



DAYLIGHT & SUNLIGHT

OVERSHADOWING ASSESSMENTS

Old Kent Road Masterplan

10 03 2022

GIA No: **14741**



PROJECT DATA:

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Project Title **Old Kent Road Masterplan**
Project Number **14741**

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APPENDIX 01
TRANSIENT OVERSHADOWING

1 INTRODUCTION

GIA have assessed the proposed Old Kent Road Masterplan to understand the potential changes in light to the relevant surrounding amenity spaces as part of the aspirations for the Old Kent Road Opportunity Area.

The Old Kent Road Area is located within the London Borough of Southwark and is identified as an Opportunity Area in the London Plan.

GIA have been instructed by Southwark Council to provide overshadowing advice in relation to the proposed Old Kent Road Opportunity Area which will feed into the microclimate study as part of the overall Air Quality Study (AQS). The purpose of the study is to provide an evidence base that will inform the work associated with the formation of the OKR Area Action Plan (AAP).

The Old Kent Road Area Action Plan seeks to set out the development vision for the Old Kent Road over the next 20 years. Along with other development plans for the area including the New Southwark Plan, the London Plan and Neighbourhood Plans, the AAP forms the basis for planning decisions to be made and therefore is a key document in shaping the future of the Old Kent Road.

Policy 'AAP 11: Parks and Healthy Streets – The Greener Belt' states that developments must:

Provide new public open spaces as shown on the masterplan and in the sub area guidance. The new public open space must have good levels of sunlight and microclimate conditions;

Specifically, GIA have been instructed to conduct overshadowing assessments of the amenity spaces in relation to sub areas 2 and 3 of the Old Kent Road AAP as illustrated within figure 02.

Sub Area 2 is located at Cantium retail park and Marlborough Grove to the south of Old Kent Road. Within OKR10 at the land bounded by Glengall Road, Latona Road and Old Kent Road, three parks have been designated including a linear park which runs through the site and follows the alignment of the old Surrey Canal and meets with Burgess Park. Moreover, pocket parks have been designated at the Asda and McDonald's sites. Within OKR11, Marlborough Grove will be redesigned to provide a public open space and include the provision of 'Six Bridges Park' which will link Marlborough Grove and St Jame's Road. Finally, within OKR12 at the former Southern Railway Stables, a new open space to act as a community garden will be incorporated into the development.

Sub Area 3 is located at Sandgate Street, Verney Road and Old Kent Road (South) and currently serves as an industrial led area with the inclusion of some residential uses such as Canal Grove Cottages. Within OKR 13, Verney Road will link to the new Surrey Canal Park which will also include a new park around the Canal Grove Cottages, at Ruby Triangle. Moreover, the former Gas-holder no. 13 which will be transformed into Livesey Park.

Due to the scale of the Masterplan, GIA have assessed the overshadowing impacts over three different time frames in order to provide a comprehensive overview of the impacts that the proposed developments will have on the surrounding amenity spaces as the development progresses. The first time frame is 2018 which we have denoted as the existing baseline scenario. The second time frame is 2030 (phase 1) which we have denoted as the proposed scenario. The third timeframe is 2040 (phase 2) which is further future proposed scenario.



Figure 01 - Old Kent Road Masterplan

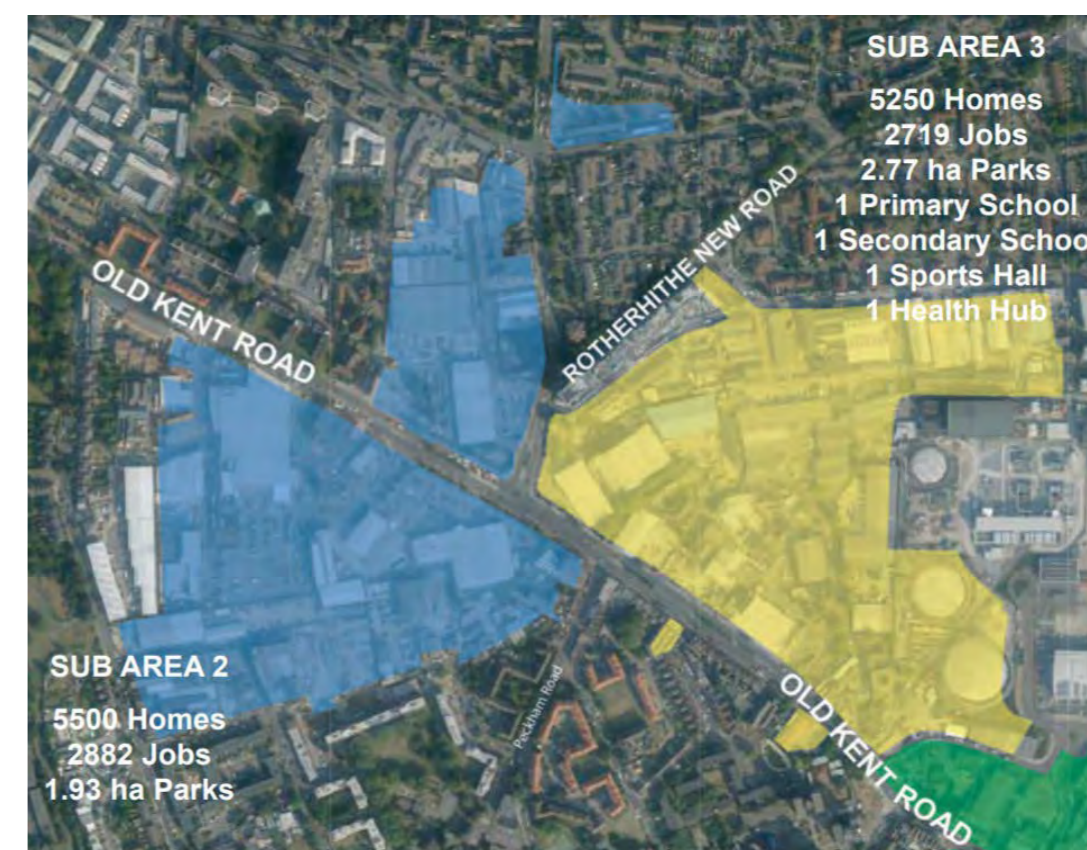


Figure 02 - Sub Areas 2 and 3 of the Old Kent Road Masterplan

2 METHODOLOGY

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 in accordance with BRE guidance.

GIA have curated a three dimensional representation of the proposed Old Kent Road masterplan, the majority of which has been produced in collaboration with Southwark Council, Wirth Research, VU.CITY and Farells architects. These models have been placed in the context of its surrounding buildings which have been modelled from photogrammetry. This allows for a precise model, which in turn ensures that analysis accurately represents the amount of sunlight available to the external spaces, considering all of the surrounding obstructions and orientation.

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 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)*
- *To make outdoor activities, like sitting out and children's play more pleasant (mainly during the warmer months)*
- *To encourage plant growth (mainly in spring and summer)*
- *To dry out the ground, reducing moss and slime (mainly during the colder months)*
- *To melt frost, ice and snow (in winter)*
- *To 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 which

can receive two hours of sun on 21 March is less than 0.8 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.

In relation to Transient Overshadowing, the BRE Guides states within paragraph 3.3.14 *'If a space is used all year round, the equinox (21 March) is the best date for which to prepare shadow plots as it gives an average level of shadowing. Lengths of shadows at the autumn equinox (21 September) will be the same as those for 21st March, so a separate set of plots for September is not required.'*

The BRE goes on to state in paragraph 3.3.15 *'As an optional addition, plots for summertime (e.g. 21 June) may be helpful as they will show the reduced shadowing then, although it should be borne in mind that 21st June represents the best case of minimum shadow, and that shadows for the rest of the year will be longer. Conversely if winter shadows (e.g. 21 December) are plotted, even low buildings will cast long shadows. In a built up area, it is common for large areas of the ground to be in shadow in December.'*

For the purpose of this document, GIA have therefore produced the following:

- Shadow Path diagrams (i.e Transient Overshadowing) for the 21st March (spring equinox), 21st June (summer solstice) and the 21st December (winter solstice).
- Sun Hours on Ground (SHOG) studies for areas of public amenity space (where the geometry is available) or private amenity space, where requested specifically by Southwark Council.

The above studies have been completed for:

- 2018 (i.e the existing baseline)
- 2030, in keeping with the Old Kent Road Area Action Plan
- 2040 (as above)



Figure 03 - GIA's interpretation of the 2018 baseline



Figure 04 - GIA's interpretation of the 2030 baseline



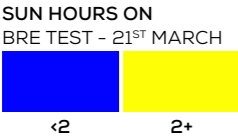
Figure 05 - GIA's interpretation of the 2040 baseline

