

To whom it may concern

Re: Overshadowing Assessment for the Proposed Development TSL Merseyside.

GIA have been instructed to undertake an overshadowing assessment for the Reserved Matters Application of the TSL Merseyside outline planning permission in relation to the neighbouring gardens to the north of the Site. The relevant gardens has been assessed in accordance with the BRE sun hours on ground methodology described in more detail on the following page. Figure 01 highlights the areas assessed and Figures 2 and 3 show the existing scenario and proposed scenario as assessed.

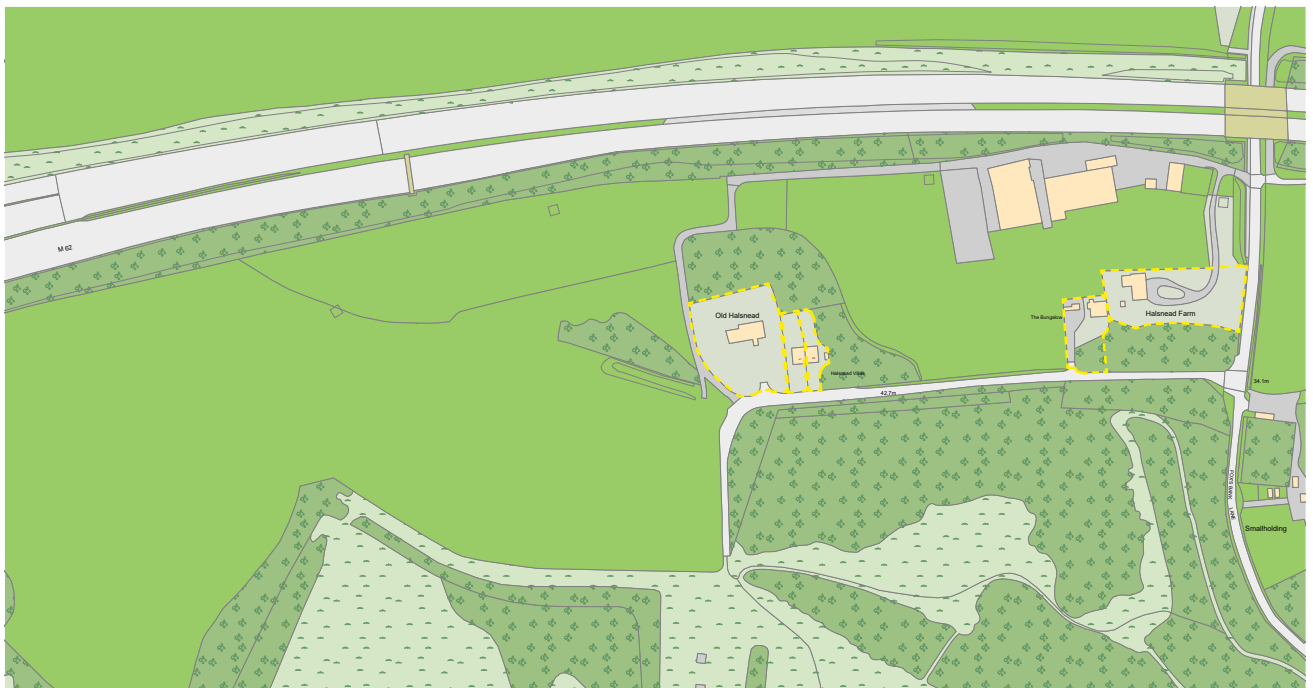


Fig. 01: Existing Site OS Map

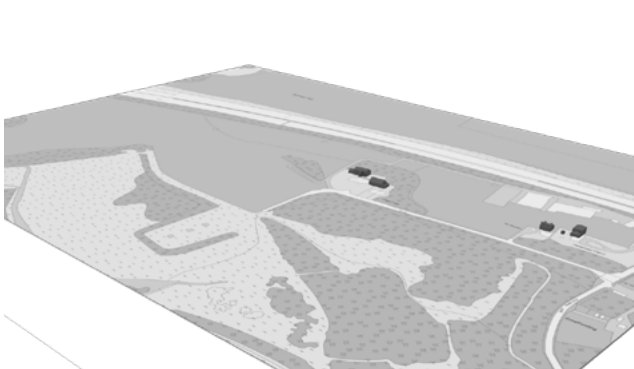


Fig. 02: Existing Scenario

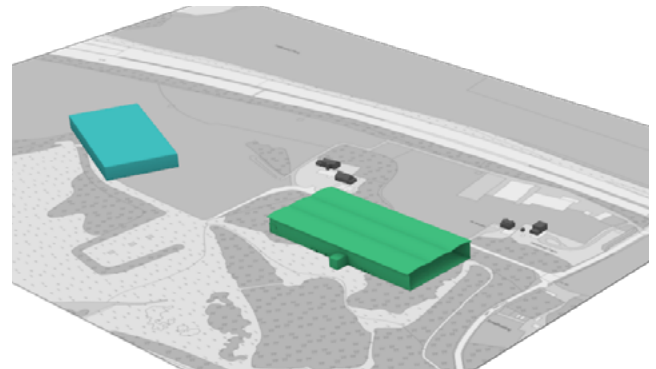
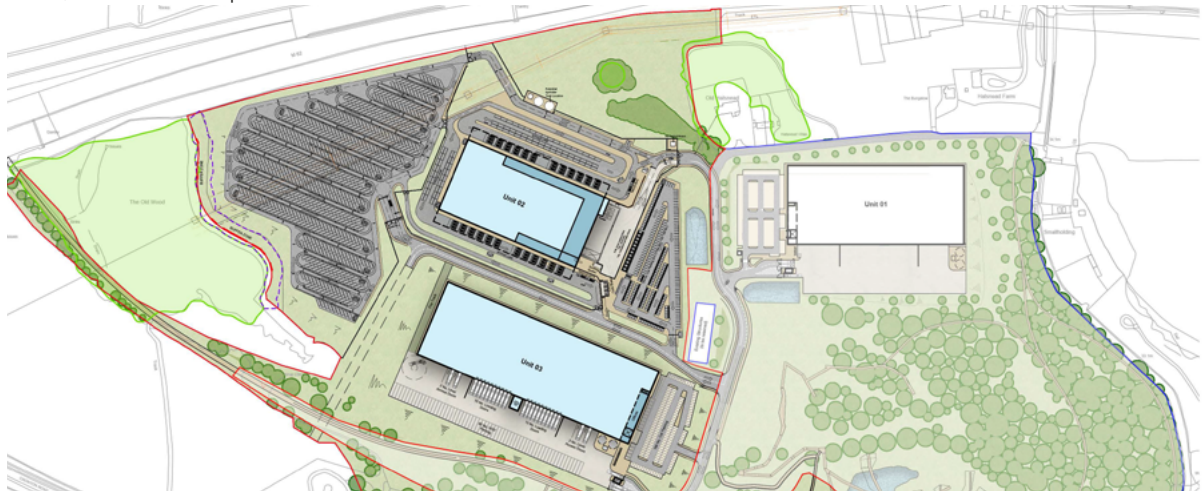


Fig. 03: Proposed Scenario (approved elements are shown in green, RMA elements in cyan)

We note that the massing of Unit 03 has not been included within the analysis. Owing to its scale and distance from the neighbouring gardens, shadows from Unit 03 would not reach the gardens and so do not require technical assessment. Any additional shadow upon the gardens is generated by Unit 01 (permitted in detail) and Unit 02 (as proposed) of the masterplan.



In order to assess potential overshadowing of the gardens, the following has been undertaken:

- Preparation of a 3d digital model of the surrounding based on OS information and site imagery (google maps), to portray the levels of sunlight enjoyed within the relevant gardens in the existing condition and proposed conditions;
- Insertion of a 3d digital model of the proposed RMA scheme provided by UMC Architects;
- Technical assessment using the BRE Sun Hours on Ground test in the existing and proposed scenarios; and
- Technical assessment of the retained sun exposure within the garden on 21st March (spring equinox), 21st June (summer solstice) and 21st December (winter solstice) in the existing and proposed scenarios.

