SHADOW ANALYSIS

Introduction

Shadow analyses were carried out in order to examine the impact of the proposed extensions on the neighbouring houses located to the north of the proposed site.

The Site

Address: No. 12 and 14 Poplars Close, Ruislip, HA4 7BU

Longitude: -0.4244

Latitude: 51.5734

Buildings of interest to the analysis:

North of the site: Nos. 8 and 10 Poplars Close – 1920/30's two-story building with dormer loft conversions and bordered off from the alleyway using 6ft high fencing which will be referred to hereon as the fence.

East of the site: A retail unit of 9.4 meters high and 16.2m length, referred to hereon as the retail unit.

South of the site: Converted residential block, 9.5m high and over 20m length, referred to hereon as the residential block.

This cluster is captured in the Aerial View 1.

Method

Generally accepted industry standard date/time used as follows:

21st March at 9:00, 12:00 and 15:00
21st June (summer solstice) at 9:00, 12:00 and 15:00
21st December (winter solstice) at 9:00, 12:00 and 15:00

Evaluation was done using tools offered by findmyshadow.com.

Shadowing impact analysis were done for the following cases:

Case 1: No building on the site. This was done to see isolated impact of adjacent retail building and the residential block together with fencing of nos. 8 and 10 Poplars Close.

Case 2: Impact of existing bungalows

Case 3: Impact of the proposed extensions

Discussions and the conclusion

The site has a South-Easterly aspect as seen in Diagram 1. On examination, few points become evident:

1) the width and height of the Retail Unit make it the primary cause of shadow till an Azimuth of about 143°. At this point the sun is within its peak elevation as shown on Chart 1,2 and 3.

2) From this point on the sun continues to rise in elevation till 192° azimuth, at which point on shadows from the proposed development will become too oblique to be of concern to northern properties. As the sun rises shadows become increasingly tight close to their respective obstacles.

3) The northern properties are enclosed by 6' high fences and some mature trees which cause shadowing regardless of any other building and are significant cause of shadowing outside the 49° azimuth band, greyed area on the Diagram 1.

4) The proposal aims to increase the eaves height from existing 2.6 meters to 4.5 meters, an increase in height of 1.9 meter. It is not expected that such an increase would have significant impact on shadows between 143° and 192° azimuth where sun is within its highest elevations.

Results shown for Case 1 reinforces this and suggest that even in the absence of any building on the site the shadowing effects of the retail unit, the residential block and the fence are significant particularly when the sun is low, normally in mornings and in the winter.

In order to summarise the results shown for all cases studied and show impact of the proposed extension on the shadowing affecting properties nos. 8 and 10 the following table is drawn up:

Time	9:00	12:00	15:00
21 March	1	0	0
21 June	0	0	0
21 December	0	0	0

Where 1 indicates that the proposed extensions have some influence and 0 denotes no influence. It can readily be seen that in almost all cases bar one the proposed extensions have no effect on shadowing of nos. 8 and 10 and in that one case the effects can be seen as minor.

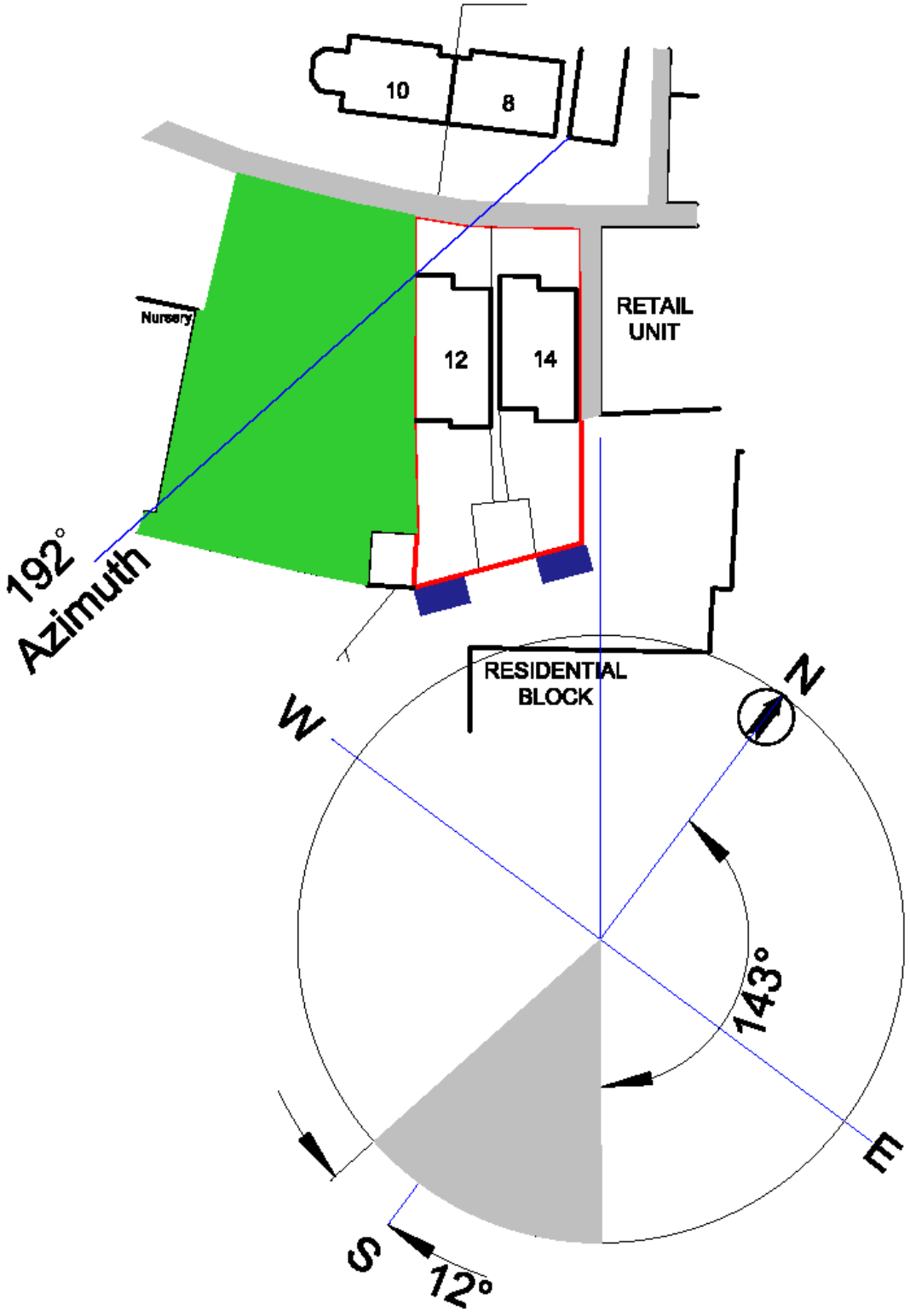

10
8
Nursery
12
14
RETAIL
UNIT
192°
Azimuth
RESIDENTIAL
BLOCK
N
W
143°
E
S
12°

Diagram 1

Aerial View 1

(Courtesy of Microsoft Bing Map)

