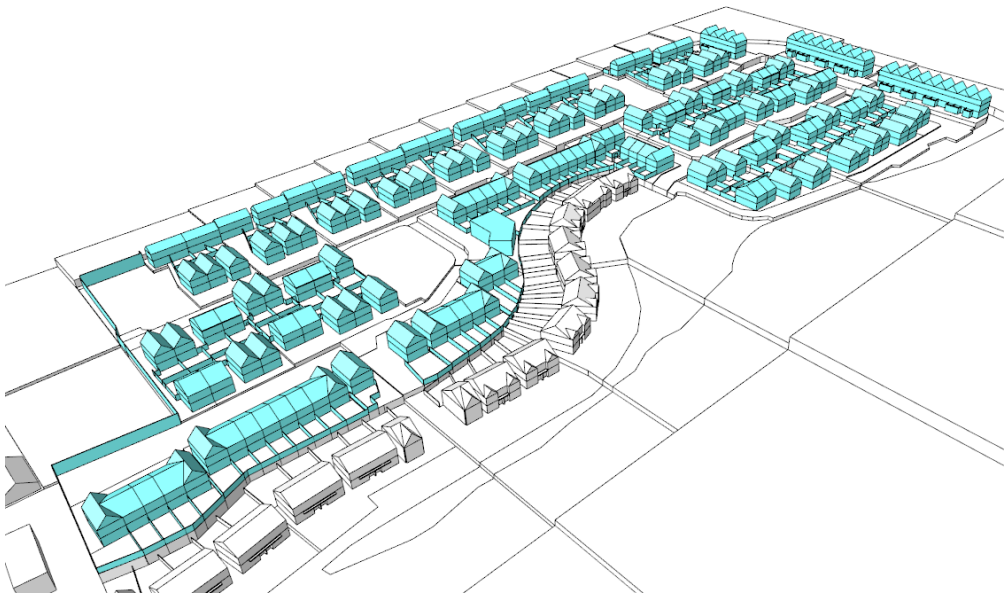




# Old Slane Road, Drogheda

*Daylight, Sunlight and Overshadowing Study*



Not Marked

Report For: Lagan Homes Tullyallen

Project No: 17686



# Version History

**Document created by:**

Integrated Environmental Solutions Limited

International Sustainability Consulting Developers of the IES <Virtual Environment>

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Planning Application	Sergio Malpica/Amanda Saade Project Consultants	Douglas Bell Consultancy Manager	
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## 1 Executive Summary

This document serves as an update to the previously submitted daylight, sunlight and overshadowing report for the proposed development Old Slane Road located in Drogheda. The report focuses on updates to the shadow analysis and sunlight assessment for the rear garden amenity spaces taking account of revised boundary treatments as illustrated by the drawings prepared by NMP provided under separate cover.

### 1.1 Planning Authority Guidelines

The Sustainable Urban Housing: Design Standards for New Apartments 2023 states the following in Section 6.6:

*“Planning authorities should avail of appropriate expert advice where necessary and have regard to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2018 and the associated BRE guide 209 2022 Edition (June 2022) or any relevant future standards or guidance specific to the Irish context, when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.”*

In addition to this, the Sustainable and Compact Settlements Guidelines states the following in Section 5.3.7-point b:

*“In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.”*

Finally, the latest BRE Guide ‘Site Layout Planning for Daylight and Sunlight’ (3<sup>rd</sup> Edition) was published in June 2022. This edition now directly links to the new daylighting standards EN 17037-2018+A1-2021. Aside refinements to the BRE guide, the assessments are the same to what is found within the BRE guide 2<sup>nd</sup> Edition. Regarding sunlight exposure, the BRE Guide ‘Site Layout Planning for Daylight and Sunlight’ (3<sup>rd</sup> Edition) has been employed to address the sunlight to amenity spaces assessment.

## 1.2 Reference Standards & Summary of Assessments Undertaken

The various daylight and sunlight assessments that were undertaken using the IES VE software are based on a number of different standards which are referenced in the individual sections of this report. For clarity, the assessments that were undertaken are summarised below as well as the reference standards that were used for each (where applicable):

- **Shadow Analysis**
  - Assessed using shadow images cast at key times throughout the year, i.e. March 21<sup>st</sup>, June 21<sup>st</sup> and December 21<sup>st</sup> to determine if any overshadowing impact occurs and to what extent to any existing residential neighbouring buildings in accordance with the BRE Guide (3<sup>rd</sup> Edition).
- **Sunlight to Amenity Spaces**
  - Assessed using annual Solar Exposure calculations to determine any impact to existing amenities and the sunlight received and also to assess the proposed developments amenity spaces to derive how much sunlight they can expect to receive in accordance with the BRE Guide (3<sup>rd</sup> Edition).

It is noted that Section 3.3.10 of the BRE (3<sup>rd</sup> Edition) states the following: *“Fences and walls cast deeper shade than trees and their positions can often be predicted. As a guide, shadows of walls or opaque fences greater than 1.5 m high should be included in the calculation. Where low fences or walls are intended – or railings or trellises that let through sunlight – no calculation of shadows is necessary.”*

The following can be concluded based on the assessments undertaken:

## 1.3 Shadow Analysis

The shadow analysis illustrates different shadows being cast at key times of the year (March 21<sup>st</sup>, June 21<sup>st</sup> and December 21<sup>st</sup>) for the Existing/Permitted Situation and the Proposed Scheme. The results from the study are summarised as follows:

### Properties on Slane Road - South

No additional shading visible from the proposed development on these existing properties throughout the year.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” section of this report.

## 1.4 Sunlight to Amenity Spaces

As outlined in Section 3.3.17 of the BRE Guide (3<sup>rd</sup> Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21<sup>st</sup>. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

### Proposed Rear Garden Amenity Spaces

On March 21<sup>st</sup>, 100% (165 out of 165) of the proposed rear garden amenity spaces within the development site will receive at least 2 hours of sunlight over their total area, thus complying with the BRE guidelines.

### **Proposed Creche Amenity Space.**

On March 21<sup>st</sup>, 57% of the proposed amenity space provided for the creche will receive at least 2 hours of sunlight over its total area, thus complying with the BRE guidelines.

## **1.5 Observations**

It is important to note the BRE Guide (3<sup>rd</sup> Edition) itself states *“although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of many factors in site layout design”*. Although this is true, appropriate and reasonable regard has still been taken to the BRE guide.

Whilst the results shown relate to the criteria as laid out in the BRE Guide (3<sup>rd</sup> Edition), it is important to note that the BRE targets are guidance only and should therefore be used with flexibility and caution when dealing with different types of sites.

In addition, BRE Guide 3<sup>rd</sup> Edition also notes:

*“This report is a comprehensive revision of the 2011 edition of Site layout planning for daylight and sunlight: a guide to good practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.”*

Taking all of the above information into account and based on the results from each of the assessments undertaken, the proposed development performs very well when compared to the guidelines in the BRE Guide 3<sup>rd</sup> Edition and IS EN 17037-2018+A1-2021 /BS EN 17037-2018+A1-2021 National Annex.

## 2 Introduction

This document serves as an update to the previously submitted daylight, sunlight and overshadowing report for the proposed development Old Slane Road located in Drogheda. The report focuses on updates to the shadow analysis and sunlight assessment for the rear garden amenity spaces.

### 2.1 Development Description

The LRD planning application seeks modifications to the permitted SHD (APB-311678-21, as amended under P.A. Ref. 2360368) and the application relates to 207 of the 237 permitted dwellings and the construction of the crèche as a standalone building (crèche is permitted as integral part of one of the apartment buildings in the permitted development). The modifications proposed do not affect the 30no. permitted dwellings currently under construction (Amendment permission P.A. Ref. 2360368) other than a minor boundary adjustment to the garden boundary of No. 30. The modifications provide for amendments to the design, layout and dwelling types including the omission of two permitted apartment buildings (111no. apartments) with associated modifications to the road layout and distribution of public open space, car parking, site services and site development works including the undergrounding of ESB overhead lines and associated diversion works. The 207no. new house types and apartments proposed have a residential mix of 21no. 1-bed, 49no. 2-bed, 115no. 3-bed & 22no. 4-bed, one, two and three storey in height in detached, semi-detached and terraced formats. The overall number of dwellings as permitted under the SHD (APB-311678-21, as amended under P.A. Ref. 2360368) will remain unchanged at 237 dwellings. The overall permitted dwelling mix will change from 147no. apartments and 90no. houses, to 42no. apartments and 195no. houses. The mix of dwellings within the entire SHD site will be amended from 19no. 1-bed, 96no. 2-bed, 109no. 3-bed and 13no. 4-bed (as permitted under APB-311678-21 and amended under P.A. Ref. 2360368), to 21no. 1-bed, 49no. 2-bed, 142no. 3-bed and 25no. 4-bed. This planning application also seeks permission for 2no. ESB substations required to serve the proposed development. This planning application will be accompanied by a Natura Impact Statement (NIS).

### 3 BRE – Site Layout Planning for Daylight and Sunlight (3<sup>rd</sup> Edition)

Access to daylight and sunlight is a vital part of a healthy environment. Sensitive design should provide sufficient daylight and sunlight to new residential developments while not obstructing light to existing homes nearby.

The 3<sup>rd</sup> Edition of the BR 209 BRE Site Layout Planning for Daylight and Sunlight, advise on planning developments for good access to daylight and sunlight and is widely used by local authorities to help determine the performance of new developments.

#### 3.1 Impact Classification Discussion

BRE guidance in Appendix H (BRE Guide 3<sup>rd</sup> Edition) – Environmental Impact Assessment suggests impact classifications as minor, moderate and major adverse. It provides further classifications of these impacts with respect to criteria summarised in the table below.

Where the loss of skylight or sunlight fully meets the guidelines in the BRE guide (3<sup>rd</sup> Edition), the impact is assessed as negligible or minor adverse. Where the loss of skylight or sunlight does not meet the BRE guidelines, the impact is assessed as minor, moderate or major adverse.

Impact	Description
<i>Negligible adverse impact</i>	<ul style="list-style-type: none"> <li>• <i>Loss of light well within guidelines, or</i></li> <li>• <i>only a small number of windows losing light (within the guidelines) or limited area of open space losing light (within the guidelines)</i></li> </ul>
<i>Minor adverse impact (a)</i>	<ul style="list-style-type: none"> <li>• <i>Loss of light only just within guidelines and</i> <ul style="list-style-type: none"> <li>○ <i>a larger number of windows are affected or</i></li> <li>○ <i>larger area of open space is affected (within the guidelines)</i></li> </ul> </li> </ul>
<i>Minor adverse impact (b)</i>	<ul style="list-style-type: none"> <li>• <i>only a small number of windows or limited open space areas are affected</i></li> <li>• <i>the loss of light is only marginally outside the guidelines</i></li> <li>• <i>an affected room has other sources of skylight or sunlight</i></li> <li>• <i>the affected building or open space only has a low-level requirement for skylight or sunlight</i></li> <li>• <i>there are particular reasons why an alternative, less stringent, guideline should be applied</i></li> </ul>
<i>Major adverse impact</i>	<ul style="list-style-type: none"> <li>• <i>large number of windows or large open space areas are affected</i></li> <li>• <i>the loss of light is substantially outside the guidelines</i></li> <li>• <i>all the windows in a particular property are affected</i></li> <li>• <i>the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight (living rooms / playground)</i></li> </ul>



## 4 Methodology

### 4.1 Planning Authority Guidelines

The Sustainable Urban Housing: Design Standards for New Apartments 2023 states the following in Section 6.6:

*“Planning authorities should avail of appropriate expert advice where necessary and have regard to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2018 and the associated BRE guide 209 2022 Edition (June 2022) or any relevant future standards or guidance specific to the Irish context, when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.”*

In addition to this, the Sustainable and Compact Settlements Guidelines states the following in Section 5.3.7-point b:

*“In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.”*

Finally, the latest BRE Guide ‘Site Layout Planning for Daylight and Sunlight’ (3<sup>rd</sup> Edition) was published in June 2022. This edition now directly links to the new daylighting standards EN 17037-2018+A1-2021. Aside refinements to the BRE guide, the assessments are the same to what is found within the BRE guide 2<sup>nd</sup> Edition. Regarding sunlight exposure, the BRE Guide ‘Site Layout Planning for Daylight and Sunlight’ (3<sup>rd</sup> Edition) has been employed to address the sunlight to amenity spaces assessment.

### 4.2 Reference Standards & Summary of Assessments Undertaken

The various daylight and sunlight assessments that were undertaken using the IES VE software are based on a number of different standards which are referenced in the individual sections of this report. For clarity, the assessments that were undertaken are summarised below as well as the reference standards that were used for each (where applicable):

- **Shadow Analysis**
  - Assessed using shadow images cast at key times throughout the year, i.e. March 21<sup>st</sup>, June 21<sup>st</sup> and December 21<sup>st</sup> to determine if any overshadowing impact occurs and to what extent to any existing residential neighbouring buildings in accordance with the BRE Guide (3<sup>rd</sup> Edition).
- **Sunlight to Amenity Spaces**
  - Assessed using annual Solar Exposure calculations to determine any impact to existing amenities and the sunlight received and also to assess the proposed developments amenity spaces to derive how much sunlight they can expect to receive in accordance with the BRE Guide (3<sup>rd</sup> Edition).



It is noted that Section 3.3.10 of the BRE (3<sup>rd</sup> Edition) states the following: *“Fences and walls cast deeper shade than trees and their positions can often be predicted. As a guide, shadows of walls or opaque fences greater than 1.5 m high should be included in the calculation. Where low fences or walls are intended – or railings or trellises that let through sunlight – no calculation of shadows is necessary.”*





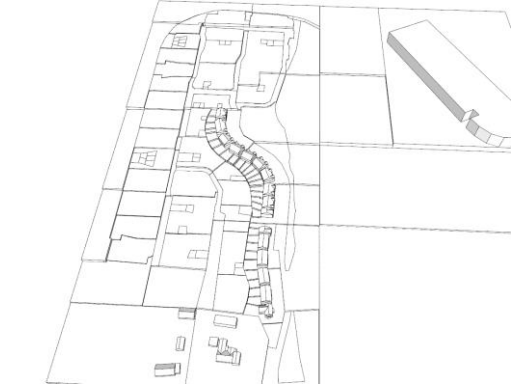

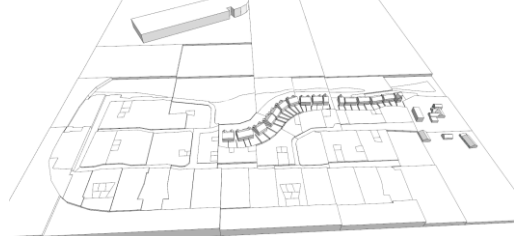

### 4.3 Orientation

The model orientation has been taken from drawings provided by the Architect with the resulting angle shown below used in the analysis.

