24:00: open

The sketch in **Appendix A3** shows in more detail how the openings have been setup.

3. OVERHEATING ANALYSIS RESULTS

A number of simulations have been carried out to estimate the risk of overheating in the selected residential units. The results are presented in Table 16 below as per the CIBSE TM59 criteria requirements. The analysis shows that all the assessed spaces pass the TM59 criteria for the DSY 1 weather scenario.

Table 16: TM59 Overheating results for the selected residential units.

Apartment	Room	Criterion 1 (% Hours Top - Tmax ≥ 1K)	Criterion 2 (Max. daily deg. hours)
		DSY 1 (1989)	
Block C - 503	Bedroom	0.6	14
	Bedroom Single	0.7	13
	Bedroom Single	0.8	12
	Kitchen / Living Room	1.3	-
Block C - 504	Bedroom	0.7	14
	Bedroom Single	1.1	13
	Kitchen / Living Room	2.6	-
Block C - 904	Bedroom	0.6	14
	Bedroom Single	0.9	13
	Kitchen / Living Room	1.6	-
Block C - 905	Bedroom	1.2	10
	Bedroom Single	1.3	11
	Kitchen / Living Room	2.6	-
Block H - 310	Bedroom	1.1	10
	Bedroom	2.3	11
	Bedroom Single	1.8	14
	Kitchen / Living Room	2.1	-
Block O - 503	Bedroom	1	12
	Bedroom Single	1.1	16
	Kitchen / Living Room	1.5	-
Block O - 504	Bedroom	0.6	15
	Kitchen / Living Room	0.7	-
Block O - 505	Bedroom	2.5	15
	Bedroom Single	2.1	12
	Kitchen / Living Room	2.5	-
Block O - 506	Bedroom	2	16
	Kitchen / Living Room	2.3	-
Block O - 903	Bedroom	0.7	12
	Bedroom Single	0.8	13
	Kitchen / Living Room	1.2	-
Block O - 904	Bedroom	1.1	17
	Kitchen / Living Room	1.1	-
Block O - 905	Bedroom	1.8	19
	Kitchen / Living Room	2.9	-

*Criterion (a): This applies only to living rooms, kitchens and bedrooms (same as Criterion 1 as per CIBSE TM 52)

** Criterion (b): This applies only to bedrooms from 10pm to 7am.

The following table shows the performance of the spaces for the DSY 2 and DSY 3 weather scenarios. Passing the criteria under these weather scenarios in not a mandatory requirement for CIBSE TM59.

Table 17 TM59 Overheating results for the selected residential units.

Apartment	Room	Criterion 1 (% Hours T_{op} - T_{max} ≥ 1K)	Criterion 2 (Max. daily deg. hours)	Compliance Status	Criterion 1 (% Hours T_{op} - T_{max} ≥ 1K)	Criterion 2 (Max. daily deg. hours)	Compliance Status
		DSY 2 (2003)			**DSY 3 (1976)**		
Block C - 503	Bedroom	1.5	36	Fail	1.9	35	Fail
	Bedroom Single	2	34	Fail	2.3	33	Fail
	Bedroom Single	2.2	34	Fail	2.4	32	
	Kitchen / Living Room	3.5	-	Fail	4.1	-	Fail
Block C - 504	Bedroom	2	35	Fail	2.3	34	Fail
	Bedroom Single	2.4	33	Fail	2.9	31	
	Kitchen / Living Room	4.9	-	Fail	6.1	-	Fail
Block C - 904	Bedroom	1.9	35	Fail	2.2	33	Fail
	Bedroom Single	2.3	32	Pass	2.6	31	
	Kitchen / Living Room	4.4	-	Fail	4.8	-	Fail
Block C - 905	Bedroom	2.5	28	Pass	3.1	23	Pass
	Bedroom Single	2.6	33	Fail	3.3	29	
	Kitchen / Living Room	5.4	-	Fail	6.2	-	Fail
Block H - 310	Bedroom	2.6	27	Pass	3.1	23	Fail
	Bedroom	3.2	33	Fail	3.3	31	Fail
	Bedroom Single	3.5	31	Fail	3.6	30	Fail
	Kitchen / Living Room	5.2	-	Fail	5.9	-	Fail
Block O - 503	Bedroom	2.5	34	Fail	3	30	Pass
	Bedroom Single	2.6	41	Fail	3	37	Fail
	Kitchen / Living Room	3.9	-	Fail	4.7	-	Fail
Block O - 504	Bedroom	1.4	38	Fail	1.8	35	Fail
	Kitchen / Living Room	2.3	-	Pass	2.3	-	Pass
Block O - 505	Bedroom	3.4	34	Fail	3.4	36	Fail

