s p planning

32 Laurier Road
Dartmouth Park
London NW5

Daylight, Sunlight and Overshadowing Assessment

AMENDED SCHEME

25 September 2017
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1.0 INTRODUCTION

1.1 This report provides a quantitative assessment of the effect of the proposed development at the above address on natural light reaching windows serving residential properties to the side and rear. It also considers the effect of the proposal on sunlight reaching the space at the side of St Mary Brookfield Hall which is used as outdoor space by a nursery.

1.2 The assessment has been undertaken in full accordance with the guidelines set out in the Building Research Establishment (BRE) document *"Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice"* (BR209, 2011) (the "BRE Guide"). The introduction states:

> *"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design"*

1.3 This assessment has been carried out using the application drawings 147 1202 P1; 1203 P3; 1204 P3; 1210 P3; 1211 P3; 1213 P3; 1214 P3; 1215 P3; 1220 P3; 1221 P3 and 1222 P3 prepared by Richard Keep Architects. It is supported by analytical plots attached in the appendices.

2.0 SCOPE OF ASSESSMENT

Guidance

2.1 The BRE guide is primarily aimed at the protection of natural light to permanent residential accommodation. With regard to the effect of new development on daylight to neighbouring properties the guide states at paragraph 2.2.2:

> *The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation area and garages need not be analysed.*

2.2 Similarly in respect of the effect of new development on sunlight paragraph 3.2.3 states:

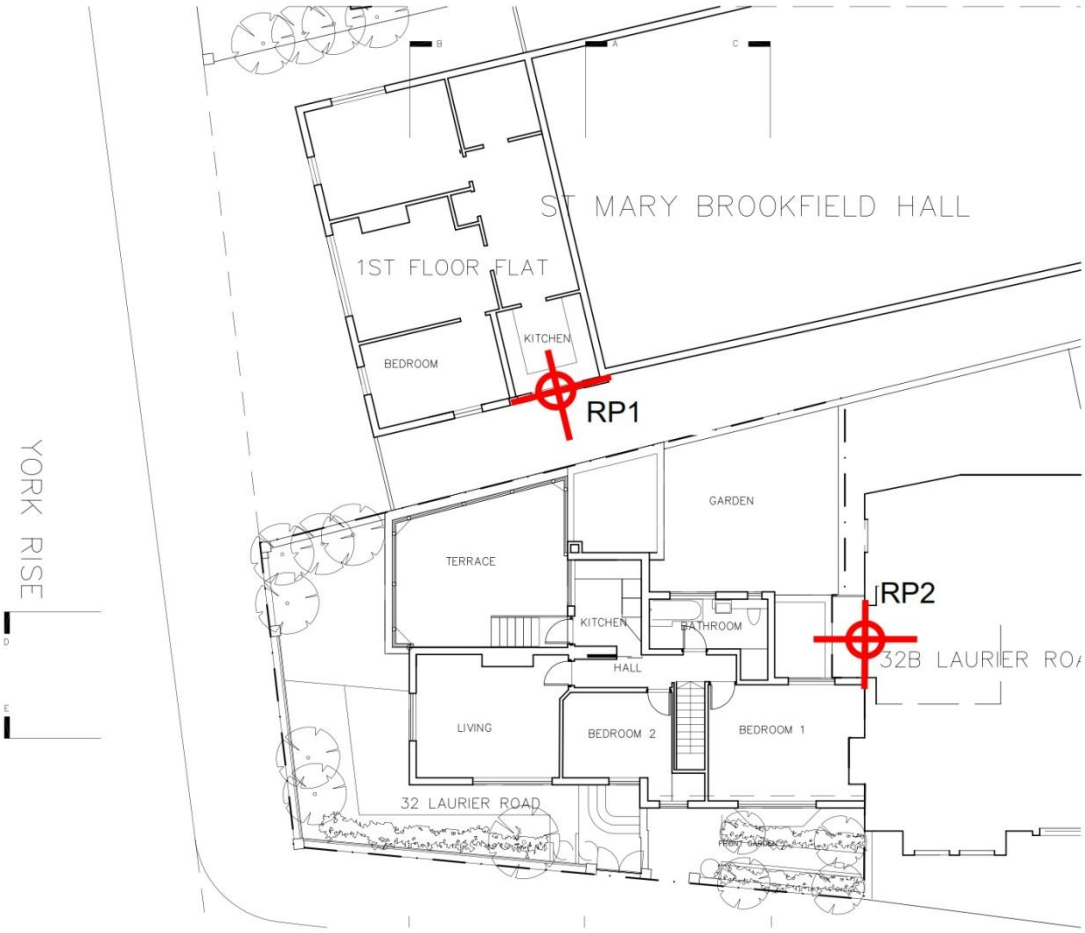
> *To assess the loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90^0 of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.*

