

Response to planning comment number 2 – Daylight and sunlight assessment

The following report is an assessment of daylight and sunlight access to the proposed development, with particular focus on the shading from the listed building to the South of the site, 50 Mount Pleasant. Recommendations can be found in the conclusions section.

The proposed development has been designed using passive low energy principles, maximising the site's orientation and solar access. Each house has a South facing elevation, helping to maximise useful solar gains to passively heat the houses in winter whilst allowing for a straightforward shading strategy to avoid overheating in the summer months.

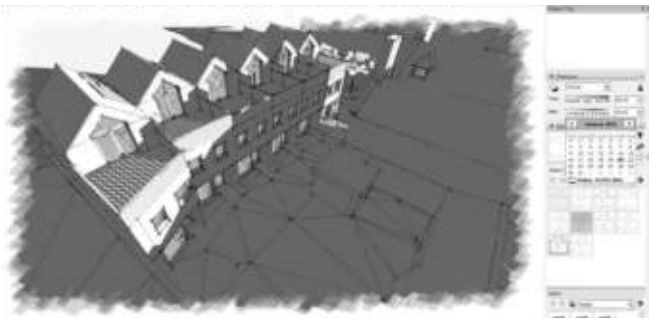
The design is a development from the outline planning application proposal which had an East/West orientation, underusing the site's potential solar access, resulting in higher levels of heat loss through the windows. The initial proposal's East/West orientation also had the potential to cause overheating in the summer months as it is very difficult to effectively shade windows on these elevations.

The submitted design aims to maximise the wellbeing of occupants by providing private outdoor space along side the best possible access to the sunlight on the site. The shading impact of 50 Mount Pleasant has been acknowledged and addressed by the addition of second floor sun terraces with year-round solar access.

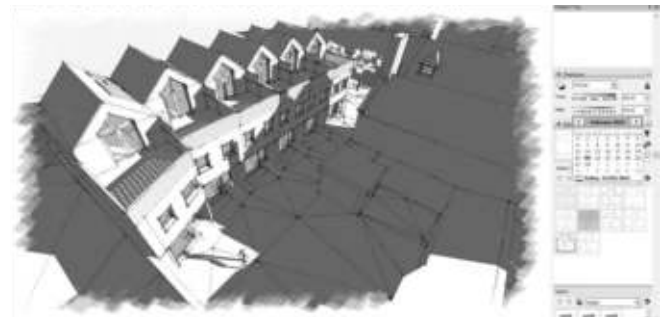
In order to determine if any of the properties are detrimentally effected by the shading of 50 Mount pleasant we have modelled the site shading throughout the year at three times of day: morning, midday and mid afternoon. We have further focussed on the site shading, by hourly modelling of the shadows cast on mid winter's day.

We have assessed the daylighting in the overshadowed properties by producing images showing the view of the sky available through the windows of these houses.