Apartment	Room	Criterion 1 (% Hours T_{op} - T_{max} ≥ 1K)	Criterion 2 (Max. daily deg. hours)	Compliance Status	Criterion 1 (% Hours T_{op} - T_{max} ≥ 1K)	Criterion 2 (Max. daily deg. hours)	Compliance Status
Block O - 506	Bedroom Single	3.6	33	Fail	3.8	31	Pass
	Kitchen / Living Room	5.1	-	Fail	5.7	-	Fail
	Bedroom	3.3	37	Fail	3.4	34	Fail
	Kitchen / Living Room	4.6	-	Fail	4.8	-	Fail
Block O - 903	Bedroom	2.2	34	Fail	2.7	32	Pass
	Bedroom Single	2.3	35	Fail	2.6	30	Pass
	Kitchen / Living Room	3.5	-	Fail	4	-	Fail
Block O - 904	Bedroom	2.9	44	Fail	3.1	40	Fail
	Kitchen / Living Room	3.2	-	Fail	4.5	-	Fail
Block O - 905	Bedroom	4	50	Fail	4.2	42	Fail
	Kitchen / Living Room	4.4	-	Fail	4.9	-	Fail

*Criterion (a): This applies only to living rooms, kitchens and bedrooms (same as Criterion 1 as per CIBSE TM 52)
** Criterion (b): This applies only to bedrooms from 10pm to 7am.

4. CONCLUSIONS AND RECOMMENDATIONS

An overheating risk analysis has been carried out for the residential part of the proposed Charlton Riverside development.

A sample of 12 flats has been tested. The sample represents the units that are expected to have the higher risk for overheating based on their orientation, less shading, limited openings for ventilation and large sun-facing surfaces.

CIBSE TM59 guidance has been followed. The results indicate that all the flats meet the criteria for the DSY1 weather scenario.

For the DSY2 and DSY3 weather scenarios the study shows that most of the spaces have a potential to present overheating.

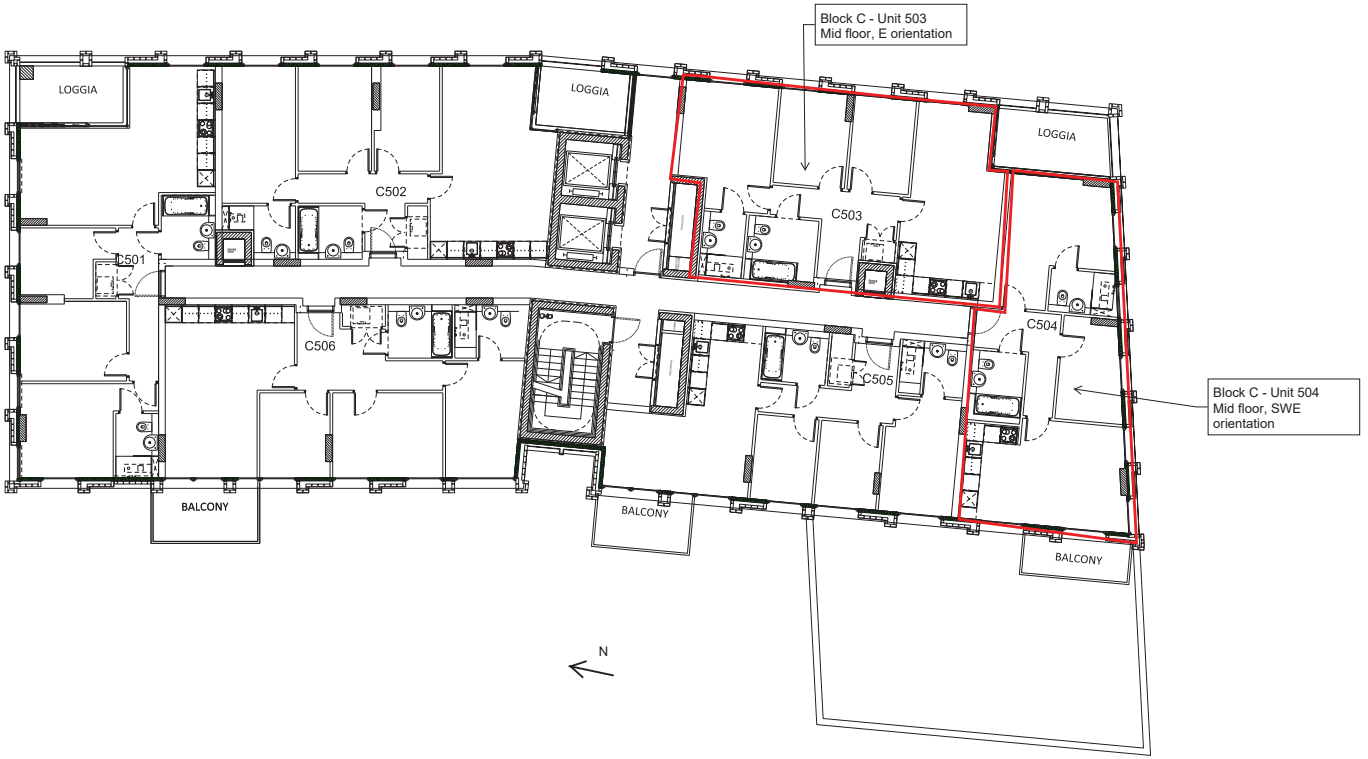
In particular, the kitchen/living room spaces do not comply with criterion 1 as they exceed the percentage limit of occupied hours that the indoor temperature will be more than one degree higher than the outdoor temperature. The bedroom spaces pass criterion 1 but fails for criterion 2.