Neighbouring properties

2.3 St Mary Brookfield Hall to the north of the application site includes residential accommodation on the upper floor. This accommodation includes a kitchen, with a window facing the application site, and a bedroom with two windows, one facing the road and a secondary one facing the application site. It is therefore considered necessary to solely assess the effect of the proposal on the kitchen window (RP1).

2.4 There is a large first floor level window in the flank elevation of 32b Laurier Road (RP2) which provides the sole source of natural light to a living room and therefore requires assessment.

2.5 The locations of the windows are shown on the plan below. As the proposed development would be to the south of RP1 and south west of RP2 both windows require daylight and sunlight testing.



Reference point locations

3.0 DAYLIGHT

Methodology

3.1 The level of daylighting received by a window is quantified in terms of its Vertical Sky Component (VSC), which represents the amount of vertical skylight falling on a vertical window. Plots for the assessment of the VSC are derived from the distance of physical obstructions from reference point and their relative height above the reference point. The heights above ground level and locations of the surrounding buildings and the proposed development have been taken from the survey and application drawings, photographs of the surroundings and aerial photography.

3.2 VSC can be calculated either using the skylight indicator and guidance provided in Appendix A of the BRE Guide or by using the Waldram diagram as explained in Appendix B of the Guide. In this case the latter approach has been used and the resultant plots for the apertures assessed are provided at Appendix 1 of this report. These graphically depict the impact of existing and proposed buildings and other obstructions. The un-shaded areas represent the amount of skylight received at each reference point. By comparing the existing and resultant plots the effect of the proposal can be established.

3.3 The BRE good practice guide outlines numerical guidelines that represent flexible targets for new developments in relation to the VSC at nearby reference points. The document states that:

> *"If the vertical sky component, with the new development in place, is both less than 27% and less than 0.8 times its former value, then the loss of light is likely to be noticeable." (our emphasis)*

3.4 These targets are based on suburban standards. Therefore, levels lower than 27% can be expected in urban areas characterised by a higher density of development.

Results

3.5 The following results were obtained:

Reference point	***Existing (a) (%)***	***Resultant (b) (%)***	***Change (b)÷(a)[1]***
BRE targets	*27*	*27*	*0.8*
RP1: St Mary Brookfield Hall – first floor kitchen	28.3	26.6	0.94
RP2: 32b Laurier Road – first floor living room	25.9	23.6	0.91

1. Applicable if the resultant is less than 27%

Table 3.1: Vertical Sky Component results

3.6 The first floor kitchen window in St Mary Brookfield Hall currently gains a VSC level of 28.3%. With the proposal in place this would be reduced to 26.6%. As the latter is more than 0.8 times the former the second part of the BRE test is satisfied.

3.7 The VSC level at the first floor living room window in the flank elevation of 32b Laurier Road would be reduced from 25.9% to 23.6% as a result of the proposal. The latter is 0.91 times the former so the BRE test is met.