As per the assessment of the illustrative application, GIA note that whilst there are a number of existing trees within and adjacent to the relevant gardens, these have not been taken into consideration within the assessment.

BRE Guidelines

The BRE Guidelines 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)"*

Sun Hours On Ground (SHOG)

In relation to the levels of sunlight within areas of amenity such as gardens, the BRE Guidelines states that for a space to appear well sunlit at least half the area should receive at least two hours of sunlight on 21st March, which is the equinox. All areas are therefore assessed on this date and a percentage area seeing at least two hours of sunlight is presented.

In understanding the impact of a proposed development, the BRE Guidelines states:

"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."

Overshadowing Assessment of Neighbouring Garden

The following Sun Hours on Ground assessments demonstrates that all gardens assessed retain well in excess of 50% of their areas with two or more hours of direct sunlight on the 21st March, as shown in yellow below. Following implementation of the proposed buildings, there would be no change in Sun Hours on Ground and the retained levels remain in excess of the BRE criteria of 50%. As such, any loss in sunlight to the gardens to the north are considered unlikely to be noticeable.

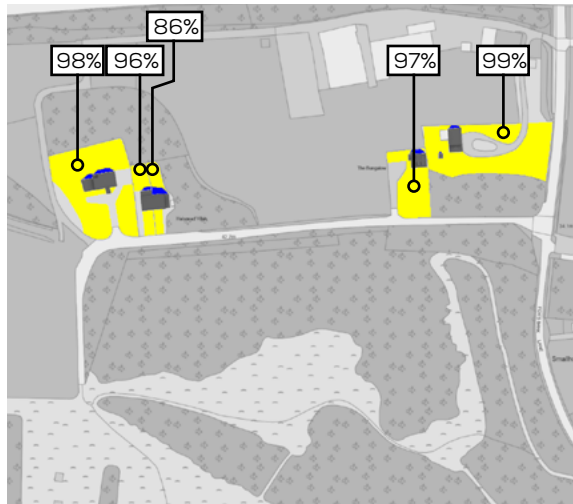


Fig. 04: SHOG - Existing Scenario

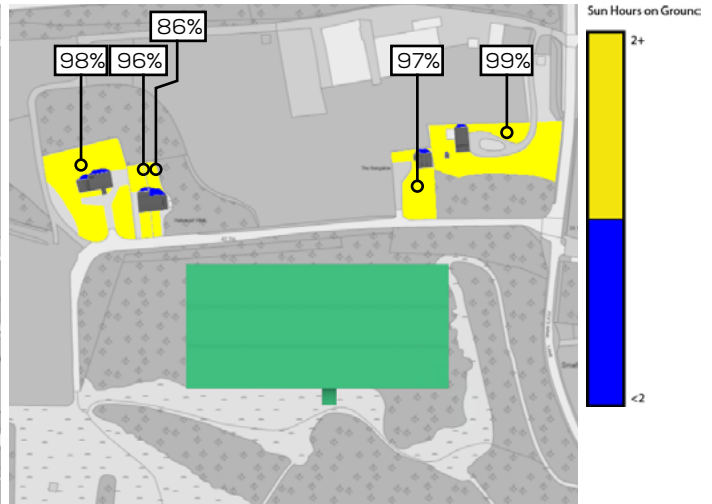


Fig. 05: SHOG - Proposed Scenario

Furthermore, the sun exposure images (Figures 06-11) on the following page show no material change in the amount of sunlight received within the gardens on the 21st March and 21st June. On the 21st March (also applicable for 22nd September - autumn equinox) and 21st June the gardens retain in excess of six hours of sunlight within the vast majority of their area, with a small area of self-shading in both the existing and proposed scenarios to the north of their properties.

On the 21st December there is a change in sun exposure to three of the gardens assessed: Old Halsnead, The Bungalow and Halsnead Farm, this is predominantly a function of the very low sun-angle in the winter months. These changes in sunlight are however due to the permitted massing of Unit 01 as evidenced in the overshadowing assessment undertaken for the masterplan application and so there is no impact on the gardens resulting from the RMA scheme.