Even though there is no requirement for the development to pass the DSY2 and DSY3 tests, there are a number of potential measures to mitigate the risk of overheating that can apply throughout the development are:

• Utilise internal shading elements (blinds or curtains) that shall not obstruct the windows when open; this measure can be explored further in later stages of the project. It is expected that the implementation of such elements will reduce significantly the incoming solar gains that are one of the major impacts for overheating.

• Enhanced mechanical ventilation can provide higher airflows to remove the heat from the indoor spaces. It can also remove the pollutants from all units and provide a comfortable environment for the occupants.

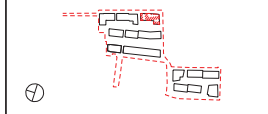
APPENDIX A1 - SELECTED FLATS



01 Level 05 plan
Section 1

NOTE:
1- All internal layouts and furnishings are shown for indicative purposes only.
2- All landscape layouts are shown for indicative purposes only.

Rev	Date	Description
C	28/09/2018	Amendments as agreed withGLA
B	16/03/2018	Layout amended
A	16/02/2018	North facade amended



Project Title
CHARLTON RIVERSIDE - PHASE 1 - RS

Drawing Title
Building C
Plot A
Apartment Layouts
Level 05

Reason for Issue
Planning RS

Status
For approval

Job No	Scale	Date
10046	1:100 @ A1	DEC 2017

Drawing No
10046-A-DRG-C-G200-2005-PL-RS

Revision
C

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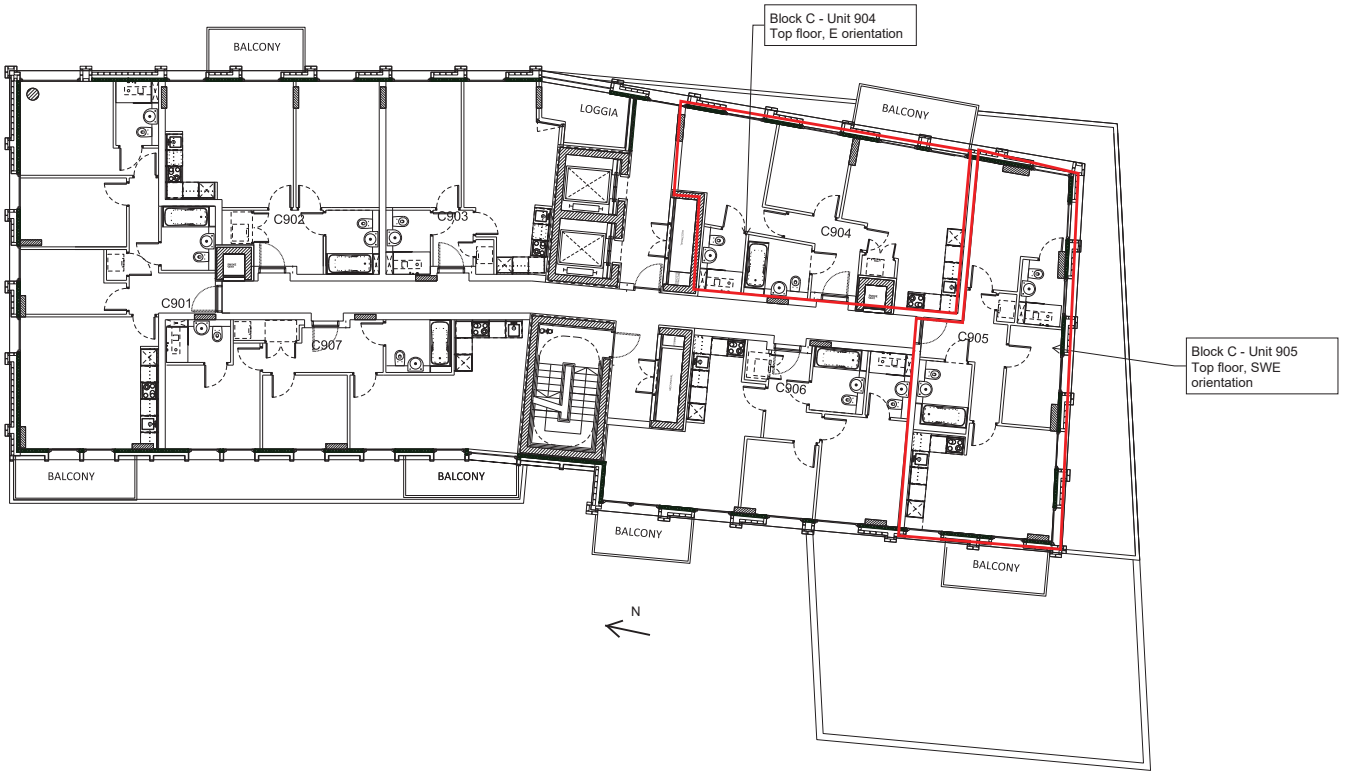

01 Level 09 Plan
Section 1

NOTE:
1- All internal layouts and furnishings are shown for indicative purposes only.
2- All landscape layouts are shown for indicative purposes only.

Rev	Date	Description
C	28/09/2018	Amendments as agreed with GLA
B	16/03/2018	Layout amended
A	16/02/2018	Floor added

Project Title
CHARLTON RIVERSIDE - PHASE 1 - RS

Drawing Title
Building C
Plot A
Apartment Layouts
Level 09

Reason for Issue
Planning RS

Status
For approval

Job No	Scale	Date
10046	1:100 @ A1	DEC 2017

Drawing No: 10046-A-DRG-C-G200-2009-PL-RS
Revision: C

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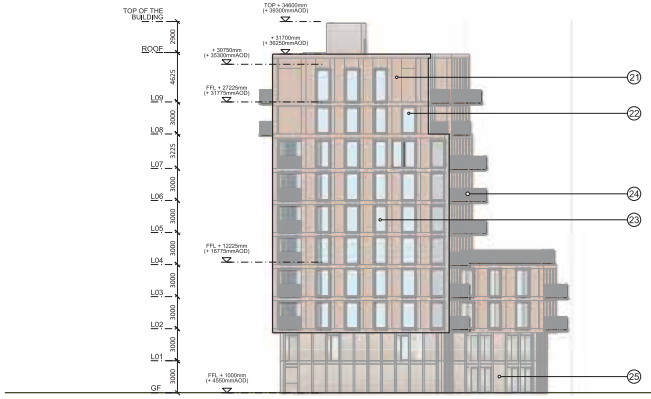
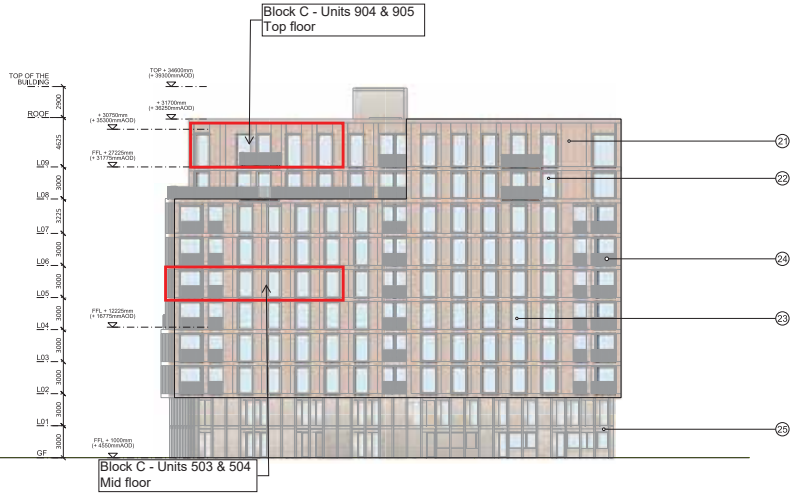
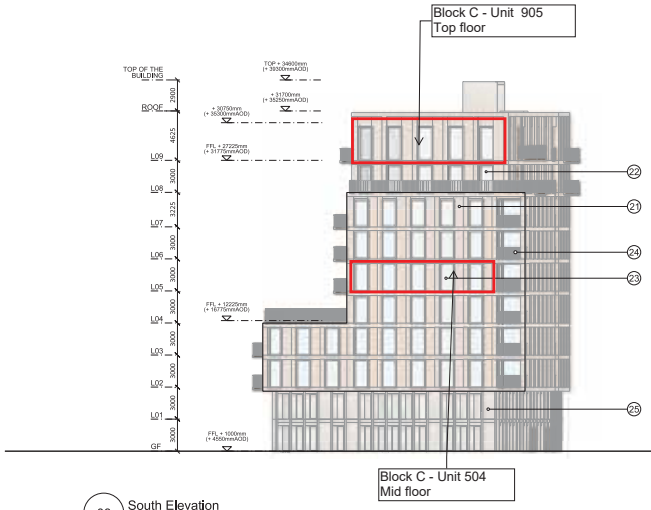