3 OVERSHADOWING IMPACTS

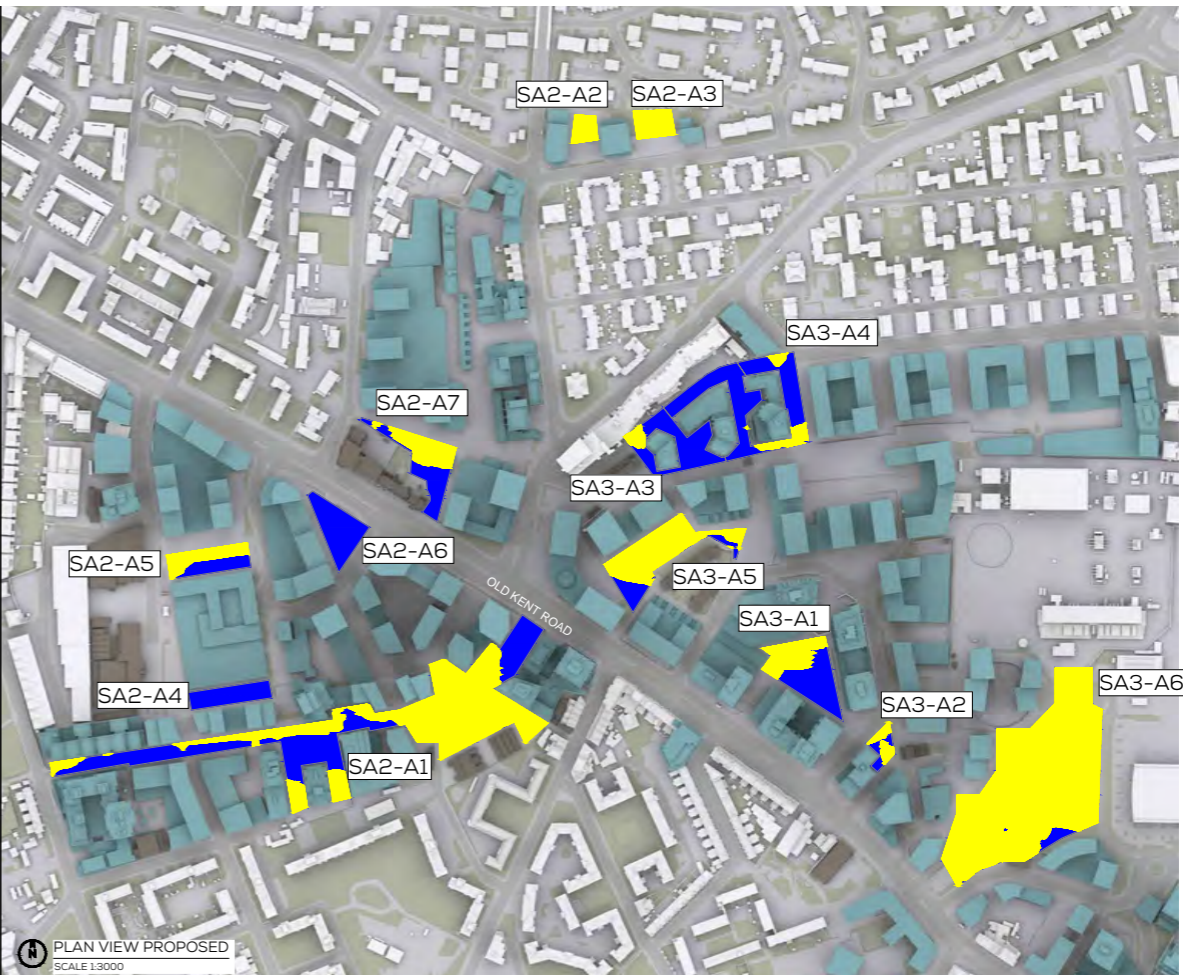
2030 SCENARIO
SUN HOURS ON GROUND - 21ST MARCH



MAP REF	AMENITY SPACE	LIT AREA PROPOSED %	MEETS BRE CRITERIA
SUB AREA 2 PUBLIC OPEN SPACE			
SA2-A1	Frensham Street Car Park & Surrey Canal Park	63.96%	YES
SA2-A2	The Stables	100.00%	YES
SA2-A3	The Stables	100.00%	YES
SUB AREA 3 PUBLIC OPEN SPACE			
SA3-A1	Ruby Triangle	45.24%	NO
SA3-A2	Ruby Street Park	50.00%	YES
SA3-A3	Surrey Canal Park	61.45%	YES
SA3-A4	Surrey Canal Park	48.07%	NO

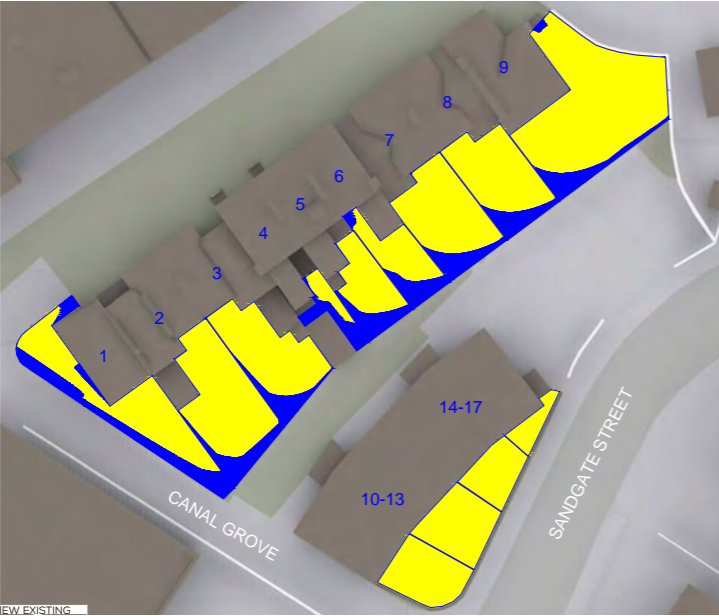


2040 SCENARIO
SUN HOURS ON GROUND - 21ST MARCH

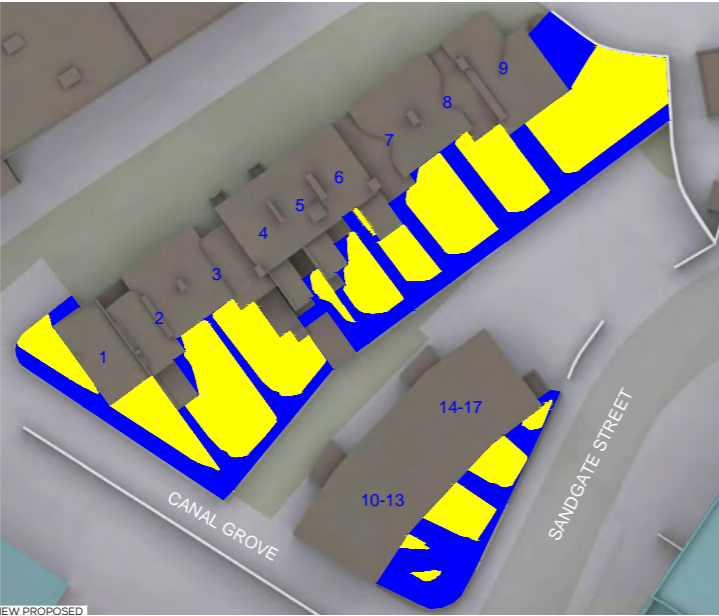


MAP REF	AMENITY SPACE	LIT AREA PROPOSED %	MEETS BRE CRITERIA
SUB AREA 2 PUBLIC OPEN SPACE			
SA2-A1	Frensham Street Car Park & Surrey Canal Park	61.29%	YES
SA2-A2	The Stables	100.00%	YES
SA2-A3	The Stables	100.00%	YES
SA2-A4	Courtyards attached to Surrey Canal Park	0.00%	NO
SA2-A5	Pocket Park at Asda	54.37%	YES
SA2-A6	Old Kent Road open spaces	0.00%	NO
SA2-A7	Six Bridges Park	47.84%	NO
SUB AREA 3 PUBLIC OPEN SPACE			
SA3-A1	Ruby Triangle	40.05%	NO
SA3-A2	Ruby Street Park	54.09%	YES
SA3-A3	Surrey Canal Park	10.86%	NO
SA3-A4	Surrey Canal Park	12.31%	NO
SA3-A5	Canal Grove Park	79.47%	YES
SA3-A6	Livesey Park	97.73%	YES

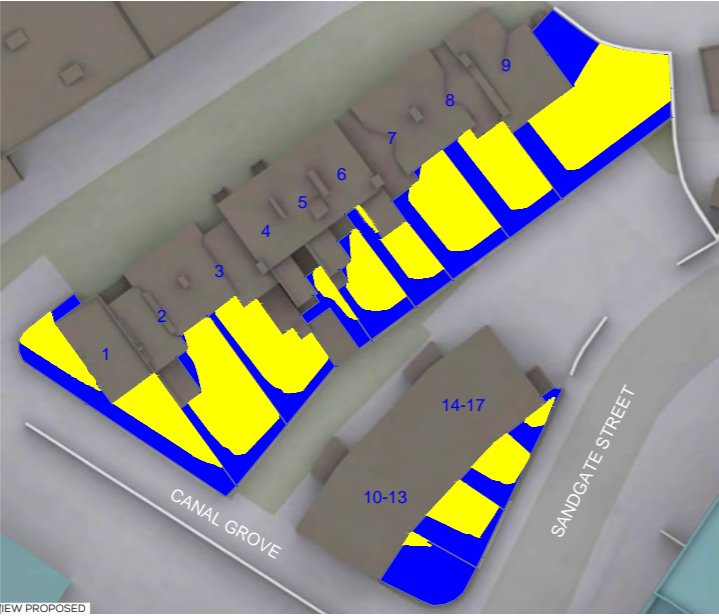
2018 SCENARIO (CANAL GROVE COTTAGES)
SUN HOURS ON GROUND - 21ST MARCH



2030 SCENARIO (CANAL GROVE COTTAGES)
SUN HOURS ON GROUND - 21ST MARCH



2040 SCENARIO (CANAL GROVE COTTAGES)
SUN HOURS ON GROUND - 21ST MARCH



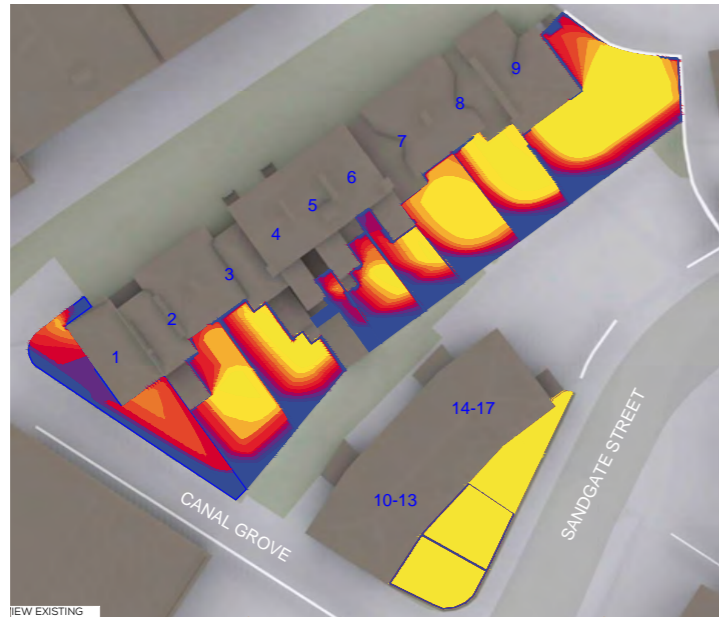
FLOOR	AMENITY AREA SQM	LIT AREA 2018	MEETS CRITERIA 2018	LIT AREA 2030	MEETS CRITERIA 2030	LIT AREA 2040	MEETS CRITERIA 2040
1 CANAL GROVE							
F00	101.55	64.71%	YES	53.00%	YES	52.71%	YES
2 CANAL GROVE							
F00	95.11	82.95%	YES	74.26%	YES	73.33%	YES
3 CANAL GROVE							
F00	74.77	82.71%	YES	70.52%	YES	70.52%	YES
4 CANAL GROVE							
F00	18.58	39.50%	NO	32.88%	NO	32.88%	NO
5 CANAL GROVE							
F00	44.04	70.41%	YES	61.29%	YES	61.29%	YES
6 CANAL GROVE							
F00	41.04	68.06%	YES	46.44%	NO	46.44%	NO
7 CANAL GROVE							
F00	76.9	83.17%	YES	65.84%	YES	65.84%	YES
8 CANAL GROVE							
F00	70.04	82.34%	YES	58.57%	YES	58.57%	YES
9 CANAL GROVE							
F00	163.57	89.50%	YES	61.81%	YES	61.81%	YES
10-13 CANAL GROVE							
F00	42.17	100.00%	YES	8.63%	NO	4.84%	NO
F00	43.65	100.00%	YES	51.39%	YES	51.39%	YES
14-17 CANAL GROVE							
F00	28.32	100.00%	YES	59.50%	YES	59.50%	YES
F00	12.44	100.00%	YES	27.33%	NO	27.33%	NO