Monthly morning sunlight study



9:33am 21 January



9:33am 21 February



9:33am 21 March



9:33am 21 April



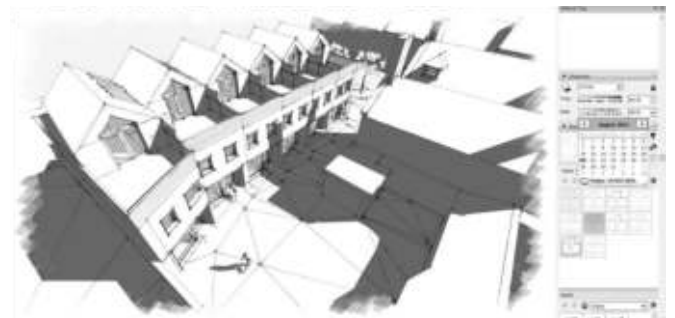
9:33am 21 May



9:33am 21 June



9:33am 21 July



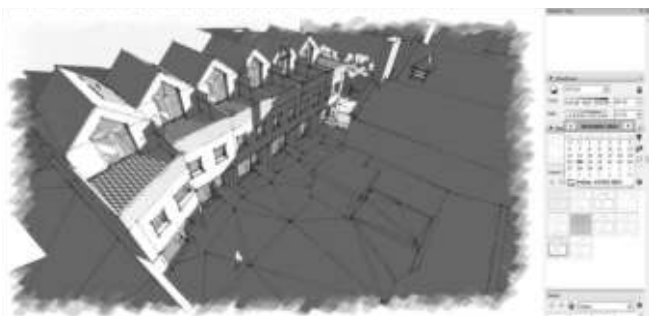
9:33am 21 August



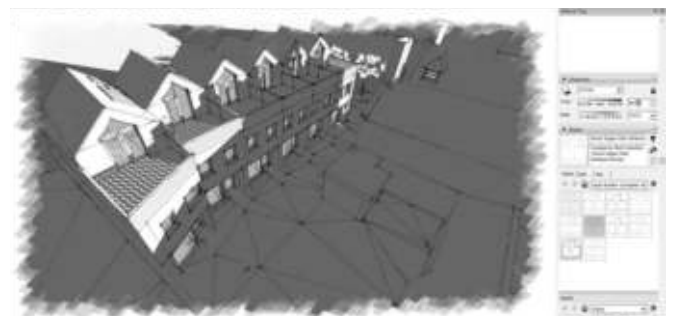
9:33am 21 September



9:33am 21 October



9:33am 21 November



9:33am 21 December

Monthly midday sunlight study



Midday 21 January



Midday 21 February



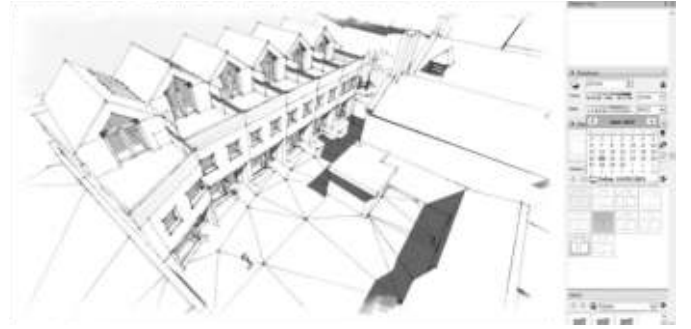
Midday 21 March