4.0 SUNLIGHT

Methodology

4.1 To determine sunlight availability, the plots derived for daylighting have been overlaid on a Sun Availability Indicator for London (51.5° N). Again, the area shaded green represents the impact of obstructions on sunlight availability. The plots provide the percentage year round sunlight availability, which is quantified by counting the number of dots outside of the shaded areas. There are 100 dots shown on the indicator, each of which represents 1% of the annual probable sunlight hours. The plots also enable the percentage of sunlight availability during the winter months to be derived by counting the number of dots outside the shaded areas and below the equinox line.

4.2 The BRE good practice guide notes that:

> *"If [a] window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months between 21 September and 21 March, then the room should still receive enough sunlight…If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months (21 September to 21 March), then the occupants of the existing building will notice the loss of sunlight." (page 11, our emphasis).*

Results

4.3 The following results have been derived:

Reference point	***Existing (a) (%)***	***Resultant (b) (%)***	***Change (b)÷(a)[1]***
BRE targets	*25*	*25*	*0.8*
RP1: St Mary Brookfield Hall – first floor kitchen	67	63	n/a
RP2: 32b Laurier Road – first floor living room	33	30	n/a

1. Only applicable if the resultant is less than 25% or 0.8 is less than 25%

Table 4.1: Annual Sunlight Availability at the reference points

Reference point	***Existing (a) (%)***	***Resultant (b) (%)***	***Change (b)÷(a)[1]***
BRE targets	*5*	*5*	
RP1: St Mary Brookfield Hall – first floor kitchen	19	15	n/a
RP2: 32b Laurier Road – first floor living room	1	0	-

1. Only applicable if the resultant is less than 5% or 0.8 is less than 5%

Table 4.2: Winter Sunlight Availability at the reference points

4.4 Both neighbouring windows currently gain levels of annual sunlight availability that exceed the BRE target (25%). This would remain the case with the proposed development in place.

4.5 In terms of sunlight during winter months the kitchen window in St Mary Brookfield Hall would retain levels that well exceed the BRE target. Due to its westerly aspect and the closeness of the existing application property the window in the flank wall of no.32b currently gains very little of the sunlight it receives during winter months, which will remain the case with the proposal in place.

5.0 OVERSHADOWING

Guidance

5.1 Section 3.3 of the BRE guide (pages 18-20) considers the level of sunlight and shadowing occurring in the spaces between buildings as a result of development. The guidance suggests that the relative levels of sunlight availability and shadowing should be checked for all outdoor space where sunlight "will be required", namely:

- Gardens (usually the main rear garden of a dwelling) and allotments;
- Parks and playing fields;
- Children's playgrounds;
- Outdoor swimming pools and paddling pools;
- Sitting-out areas, such as those between non-domestic buildings and in public squares; and
- Focal points, such as monuments or fountains.

5.2 It is understood that the c.1.8m wide alleyway on the south side of St Mary Brookfield Hall, and to the north of the application property, is used by a nursery as outdoor playspace.

5.3 The BRE document concludes with the following guidance:

> *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.*

5.4 Appendix G of the BRE guide indicates that the above should be assessed by producing a set of "sun-on-ground" plots. In effect the BRE guide requires a comparison between the area of amenity space that currently gains sun-on-ground on 21 March with the area that would do with the development in place on the same day.

Assessment

5.5 The Sketch-Up images provided at Appendix 3 show the extent of sun-on-ground (un-shaded) and shadowing at one hour intervals between 1000hrs and 1700hrs on 21 March within the play area. The grey shading represents the extent of shadowing at present and the red shows the effect of the proposal.

5.6 The plots demonstrate that there is no effect on sun-on-ground in the morning or early afternoon: additional shading due to the proposal would only occur between about 1430hrs and 1630hrs and would be limited in extent. The plan provided at Appendix 3 compares the extent of additional shadowing at 1600hrs with the area of the play space as a whole. This demonstrates that a large proportion of the overall play area would be unaffected by the proposal and therefore the aims of the BRE guidance would be satisfied.