Owing to all gardens assessed being well in excess of the BRE criteria following implementation of the proposed development, all gardens retaining very good levels of sun exposure at the equinoxes and summer solstice, and the impacts seen on the winter solstice being a result of the approved Unit 01 massing, we conclude that the proposed RMA scheme for Units 02 and 03 does impact the gardens to the north in terms of overshadowing.

Yours sincerely,
For and on behalf of GIA,

K Stewart

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SUN EXPOSURE
TOTAL HOURS

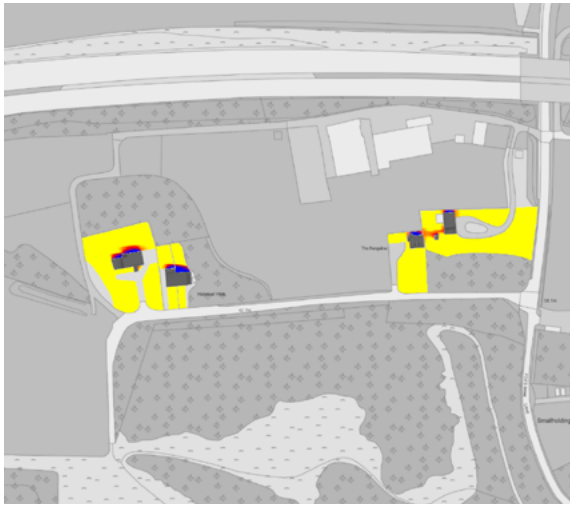
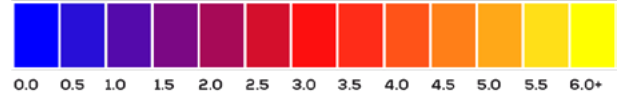


Fig. 06: 21st March Sun Exposure - Existing Scenario*



Fig. 07: 21st March Sun Exposure - Proposed Scenario*

21st MARCH
(SPRING EQUINOX)
LIVERPOOL

Latitude: 53.4
Longitude: 3.0
Sunrise: 06:11 GMT
Sunset: 18:27 GMT
Total Available Sunlight:
12hrs 16mins



Fig. 08: 21st June Sun Exposure - Existing Scenario*



Fig. 09: 21st June Sun Exposure - Proposed Scenario*

21st JUNE
(SUMMER SOLSTICE)
LIVERPOOL

Latitude: 53.4
Longitude: 3.0
Sunrise: 03:43 GMT
Sunset: 20:44 GMT
Total Available Sunlight:
16hrs 1mins



Fig. 10: 21st December Sun Exposure - Existing Scenario*

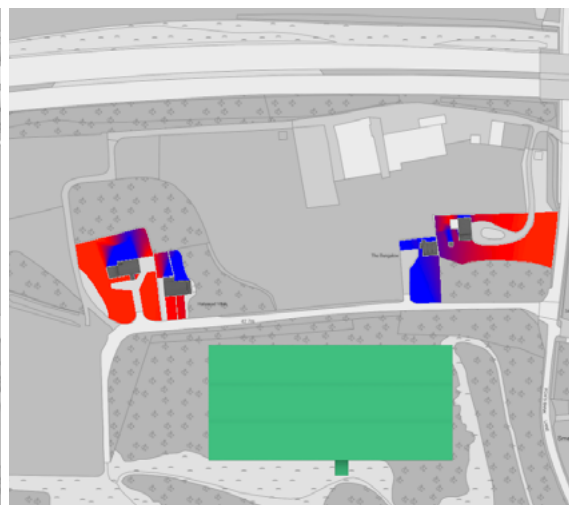


Fig. 11: 21st December Sun Exposure - Proposed Scenario*

21st DECEMBER
(WINTER SOLSTICE)
LIVERPOOL

Latitude: 53.4
Longitude: 3.0
Sunrise: 08:25 GMT
Sunset: 15:54 GMT
Total Available Sunlight:
7hrs 29mins