Orientation	
	
	

#### 4.4 Proposed Model

The following images illustrate the models created from the architectural information provided and the use of Google/Bing maps where information was absent.

	Existing / Permitted Situation	Proposed Scheme
View looking from North of Site		
View looking from East of Site		
View looking from South of Site		
View looking from West of Site		

#### 4.5 Potential Sensitive Receptors

To help understand the potential impact to surrounding buildings, potential sensitive receptors were identified as illustrated below.



## 5 Shadow Analysis

The statistics of Met Eireann, the Irish Meteorological Service, show that the sunniest months in Ireland are May and June, based on 1981-2010 averages or latest:

<https://www.met.ie/climate/30-year-averages>.

The following can also be shown:

- During December a mean daily duration of 1.7 hours of sunlight out of a potential 7.3 hours sunlight each day is received (i.e. only 23% of potential sunlight hours).
- During June a mean daily duration of 5.8 hours of sunlight out of a potential 15.9 hours sunlight each day is received (i.e. only 36% of potential sunlight hours).

Therefore, the impacts caused by overshadowing are generally most noticeable during the summer months and least noticeable during the winter months.

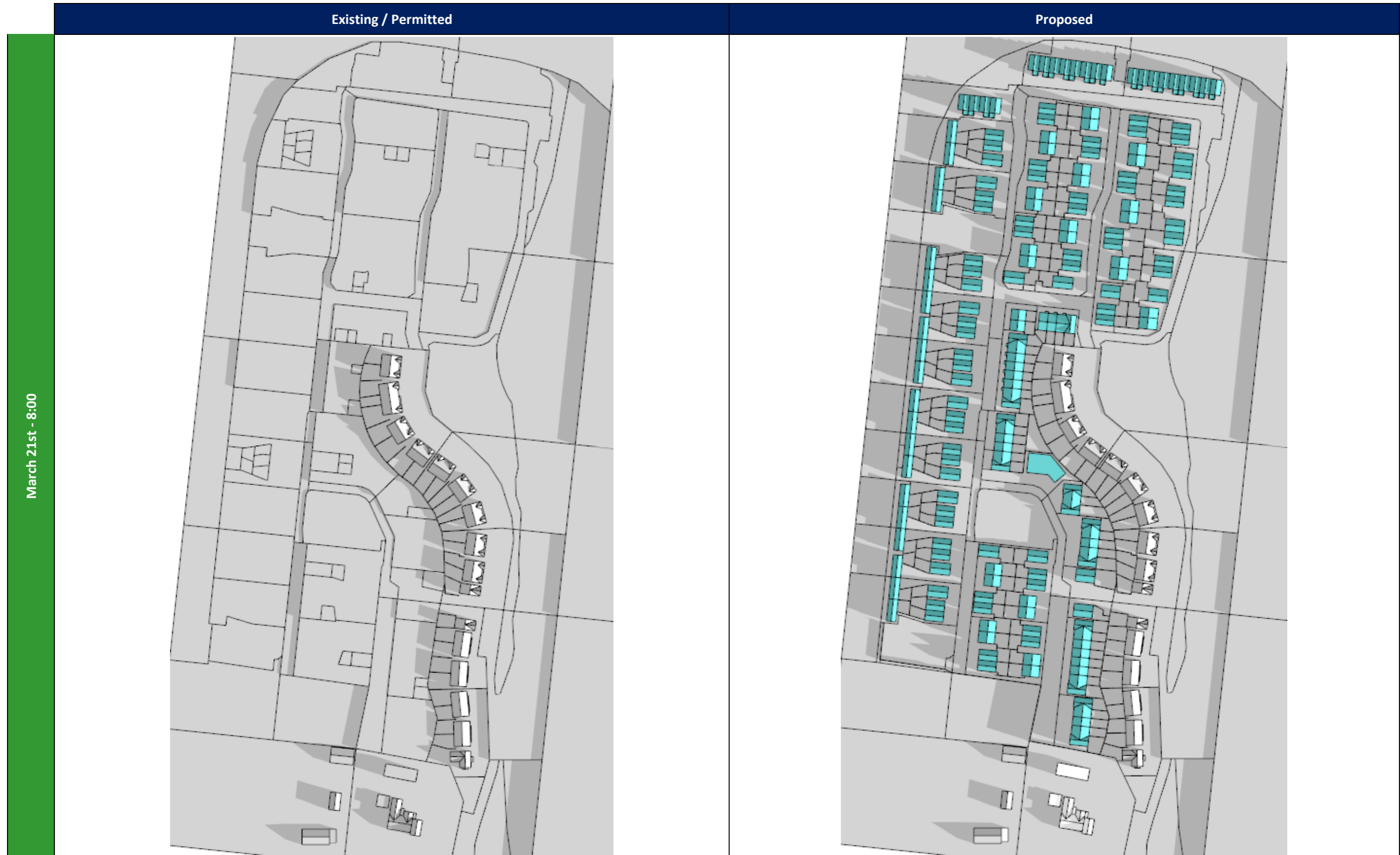
This section will consider the shadows cast by the proposed development on the following dates:

- March 21<sup>st</sup> / September 21<sup>st</sup> (Equinox)
- June 21<sup>st</sup> (Summer Solstice)
- December 21<sup>st</sup> (Winter Solstice)

These images illustrate shadows cast for 'perfect sunny' conditions with no clouds and assumed that the sun is shining for every hour shown. Given the discussion above it is important to remember that this is not always going to be the case.