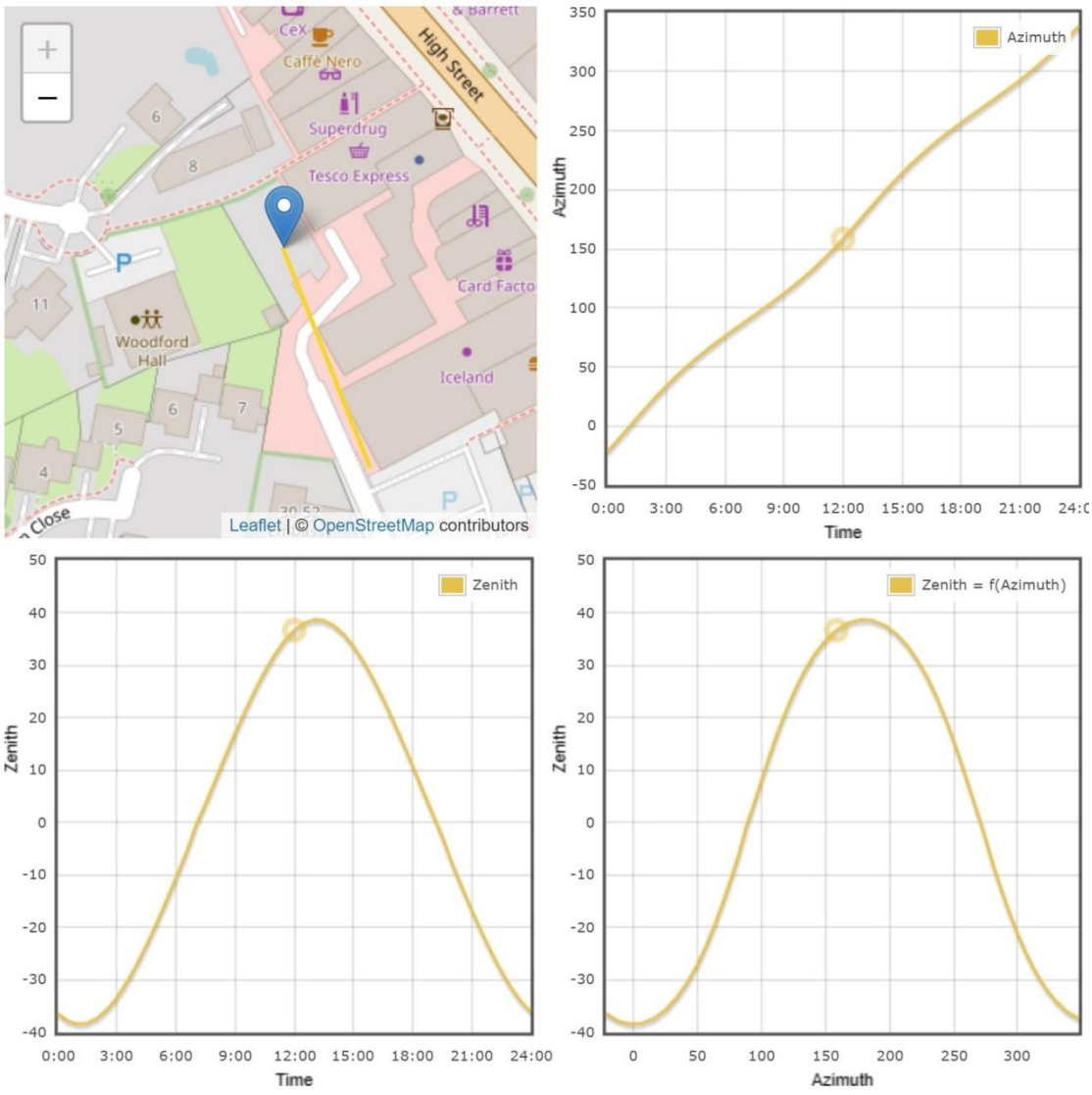


Chart 1: 21 March
(Courtesy of http://www.solartopo.com)

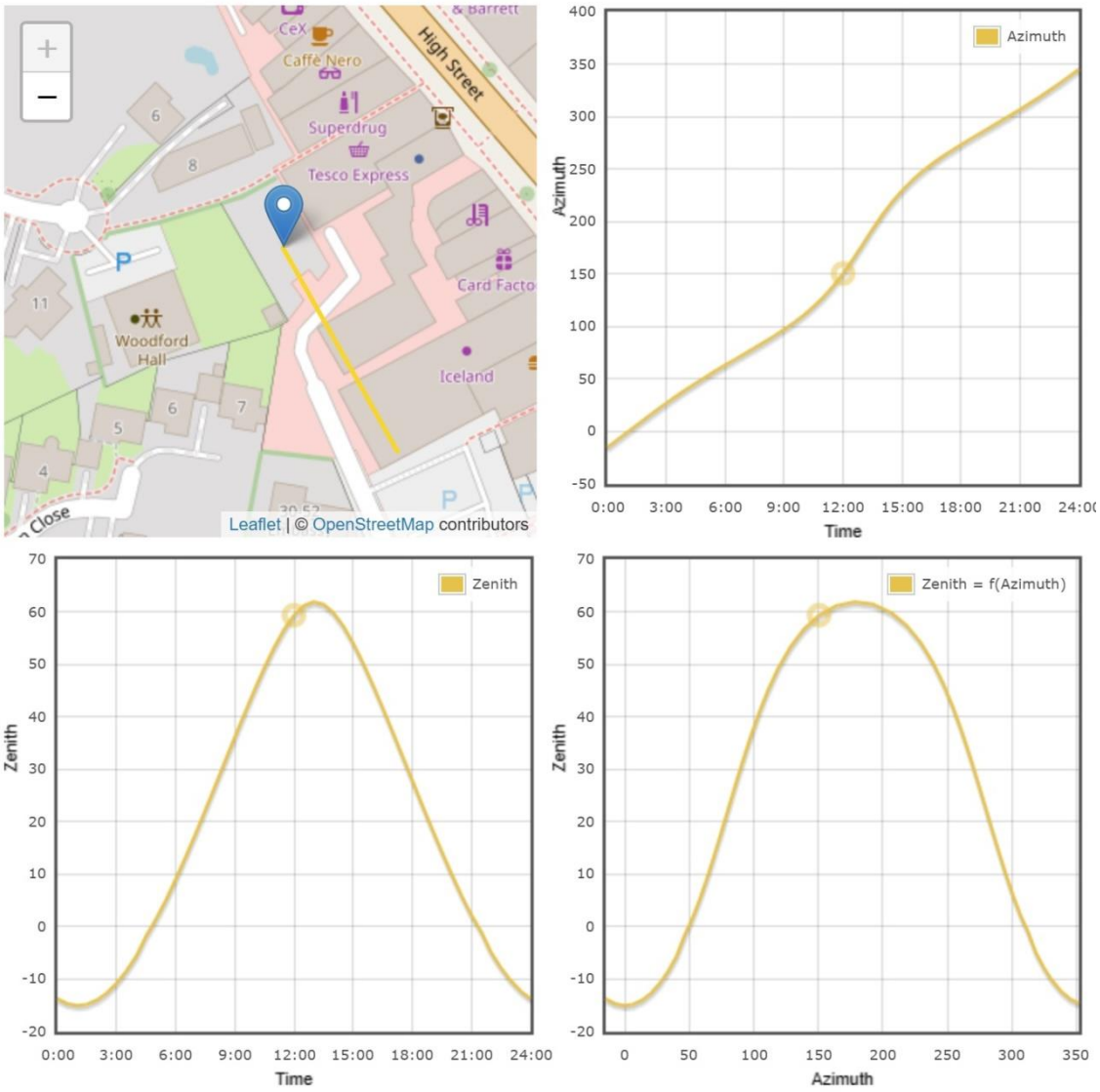


Chart 2: 21 June
(Courtesy of http://www.solartopo.com)