SUN HOURS ON
BRE TEST - 21ST MARCH

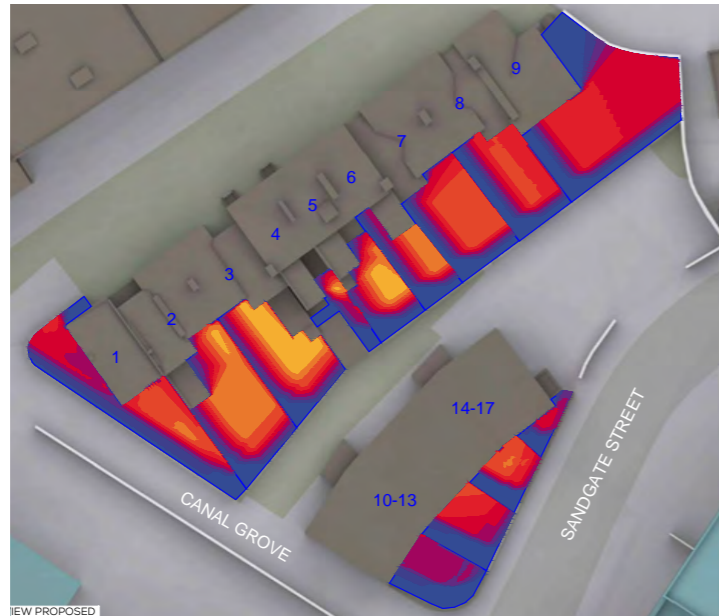
<2 2+

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

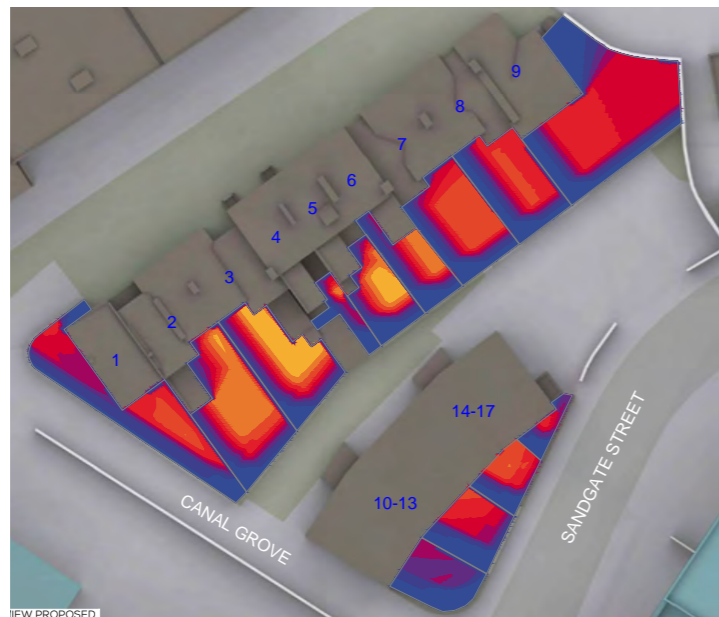
2018 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST MARCH



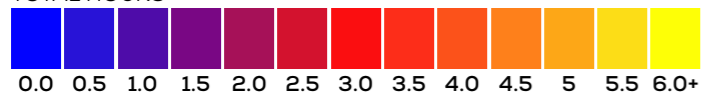
2030 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST MARCH



2040 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST MARCH

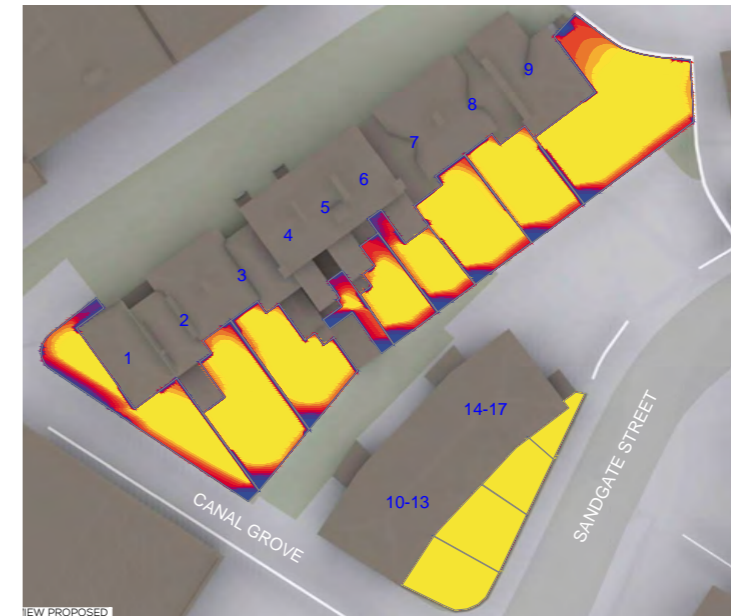


SUN EXPOSURE
TOTAL HOURS

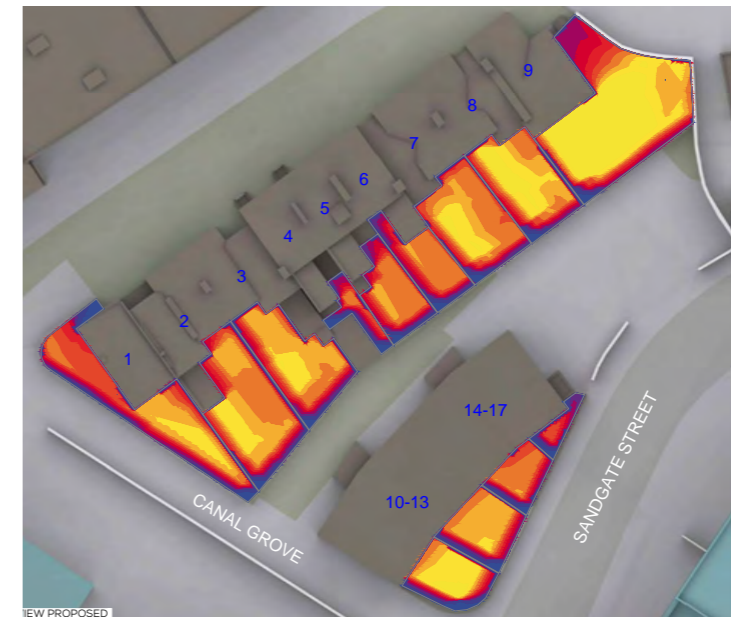


OLD KENT ROAD MASTERPLAN
OVERSHADOWING ASSESSMENTS (14741)

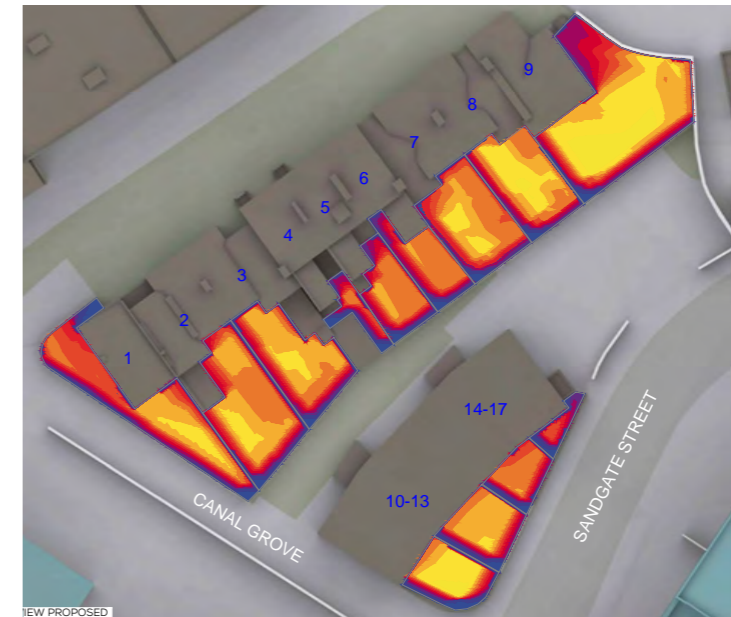
2018 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST JUNE



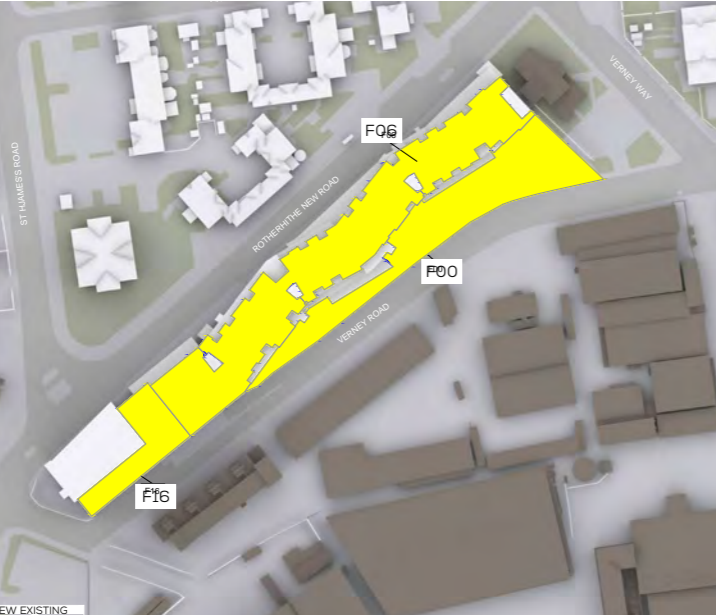
2030 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST JUNE