### 5.1 Plan View

#### 5.1.1 March 21<sup>st</sup>



Existing / Permitted



Proposed



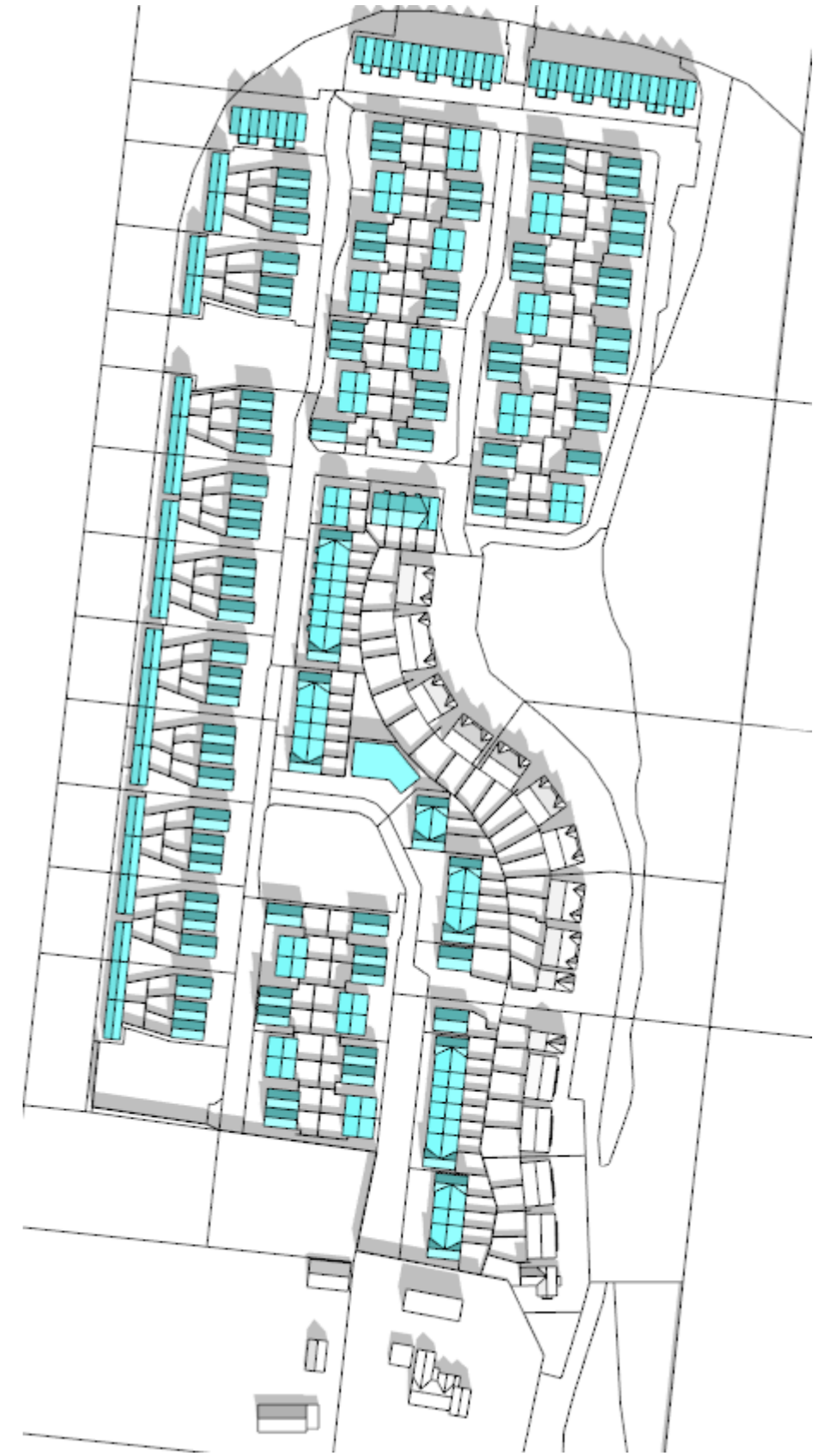
March 21<sup>st</sup> - 10:00



Existing / Permitted



Proposed



March 21<sup>st</sup> - 12:00

Existing / Permitted



Proposed



March 21<sup>st</sup> - 14:00

Existing / Permitted



Proposed



March 21<sup>st</sup> - 16:00

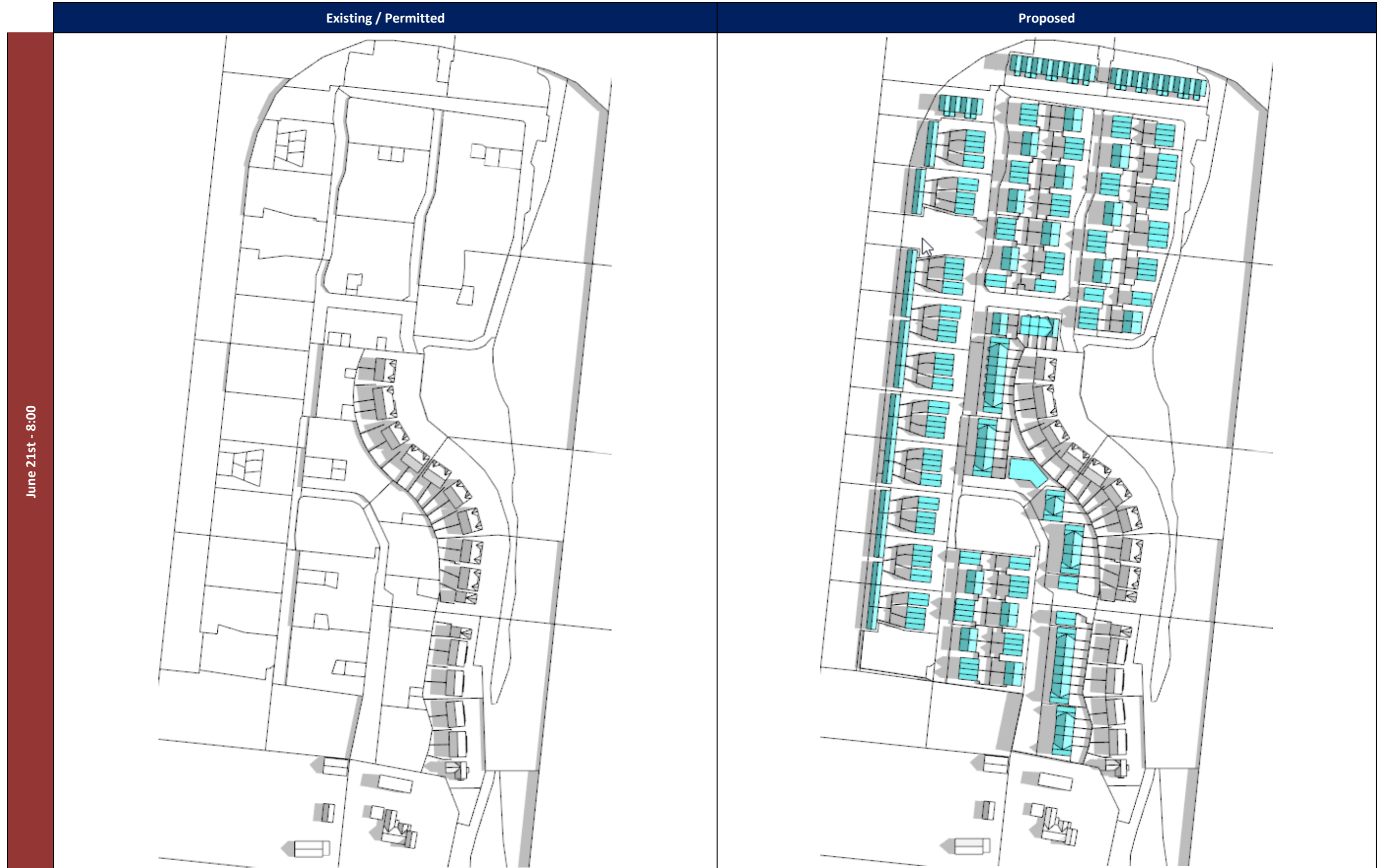
Existing / Permitted

Proposed

March 21<sup>st</sup> - 18:00



5.1.2 June 21<sup>st</sup>



Existing / Permitted



Proposed



June 21<sup>st</sup> - 10:00

Existing / Permitted



Proposed



June 21<sup>st</sup> - 12:00

Existing / Permitted



Proposed



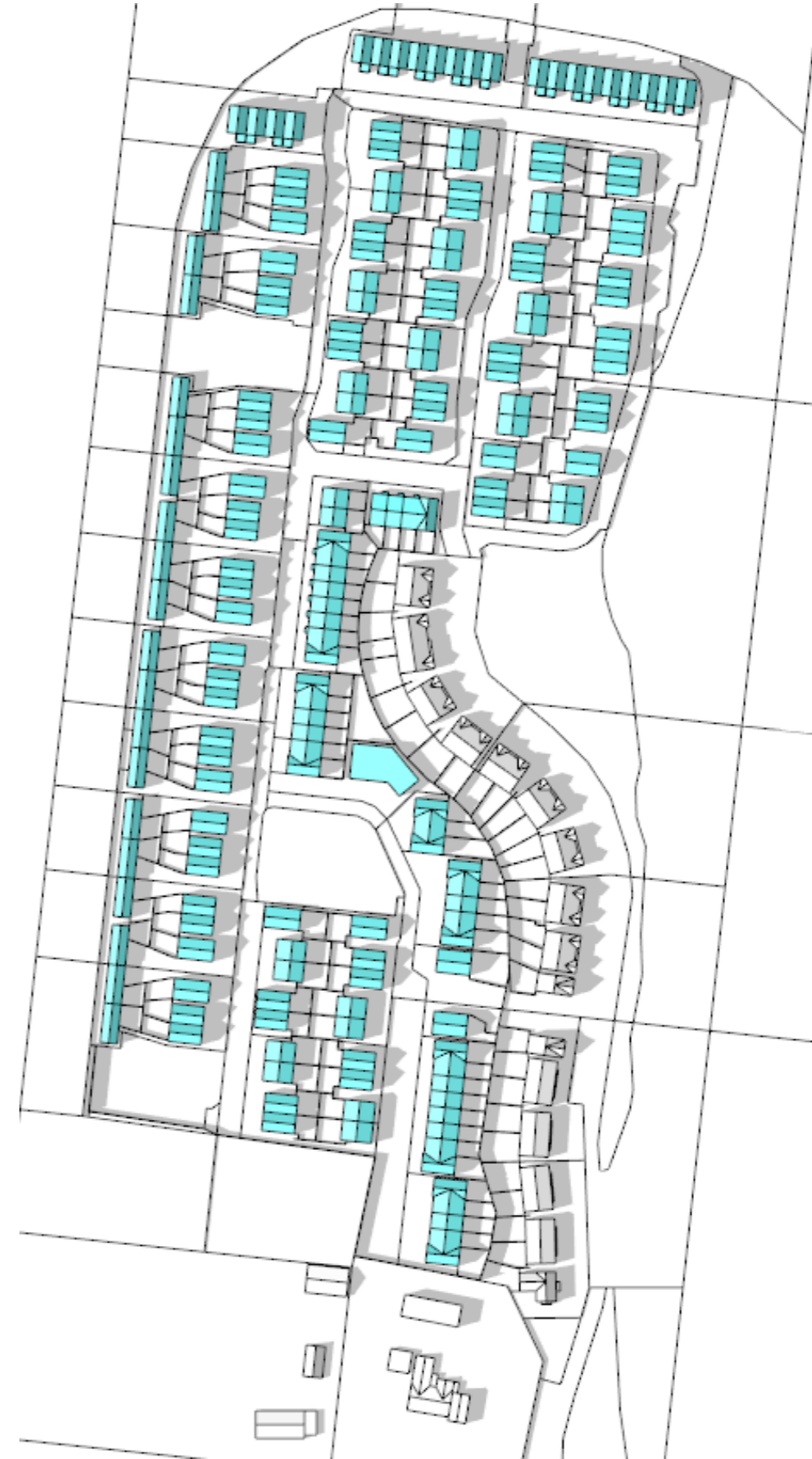
June 21<sup>st</sup> - 14:00



Existing / Permitted



Proposed



June 21<sup>st</sup> - 16:00

Existing / Permitted



Proposed



June 21<sup>st</sup> - 18:00

Existing / Permitted



Proposed



June 21<sup>st</sup> – 20:00

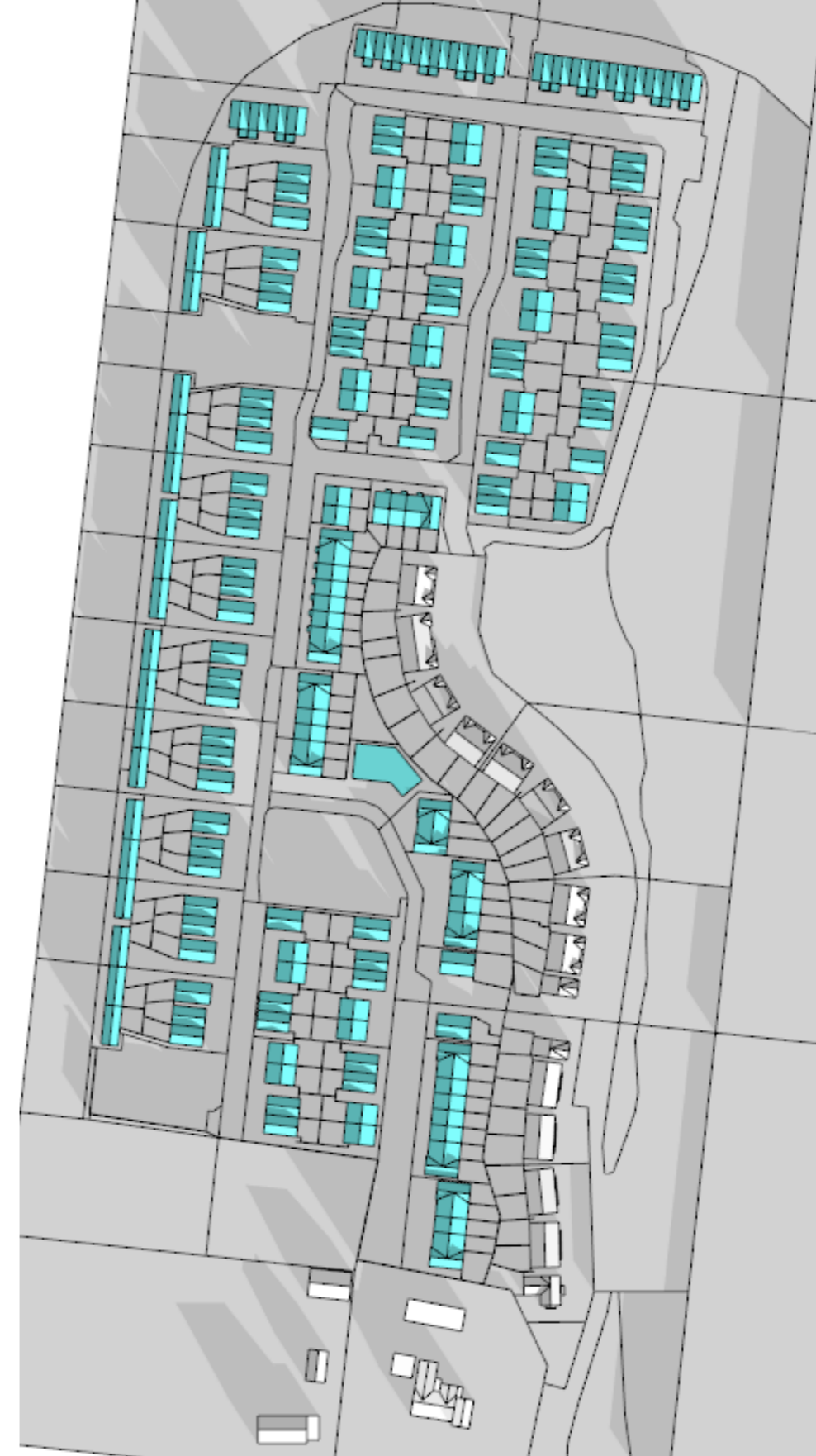
5.1.3 December 21<sup>st</sup>



Existing / Permitted



Proposed

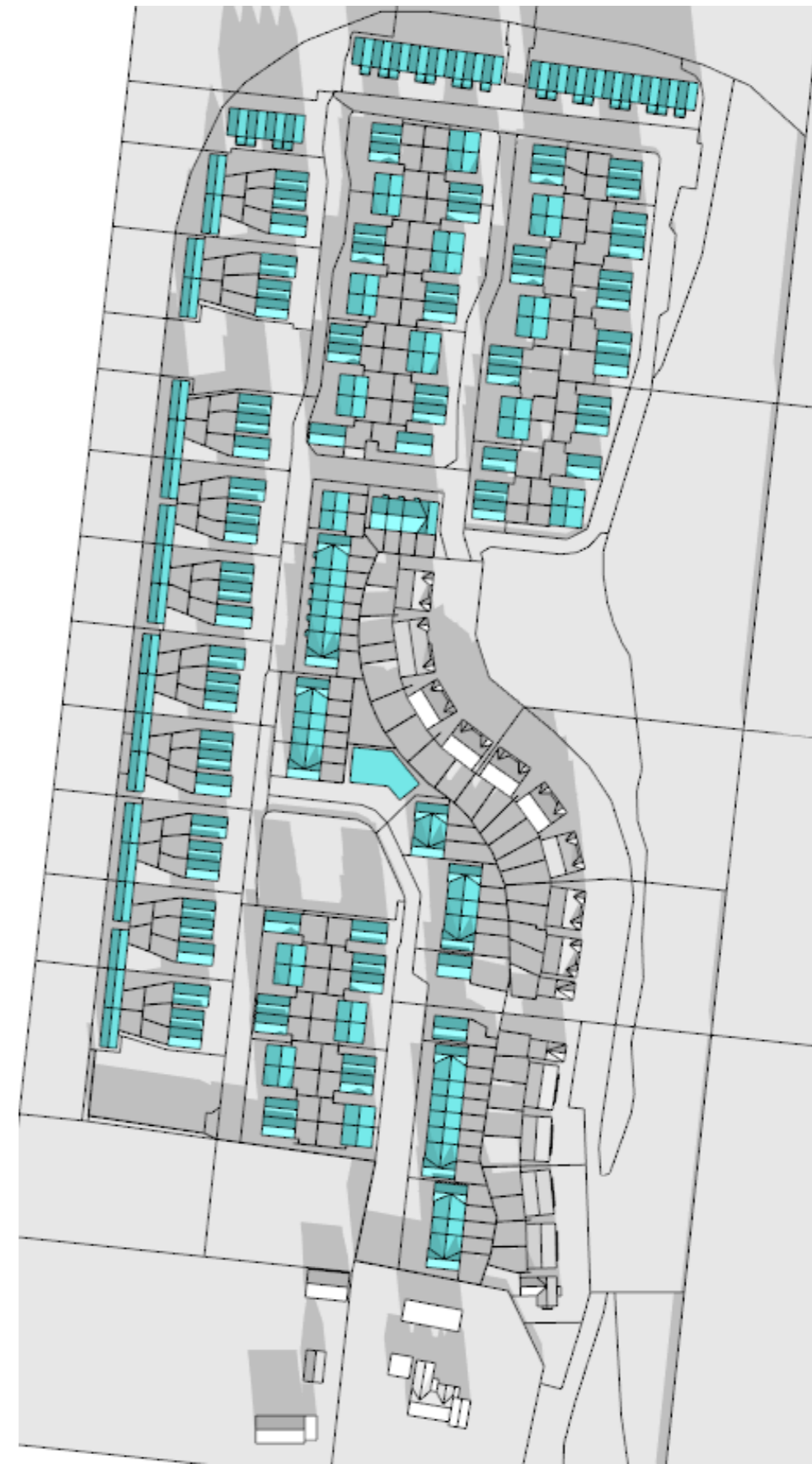


December 21<sup>st</sup> - 10:00

Existing / Permitted



Proposed