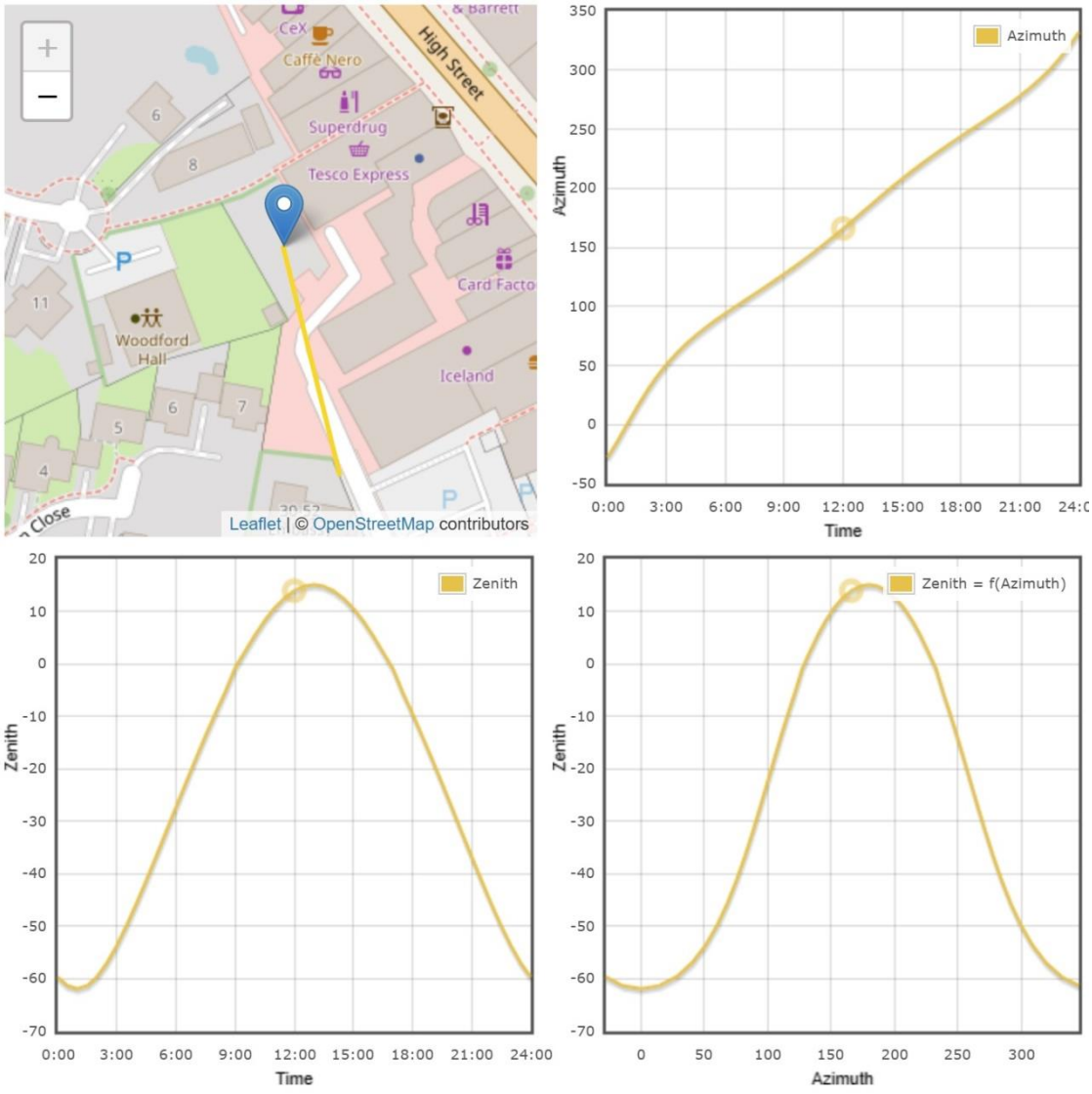
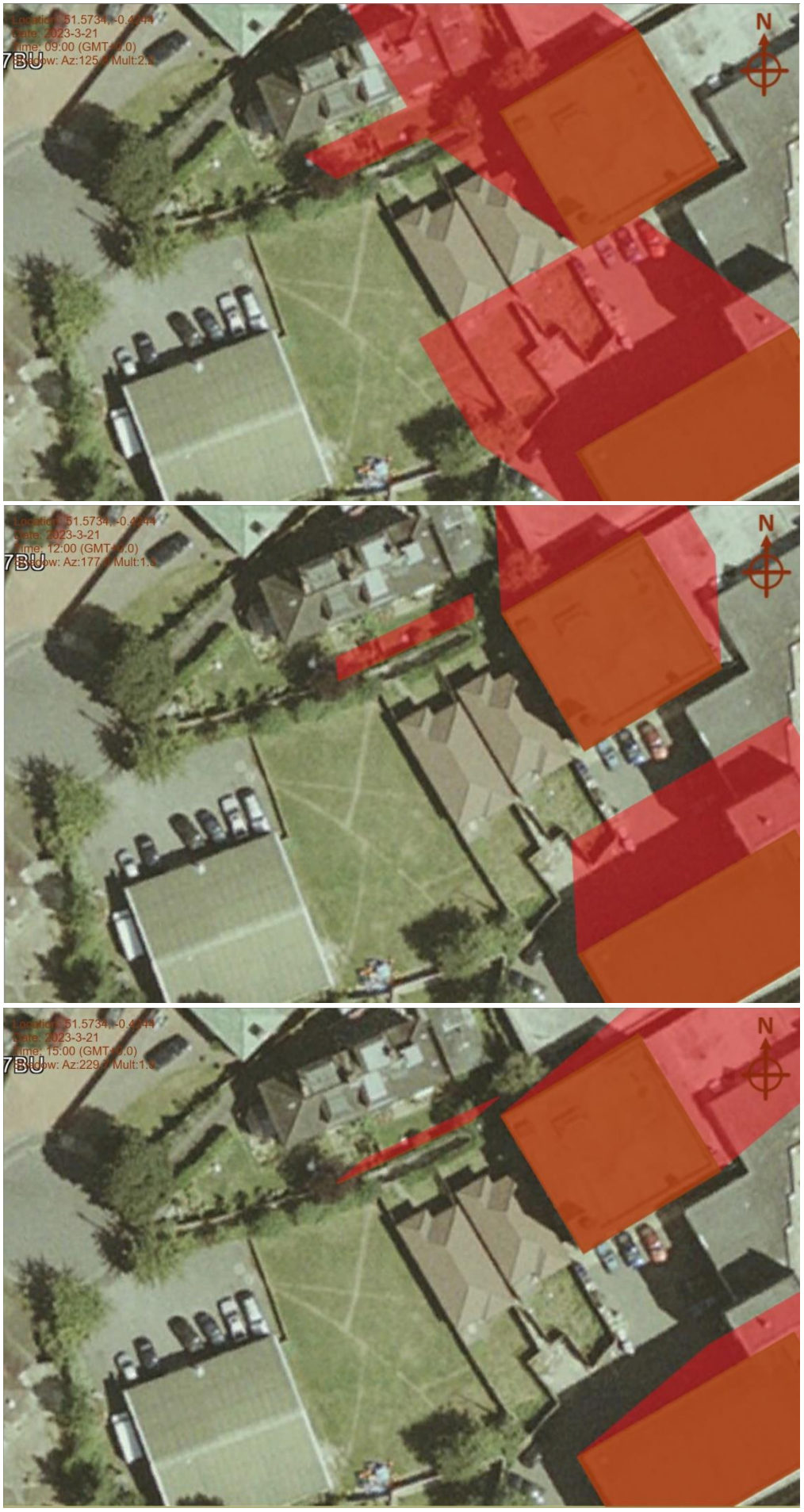
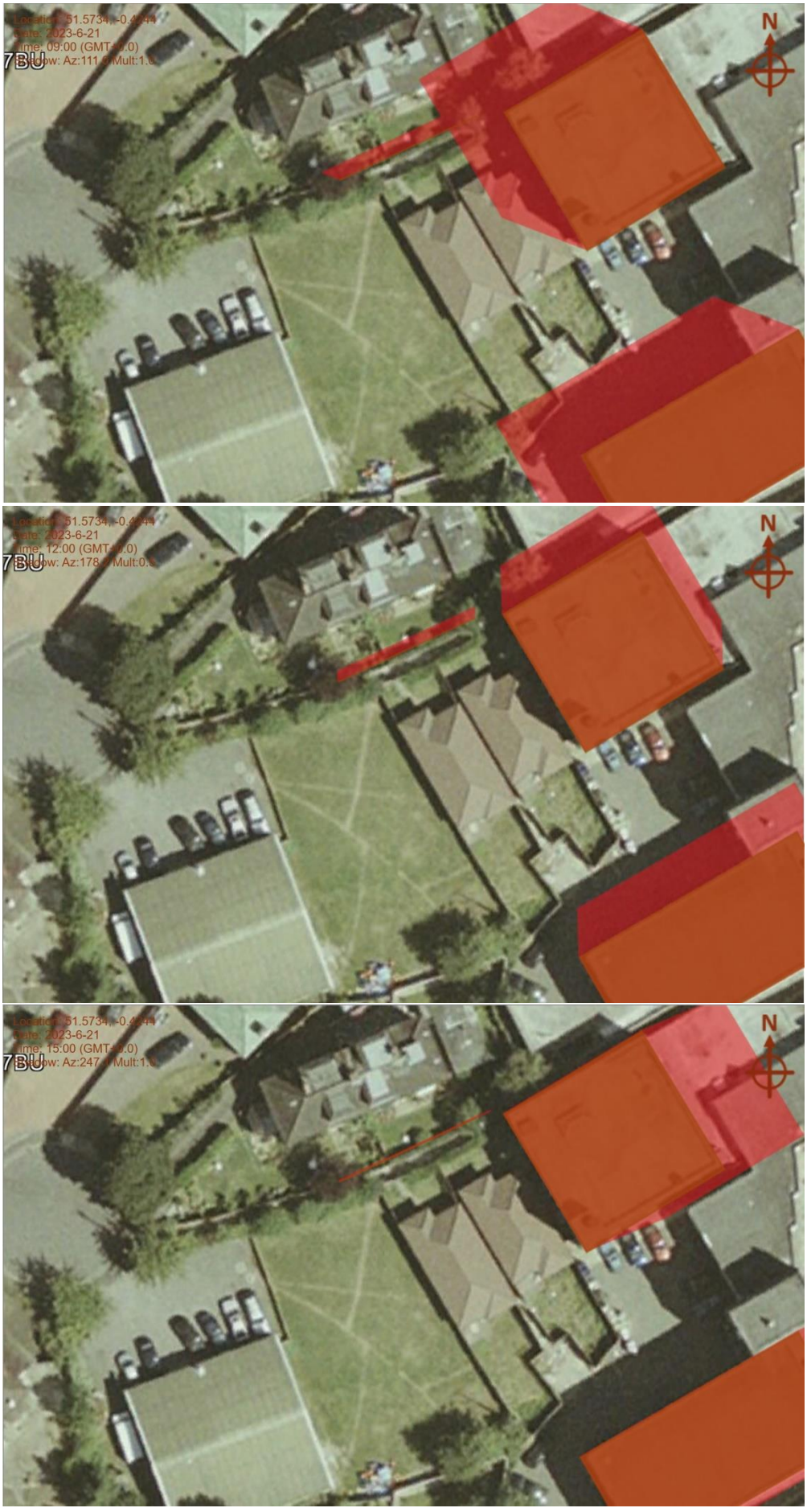