2040 SCENARIO (CANAL GROVE COTTAGES)
SUN EXPOSURE - 21ST JUNE



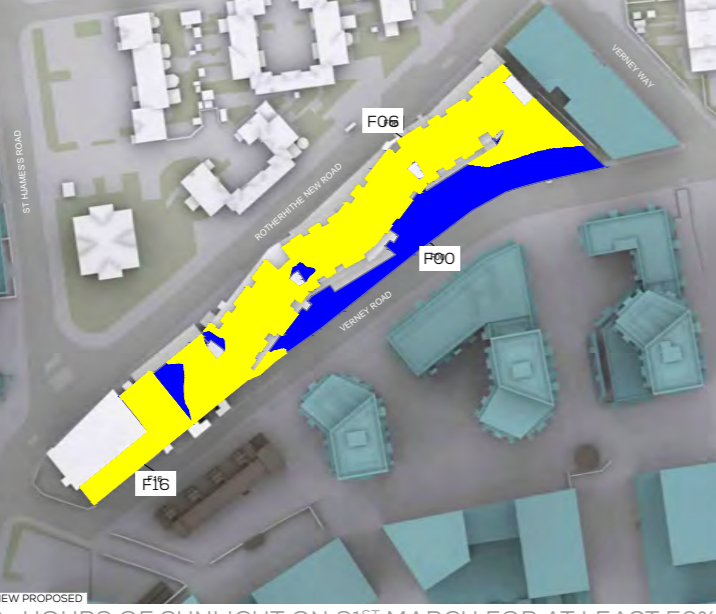
2018 SCENARIO (ROTHERHITHE NEW ROAD)
SUN HOURS ON GROUND - 21ST MARCH



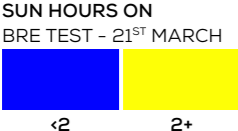
2030 SCENARIO (ROTHERHITHE NEW ROAD)
SUN HOURS ON GROUND - 21ST MARCH



2040 SCENARIO (ROTHERHITHE NEW ROAD)
SUN HOURS ON GROUND - 21ST MARCH



FLOOR	AMENITY AREA SQM	LIT AREA 2018	MEETS CRITERIA 2018	LIT AREA 2030	MEETS CRITERIA 2030	LIT AREA 2040	MEETS CRITERIA 2040
399 ROTHERHITHE NEW ROAD							
F00	1314.8	99.75%	YES	41.06%	NO	21.65%	NO
F06	2141.69	99.73%	YES	93.99%	YES	93.33%	YES
F16	429.02	99.84%	YES	99.25%	YES	99.25%	YES