December 21<sup>st</sup> - 12:00

Existing / Permitted



Proposed



December 21<sup>st</sup> - 14:00

Existing / Permitted

Proposed

December 21<sup>st</sup> - 16:00



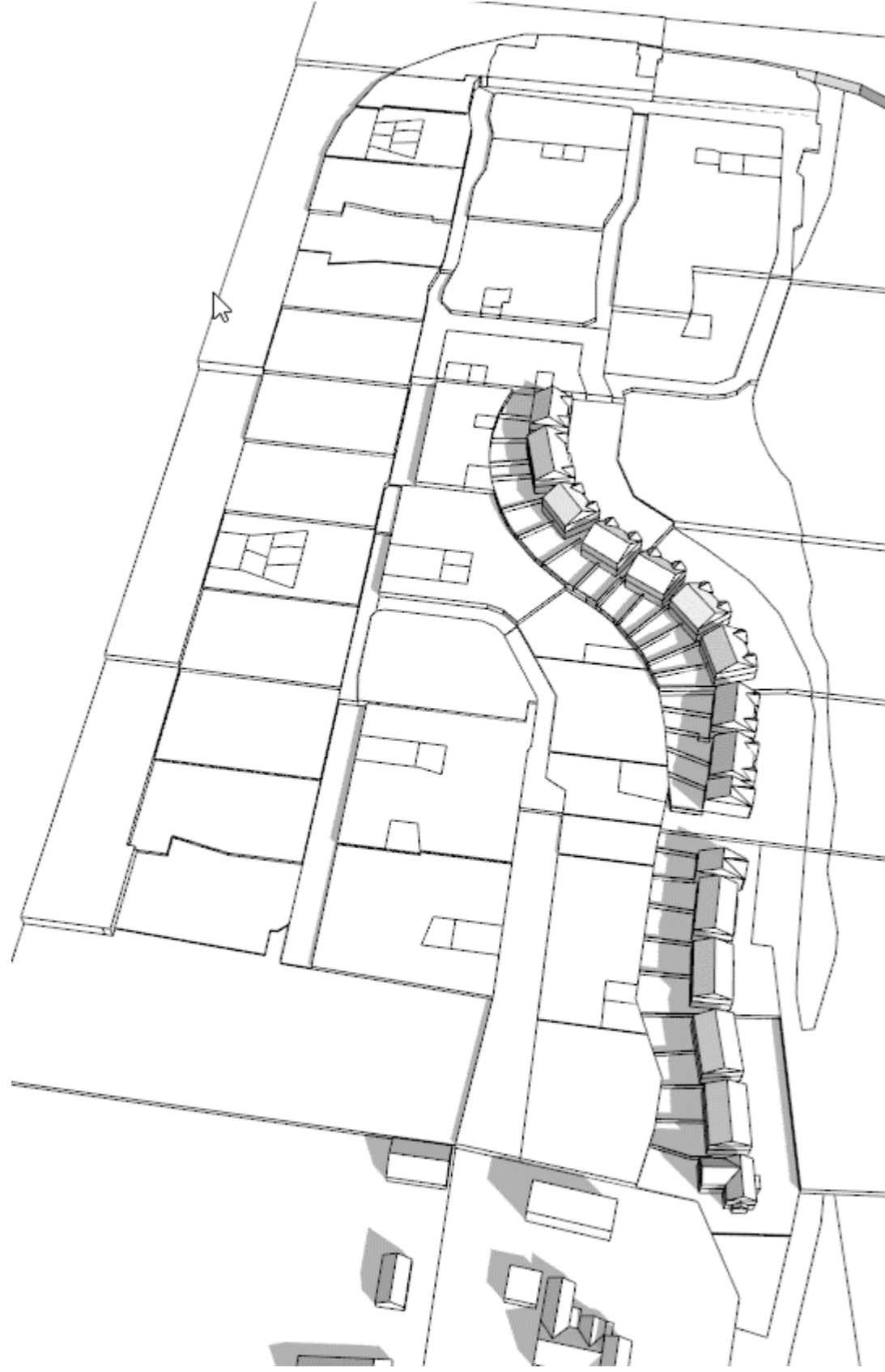


## 5.2 3D View

### 5.2.1 March 21<sup>st</sup>



Existing / Permitted

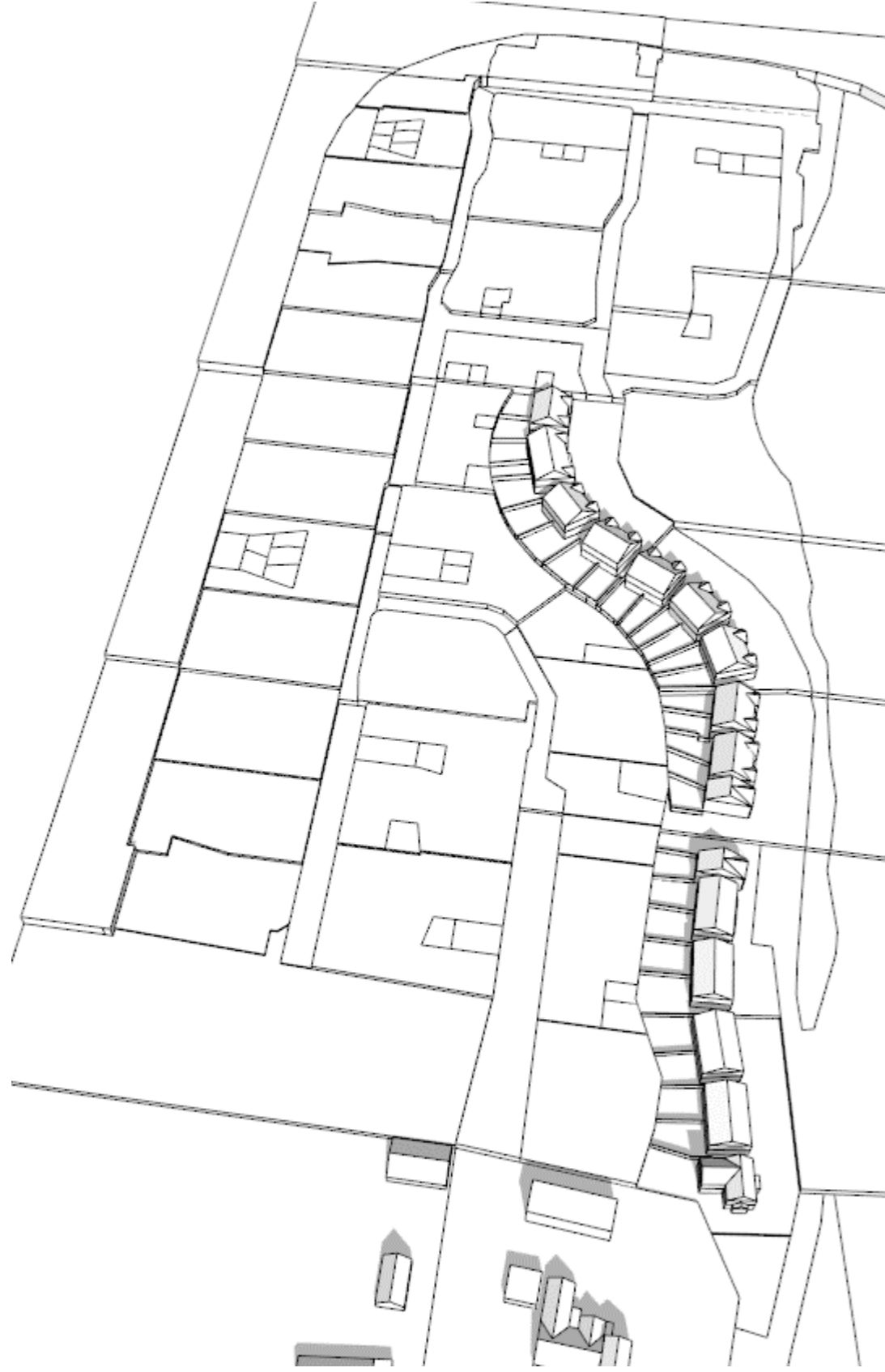


Proposed



March 21<sup>st</sup> - 10:00

Existing / Permitted

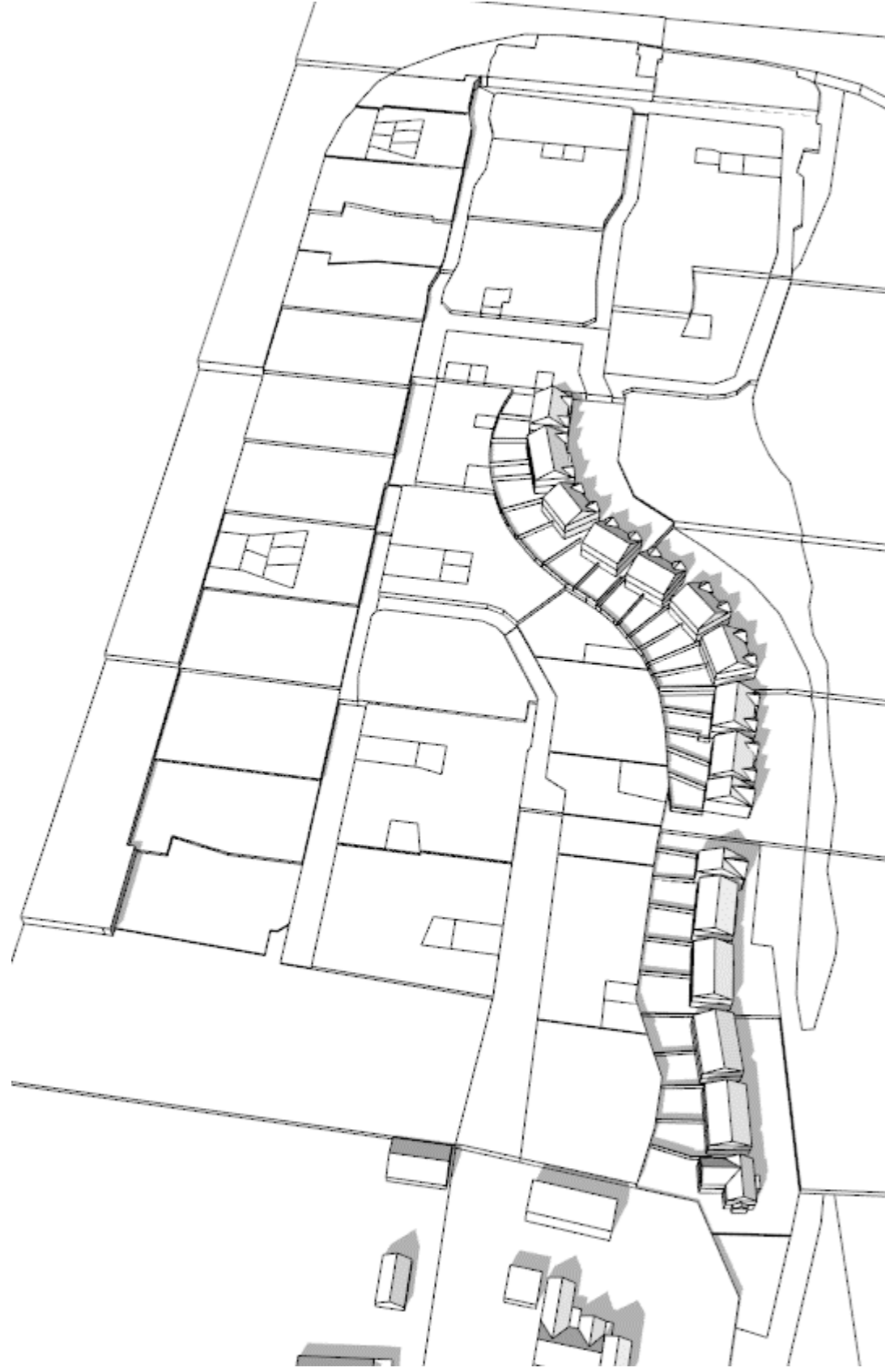


Proposed



March 21<sup>st</sup> - 12:00

Existing / Permitted

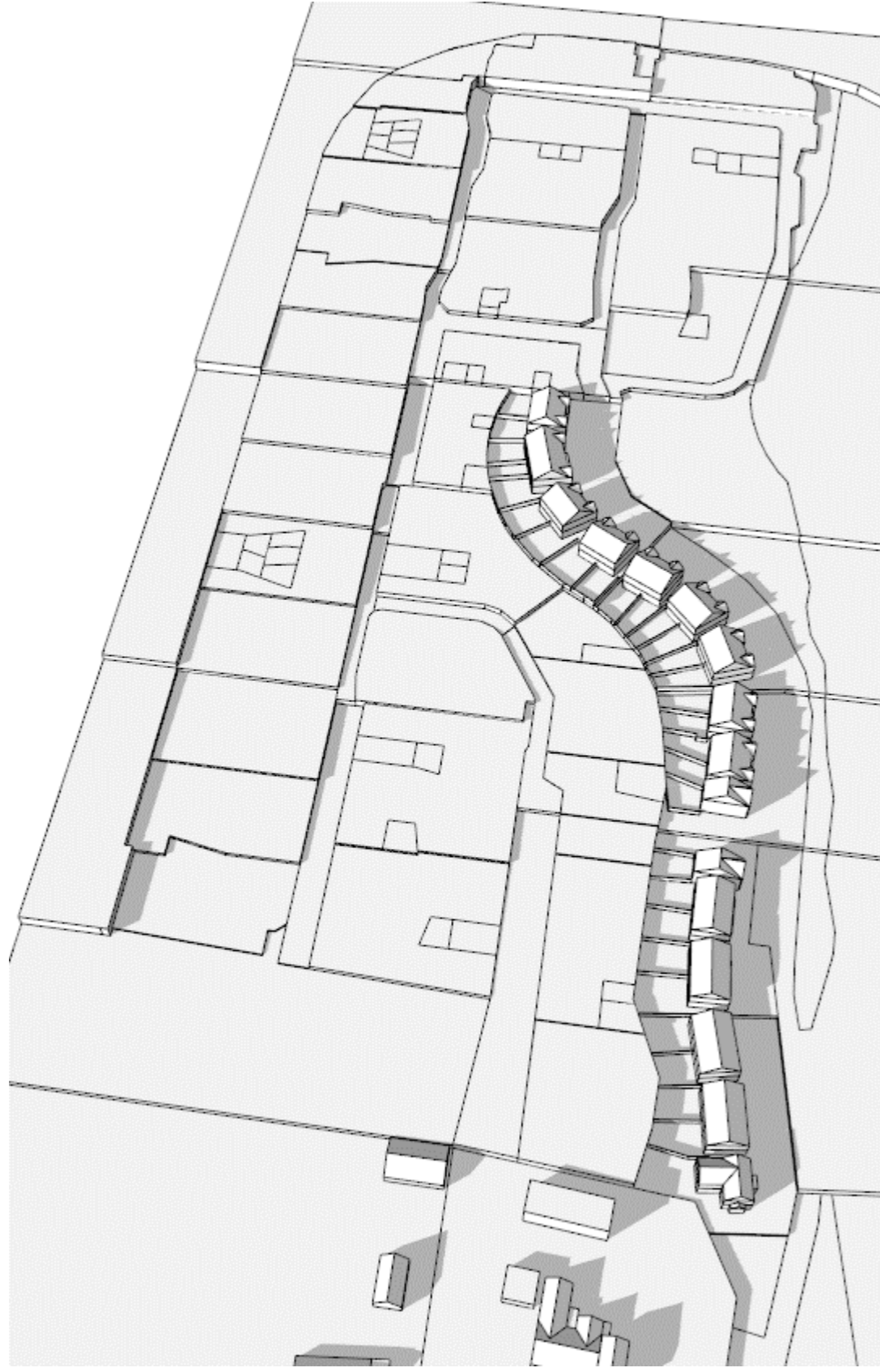


Proposed



March 21<sup>st</sup> - 14:00

Existing / Permitted



Proposed



March 21<sup>st</sup> - 16:00

Existing / Permitted

Proposed

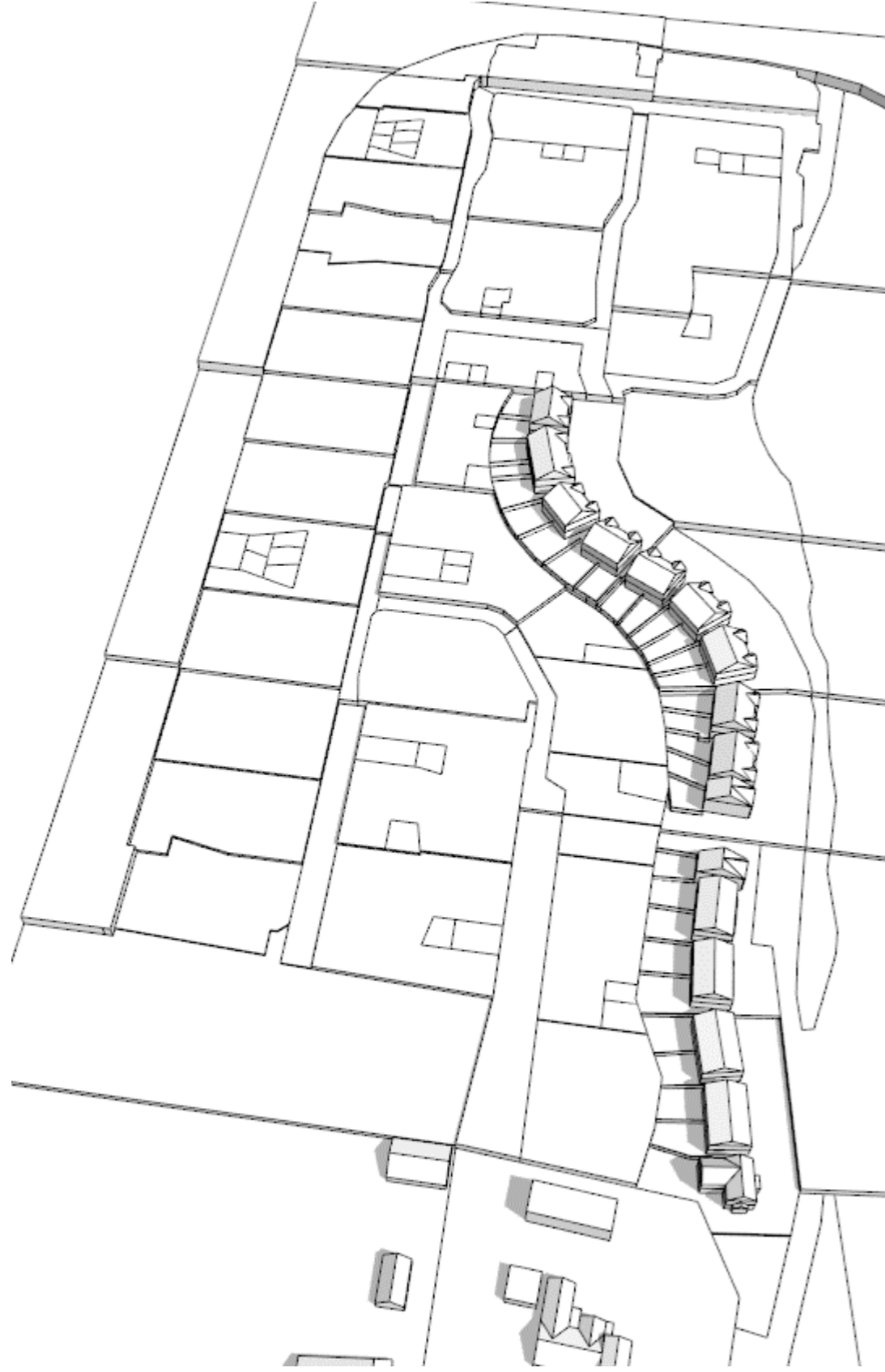
March 21<sup>st</sup> - 18:00



5.2.2 June 21<sup>st</sup>



Existing / Permitted



Proposed



June 21<sup>st</sup> - 10:00



June 21<sup>st</sup> - 12:00

Existing / Permitted



Proposed



Existing / Permitted

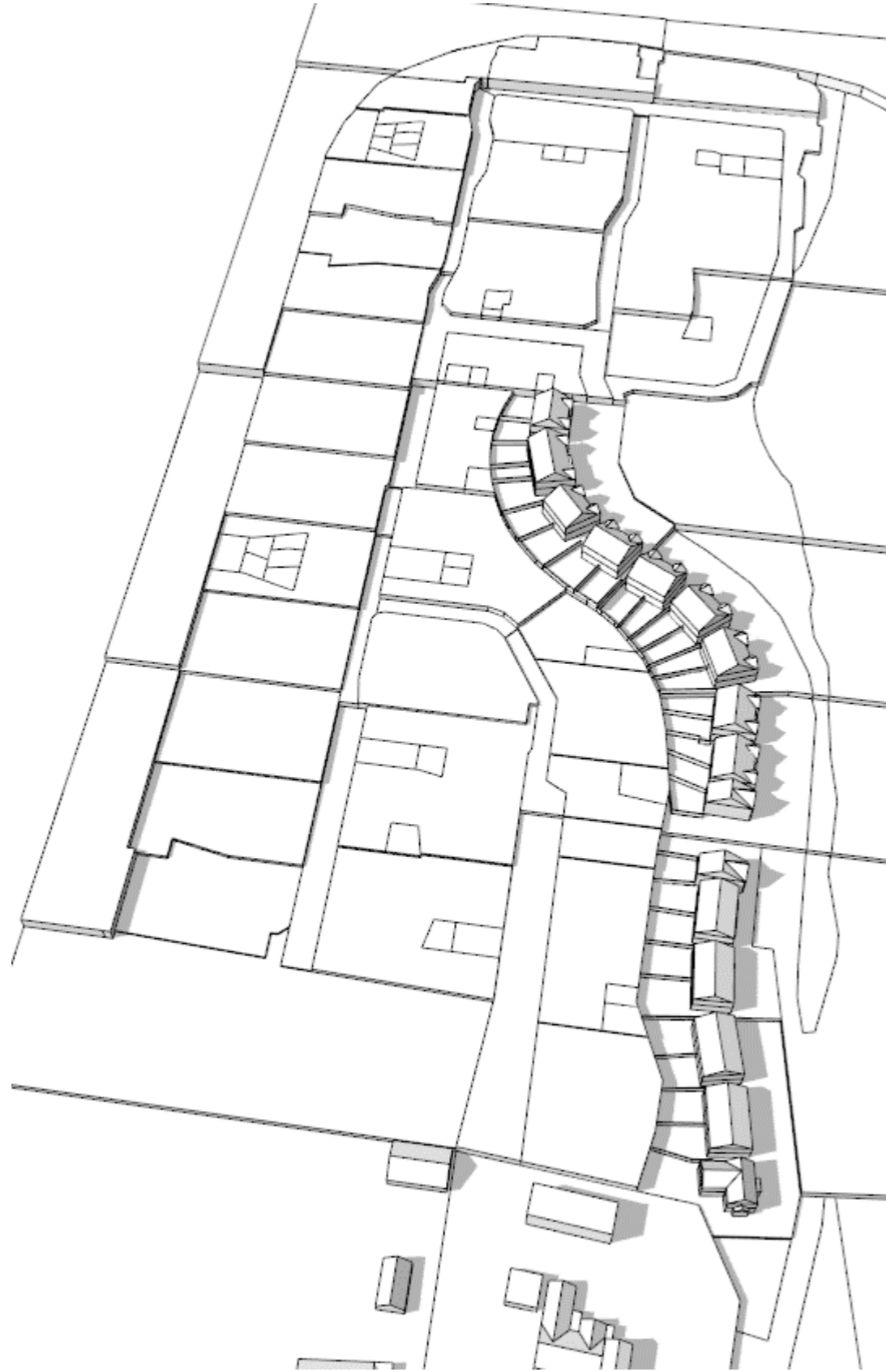


Proposed



June 21<sup>st</sup> - 14:00

Existing / Permitted



Proposed



June 21<sup>st</sup> - 16:00

Existing / Permitted



Proposed



June 21<sup>st</sup> - 18:00

Existing / Permitted