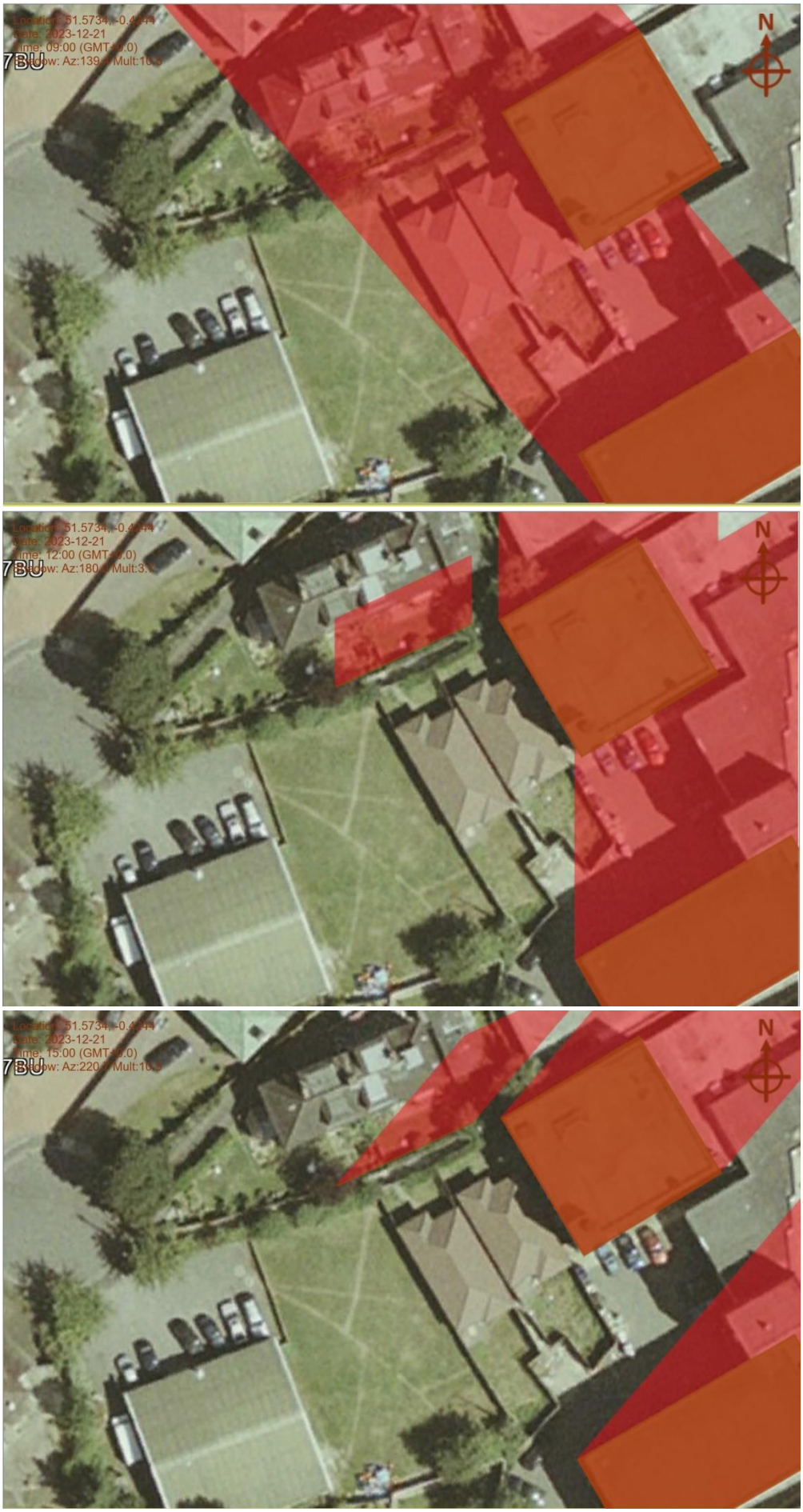
Chart 3: 21 December
(Courtesy of http://www.solartopo.com)