6.0 CONCLUSIONS

6.1 This assessment has been undertaken in full accordance with the Building Research Establishment (BRE) document "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" (BR209, 2011). Two first floor windows that provide light to main rooms in neighbouring flats close to the application site have been tested.

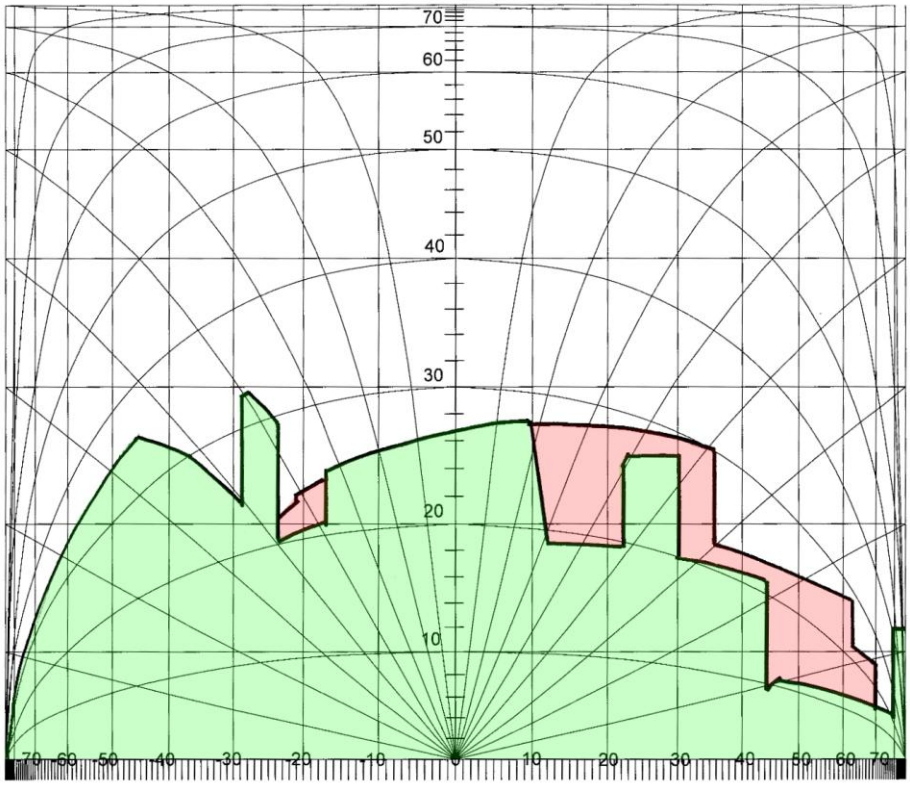
6.2 The change in the levels of daylight reaching the centres of the two neighbouring windows would be well within the tolerance deemed acceptable by the BRE.

6.3 In respect of sunlight, where windows currently gain high levels of availability to sunlight, this will remain the case with the development in place.

