



Land at Church Lane, Moston,
Manchester, Greater Manchester,
M9 4HZ

BRE Daylight & Sunlight Assessment

New build C3 Residential
28no. Apartment Building

May 2022

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1. INTRODUCTION:

- 1.1 This BRE Daylight & Sunlight Assessment aims to support and explain the proposed erection of a three-storey building, including utilising the roof space and comprising of 28 apartments with associated parking and landscaping on the vacant land at Church Lane, Moston, Greater Manchester, M9 4HZ.
- 1.2 This assessment evaluates the potential environmental impact on daylight, sunlight and overshadowing by the proposed development on the vacant land at Church Lane, Moston, Greater Manchester, M9 4HZ.
- 1.3 Under the BRE guidelines, property developments are assessed for impacts on sun lighting, vertical sky component (VSC), annual probable sunlight hours (APSH) and average daylight factor (ADF). The results generated, clarify the impacts the development may have on its environment and on itself.
- 1.4 Checking the new development doesn't limit access to light from the sky by measuring or calculating the Vertical Sky Component (VSC) at the centre of a window where daylight is required.
- 1.5 Based on The BRE guidelines recommendations for a garden or amenity area to get adequate sunlight throughout the year, the percentage of assessed areas which can receive two hours or more of direct sunlight on March 21st will be calculated in both the baseline and proposed states.
- 1.5 Based on The BRE guidelines recommendations for a garden or amenity area to get adequate sunlight throughout the year, the portion of each space capable of receiving 2 hours of direct sunlight on March 21st will be calculated on the proposed private and public external amenity areas within a scheme.



Fig.1: 3D image for the proposed apartment building which will be 3 stories and roof storey.

2. SITE:

The site is located at Church Lane, Moston, Greater Manchester, M9 4HZ, as vacant land. Church Lane mainly comprises of Victorian terraced housing, but with some areas of significant redevelopment from the post-war period up to the present day.

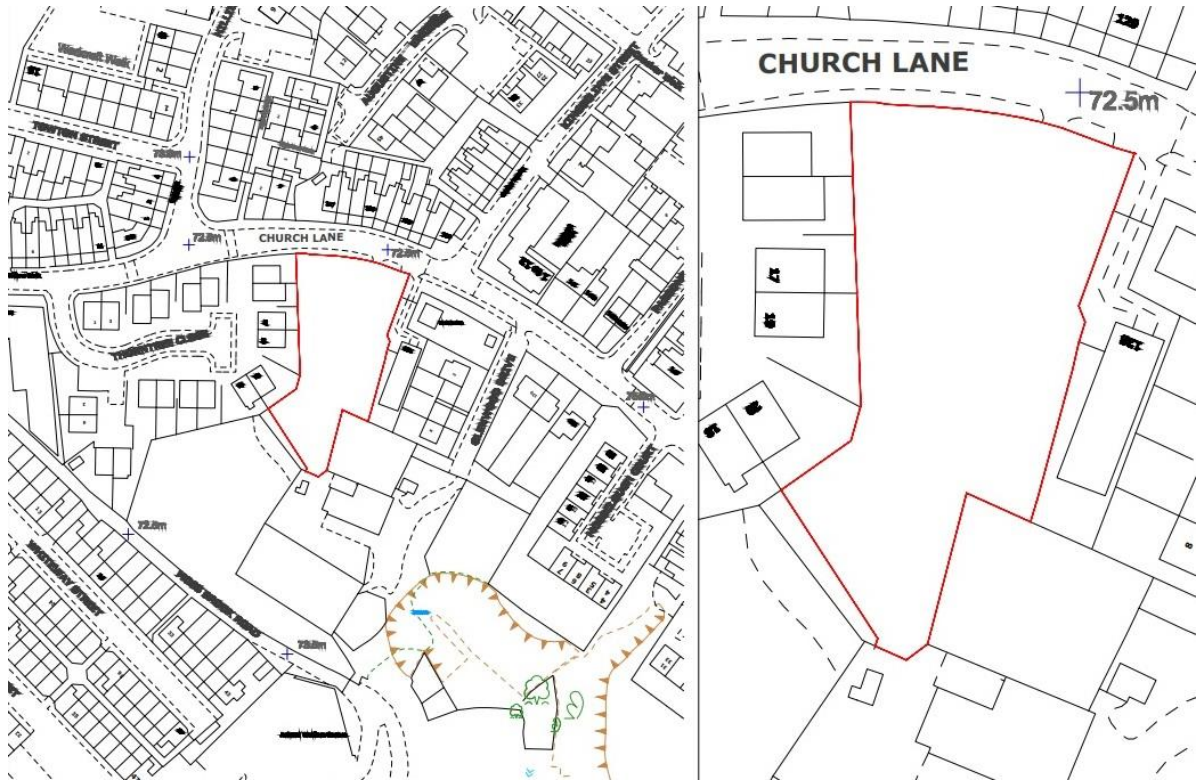


Fig.2: Location Plan indicating the ownership boundary of the site (outlined in red)