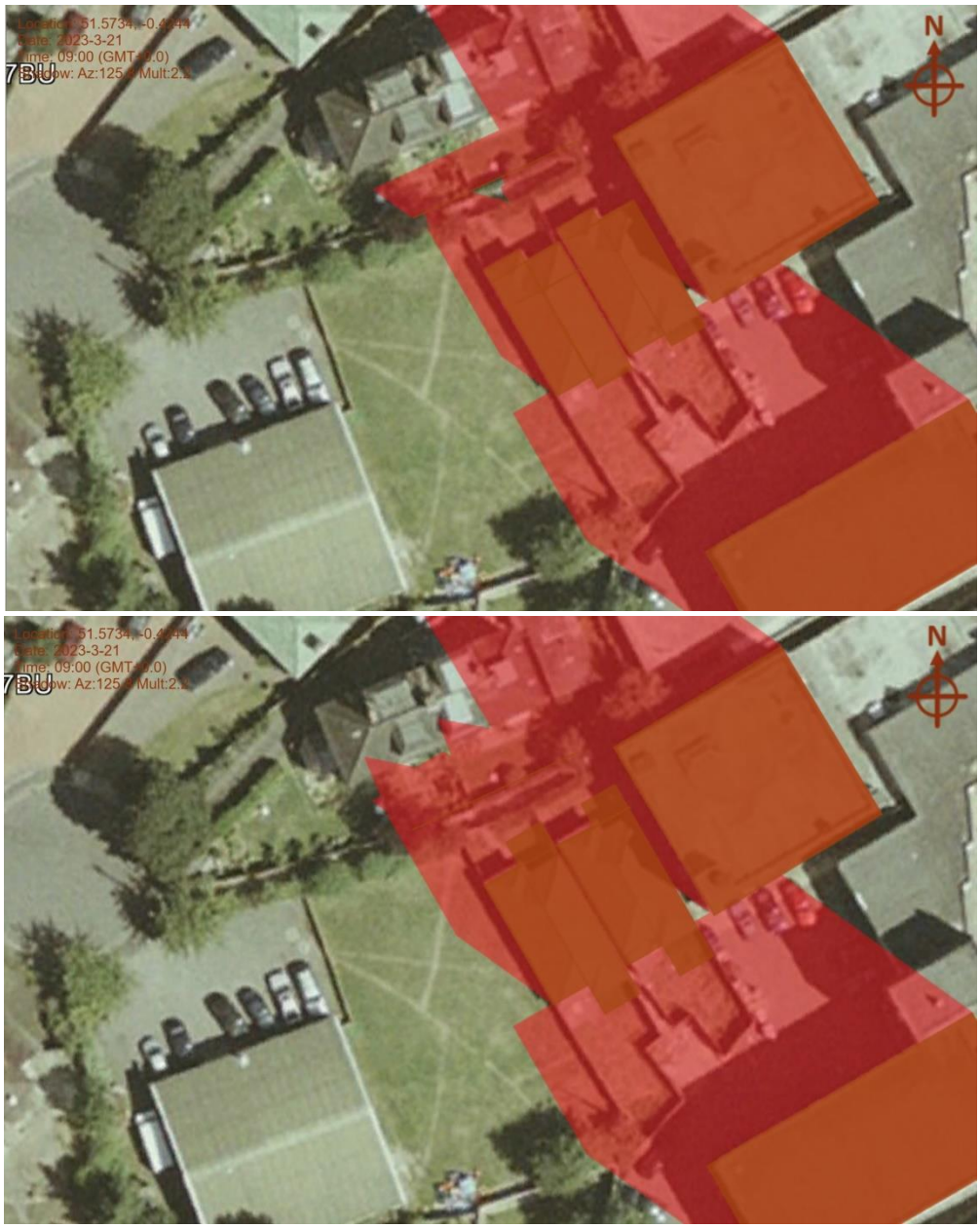
Case 1a: 21st March at 9:00, 12:00 and 15:00 (top to bottom)



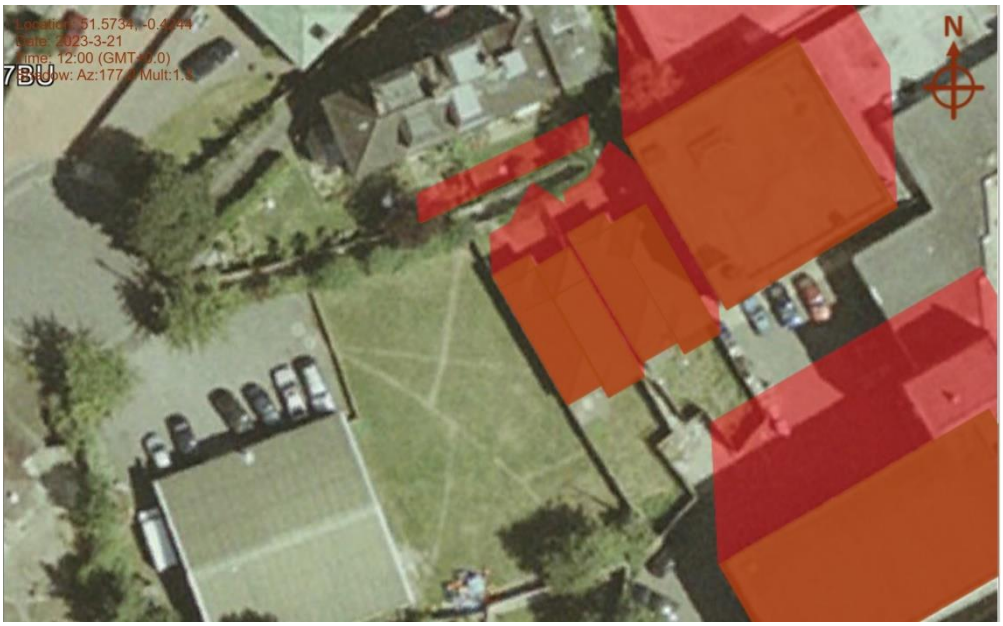
Case 1b: 21st June at 9:00, 12:00 and 15:00 (top to bottom)