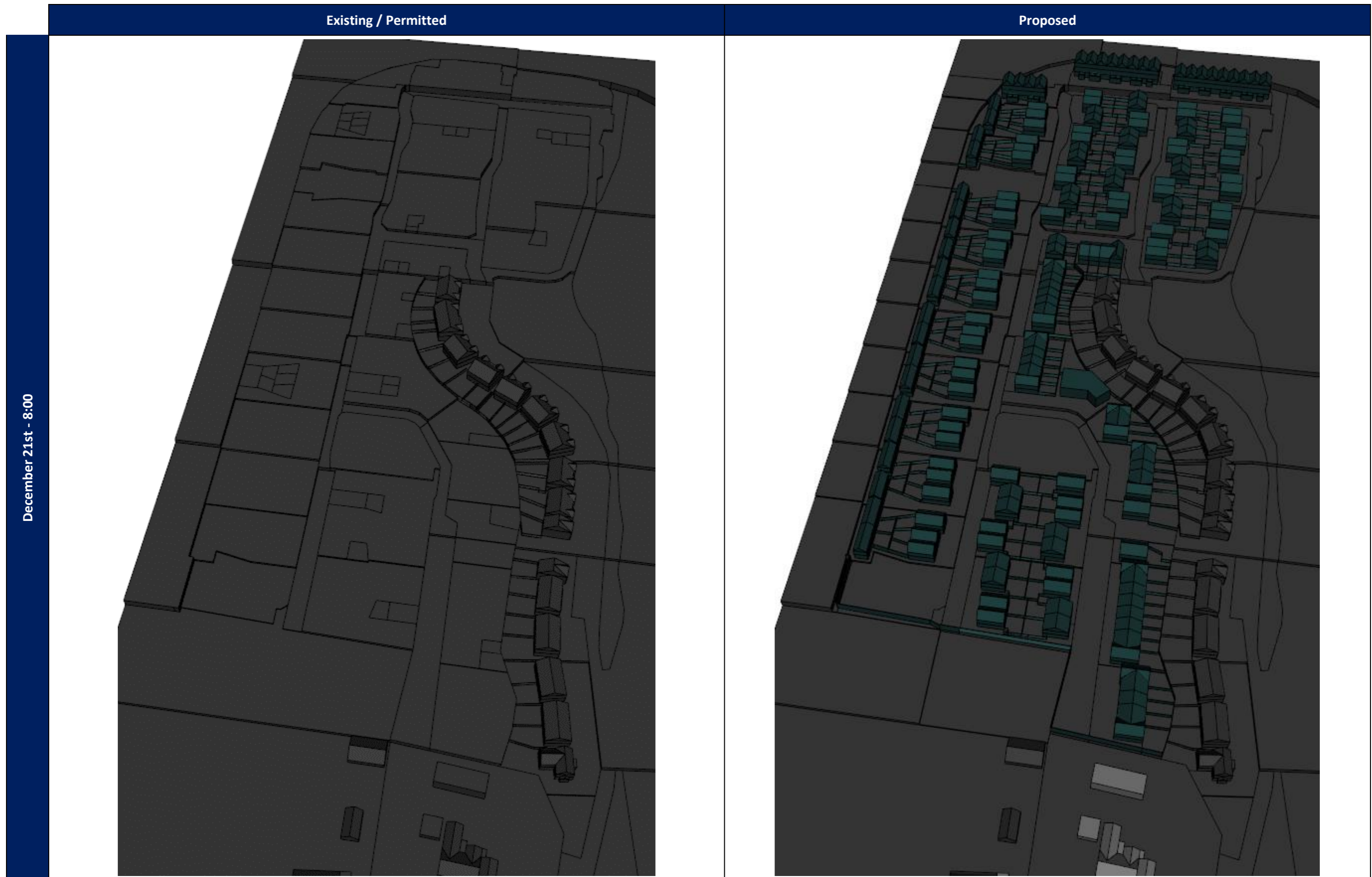


Proposed

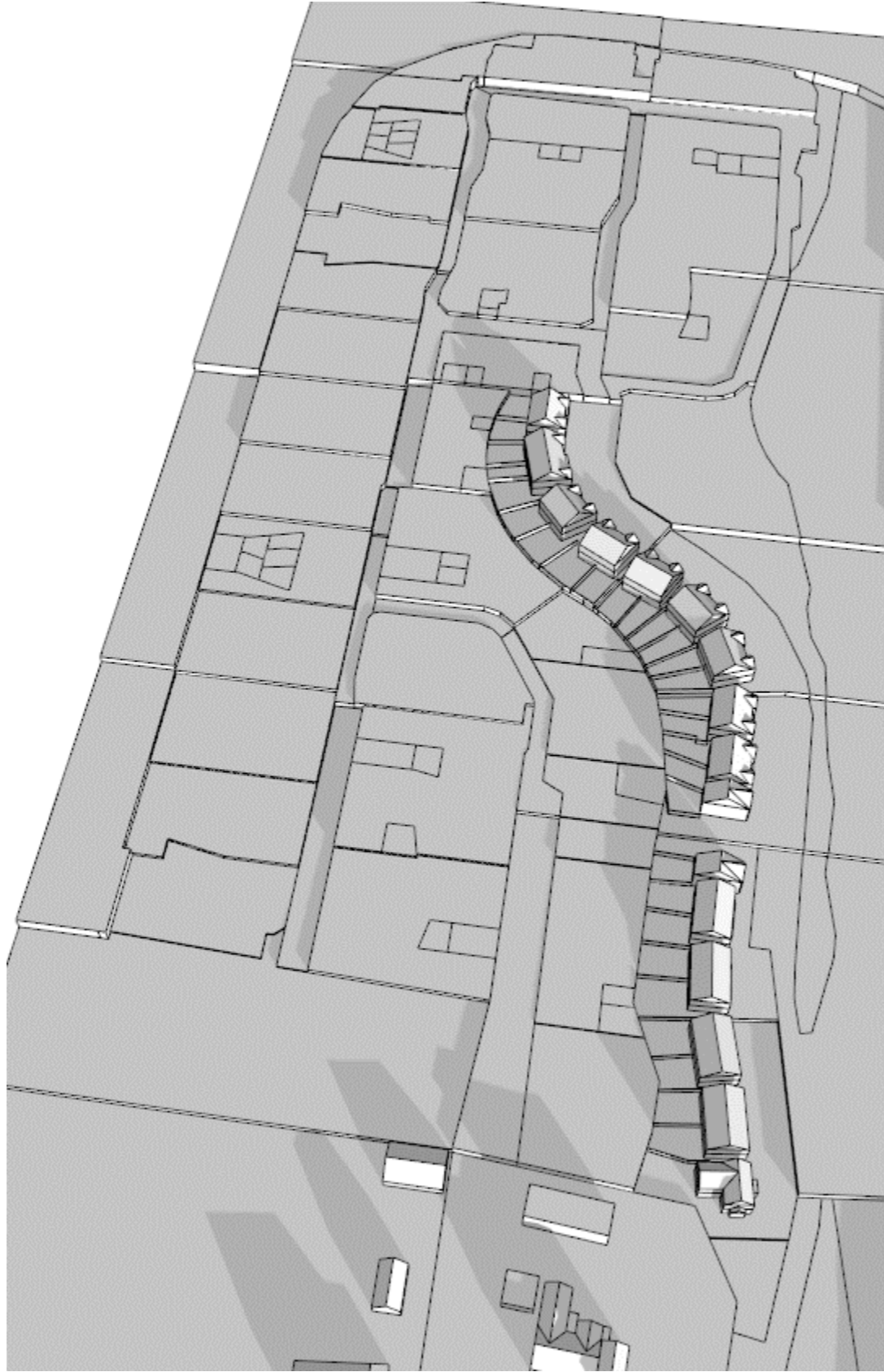


June 21<sup>st</sup> - 20:00

5.2.3 December 21<sup>st</sup>



Existing / Permitted



Proposed



December 21<sup>st</sup> - 10:00

Existing / Permitted



Proposed



December 21<sup>st</sup> - 12:00



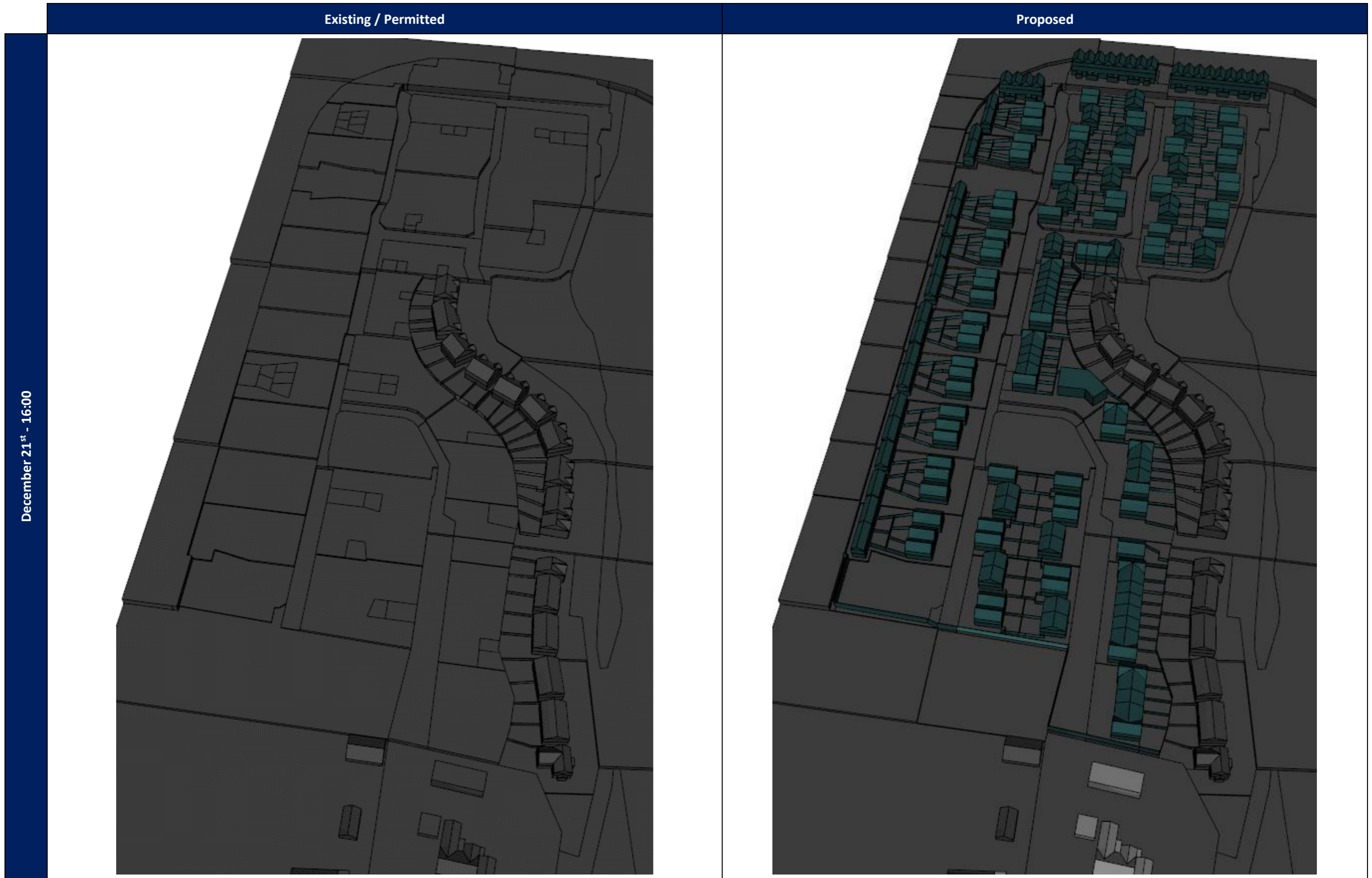
Existing / Permitted



Proposed



December 21<sup>st</sup> - 14:00



### **5.3 Discussion**

The shadow analysis illustrates different shadows being cast at key times of the year (March 21<sup>st</sup>, June 21<sup>st</sup> and December 21<sup>st</sup>) for the Existing/Permitted Situation and the Proposed Scheme. The results from the study are summarised as follows:

#### **Properties on Slane Road - South**

No additional shading visible from the proposed development on these existing properties throughout the year.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” section of this report.

## 6 Sunlight to Amenity Spaces

### 6.1 Guidance Requirements

The impact of the proposed development on the sunlight availability to the amenity spaces will be considered to determine how the amenity spaces perform when assessed against the BRE Guide (3<sup>rd</sup> Edition) which states the following in Section 3.3.17:

#### Summary

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.

The BRE Guide (3<sup>rd</sup> Edition) states that for a space to appear adequately sunlit throughout the year, at least half of a garden or amenity space should receive at least 2 hours of sunlight on March 21<sup>st</sup>. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

## 6.2 Proposed Amenity Spaces

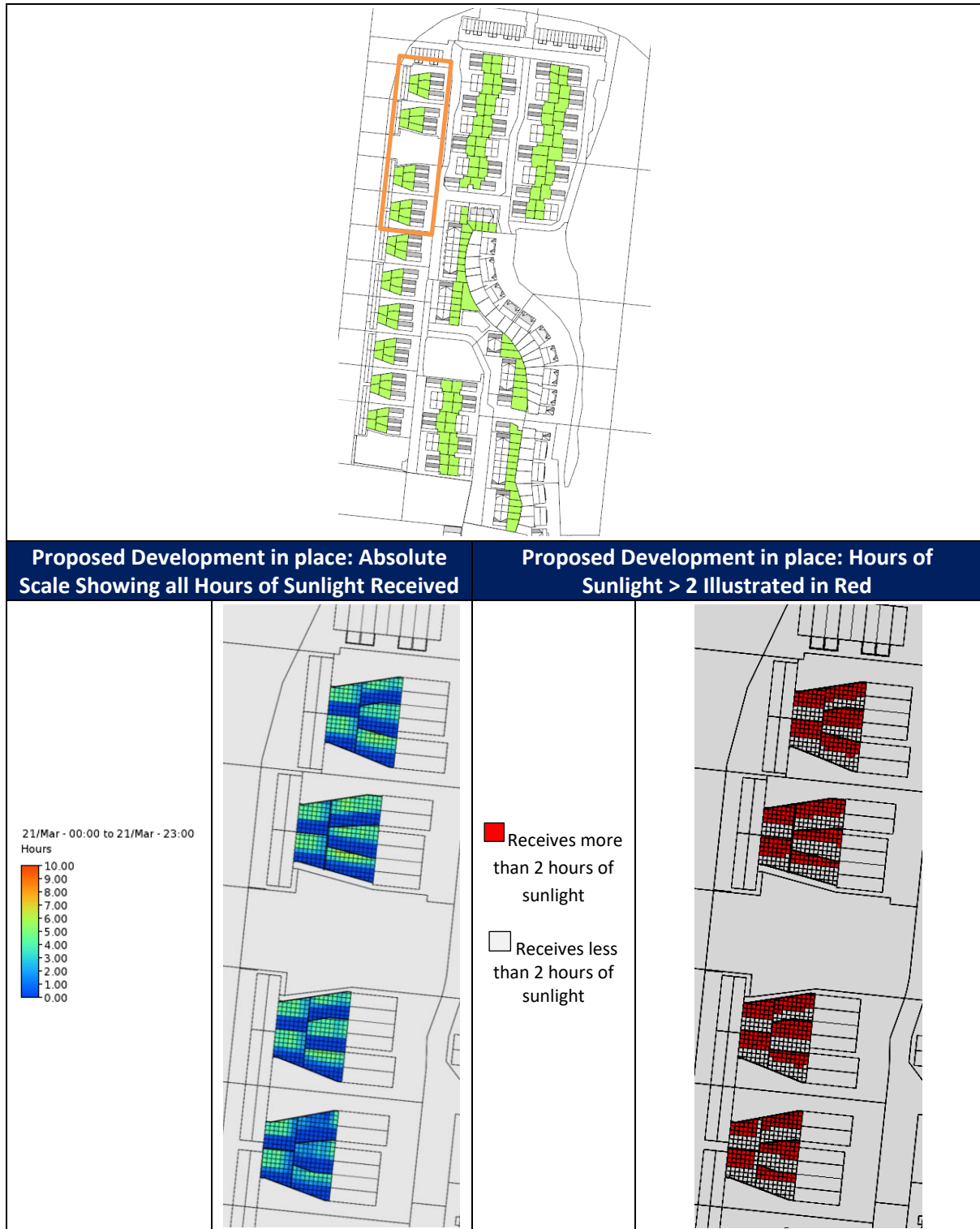
As outlined in Section 3.3.17 of the BRE Guide (3<sup>rd</sup> Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity space should receive at least 2 hours of sunlight on March 21<sup>st</sup>. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation with the proposed development in place.

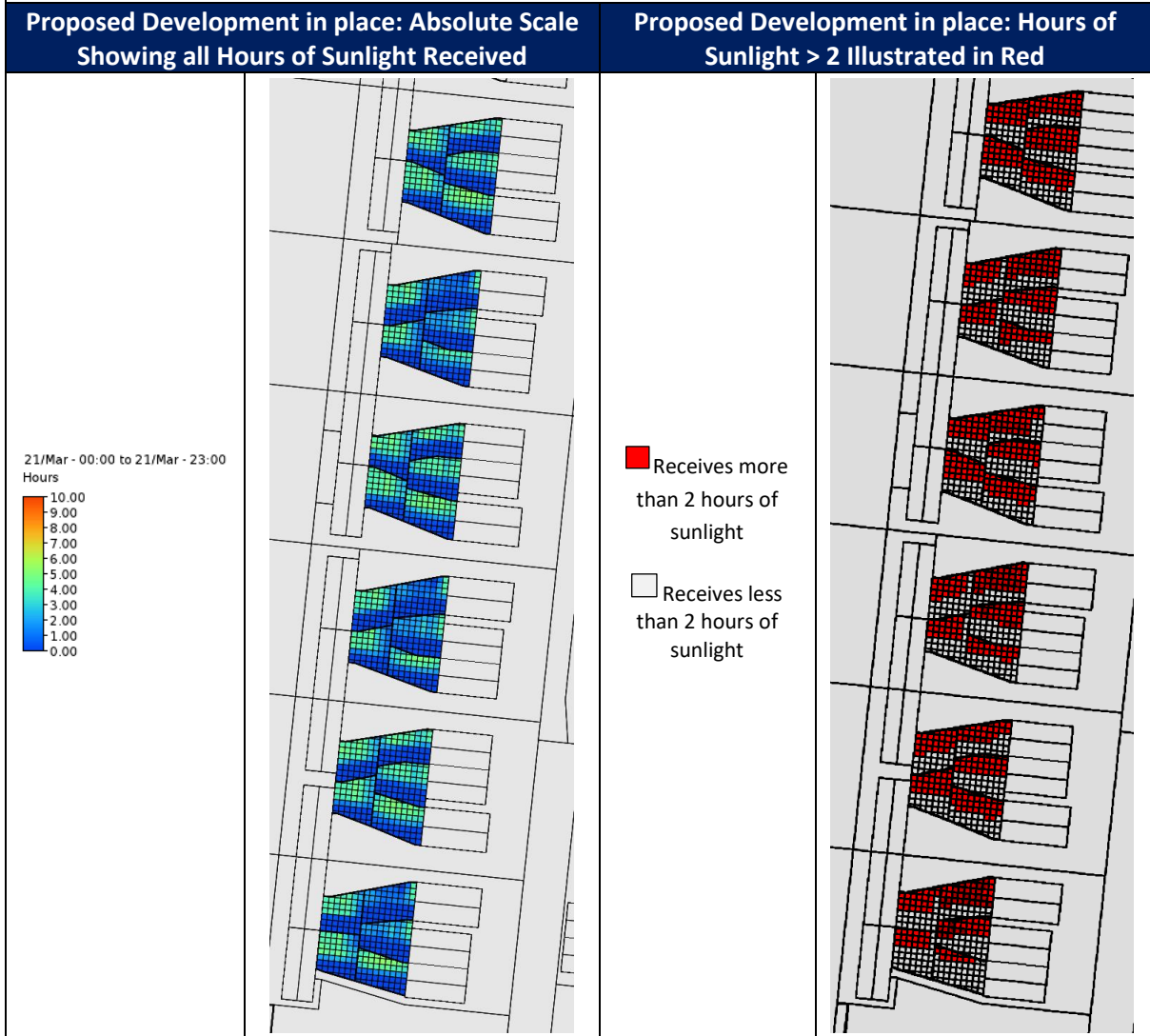
This analysis will be performed on the amenity spaces illustrated in the image below.



The following images illustrate the predicted results with respect to these spaces receiving at least 2 hours of sunlight on March 21<sup>st</sup>. Any areas that receive less than 2 hours of sunlight are colour-coded in grey.