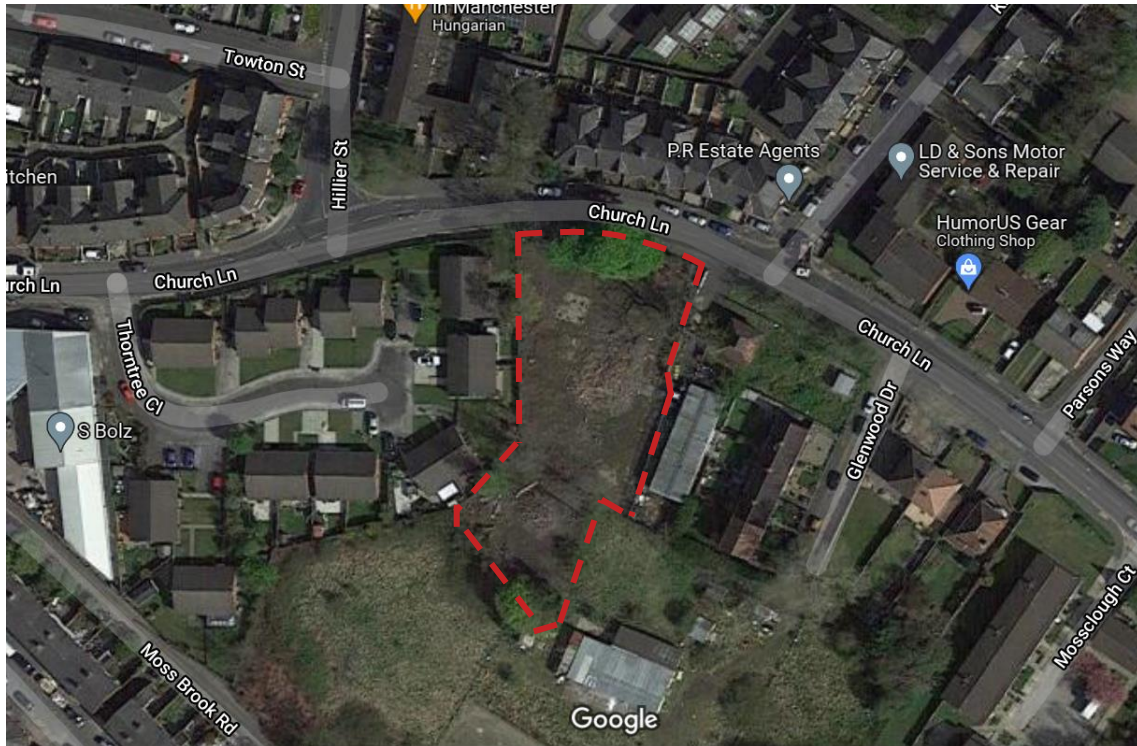


Fig.3: Aerial photograph of site, Google Maps (2022)

3. PROPOSAL

- 2.1 The new development is to be a residential apartment building in a single block addressing the existing neighbouring building lines, but with its main entrance accessible from a newly created private gated courtyard off the main road of Church Lane.
- 2.2 The design of the building is based on the following key principles:
 - The proposal aims to maximise the commercial potential of the site.
 - To bring the derelict brownfield site back into use.
 - To improve the quality of the local environment.
 - To create a focal point on the pivot of the road curve.
 - To improve the definition of the street edge.
- 2.3 The proposal is a new apartment building of 28 units arranged over three stories, with one roof storey. There are to be 25 two-bedroom and 3 one-bedroom units. To increase the green area, the building will be on 34.8% footprint on the total site area and the garden spaces will use 34.5%.

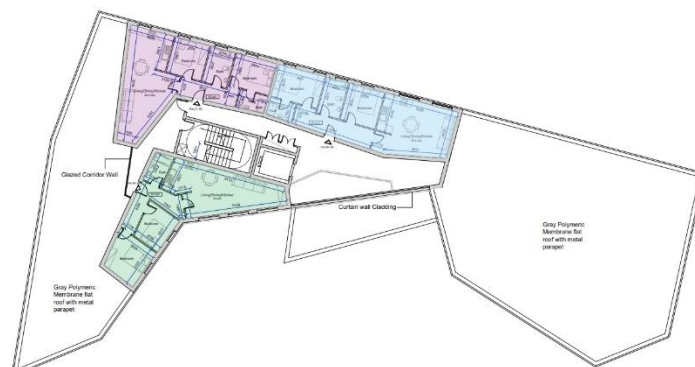
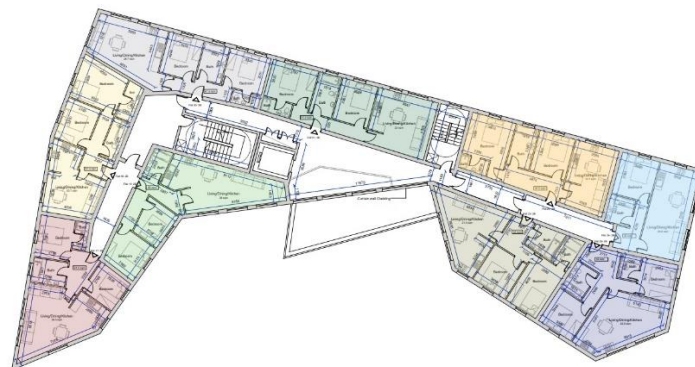
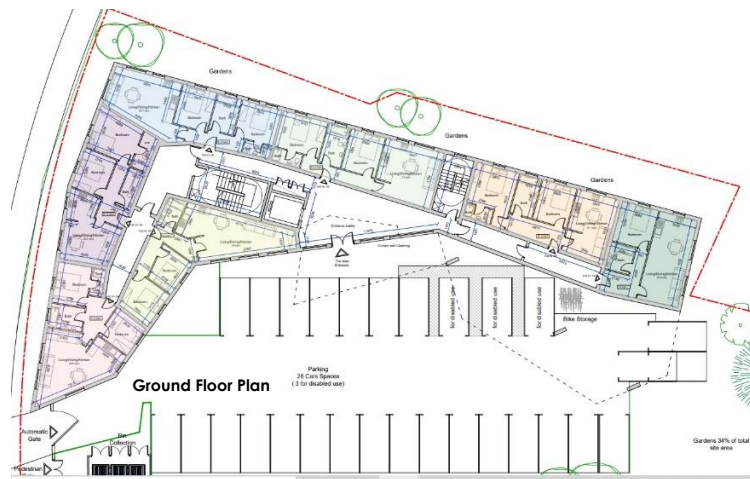


Fig.4: Proposed Floor Plans for the apartment building, HAD & Co 2022

- 2.4 To ensure that the appearance of the development is acceptable to Manchester City Council, and in the interests of the visual amenity of the area the statement will go through the materials, forms, scale, and processes that have formed the design for this development.
- 2.5 The access to and around the site and other transport considerations will also be discussed in the 'Access' section of this statement, as well as inclusive accessibility to ensure the development is suitable for everybody.





Fig. 5: 3D mock-up of proposed apartment building, HAD & Co 2022.

4. IMPACT TO VERTICAL SKY COMPONENT (VSC)

4.1 Checking the new development doesn't limit access to light from the sky by measuring or calculating the Vertical Sky Component (VSC) at the centre of a window where daylight is required Based on the following criteria:

If VSC is:

- At least 27%, then conventional window design will usually give reasonable results.
- Between 15% and 27%, then special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.
- Between 5% and 15%, then it is very difficult to provide adequate daylight unless very large windows are used.
- Less than 5%, then it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed

4.2 Measuring Criteria:

Measuring the effect of the proposed development will have on the VSC of an existing window, if the value drops below the 27% guideline and is less than 0.8 times the existing value, the proposed development could possibly have a noticeable impact on the amount of daylight received.

The VSC of the windows of the surrounding properties will be calculated both in the baseline state and as they would appear should the proposed development be constructed as proposed.

A comparison between these values will determine the level of impact.

4.3 Results:

The VSC of the windows of the surrounding properties have been calculated both in the baseline state and as they would appear should the proposed development be constructed as proposed. The results found that the proposed development will not affect Vertical Sky Component of the surrounding neighbours.