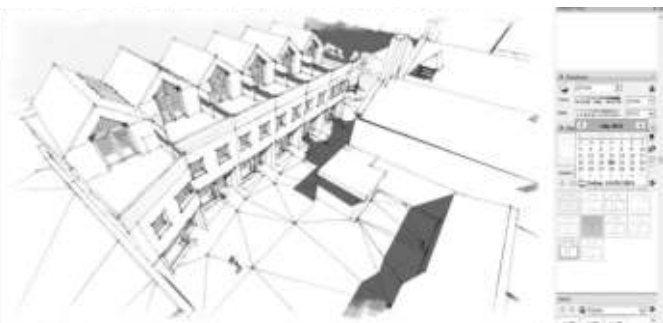
Midday 21 April



Midday 21 May



Midday 21 June



Midday 21 July



Midday 21 August



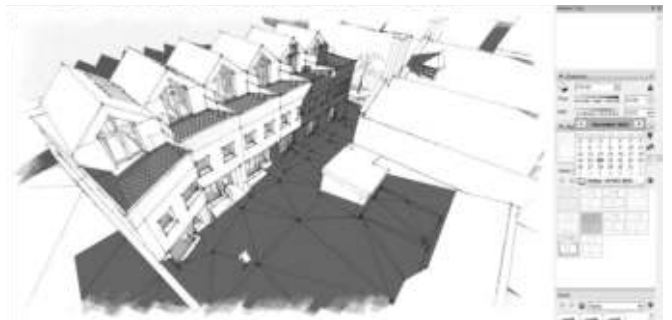
Midday 21 September



Midday 21 October



Midday 21 November



Midday 21 December

Monthly mid-afternoon day sunlight study



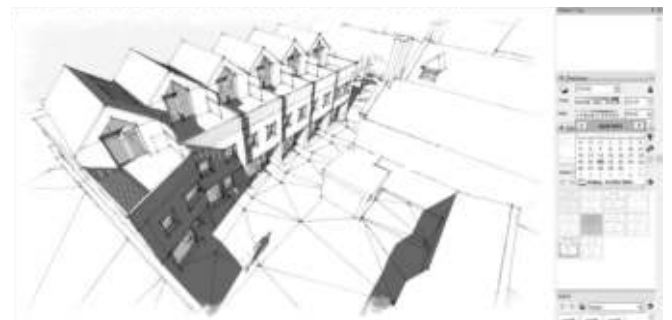
3:15pm 21 January



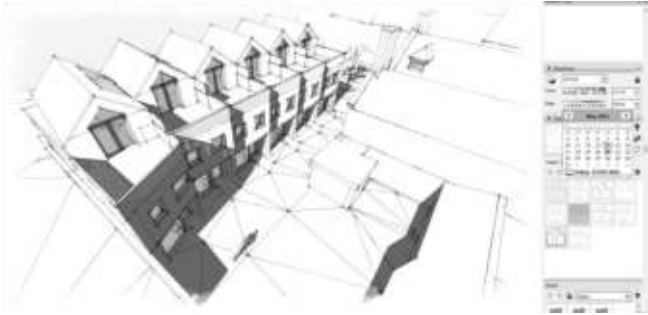
3:15pm 21 February



3:15pm 21 March



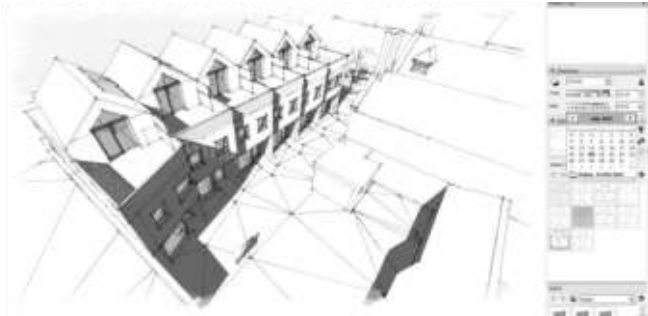
3:15pm 21 April



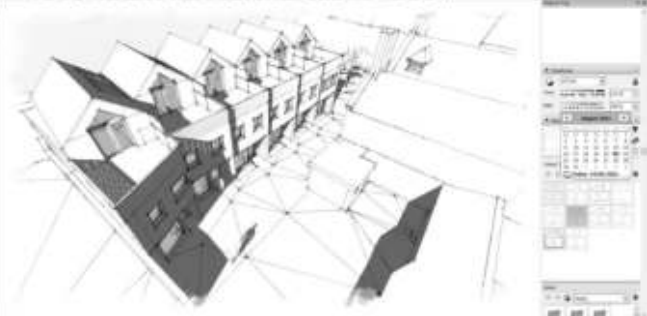