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

TRANSIENT OVERSHADOWING



2018 - 7am



2018 - 8am



2030 - 7am



2030 - 8am



2018 - 9am



2018 - 10am



2030 - 9am



2030 - 10am



2018 - 11am



2018 - 12pm



2030 - 11am



2030 - 12pm



2018 - 1pm



2018 - 2pm



2030 - 1pm



2030 - 2pm



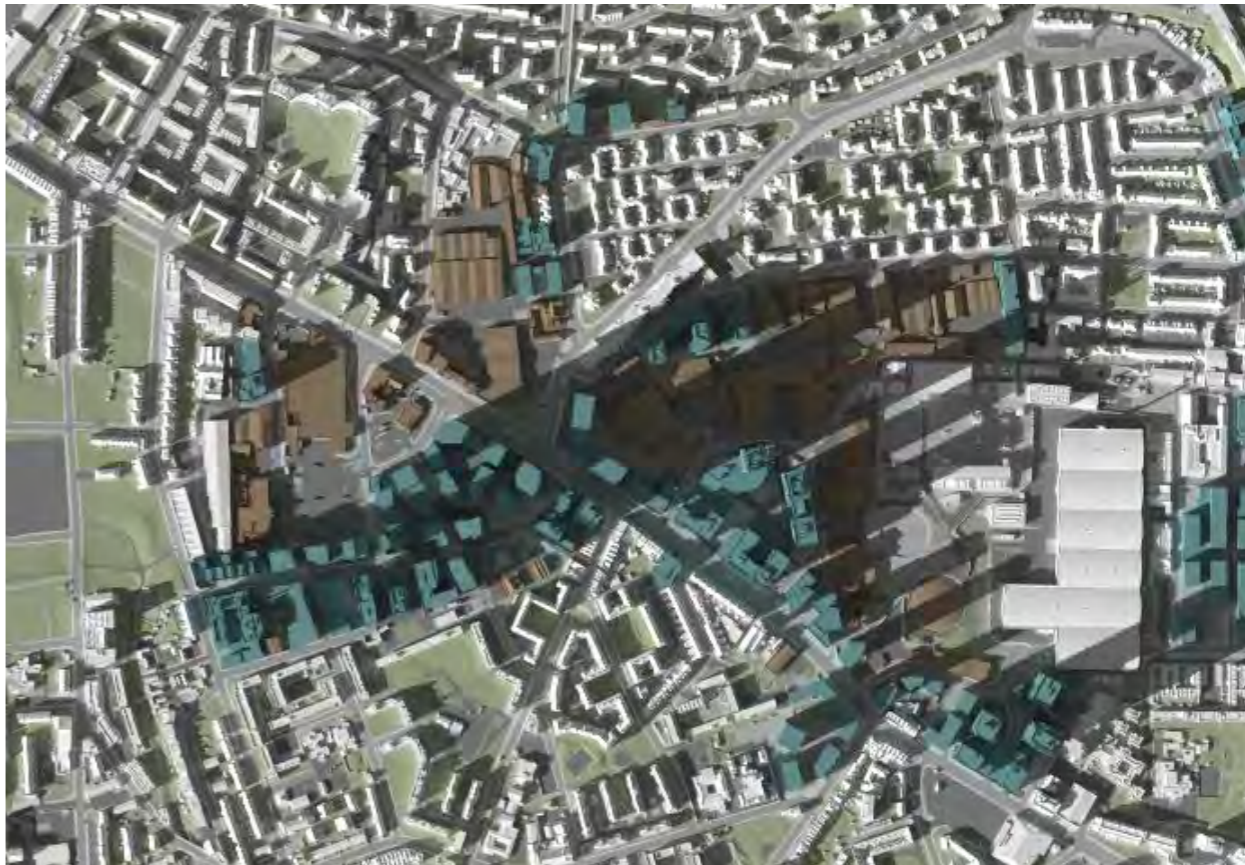
2018 - 3pm



2018 - 4pm



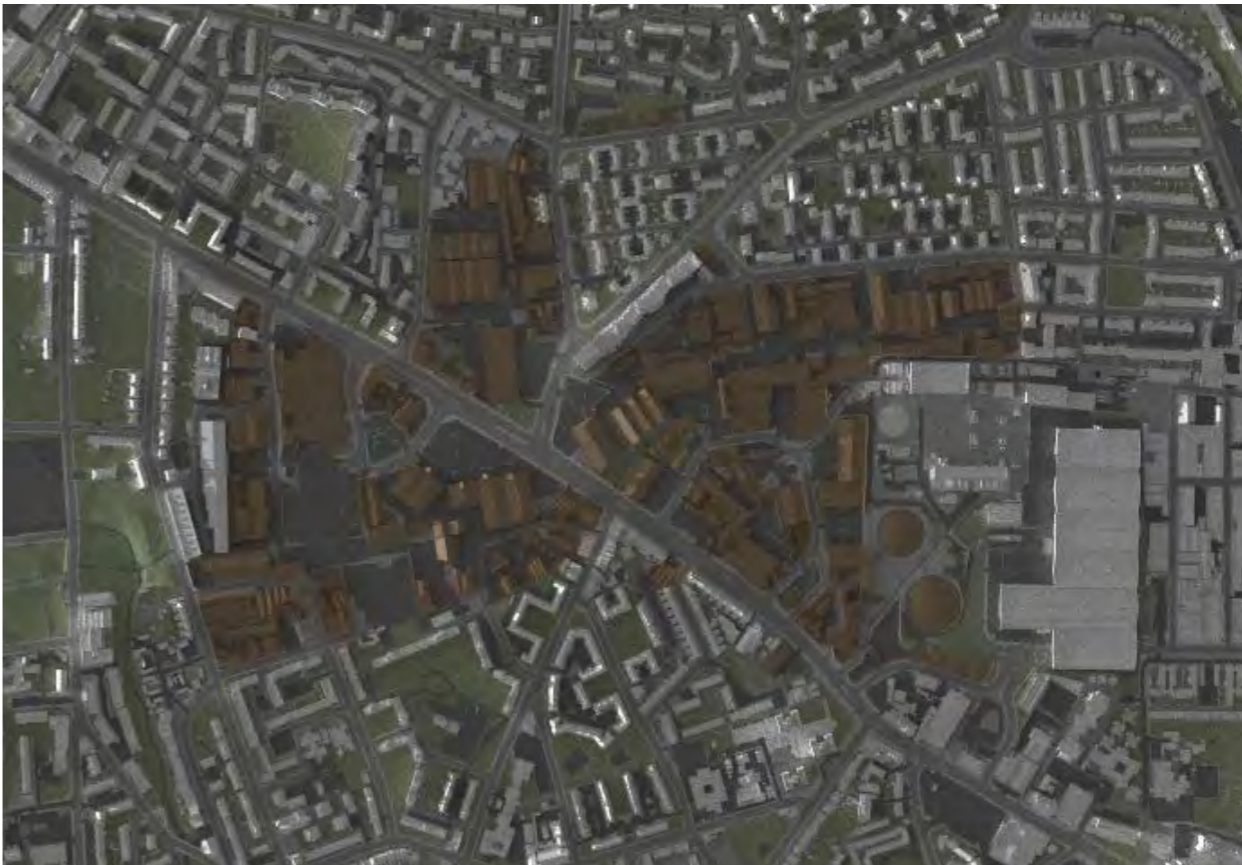
2030 - 3pm



2030 - 4pm



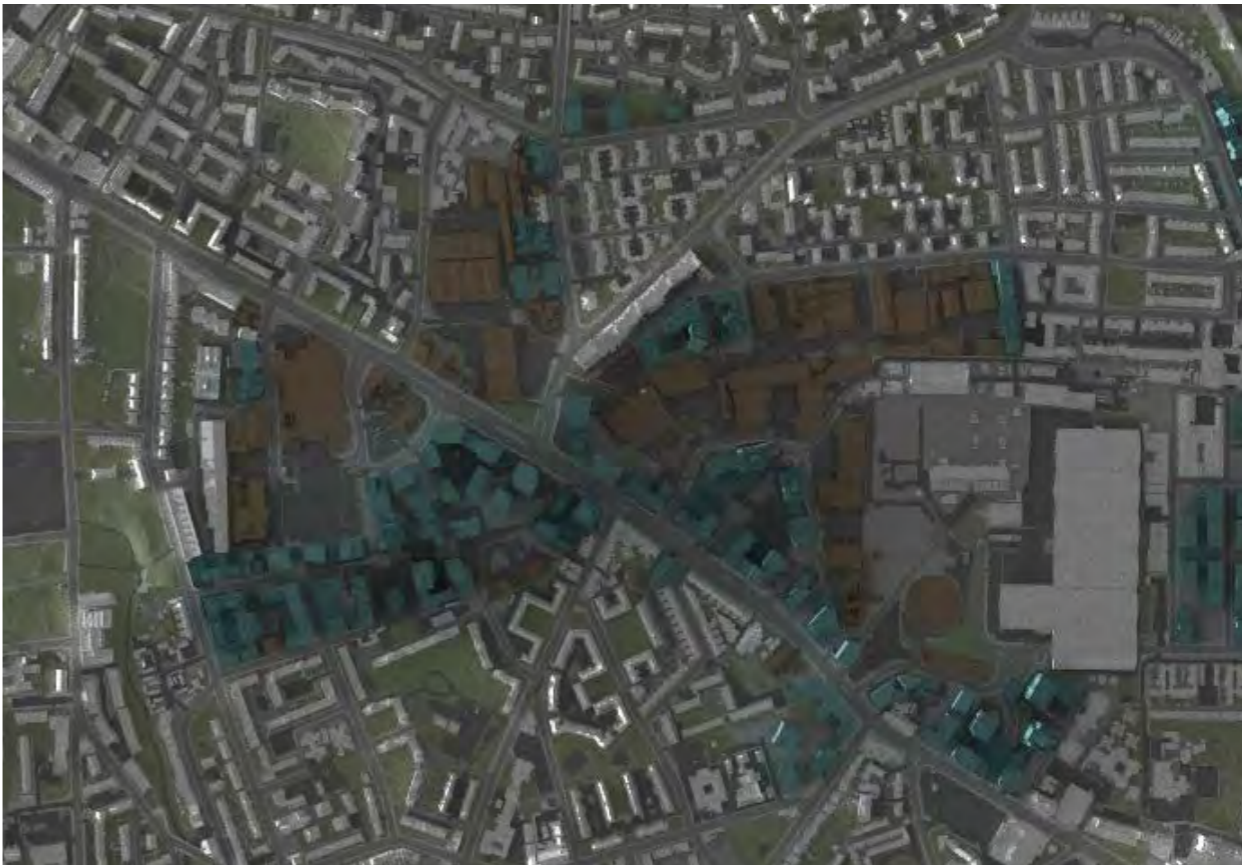
2018 - 5pm



2018 - 6pm