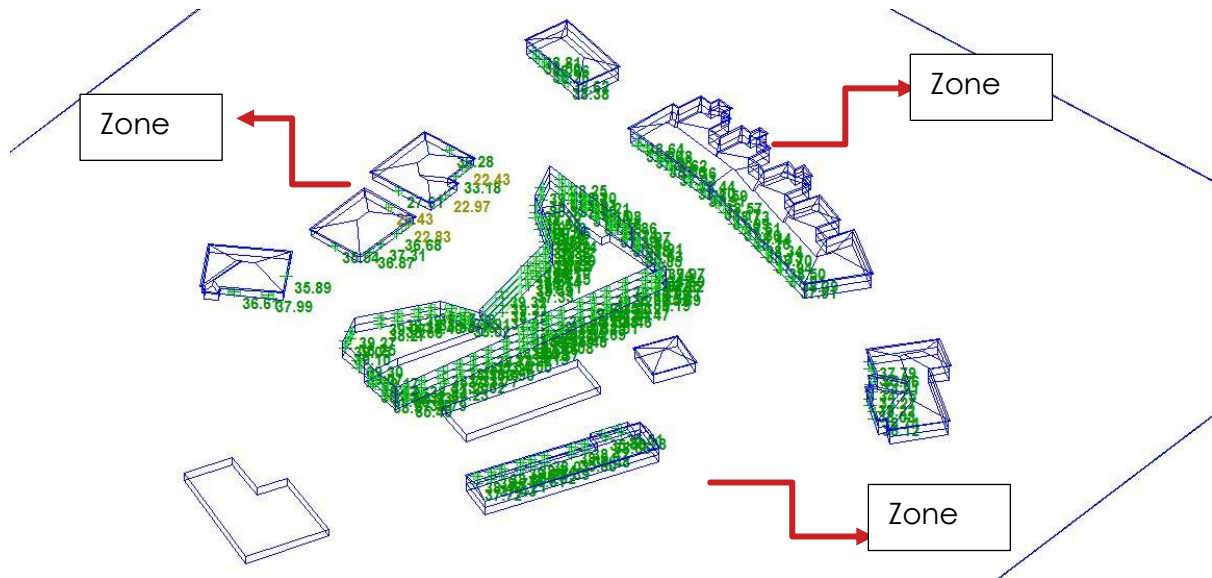


Fig.6: 3D model view of Church Lane indicating the windows which have been analysed, HAD & Co 2022.

Based on the BRE guidelines and the measuring criteria, the results are measured by the comparison between the values of the VSC on the existing surrounding neighbours before the new development of the apartment building (baseline) and the values of the VSC on the existing surrounding neighbours after the proposed development. This comparison will determine the level of impact of the new development.

The values of the VSC on the existing residential zone 01, in the west of the new apartment building, clarify that the new development will not affect the values of the VSC.

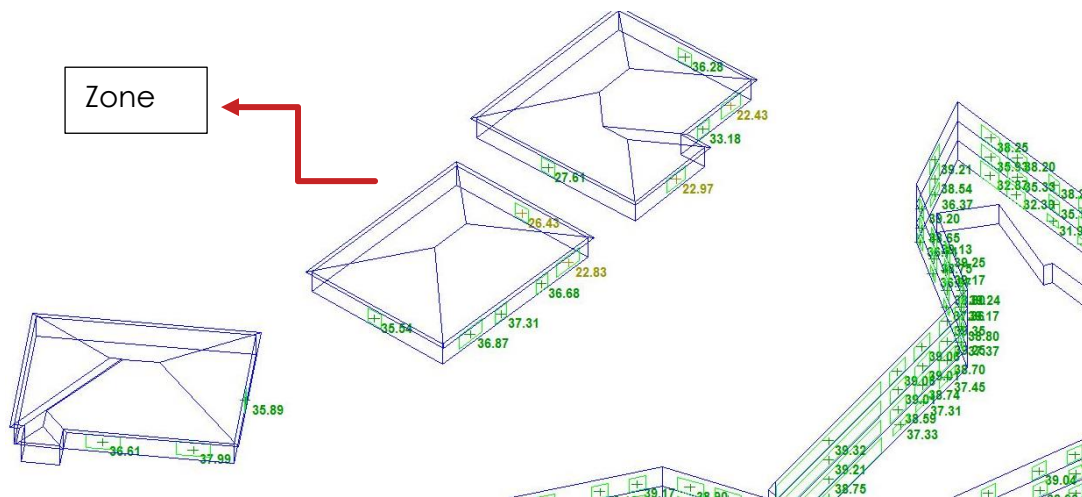


Fig.7: 3D model view of zone 01 indicating the windows which have been analysed, HAD & Co 2022.

Num.	Zone	Surface	Opening	V.S.C	Existing	Status
147	BS0000001	3	3	36.68	27.40	Pass
148		4	0	35.54	34.39	Pass
149	BS0000000	7	0	37.99	36.29	Pass
150			1	36.61	35.46	Pass
151		8	0	35.89	30.35	Pass
152		5	0	37.91	29.93	Pass
153			1	37.98	31.65	Pass
154			2	38.06	30.48	Pass
155			3	37.90	31.99	Pass
156			4	37.93	29.93	Pass
157			5	38.10	29.37	Pass
158			0	38.17	29.76	Pass
166			3	27.61	27.09	Pass
167			4	22.97	16.05	Pass2
168		6	0	33.18	24.84	Pass
169			1	22.43	16.80	Pass2
170		7	0	36.28	35.90	Pass

Fig.8: The comparison of the VSC in the existing and proposed for Zone 01, HAD & Co 2022.

The values of the VSC on the existing residential zone 02, in the North of the new apartment building, clarify that the new development will not affect the values of the VSC.

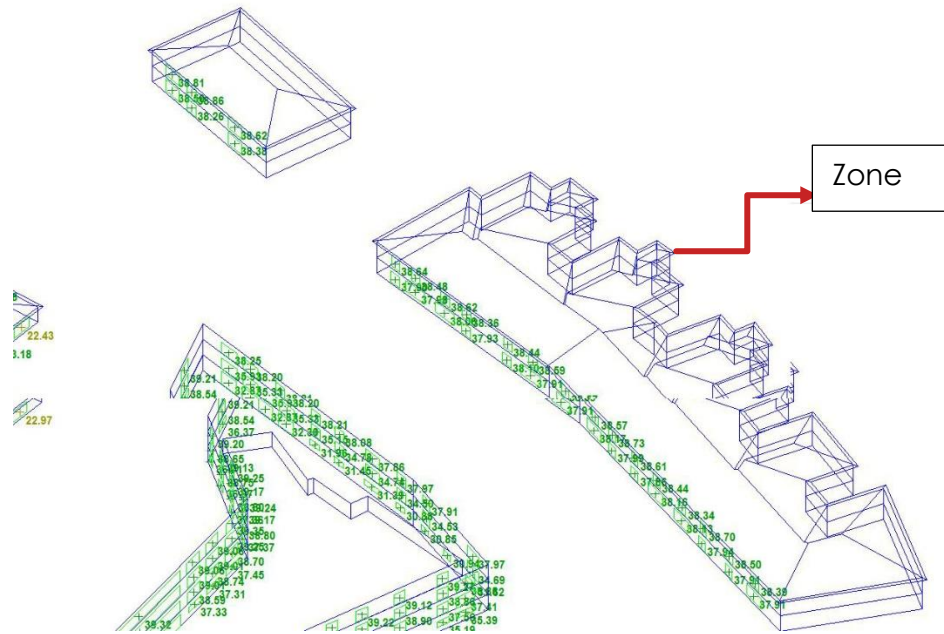


Fig.9: 3D model view of zone 02 indicating the windows which have been analysed, HAD & Co 2022.