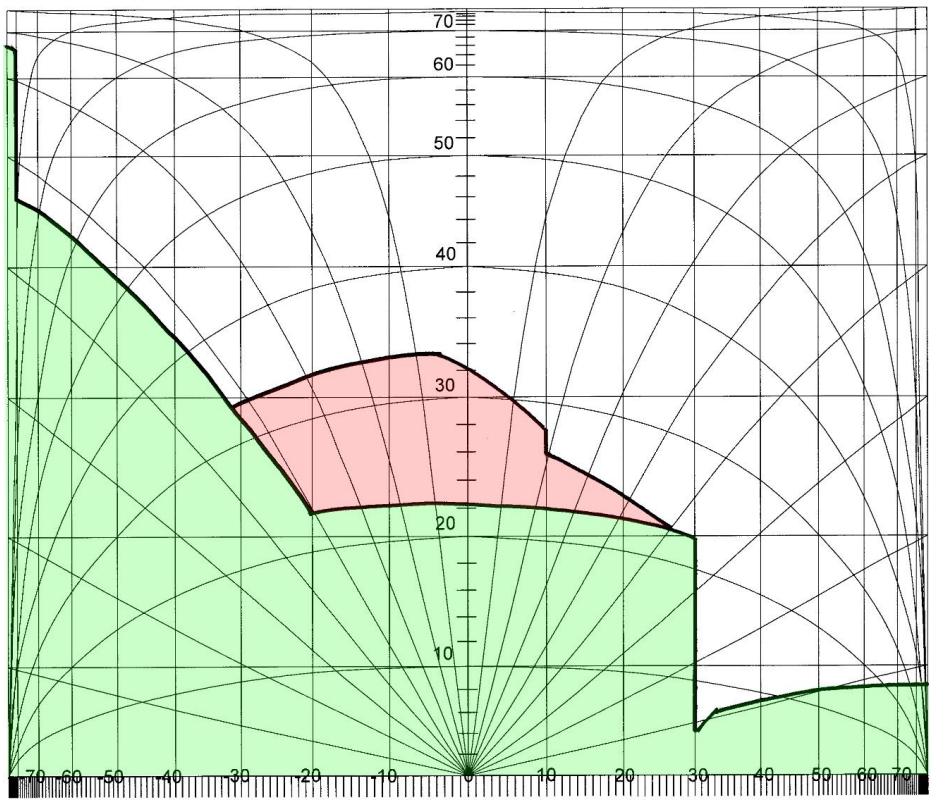
6.4 The overshadowing plots provided demonstrate that there would be a small reduction in sun-on-ground within the alleyway space at the side of St Mary Brookfield Hall and, on the 21 March, this would occur between after 1430hrs and 1630hrs. It is clear that a large proportion of the play area would be unaffected.

6.5 For these reasons we conclude that the occupiers of the neighbouring properties would retain acceptable levels of natural light.