3:15pm 21 May



3:15pm 21 June



3:15pm 21 July



3:15pm 21 August



3:15pm 21 September



3:15pm October

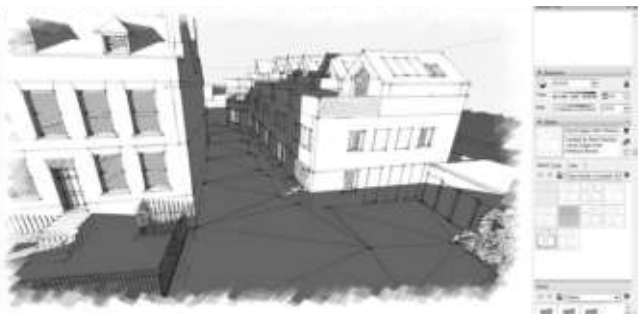


3:15pm 21 November

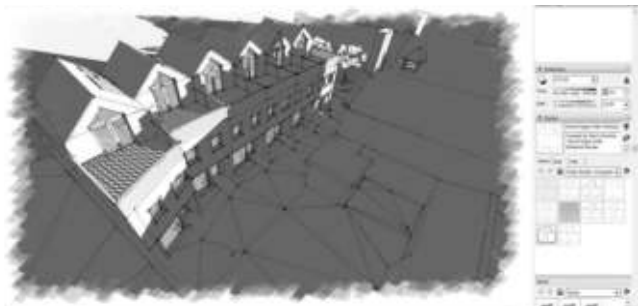


3:15pm 21 December

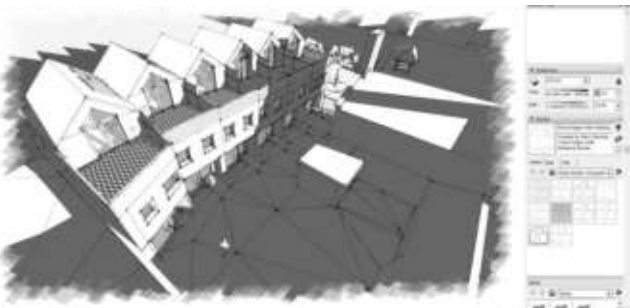
Mid Winter's day sunlight study



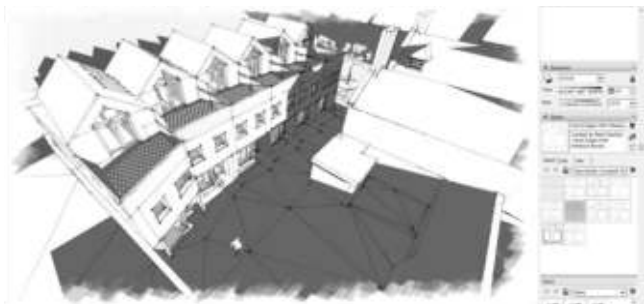
09:33am 21 December East Elevation



09:33am 21 December



10:33am 21 December



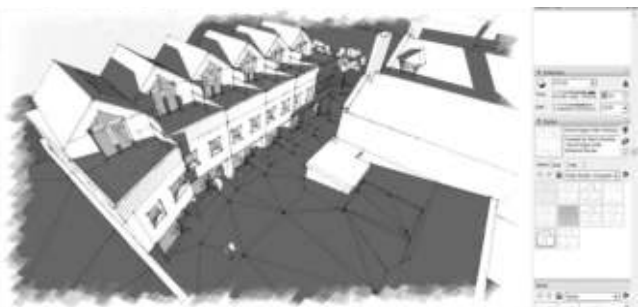
11:33am 21 December