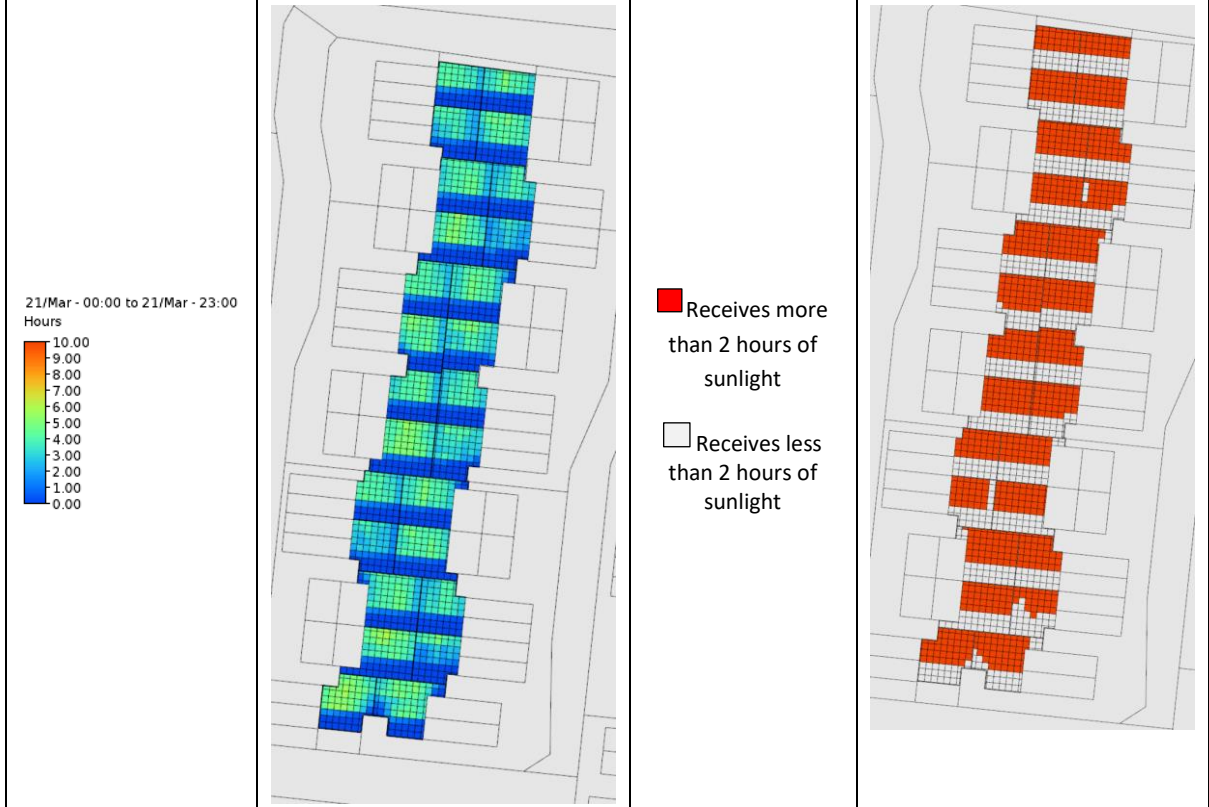
### 6.2.1 Proposed Rear Garden Space Results



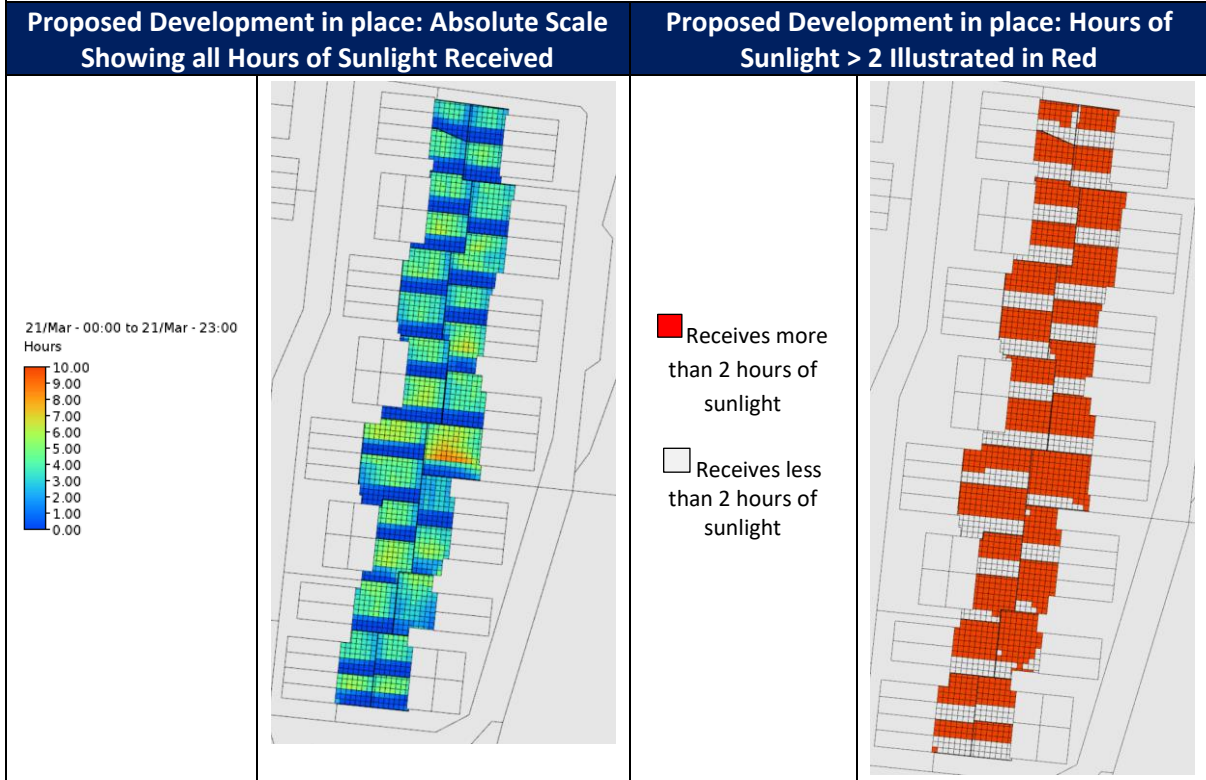


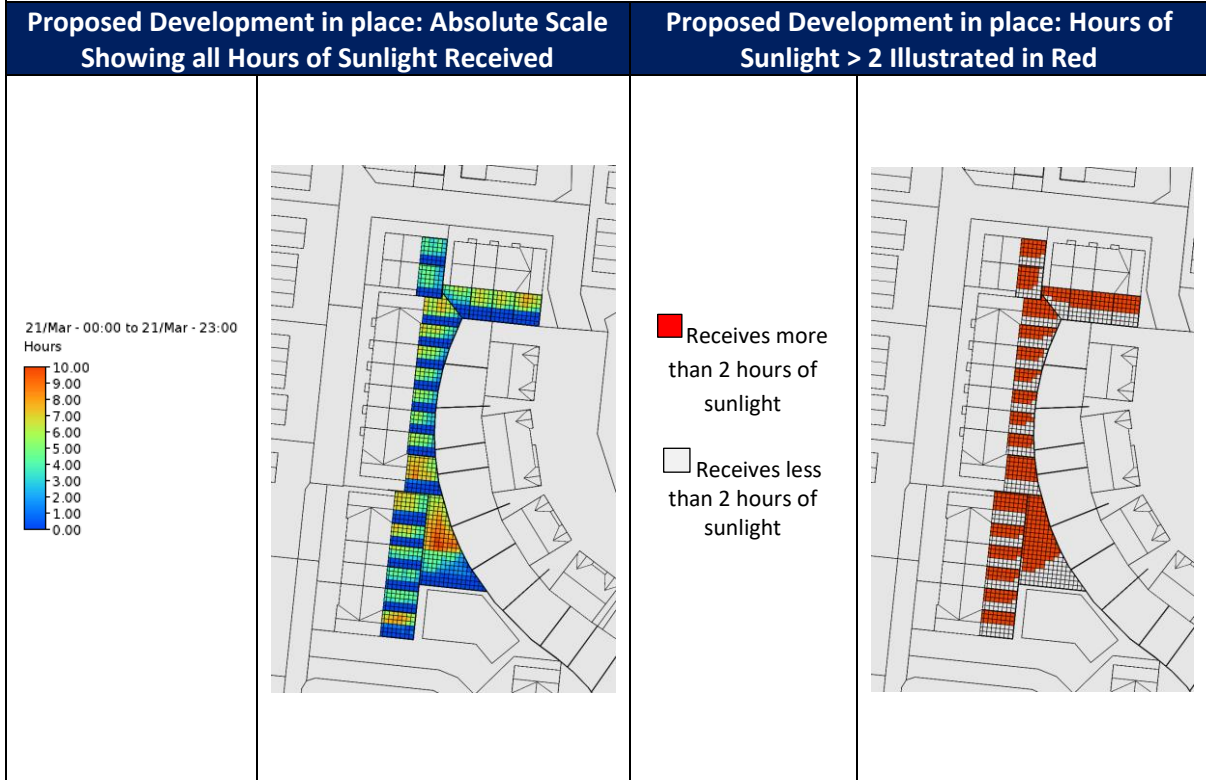


**Proposed Development in place: Absolute Scale Showing all Hours of Sunlight Received**      **Proposed Development in place: Hours of Sunlight > 2 Illustrated in Red**