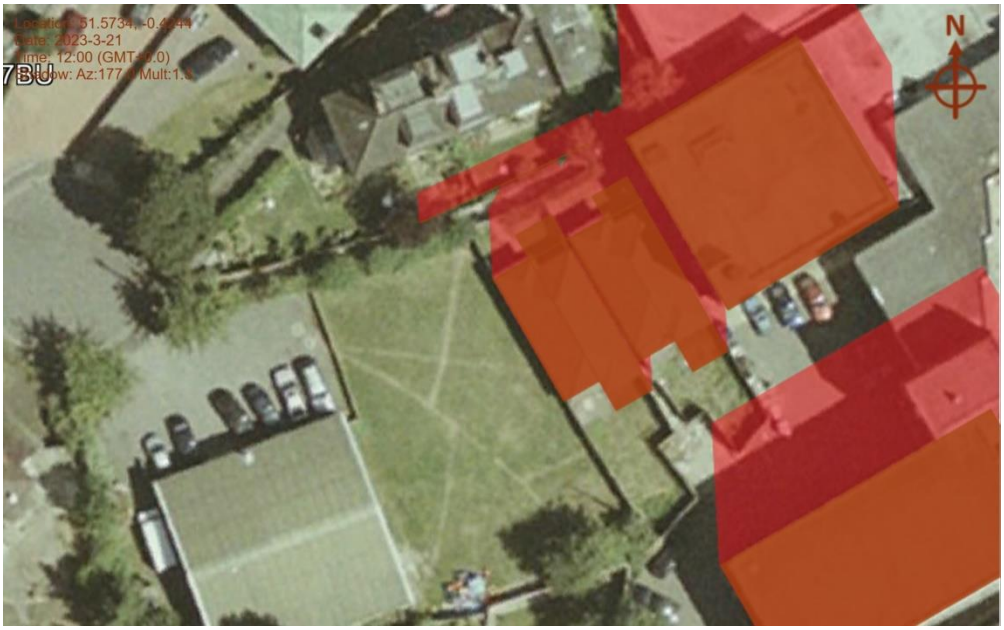


Case 1c: 21st December at 9:00, 12:00 and 15:00 (top to bottom)



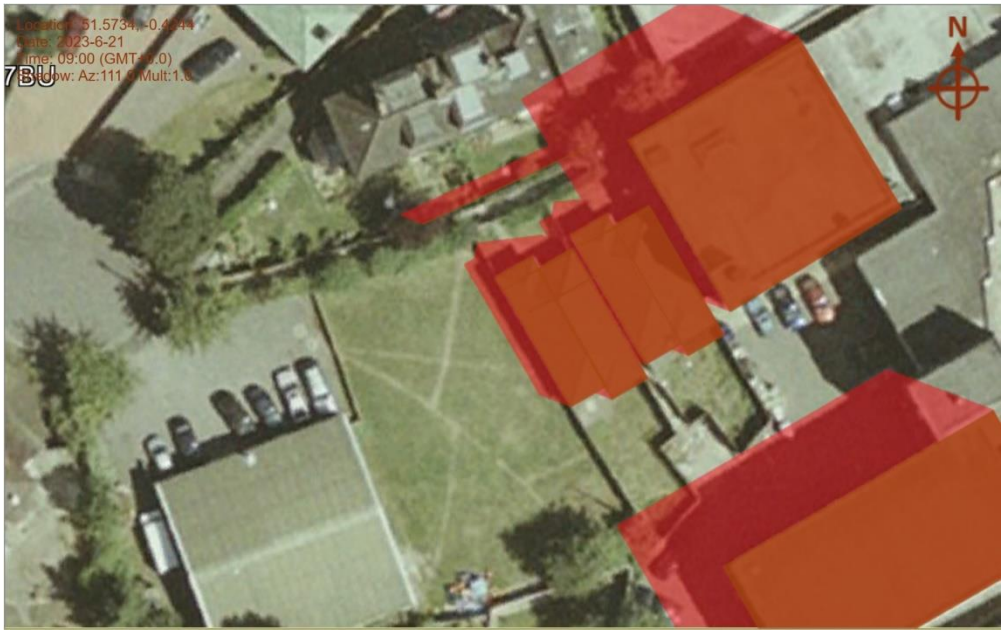
Case 2 and 3 for 21st March at 9:00 (existing top ; proposed bottom)

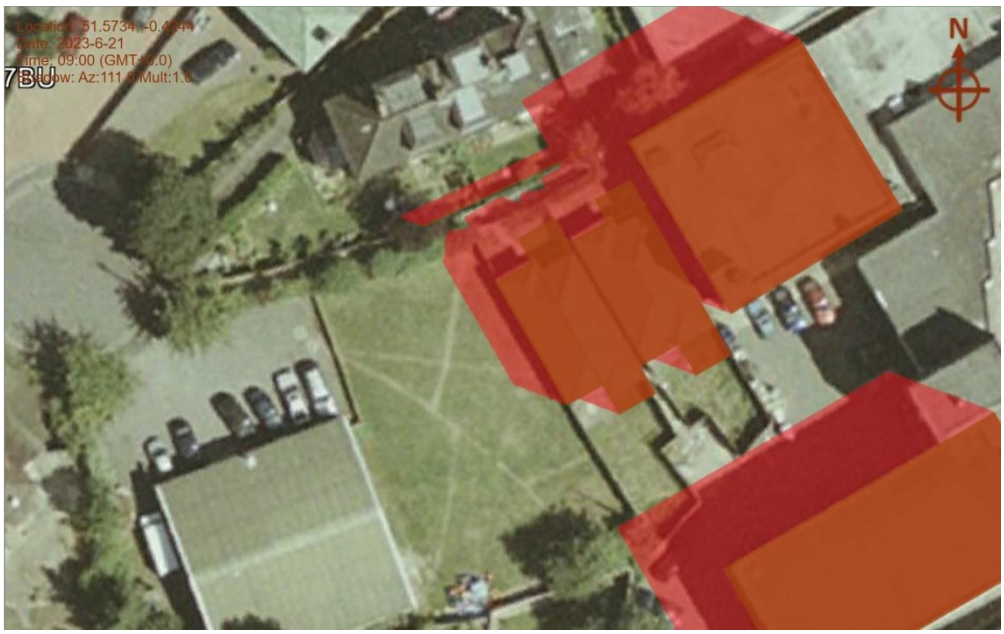




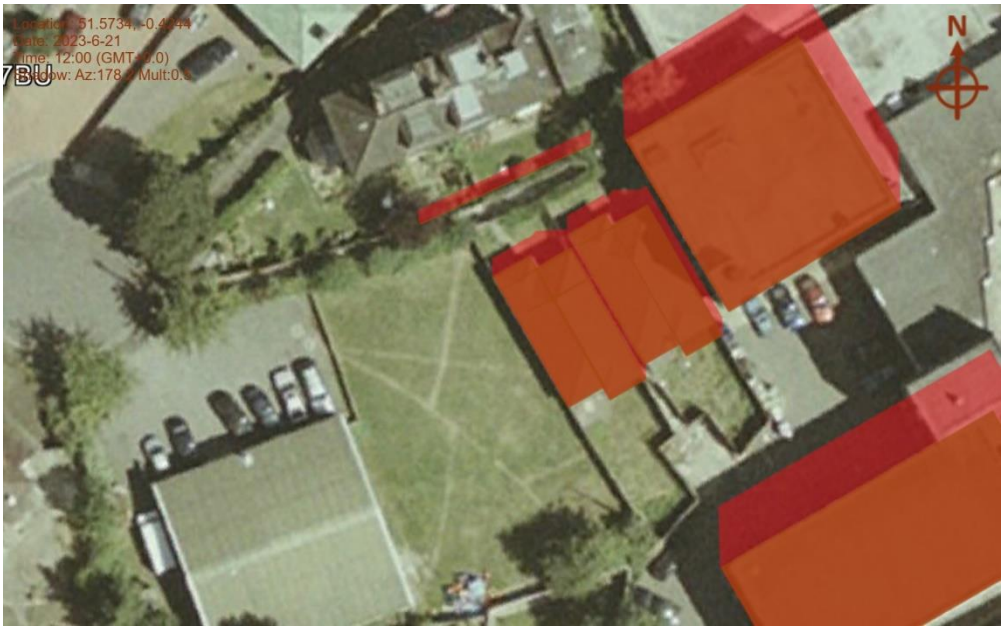
Case 2 and 3 for 21st March at 12:00 (existing top ; proposed bottom)