Num.	Zone	Surface	Opening	V.S.C	Existing	Status
159	BS000007	6	1	37.91	34.08	Pass
160			2	38.16	31.58	Pass
161			3	38.13	32.12	Pass
162			4	37.99	29.61	Pass
163			5	37.86	30.15	Pass
164			6	37.94	32.55	Pass
165	BS00000F	6	7	37.91	33.14	Pass
177			0	38.57	32.83	Pass
178			1	38.44	33.65	Pass
179			2	38.34	34.72	Pass
180			3	38.39	35.73	Pass
181			4	38.50	35.41	Pass
182	BS00000F	6	5	38.70	34.96	Pass
183			6	38.61	33.03	Pass
184	BS000006	4	7	38.73	33.05	Pass
185			0	38.50	37.73	Pass
186			1	38.38	37.25	Pass
187	BS000011	4	2	38.26	37.42	Pass
203			0	38.81	38.20	Pass
204			1	38.62	37.89	Pass
205	BS000011	4	2	38.86	38.20	Pass

Fig.10: The comparison of the VSC in the existing and proposed for Zone 02, HAD & Co 2022.

The values of the VSC on the existing residential zone 03, in the East of the new apartment building, clarify that the new development will not affect the values of the VSC.

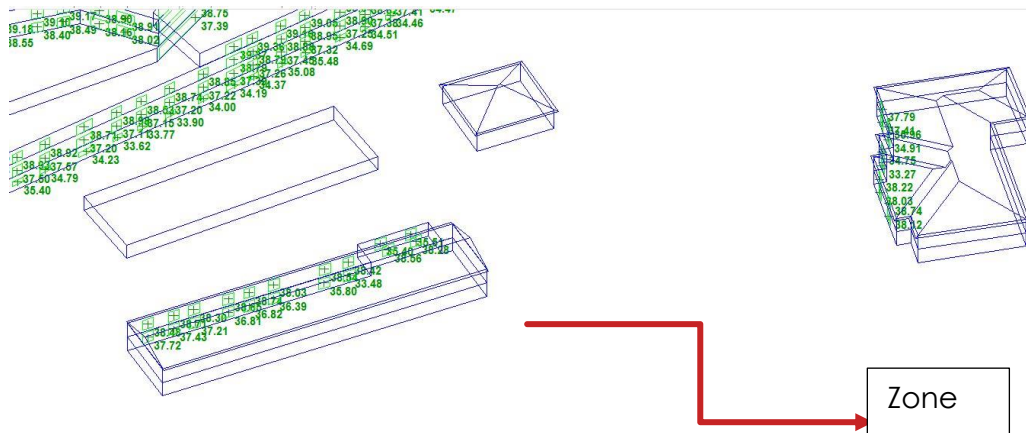


Fig.11: 3D model view of zone 03 indicating the windows which have been analysed, HAD & Co 2022.

Num.	Zone	Surface	Opening	V.S.C	Existing	Status
189	BS000008	8	1	38.03	36.98	Pass
190		10	0	33.27	32.31	Pass
191		12	0	37.41	36.20	Pass
192			1	34.91	33.56	Pass
193			0	37.72	34.37	Pass
194	BS000009	7	1	37.43	33.60	Pass
195			2	37.21	33.45	Pass
196			3	36.81	33.06	Pass
197			4	36.82	32.56	Pass
198			5	36.39	32.25	Pass
199			6	35.80	31.49	Pass
200			7	33.48	28.77	Pass
201	BS000009	9	0	35.51	29.85	Pass
202			1	35.40	29.94	Pass
207	BS000012	8	1	38.22	37.85	Pass
208		10	0	34.75	33.53	Pass
209		12	0	37.79	37.19	Pass
210			1	35.96	35.26	Pass
211			0	38.48	36.05	Pass
212			1	38.71	35.81	Pass
213	BS000010	2	2	38.30	35.56	Pass
214			3	38.65	35.51	Pass
215			4	38.74	35.28	Pass
216			5	38.03	34.86	Pass
217			6	38.54	34.29	Pass
218			7	38.42	34.45	Pass
219			8	38.56	34.72	Pass
220			9	38.28	34.43	Pass

Fig.12: The comparison of the VSC in the existing and proposed for Zone 02, HAD & Co 2022.

The values of the VSC on the existing residential zone 01, 02 and 03 surrounding the new apartment building indicating that the new development will not affect the values of the VSC.

5. IMPACT TO SUNLIGHTING IN EXISTING GARDENS:

5.1 The BRE guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st.

5.2 If as a result of a new development, an existing garden does not meet the above, and the area which can receive two hours of sun on March 21st is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable.

5.3 Measuring Criteria:

To calculate this, the percentage of assessed areas which can receive two hours or more of direct sunlight on March 21st will be calculated in both the baseline and proposed states. A comparison between these values will determine the level of impact.

A visual representation of these readings is also produced as 2-hour false colour plans on and in the hourly shadow diagrams for March 21st.