12:33pm 21 December



1:33pm 21 December

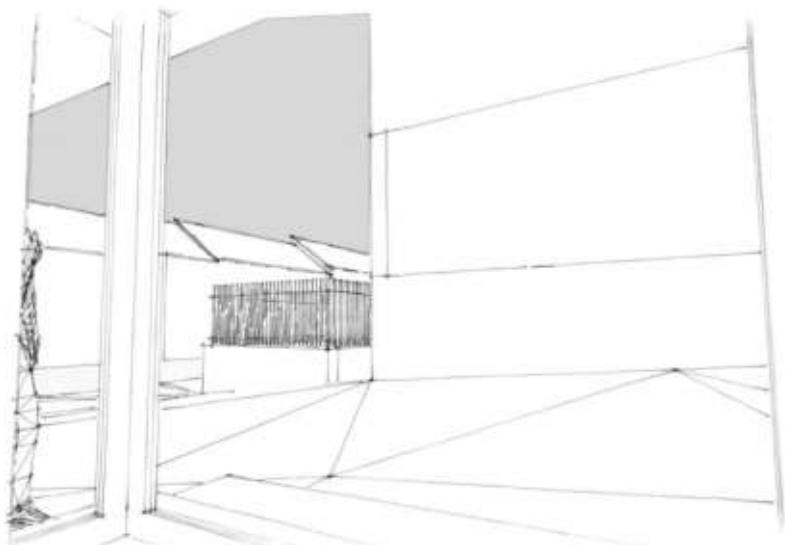


2:33pm 21 December

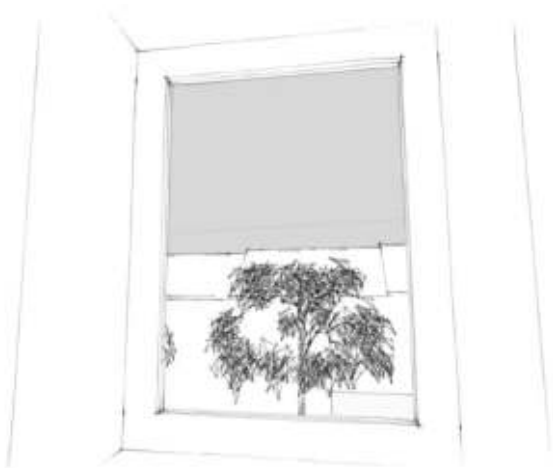


3:15pm 21 December

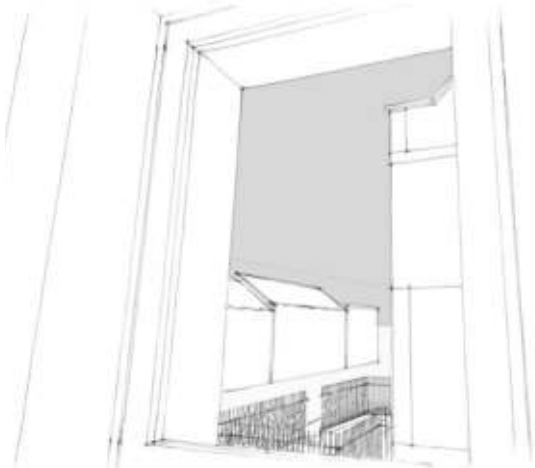
House 1 Daylight study—view of the sky



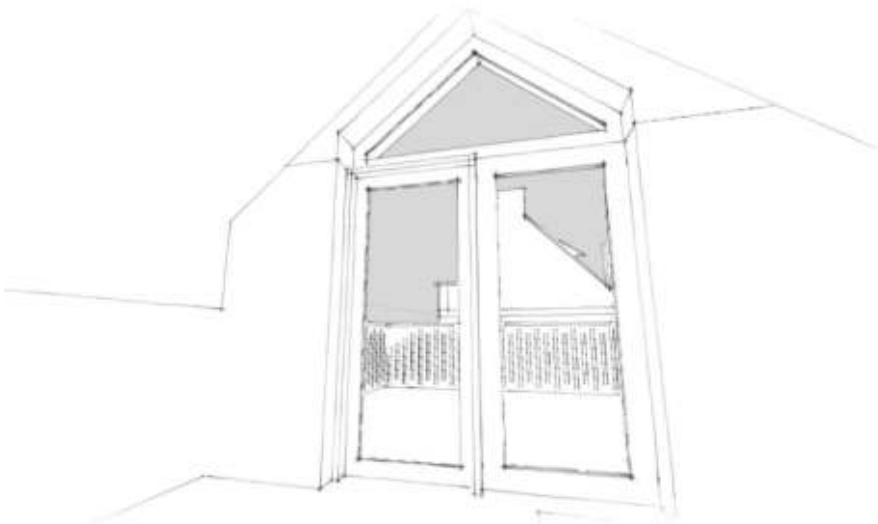
House 1 Living room sky view



House 1 First floor sky view

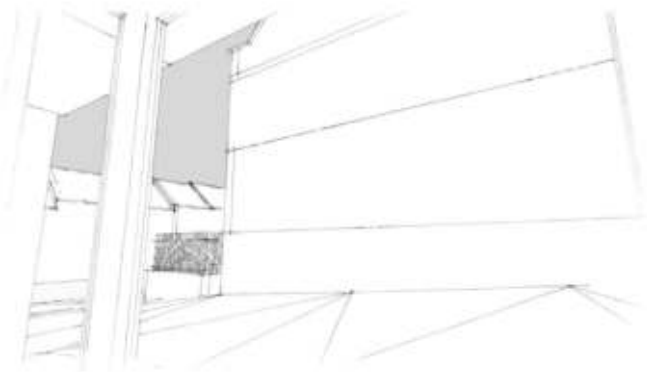


House 1 First floor sky view



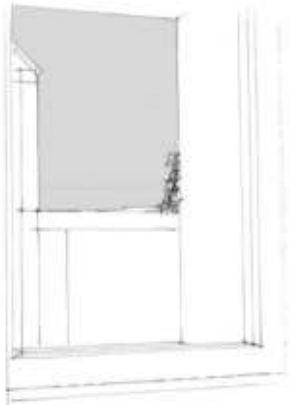
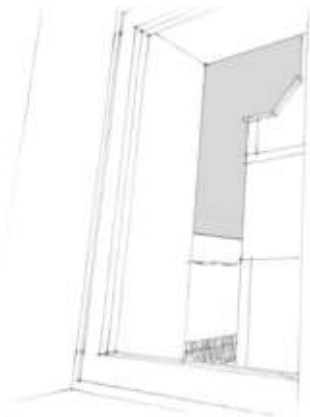
House 1 Second floor sky view