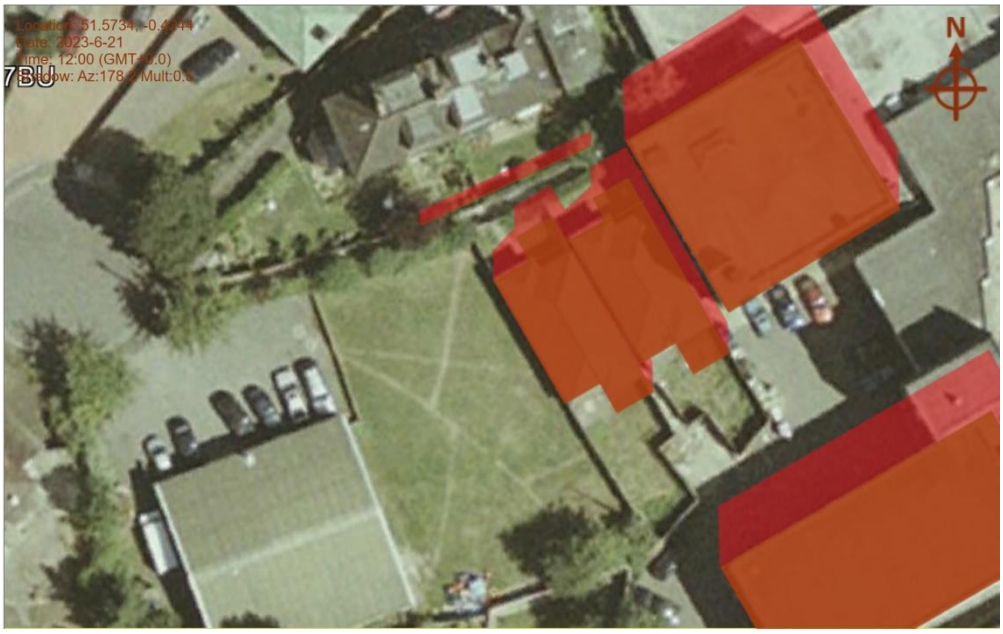
Case 2 and 3 for 21st March at 15:00 (existing top ; proposed bottom)





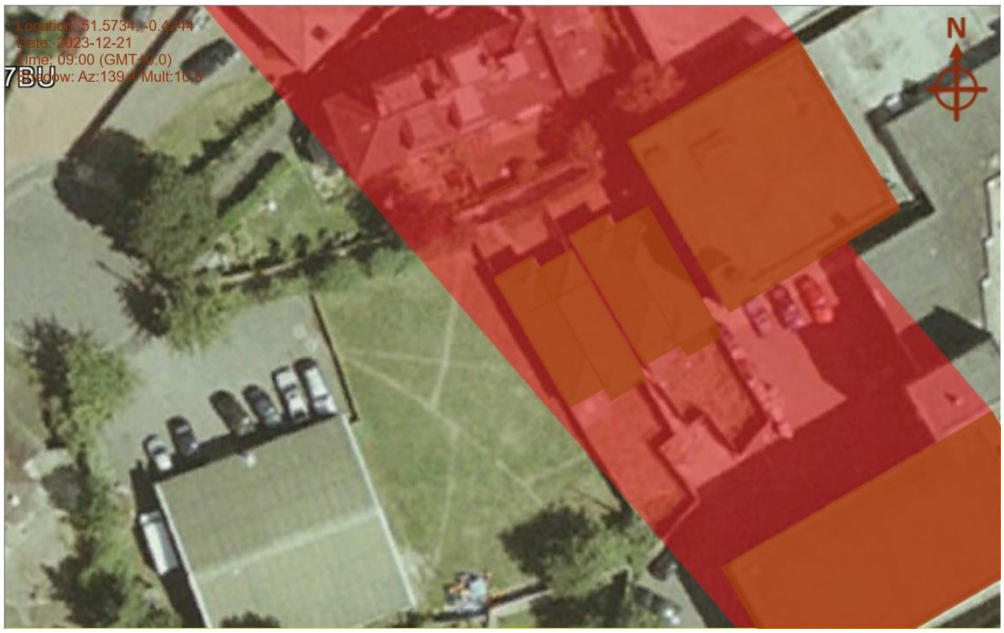
Case 2 and 3 for 21st June at 9:00 (existing top ; proposed bottom)

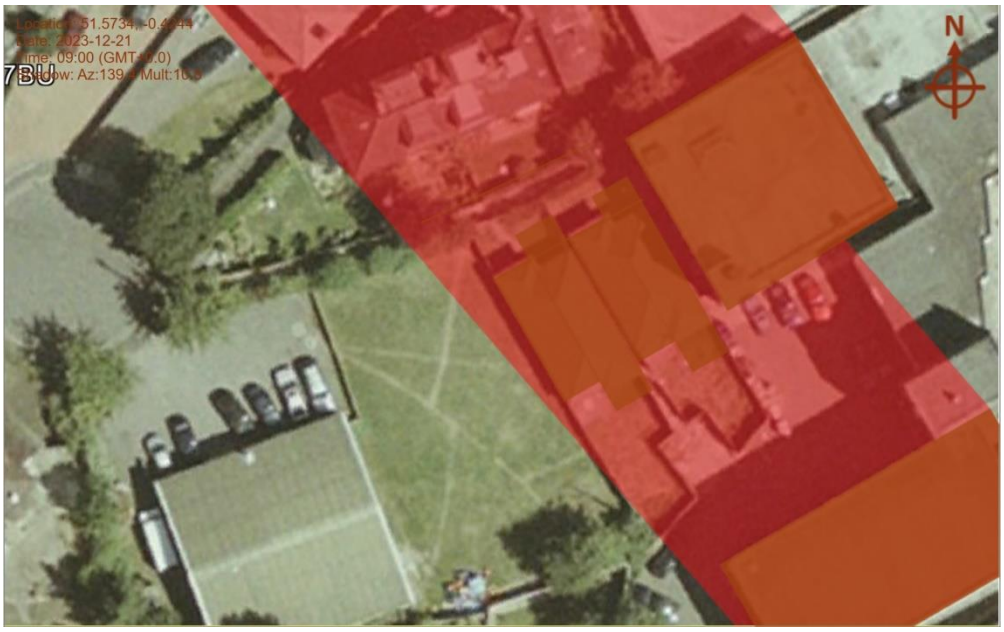




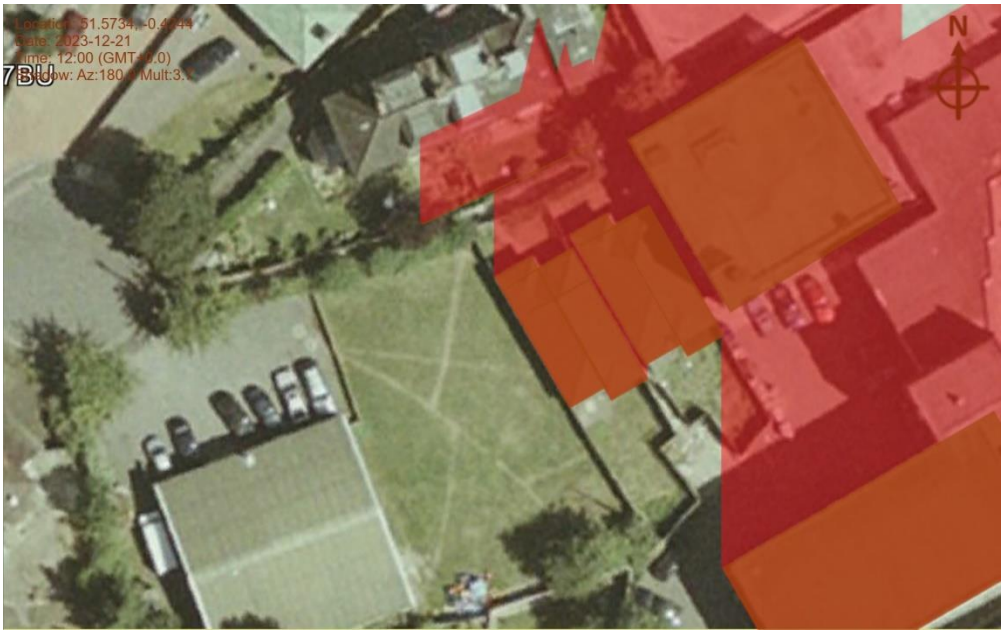
Case 2 and 3 for 21st June at 12:00 (existing top ; proposed bottom)