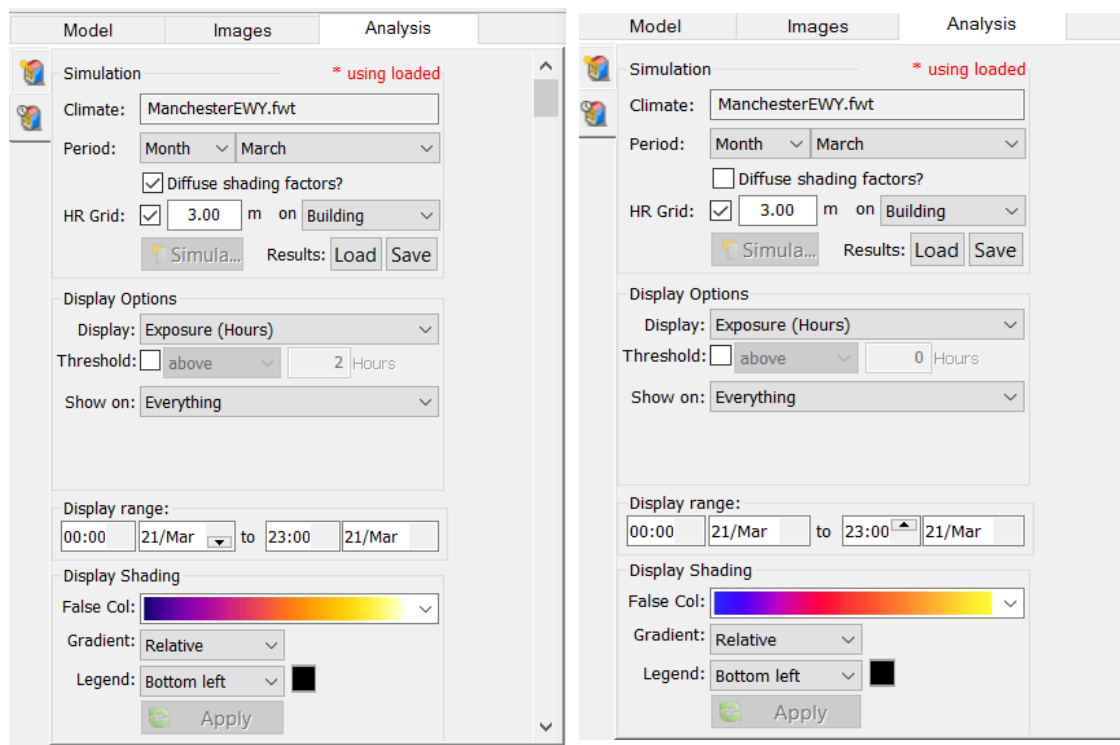


Fig.13: The setting of the analysis on IES Virtual Environment software to calculate the hourly shadow diagrams for March 21st, HAD & Co 2022.

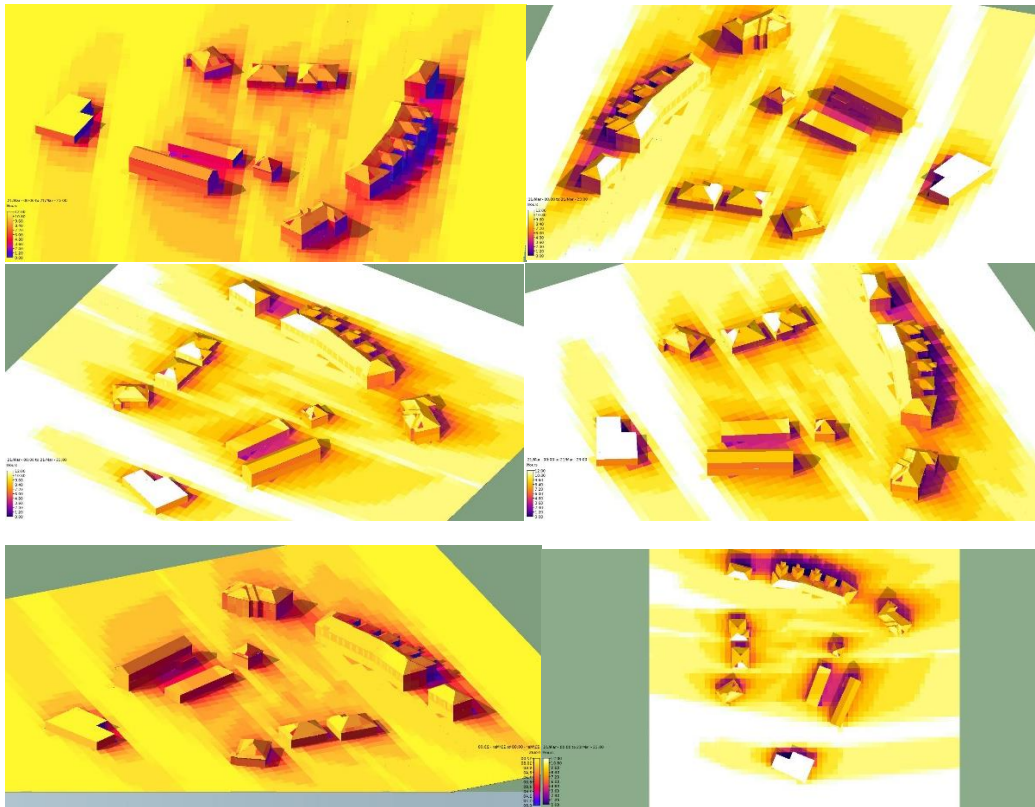


Fig.14: A visual representation of these readings is also produced as 2-hour false colour plans on and in the hourly shadow diagrams for March 21st (the Baseline).