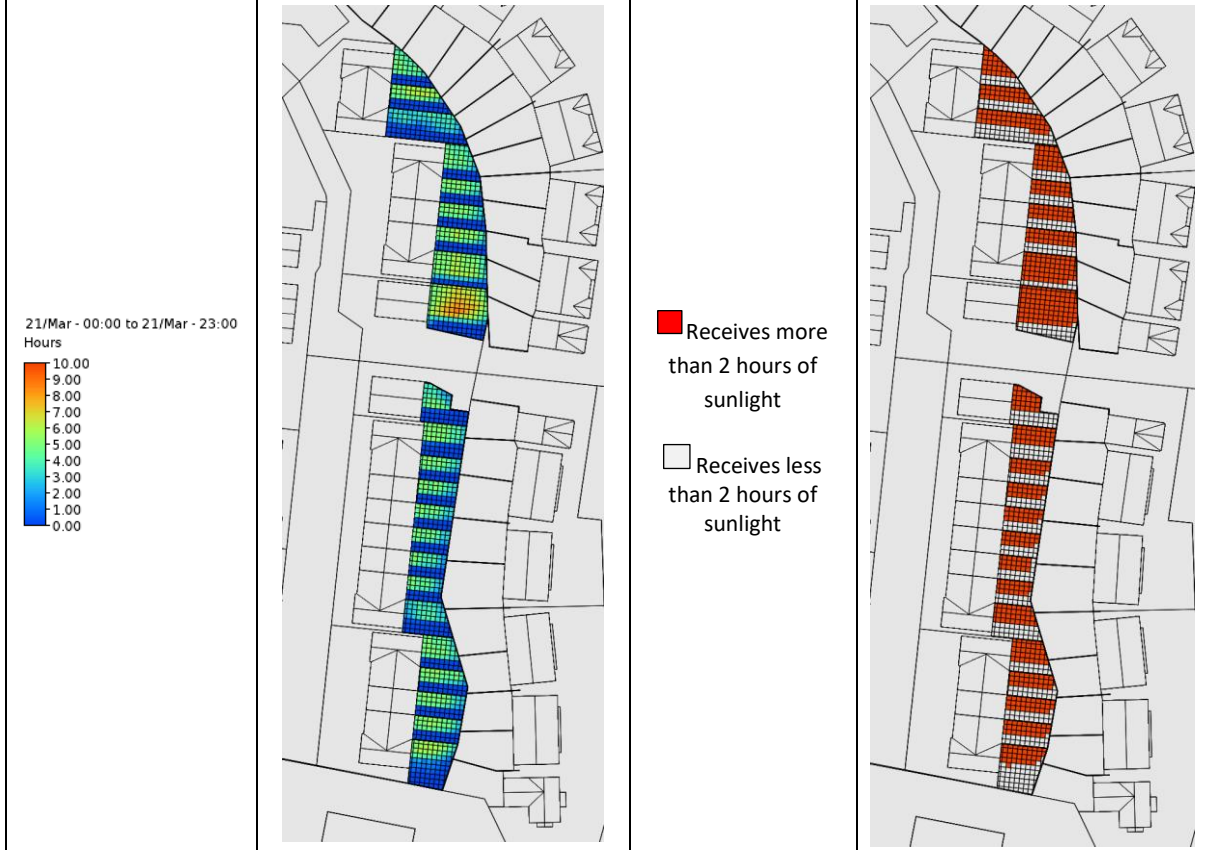


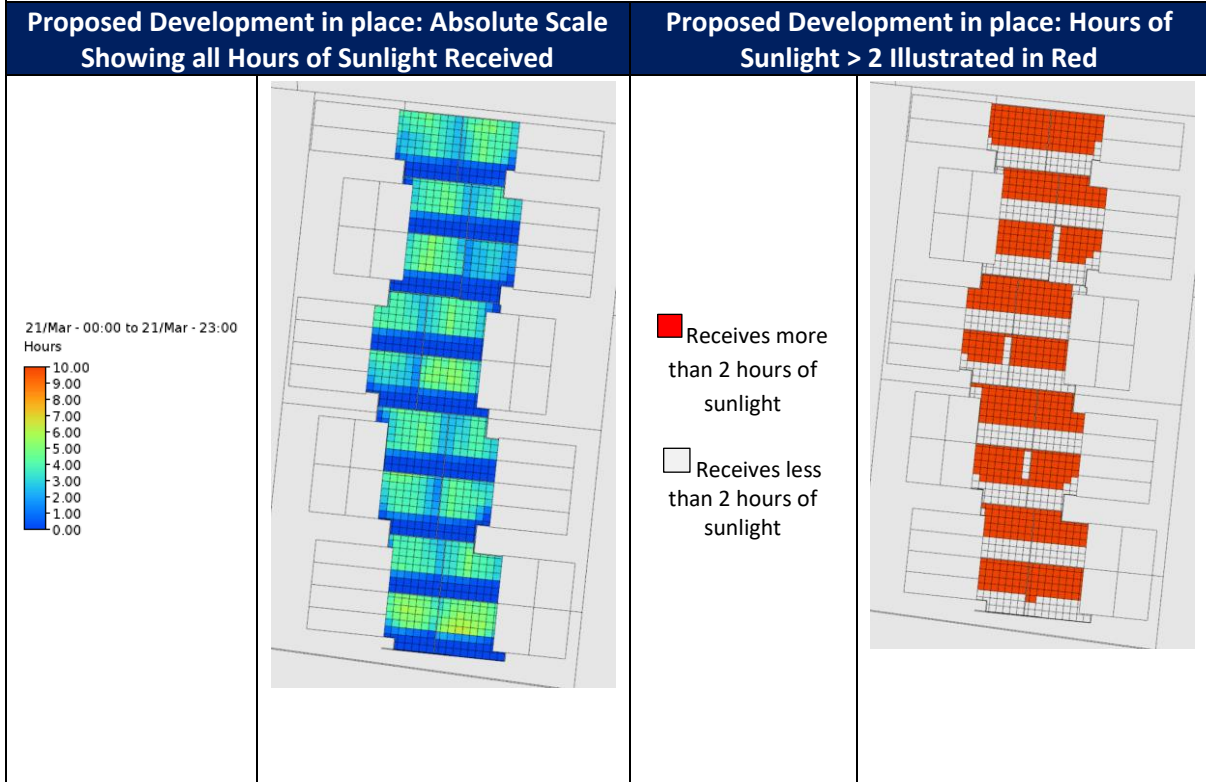




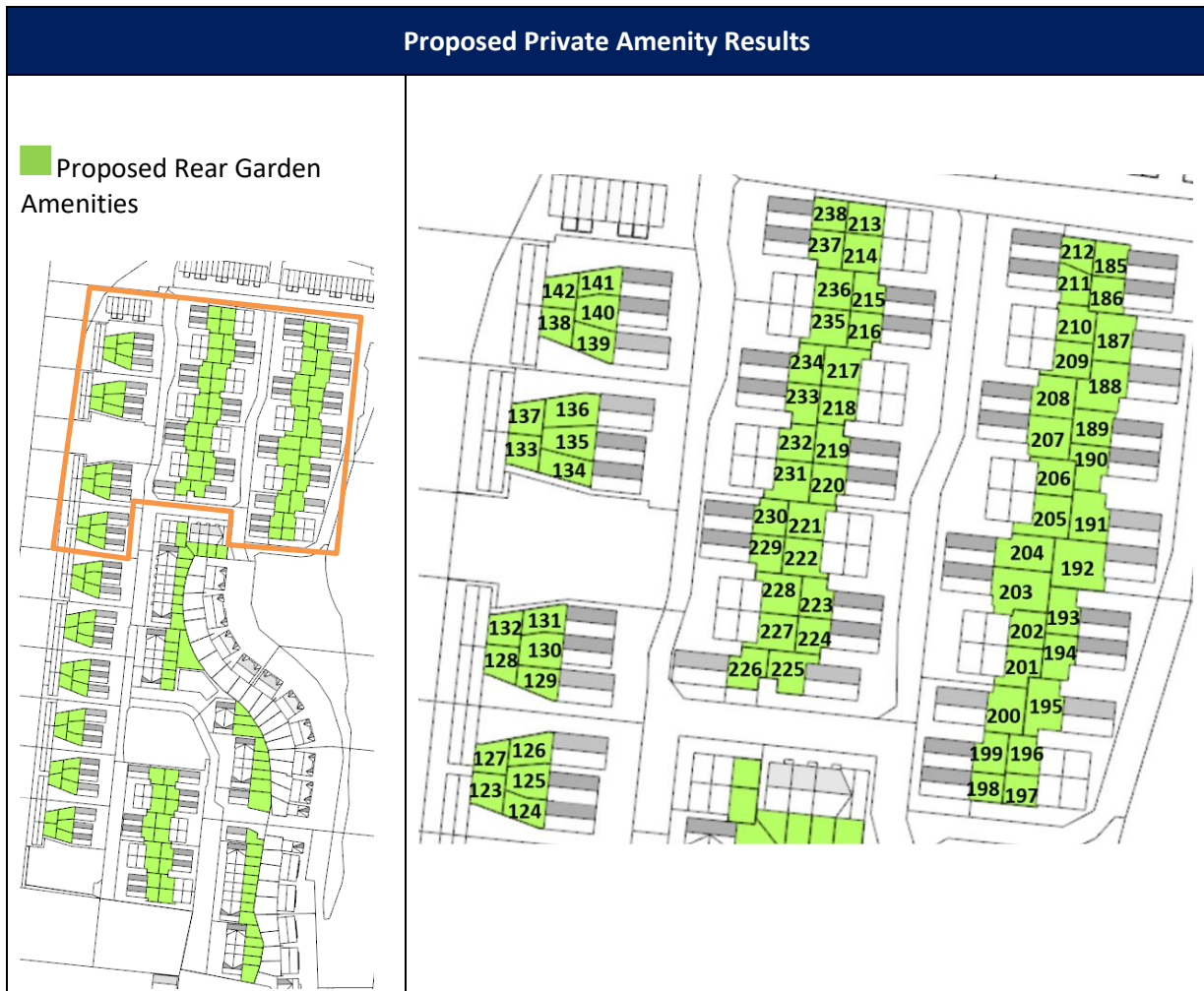


**Proposed Development in place: Absolute Scale Showing all Hours of Sunlight Received**      **Proposed Development in place: Hours of Sunlight > 2 Illustrated in Red**





### 6.2.2 Proposed Rear Garden Amenity Results

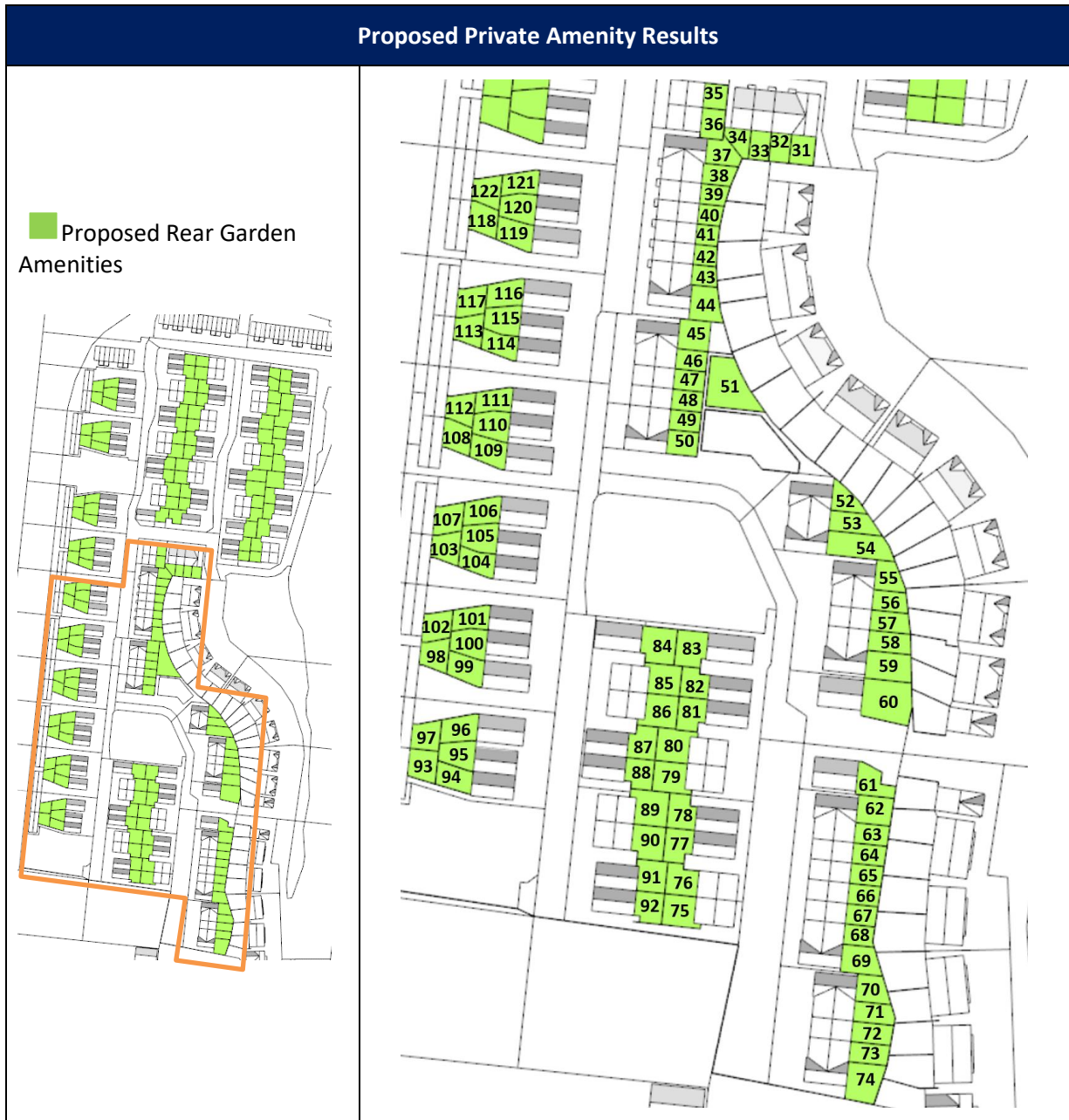


Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
123	53	29	55%	✓
124	48	24	50%	✓
125	59	30	51%	✓
126	57	29	51%	✓
127	44	22	50%	✓
128	50	31	62%	✓
129	51	29	57%	✓
130	63	34	54%	✓
131	50	26	52%	✓
132	49	27	55%	✓
133	50	33	66%	✓
134	60	30	50%	✓
135	68	38	56%	✓
136	74	37	50%	✓
137	49	27	55%	✓
138	50	31	62%	✓
139	56	30	54%	✓

Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
140	60	35	58%	✓
141	49	25	51%	✓
142	49	26	53%	✓
185	52	26	50%	✓
186	53	28	53%	✓
187	83	55	66%	✓
188	96	65	68%	✓
189	62	33	53%	✓
190	67	46	69%	✓
191	82	53	65%	✓
192	114	96	84%	✓
193	64	42	66%	✓
194	62	55	89%	✓
195	87	70	80%	✓
196	55	34	62%	✓
197	46	26	57%	✓
198	42	21	50%	✓
199	56	35	63%	✓
200	77	53	69%	✓
201	62	51	82%	✓
202	57	34	60%	✓
203	107	73	68%	✓
204	85	53	62%	✓
205	78	47	60%	✓
206	61	38	62%	✓
207	77	51	66%	✓
208	76	49	64%	✓
209	62	35	56%	✓
210	60	36	60%	✓
211	51	32	63%	✓
212	45	25	56%	✓
213	51	27	53%	✓
214	62	38	61%	✓
215	53	32	60%	✓
216	51	28	55%	✓
217	70	47	67%	✓
218	59	37	63%	✓
219	58	36	62%	✓
220	57	38	67%	✓
221	63	39	62%	✓
222	64	39	61%	✓
223	55	34	62%	✓
224	50	26	52%	✓
225	69	45	65%	✓
226	62	42	68%	✓
227	65	38	58%	✓
228	71	44	62%	✓
229	51	29	57%	✓
230	51	30	59%	✓
231	68	42	62%	✓



Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
232	57	34	60%	✓
233	56	38	68%	✓
234	55	34	62%	✓
235	65	39	60%	✓
236	66	42	64%	✓
237	53	35	66%	✓
238	47	26	55%	✓



Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
31	44	25	57%	✓
32	36	20	56%	✓
33	36	20	56%	✓
34	34	17	50%	✓
35	35	21	60%	✓
36	43	23	53%	✓
37	47	28	60%	✓
38	40	22	55%	✓
39	33	17	52%	✓
40	30	15	50%	✓
41	30	16	53%	✓



Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
42	30	15	50%	✓
43	31	17	54%	✓
44	64	38	59%	✓
45	56	32	57%	✓
46	38	21	55%	✓
47	38	21	55%	✓
48	38	21	55%	✓
49	38	21	55%	✓
50	46	24	52%	✓
51	171	98	57%	✓
52	41	24	59%	✓
53	56	31	55%	✓
54	93	47	51%	✓
55	47	30	64%	✓
56	43	24	56%	✓
57	48	27	56%	✓
58	52	32	62%	✓
59	77	53	69%	✓
60	121	94	78%	✓
61	56	28	50%	✓
62	59	35	59%	✓
63	42	24	57%	✓
64	41	23	55%	✓
65	40	23	58%	✓
66	39	23	60%	✓
67	37	20	54%	✓
68	37	20	54%	✓
69	64	35	55%	✓
70	50	25	50%	✓
71	49	27	55%	✓
72	50	29	58%	✓
73	48	28	58%	✓
74	81	31	38%	✓
75	62	35	56%	✓
76	56	30	54%	✓
77	54	34	63%	✓
78	55	32	58%	✓
79	62	33	53%	✓
80	68	40	59%	✓
81	54	27	50%	✓
82	48	26	54%	✓
83	66	43	65%	✓
84	74	50	68%	✓
85	60	34	57%	✓
86	66	40	61%	✓
87	53	31	58%	✓
88	49	25	51%	✓
89	73	45	62%	✓
90	64	35	55%	✓
91	56	32	57%	✓



Plot Number	Total Area (m <sup>2</sup> )	Area Receiving >2h (m <sup>2</sup> )	Percent Receiving >2h above the total area	Comment
92	51	31	61%	✓
93	53	30	57%	✓
94	51	27	53%	✓
95	51	26	51%	✓
96	57	29	51%	✓
97	48	24	50%	✓
98	50	30	60%	✓
99	57	29	51%	✓
100	58	29	50%	✓
101	49	25	51%	✓
102	49	29	59%	✓
103	49	25	51%	✓
104	48	24	50%	✓
105	59	30	51%	✓
106	57	29	51%	✓
107	51	28	55%	✓
108	51	31	61%	✓
109	59	31	53%	✓
110	56	29	52%	✓
111	49	26	53%	✓
112	49	30	61%	✓
113	50	25	50%	✓
114	48	24	50%	✓
115	57	29	51%	✓
116	57	29	51%	✓
117	50	25	50%	✓
118	51	31	61%	✓
119	59	31	53%	✓
120	56	29	52%	✓
121	49	26	53%	✓
122	49	29	59%	✓

### **6.3 Discussion**

As outlined in Section 3.3.17 of the BRE Guide (3<sup>rd</sup> Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21<sup>st</sup>.

#### **Proposed Rear Garden Amenity Spaces**

On March 21<sup>st</sup>, 100% (165 out of 165) of the proposed rear garden amenity spaces within the development site will receive at least 2 hours of sunlight over their total area, thus complying with the BRE guidelines.

#### **Proposed Creche Amenity Space.**

On March 21<sup>st</sup>, 57% of the proposed amenity space provided for the creche will receive at least 2 hours of sunlight over its total area, thus complying with the BRE guidelines.

## 7 Conclusion

The following can be concluded based on the assessments undertaken:

### 7.1 Shadow Analysis

The shadow analysis illustrates different shadows being cast at key times of the year (March 21<sup>st</sup>, June 21<sup>st</sup> and December 21<sup>st</sup>) for the Existing/Permitted Situation and the Proposed Scheme. The results from the study are summarised as follows:

#### Properties on Slane Road - South

No additional shading visible from the proposed development on these existing properties throughout the year.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” and section of this report.

### 7.2 Sunlight to Amenity Spaces

As outlined in Section 3.3.17 of the BRE Guide (3<sup>rd</sup> Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21<sup>st</sup>. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

#### Proposed Rear Garden Amenity Spaces

On March 21<sup>st</sup>, 100% (165 out of 165) of the proposed rear garden amenity spaces within the development site will receive at least 2 hours of sunlight over their total area, thus complying with the BRE guidelines.

#### Proposed Creche Amenity Space.

On March 21<sup>st</sup>, 57% of the proposed amenity space provided for the creche will receive at least 2 hours of sunlight over its total area, thus complying with the BRE guidelines.

### 7.3 Observations

It is important to note that the BRE Guide (3<sup>rd</sup> Edition) itself states “*although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of many factors in site layout design*”. Although this is true appropriate and reasonable regard has still been taken to the BRE Guide.

Whilst the results shown relate to the criteria as laid out in the BRE Guide (3<sup>rd</sup> Edition), it is important to note that the BRE targets are guidance only and should therefore be used with flexibility and caution when dealing with different types of sites.

In addition, BRE Guide 3<sup>rd</sup> Edition also notes:

*“This report is a comprehensive revision of the 2011 edition of Site layout planning for daylight and sunlight: a guide to good practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.”*

Taking all of the above information into account and based on the results from each of the assessments undertaken, the proposed development performs very well when compared to the guidelines in the BRE Guide 3rd Edition and IS EN 17037-2018+A1-2021 /BS EN 17037-2018+A1-2021 National Annex.