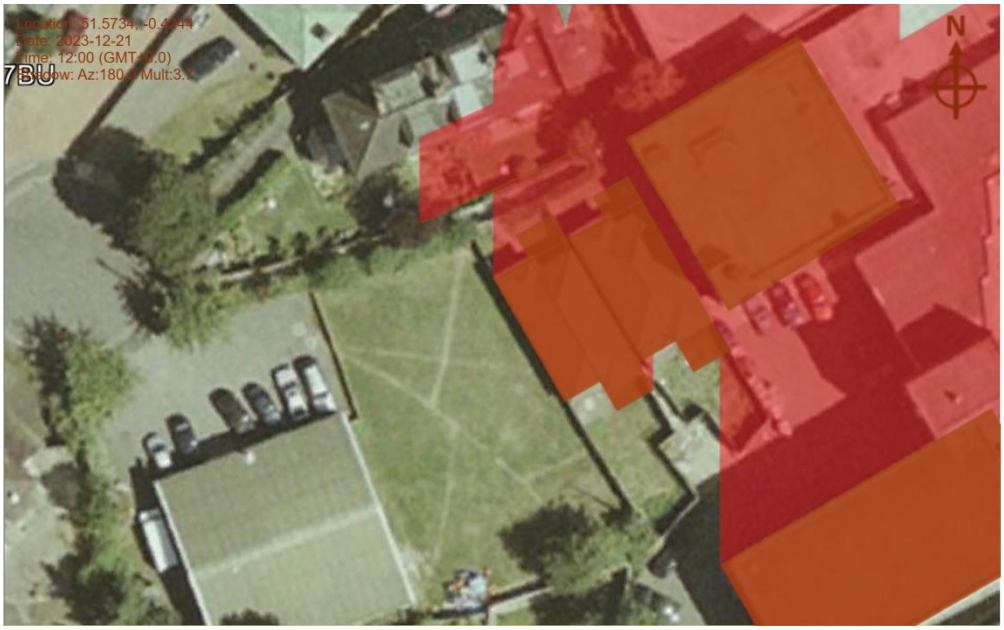
Case 2 and 3 for 21st June at 15:00 (existing top ; proposed bottom)





Case 2 and 3 for 21st December at 9:00 (existing top ; proposed bottom)





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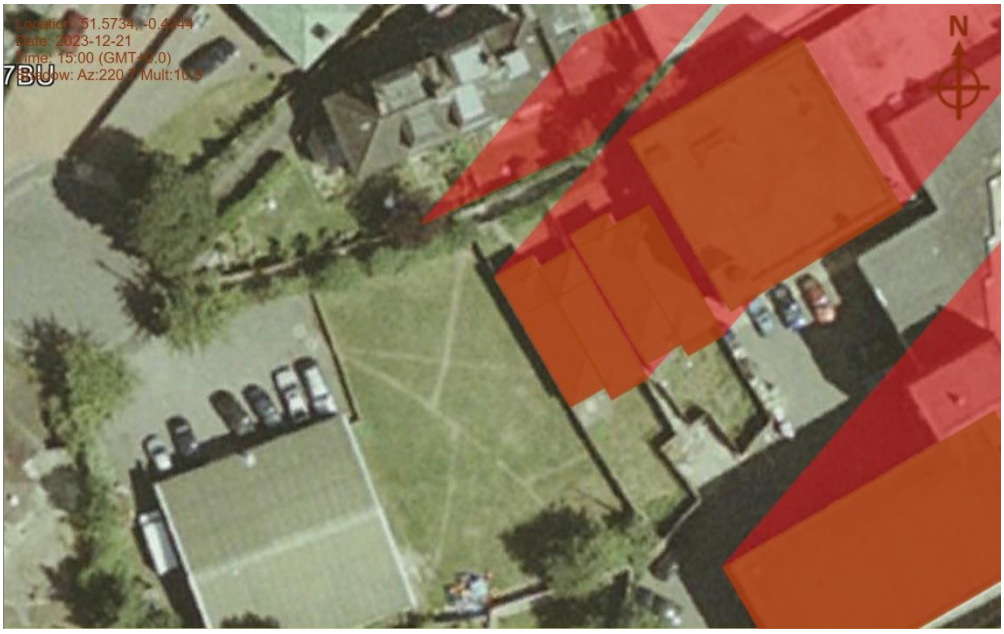

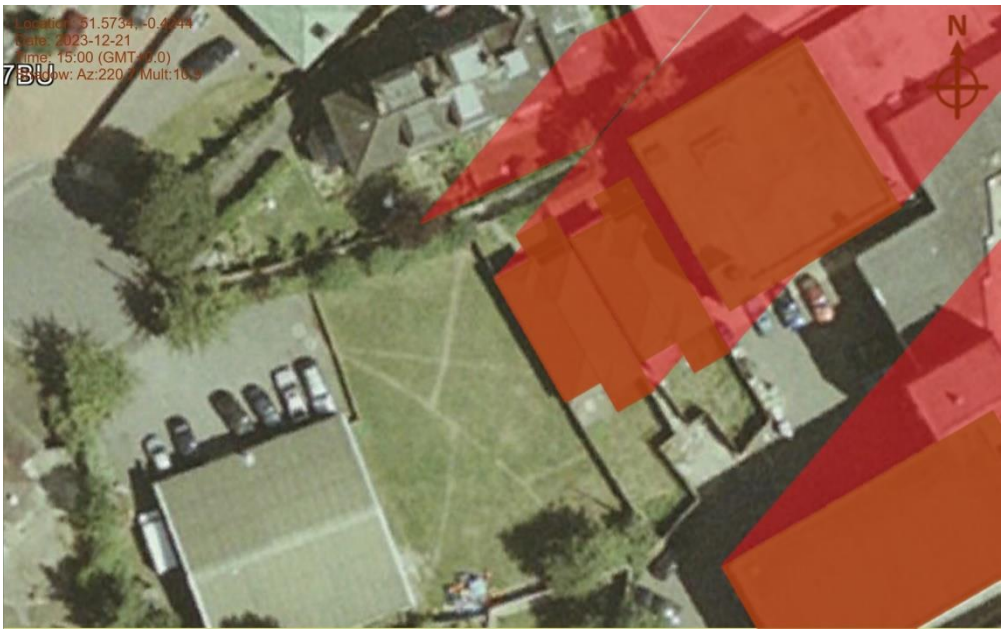

Case 2 and 3 for 21st December at 15:00 (existing top ; proposed bottom)