2030 - 5pm



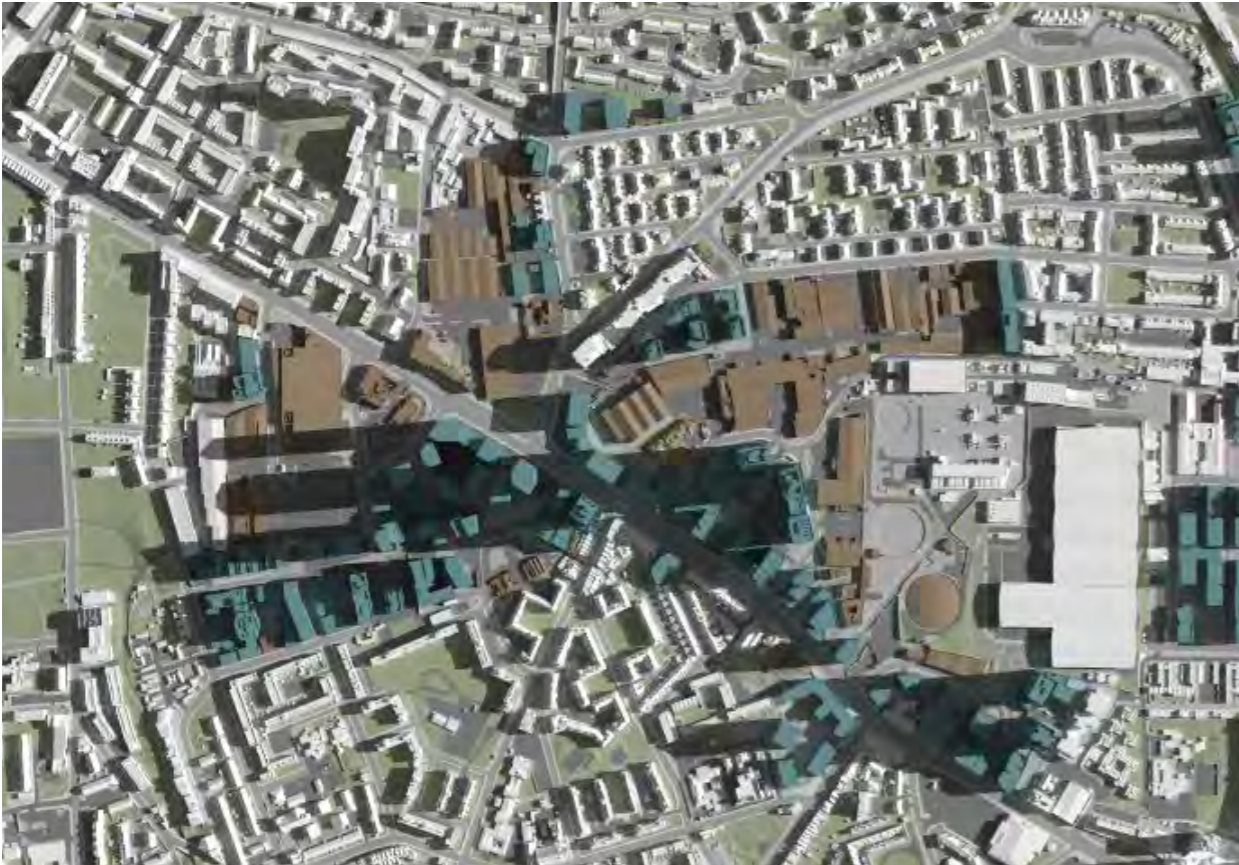
2030 - 6pm



2018 - 7am



2018 - 8am



2030 - 7am



2030 - 8am



2018 - 9am



2018 - 10am



2030 - 9am



2030 - 10am



2018 - 11am



2018 - 12pm



2030 - 11am



2030 - 12pm



2018 - 1pm



2018 - 2pm



2030 - 1pm



2030 - 2pm



2018 - 3pm



2018 - 4pm



2030 - 3pm



2030 - 4pm



2018 - 5pm



2018 - 6pm



2030 - 5pm



2030 - 6pm

21ST DECEMBER



2018 - 9am



2018 - 10am



2030 - 9am



2030 - 10am



2018 - 11am



2018 - 12pm