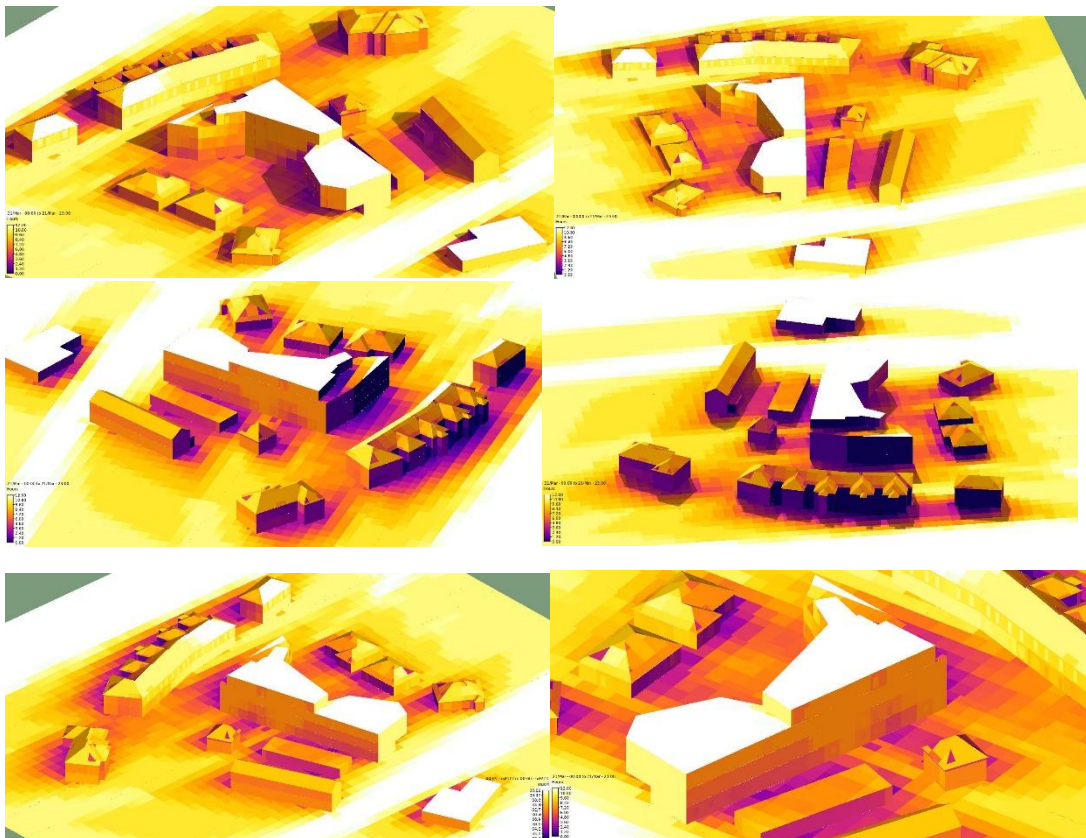
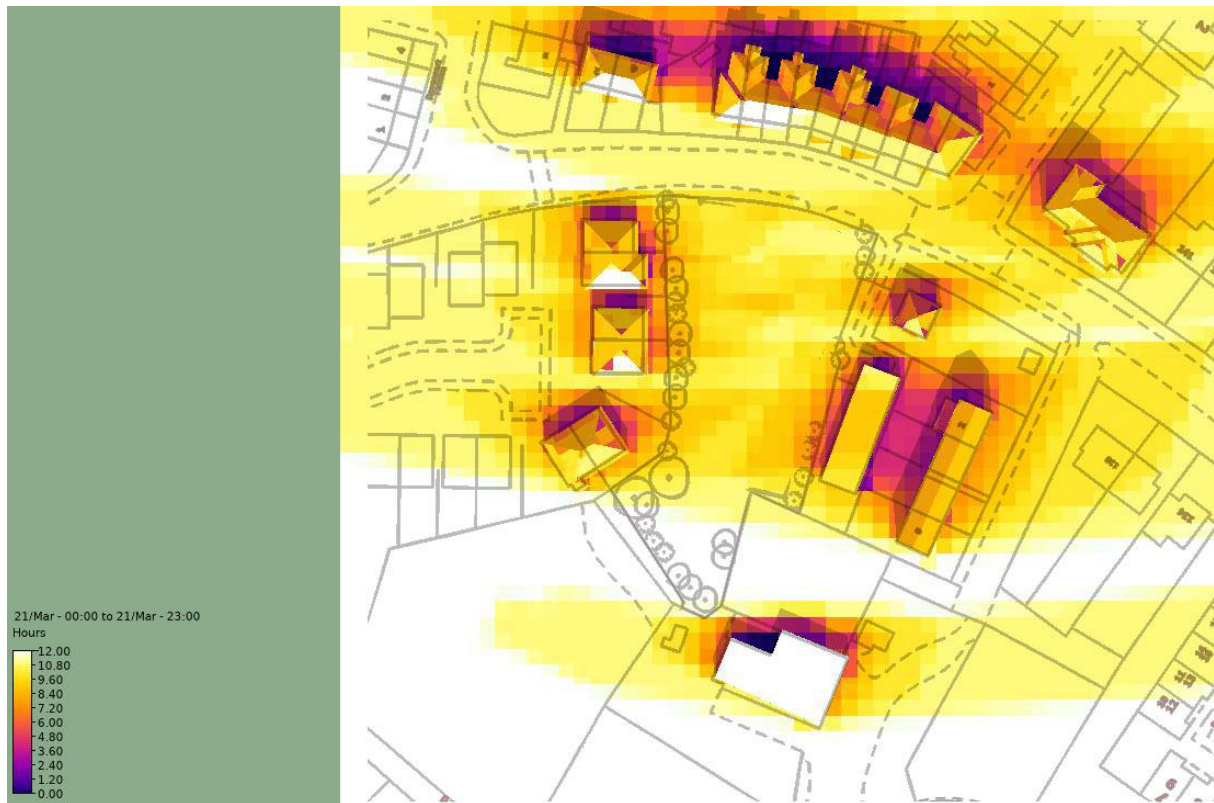


Fig.15: A visual representation of these readings is also produced as 2-hour false colour plans on and in the hourly shadow diagrams for March 21st (the proposed).

To calculate this, the percentage of assessed areas, which can receive two hours or more of direct sunlight on March 21st, will be calculated in both the baseline and proposed states. A comparison between these values will determine the level of impact.