APPENDIX 1: Waldram plots

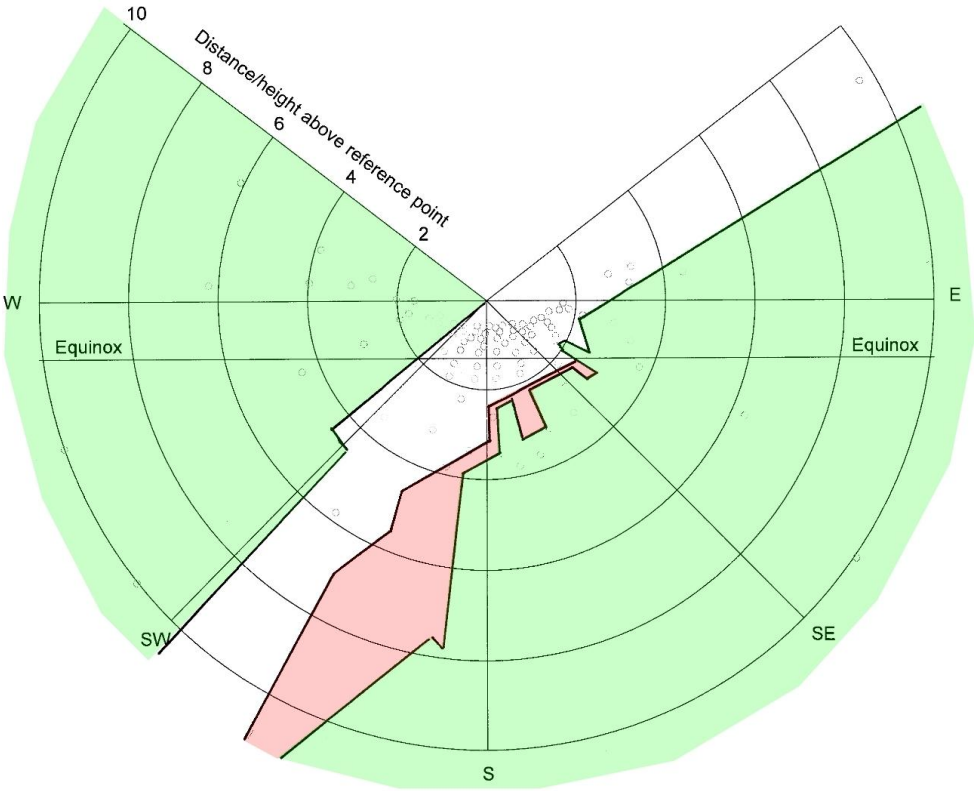


RP1: St Mary Brookfield Hall – first floor kitchen

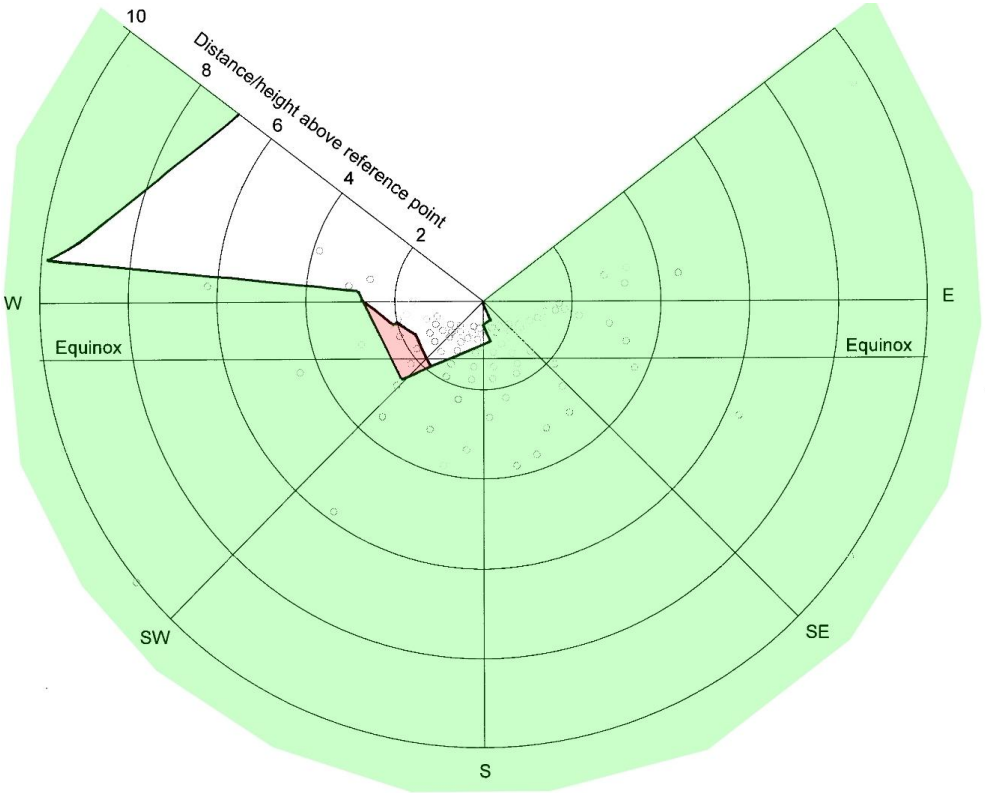


RP2: 32b Laurier Road – first floor living room

APPENDIX 2: Sunlight availability plots



RP1: St Mary Brookfield Hall – first floor kitchen



RP2: 32b Laurier Road – first floor living room

APPENDIX 3: Overshadowing plots

Extent of overshadowing at 1000hrs