House 2 Daylight study—view of the sky



House 2 Living room sky view

House 2 Living room sky view



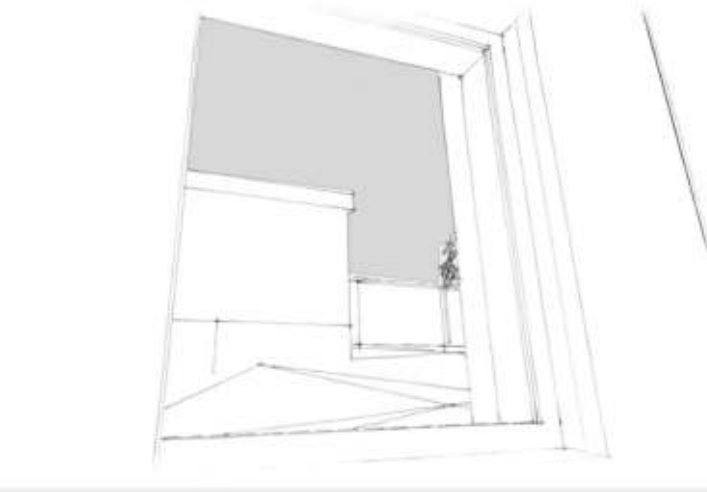
House 2 First floor sky view

House 2 First floor sky view

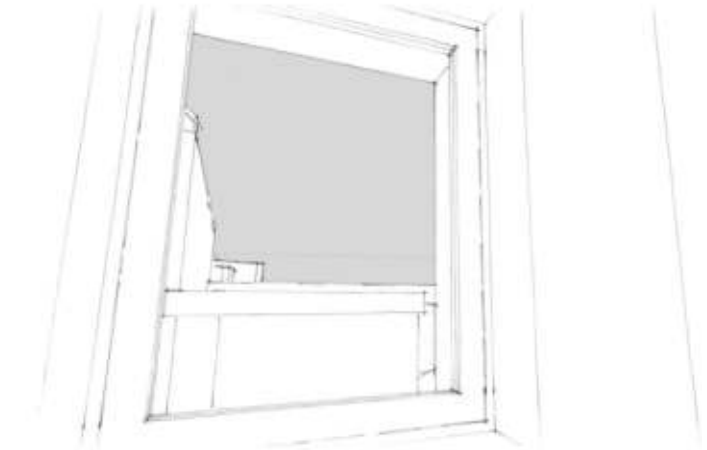


House 2 Second floor sky view

House 23Daylight study—view of the sky



House 3 Living room sky view



House 3 First floor sky view



House 3 Second floor sky view

Conclusions

The analysis shows that despite the adjacent shading of 50 Mount Pleasant, the proposal in general has very high levels of solar access throughout the year.

During the winter months, there is restricted access to sunlight for houses 1 and 2 and to a lesser extent, house 3. The daylight study showing the amount of sky visible from inside houses 1, 2 and 3 demonstrates that house 3 has good access to views of the sky whilst houses 1 and 2 have more restricted sky views.

In order to improve the sunlight and daylight access to houses 1, 2 and 3, it is recommended that the window area is increased to compensate for the reduction in light levels due to overshadowing. This could be done on the South and East elevations of house 1 and the South elevation of houses 2 and 3.

With regard to the window recesses to the South elevation, as the solar access in summer is almost entirely uninterrupted the recesses and overhangs are an effective way of mitigating potential summer overheating. As such, it is recommended that the recesses remain as part of the design.

Changes Implemented on the Proposed Design

The proposal has been updated to include the recommendations of the above report. The window area has been increased on the south elevation for houses 1, 2 and 3 in order to compensate for the overshadowing from 50 Mount Pleasant. A new window has also been added to the east elevation to the kitchen area of house 1.



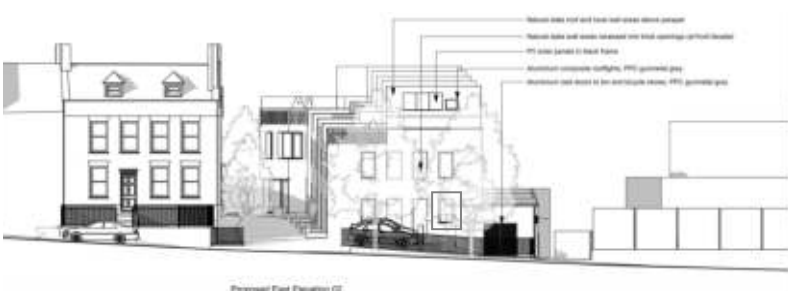
Original proposal.



Proposal with increased glazing area highlighted.



Original proposal.



Proposal with additional window highlighted.