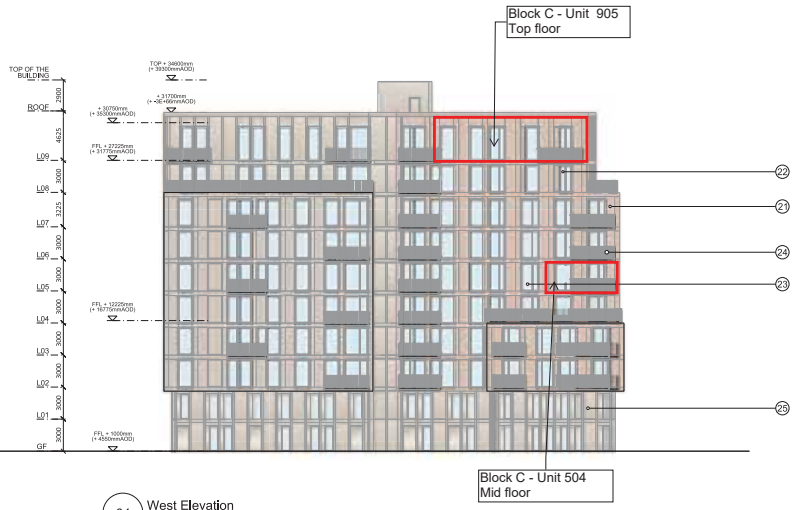
01 North Elevation
Building C



02 East Elevation
Building C



03 South Elevation
Building C

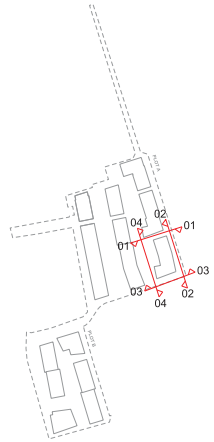


04 West Elevation
Building C

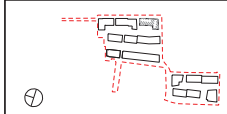
NOTE:
1- All internal layouts and furnishings are shown for indicative purposes only.
2- All landscape layouts are shown for indicative purposes only.

Legend:

21 Brick
22 Double glazed unit
23 Double glazed unit with openable window
24 Metal Balustrade
25 GRC
26 Glass Balustrade



Rev	Date	Description
B	28/09/2018	Amendments as agreed with GLA
A	16/02/2018	Floor added and north facade amended



Project Title
CHARLTON RIVERSIDE - PHASE 1 - RS

Drawing Title
Building C
Plot A
Facade Elevation

Reason for Issue
Planning RS

Status
For approval

Job No	Scale	Date
10046	1:250 @ A1	DEC 2017

Drawing No
10046-A-DRG-C-G200-4000-PL-RS

Revision
B

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