Extent of overshadowing at 1100hrs

Extent of overshadowing at 1200hrs

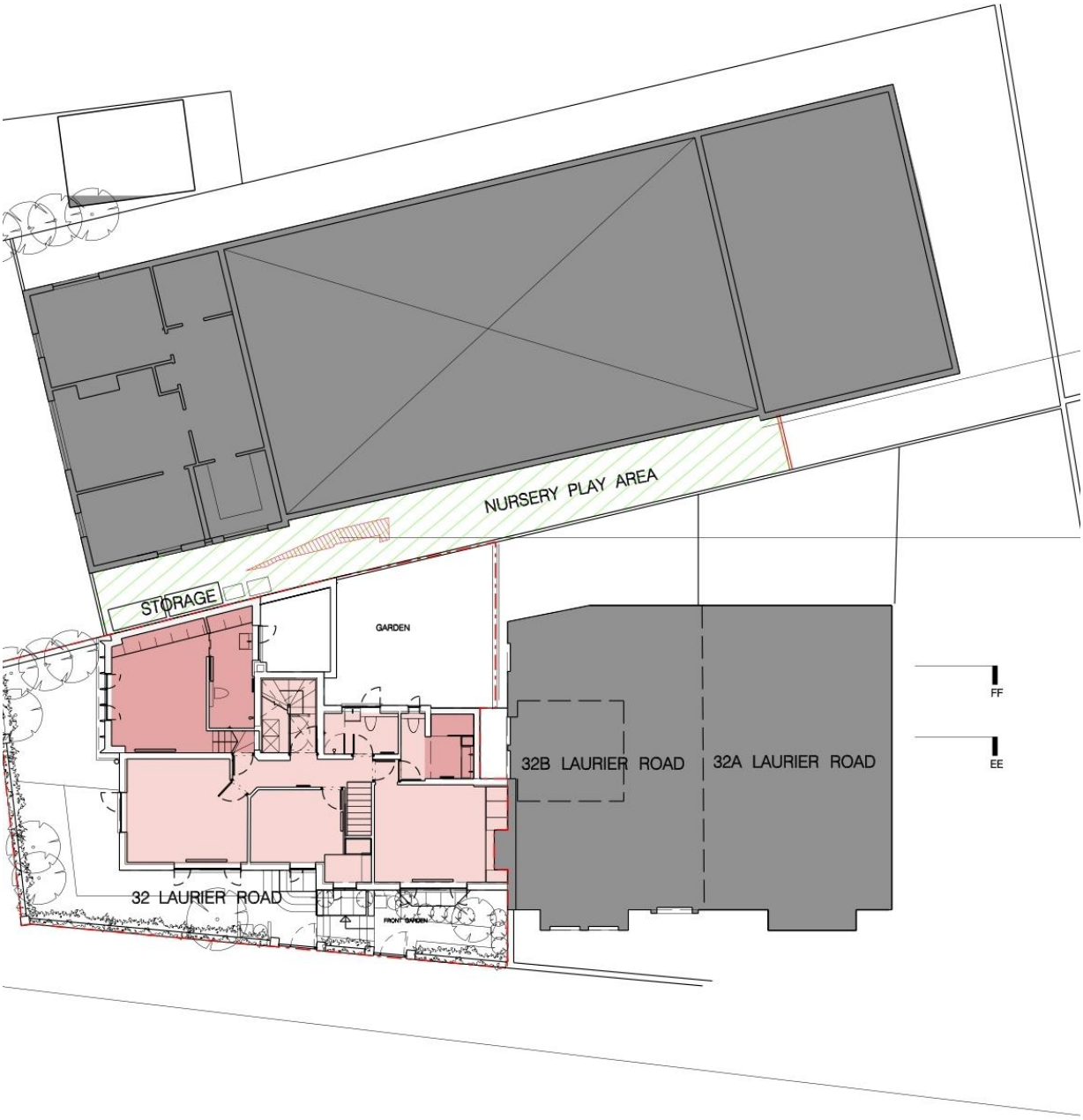
Extent of overshadowing at 1300hrs

Extent of overshadowing at 1400hrs

Extent of overshadowing at 1500hrs

Extent of overshadowing at 1600hrs

Extent of overshadowing at 1700hrs



Comparison between the size of amenity space and additional shadowing resulting from the proposal at 1600hrs