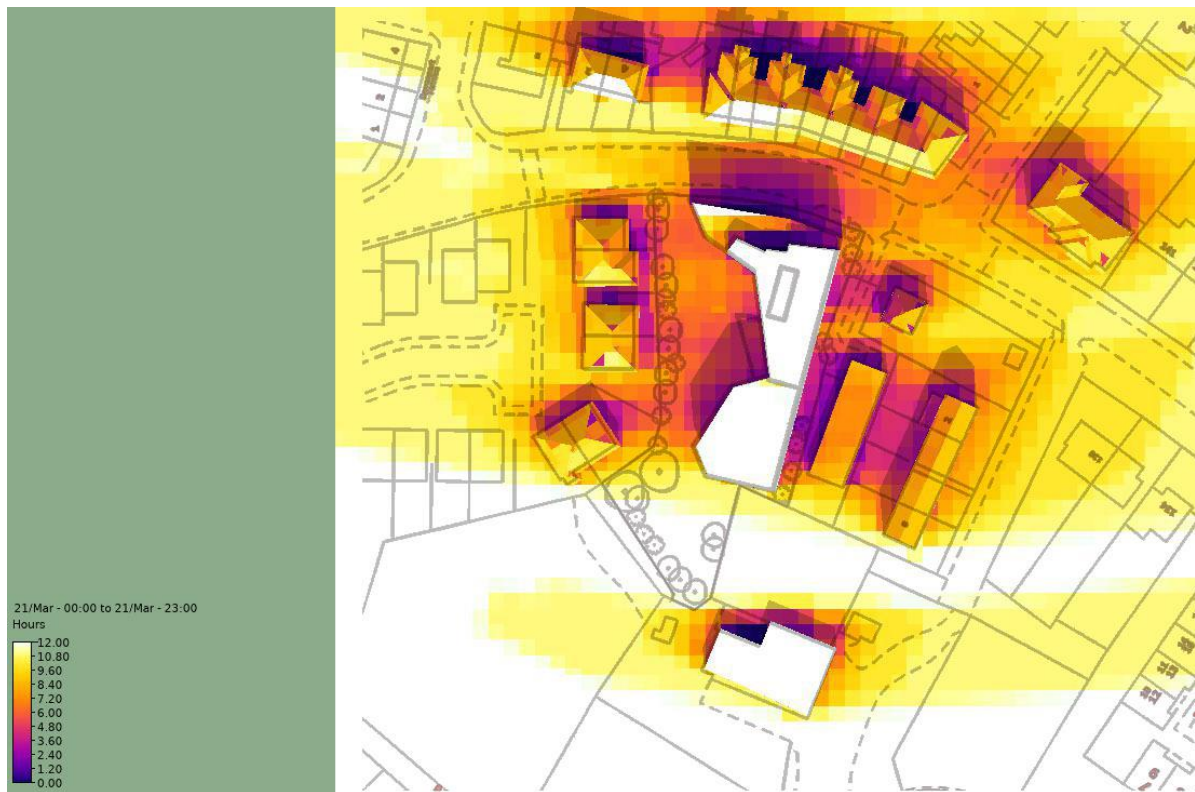


Fig.16: A visual representation of these readings is also produced as 2-hour false colour plans on and in the hourly shadow diagrams for March 21st (comparison between the baseline and the proposed).

The values of the analysis on the existing gardens surrounding the new apartment building indicating that the new development will meet the BRE guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st.

6. SUNLIGHTING IN PROPOSED OUTDOOR AMENITY AREAS:

Based on the BRE guidelines recommendation that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should be capable of receiving two hours or more of direct sunlight on March 21st.

The proposed private and public external amenity areas within a scheme, to determine the portion of each space capable of receiving 2 hours of direct sunlight on March 21st will be calculated.

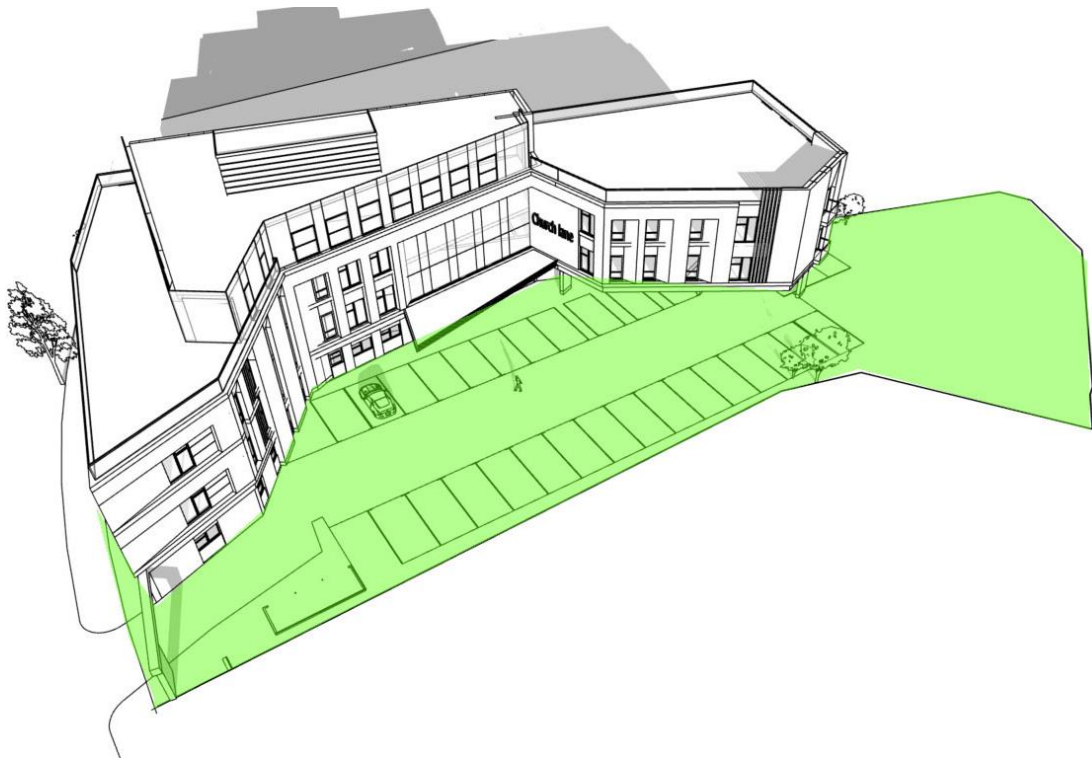
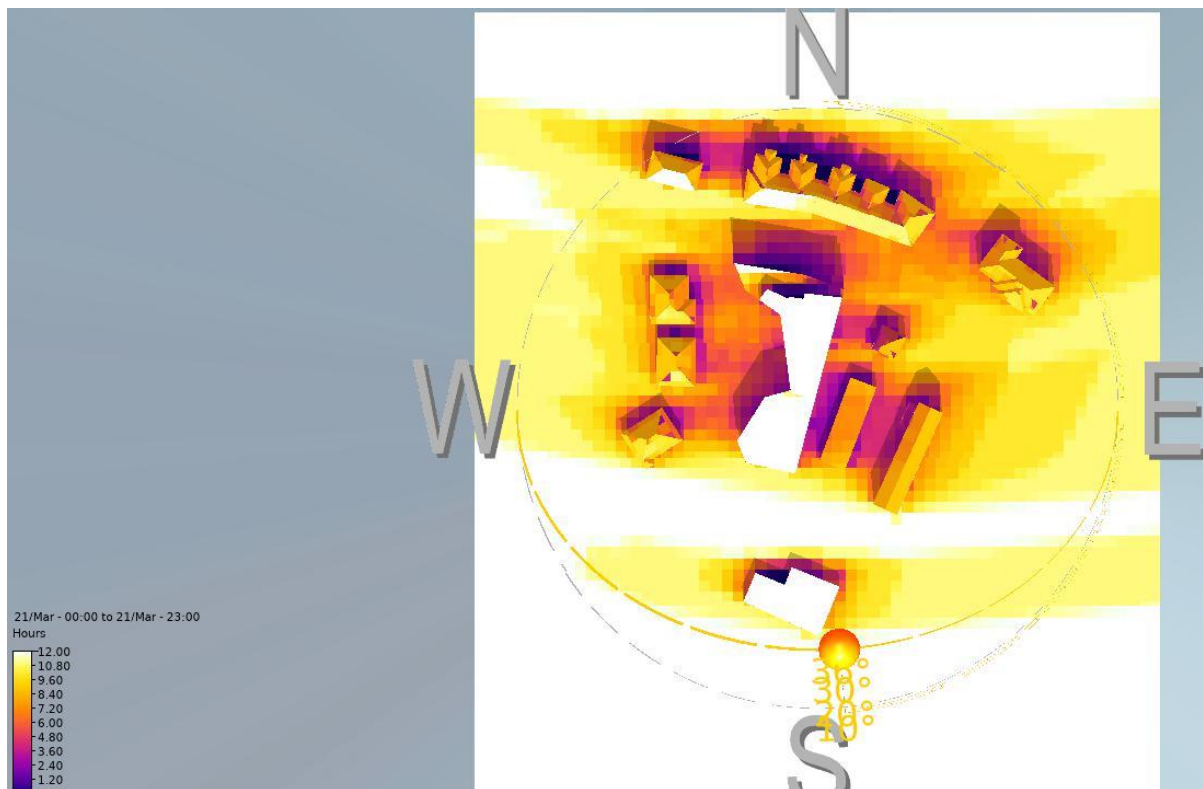