2030 - 11am



2030 - 12pm



2018 - 1pm



2018 - 2pm



2030 - 1pm



2030 - 2pm



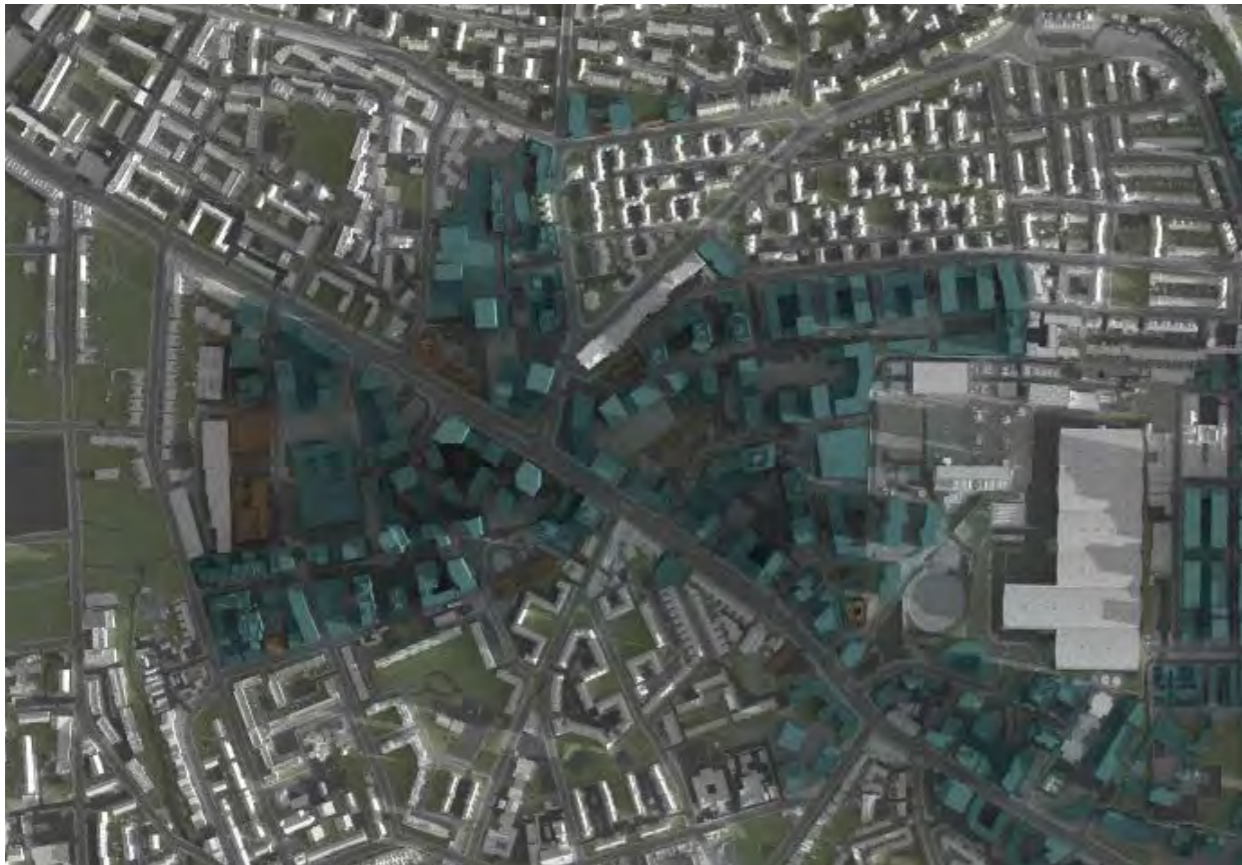
2018 - 3pm



2030 - 3pm

2040

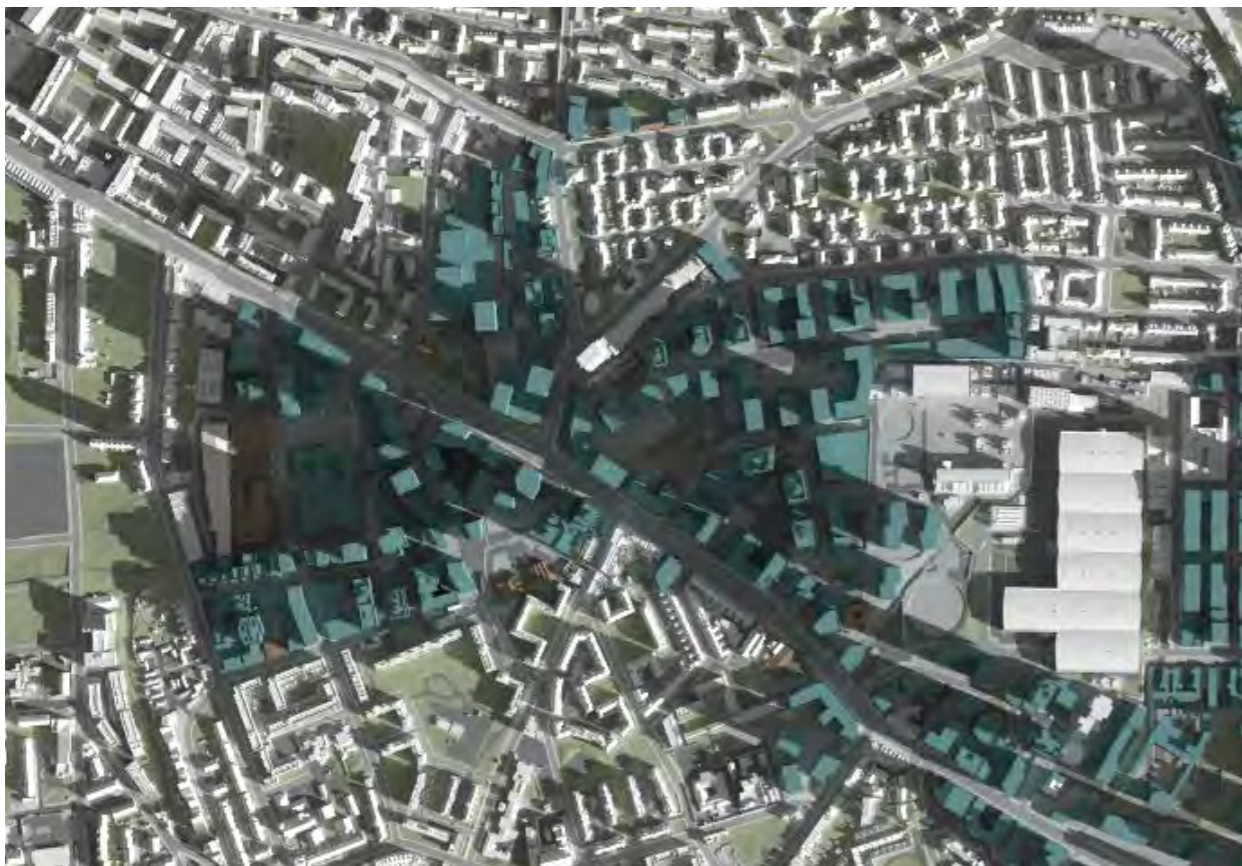
21ST MARCH



2040 - 7am



2040 - 9am



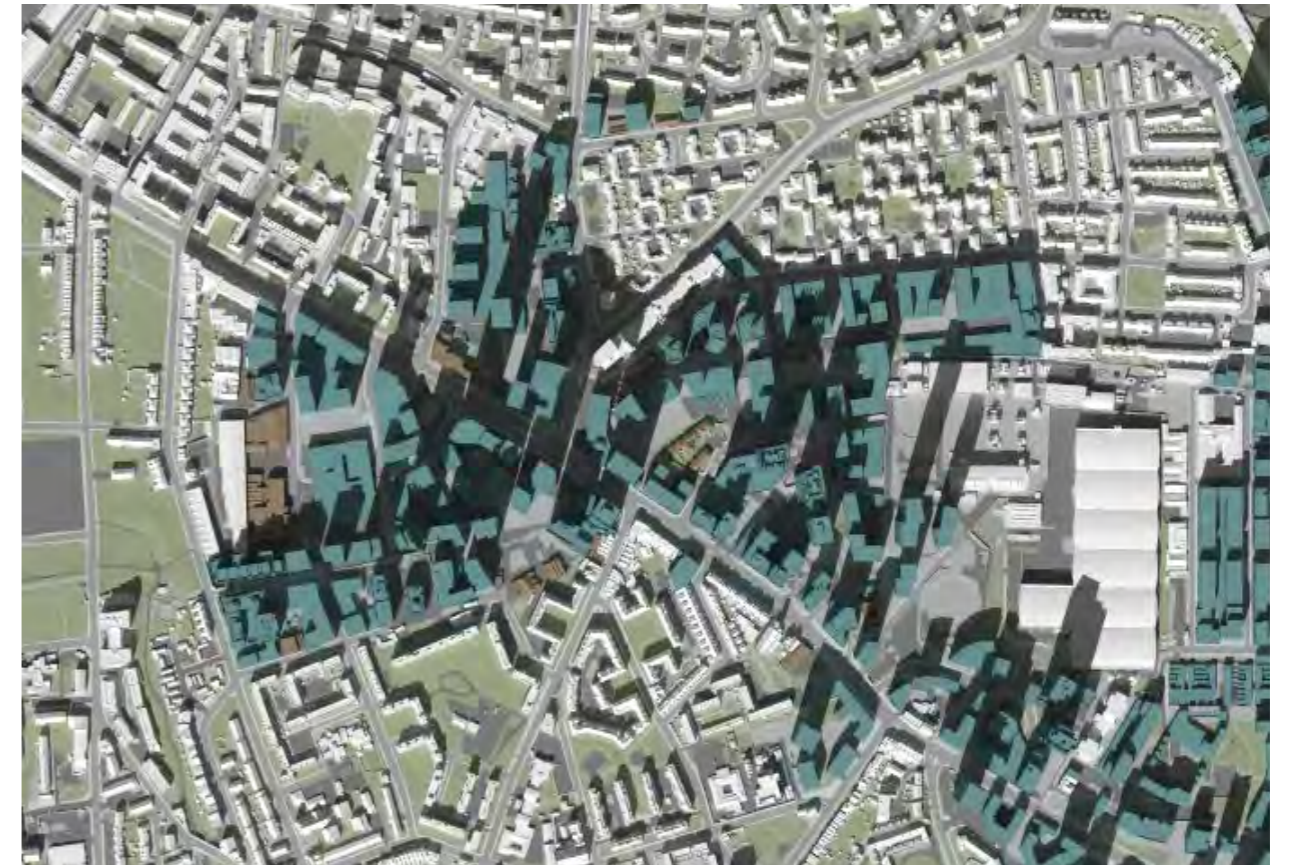
2040 - 8am



2040 - 10am



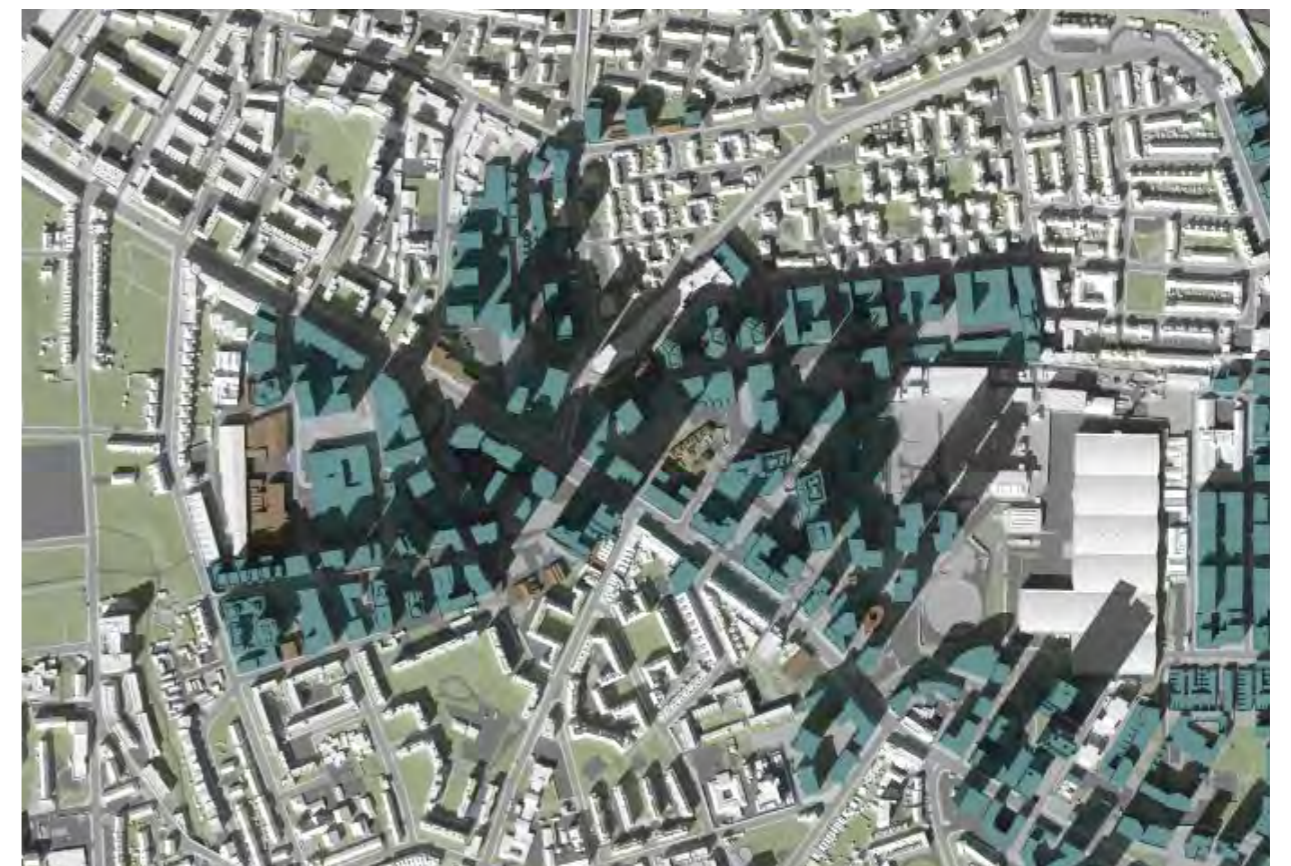
2040 - 11am



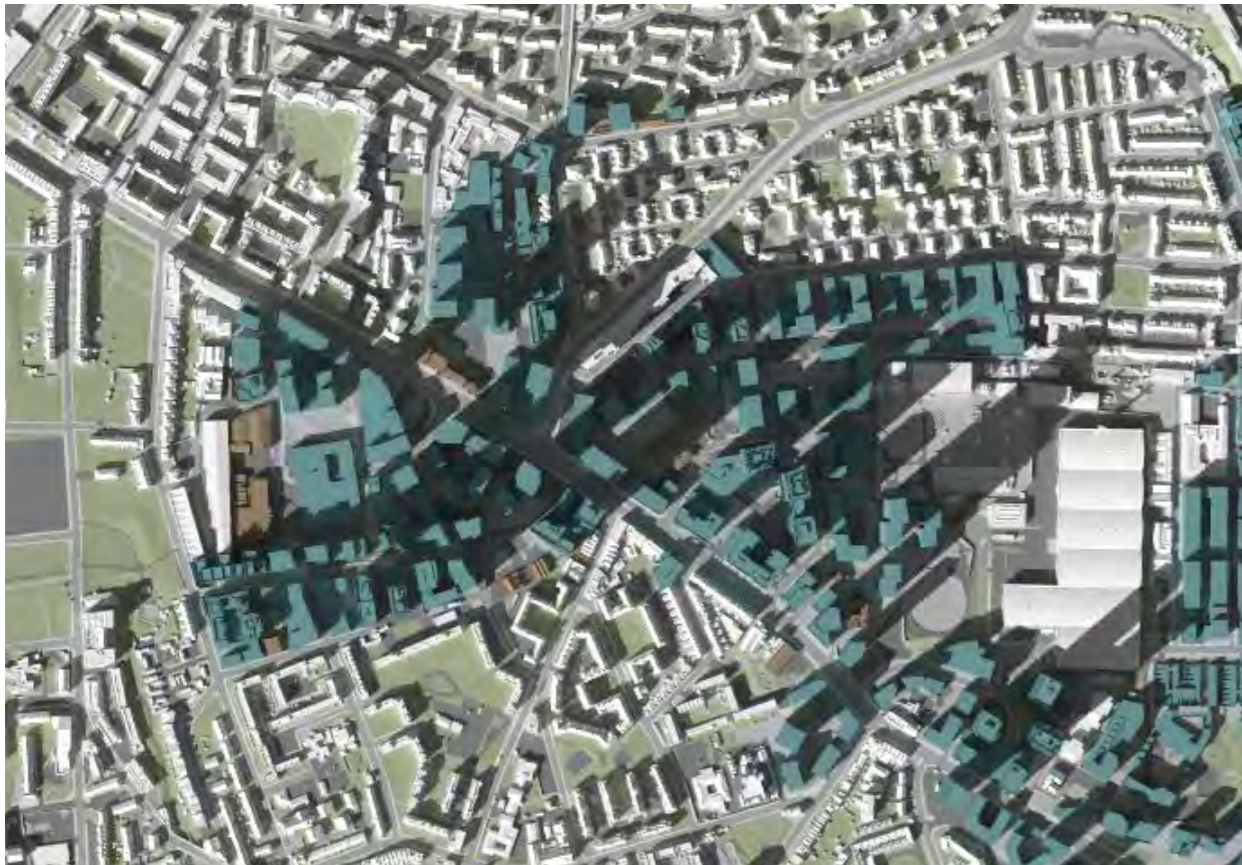
2040 - 1pm



2040 - 12pm



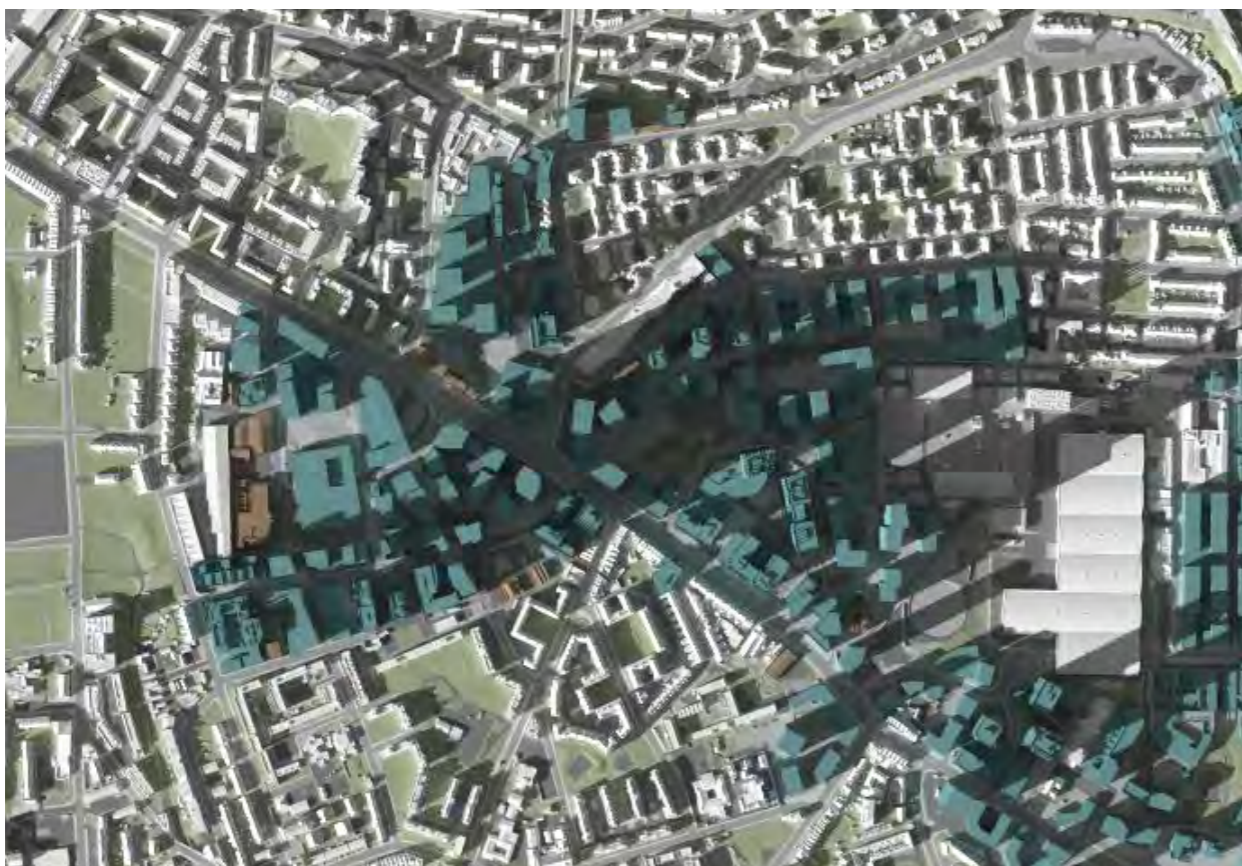
2040 - 2pm



2040 - 3pm