Fig.17: The proposed private and public external amenity areas in the new development highlighted in green, HAD & Co 2022.



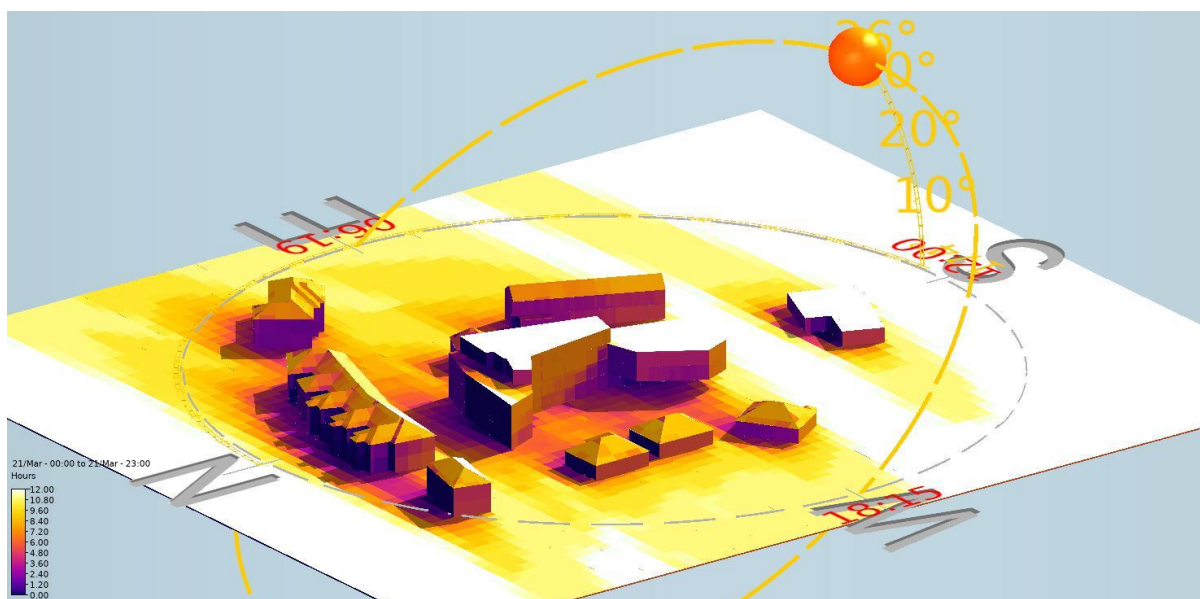


Fig.18: A visual representation of these readings is also produced as 2-hour false colour plans on and in the hourly shadow diagrams for March for the proposed private and public external amenity areas.

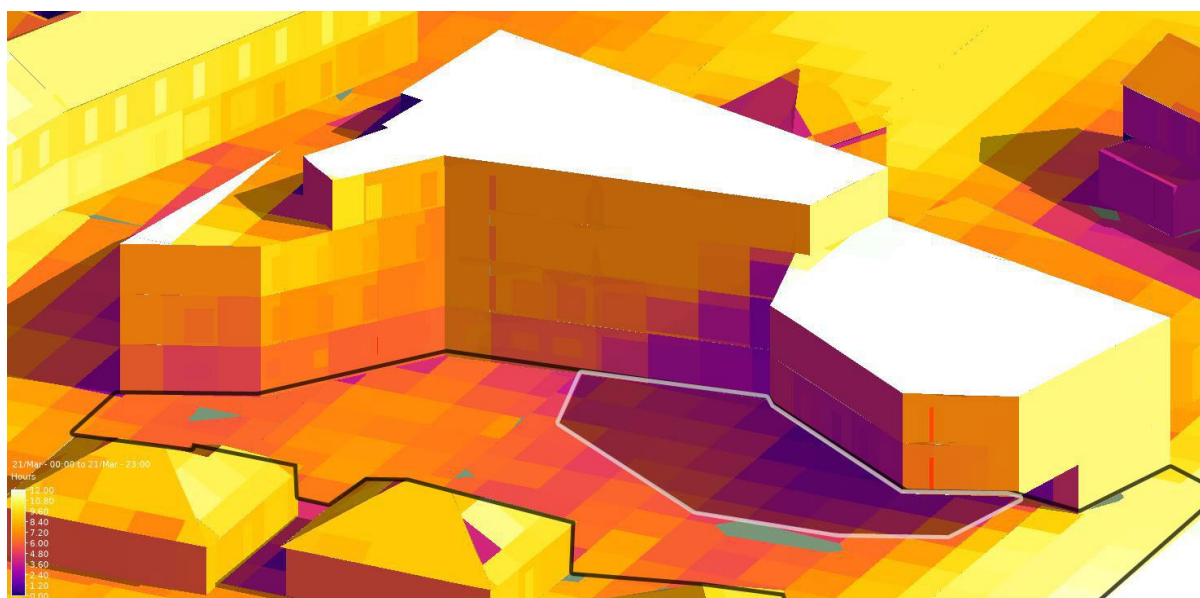


Fig.19: A visual representation of the proposed private and public external amenity areas indicated the hourly shadow diagrams for March.

The values of the analysis on the proposed private and public external amenity areas in the new development indicating that the new development will meet the BRE guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st.

7 CONCLUSION

7.1 Following the BRE guidelines the proposed redevelopment has been designed with the end user in mind. The design aims to have minimal detrimental impact on the site and surrounding environment and respects the right of light for the surrounding neighbours. The analysis found that the new development will not affect the values of the VSC for the surrounding residential buildings and the new development will meet the BRE guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st for the existing gardens and the proposed private and public external amenity areas in the new development.



Fig.20: Rendered Images of the proposed apartment building in Church Lane, HAD & Co 2022.