2040 - 5pm



2040 - 4pm



2040 - 6pm

2040

21ST JUNE



2040 - 7am



2040 - 9am



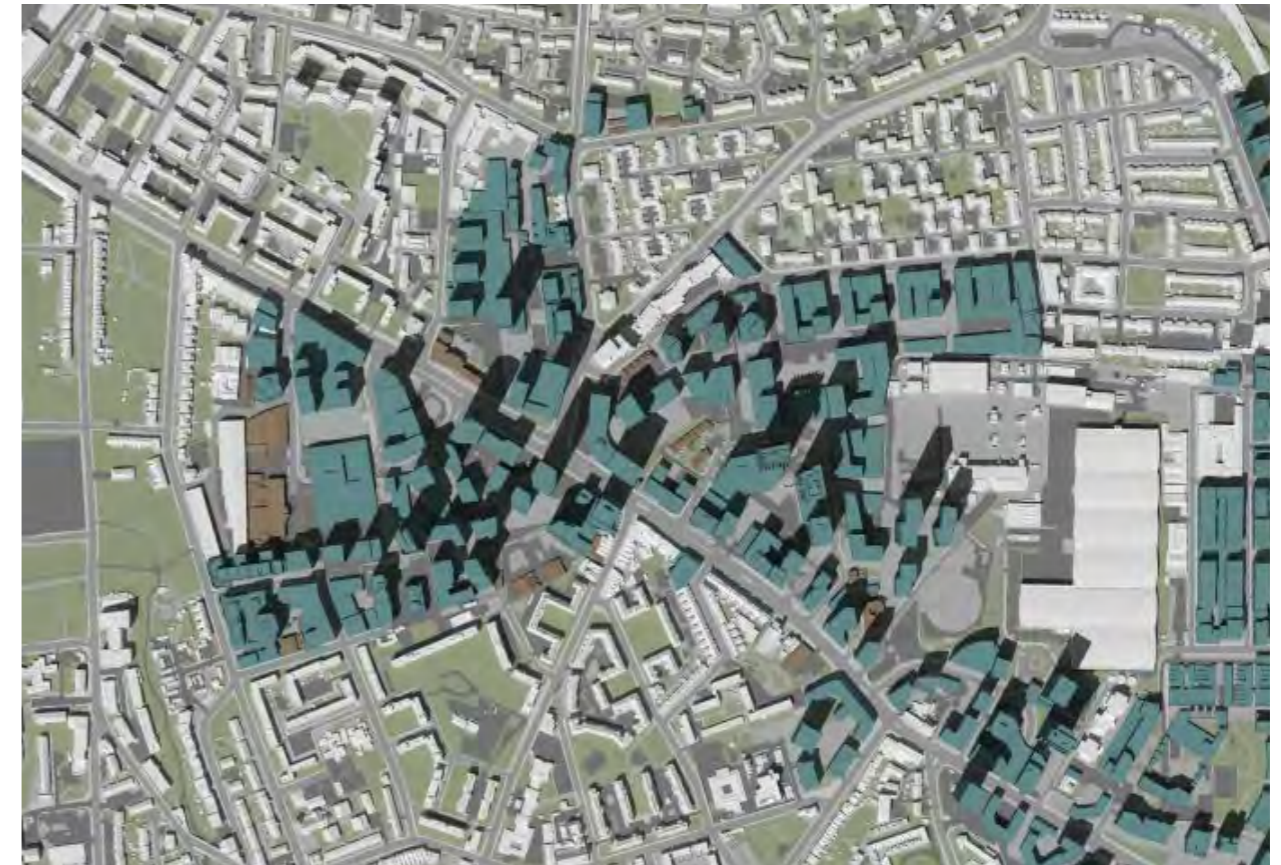
2040 - 8am



2040 - 10am



2040 - 11am



2040 - 1pm



2040 - 12pm



2040 - 2pm



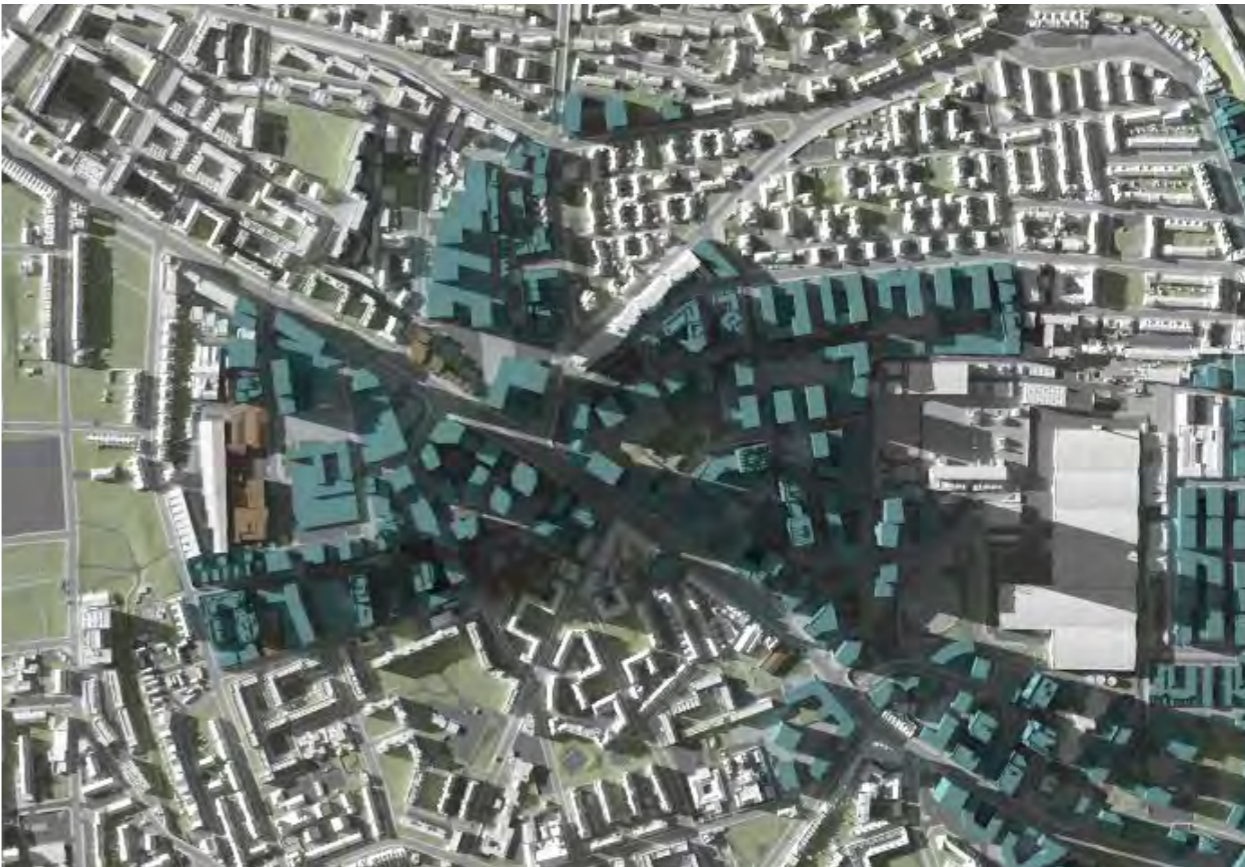
2040 - 3pm



2040 - 5pm



2040 - 4pm



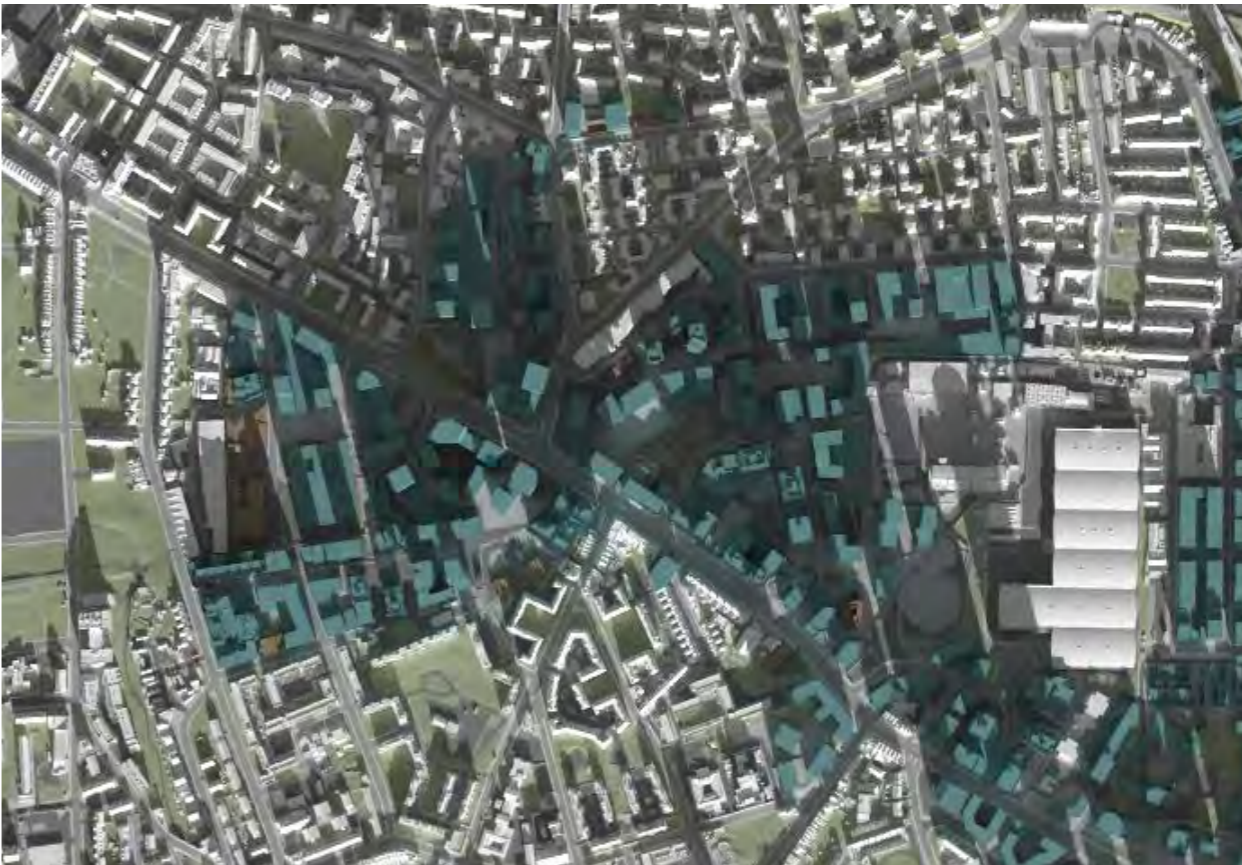
2040 - 6pm

2040

21ST DECEMBER



2040 - 9am



2040 - 11am



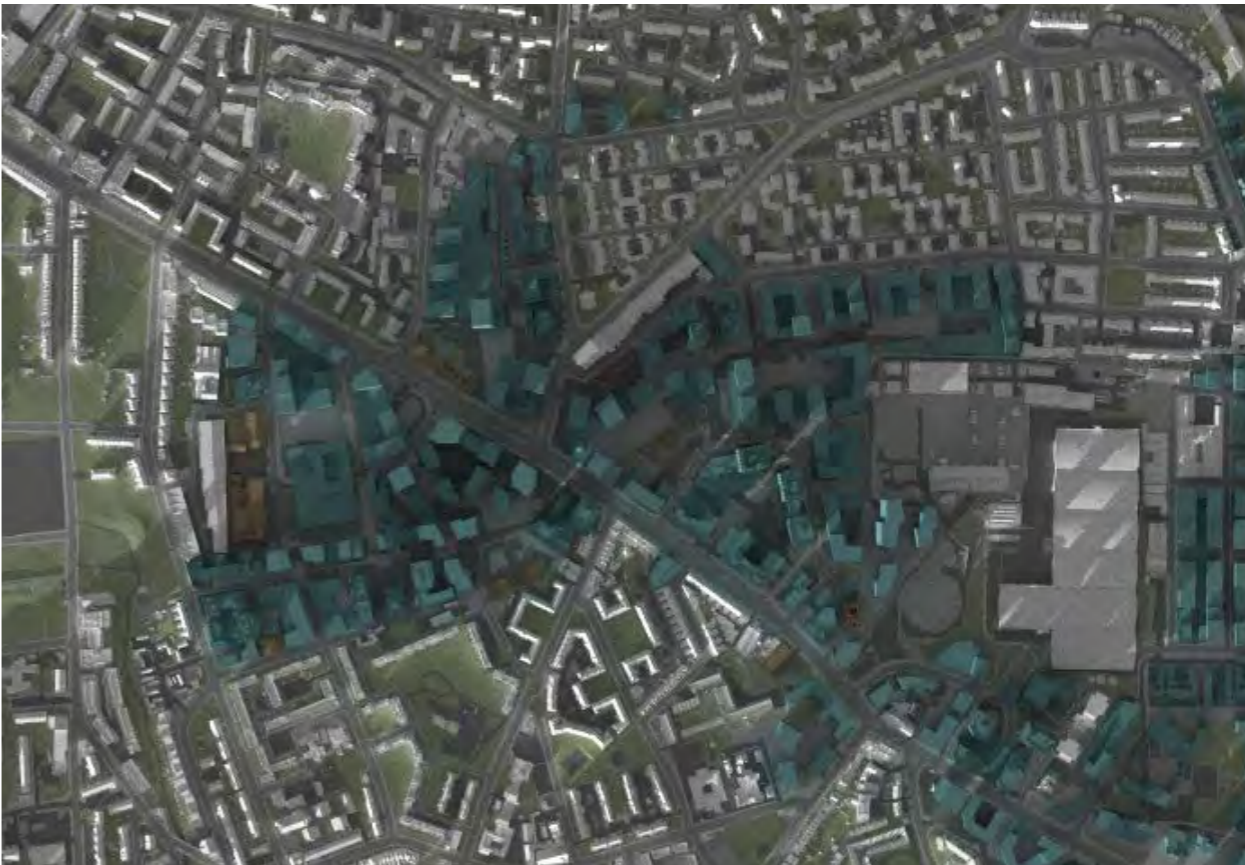
2040 - 10am



2040 - 12pm



2040 - 1pm



2040 - 3pm



2040 - 2pm

