AMENDED PLAN
Ref. A2

SHDC
PLANNING & DEVELOPMENT
16 NOV 2011
Ref. 0708-11

Vertical Sky Component Analysis

15.11.11

H09-0708-11. Erection of two self contained apartments, Albert St, Holbeach

Project No: 1496
Issue Date: 16.11.11
Distribution: Kevin Salter - D'Vine Living Ltd

Introduction

South Holland District Council have requested that David Turnock Architects undertake an assessment of the impact on levels of daylight to the neighbours of the above development, this is following concerns expressed by these neighbours about the levels of daylight into rooms adjacent to the proposed site.

This document shows the analysis undertaken of daylight incident on the 3 no. affected windows in the Dental Surgery which face northwards towards the site.

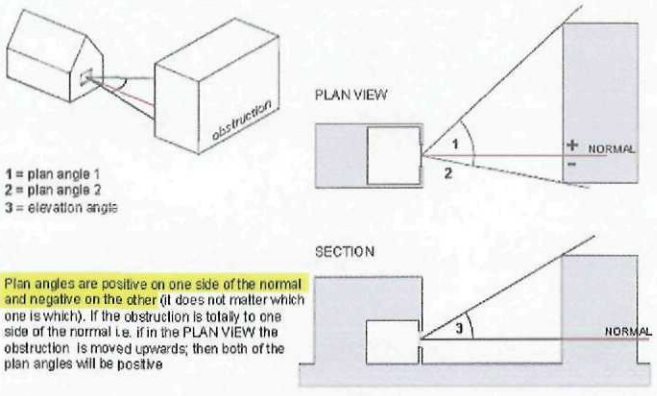
This document outlines the study undertaken in accordance with BRE Digest 209 and has been restricted to a daylight calculation only, given that the due North orientation does not require the exercise be carried out for direct sunlight.

There are two windows into one surgery within the Dental Practice and it was agreed reasonable to ensure that one of these windows was not disadvantaged by the construction of the development.

Analysis to be undertaken

The analysis is undertaken using an assessment of the Vertical Sky Component (VSC). The Vertical Sky Component is a measure of the amount of skylight incident on a vertical plane (it is the Sky Factor on a Vertical Plane). It is most commonly applied to the light incident at the centre of a window and in this sense is a measure of the potential for good daylighting. The VSC is calculated by taking the ratio of the skylight incident at a point to the unobstructed skylight available at that same point on a horizontal plane. For a uniform sky, the maximum value is 50% (since the point is on a vertical plane, clearly only half the hemisphere can contribute). For a CIE sky, the maximum value is 39.6%.

The guidelines state that if the VSC at the centre of a window is less than 27% and less than 0.8 times its former value, the diffuse daylighting of the existing building will be adversely affected. A value of 27% corresponds to an infinite obstruction angle of 25 degrees. This guideline (as with all the BRE guidelines) can be interpreted flexibly. The above criterion was developed in the case of suburban development where existing development was 2 storeys across an average street width. In city centre locations, the target VSC can be reduced to allow proposed buildings to match the height of other buildings in the neighbourhood.



Calculations engine and image above by Waterslade Ltd Vertical Sky Component Calculator

Vertical Sky Component Analysis

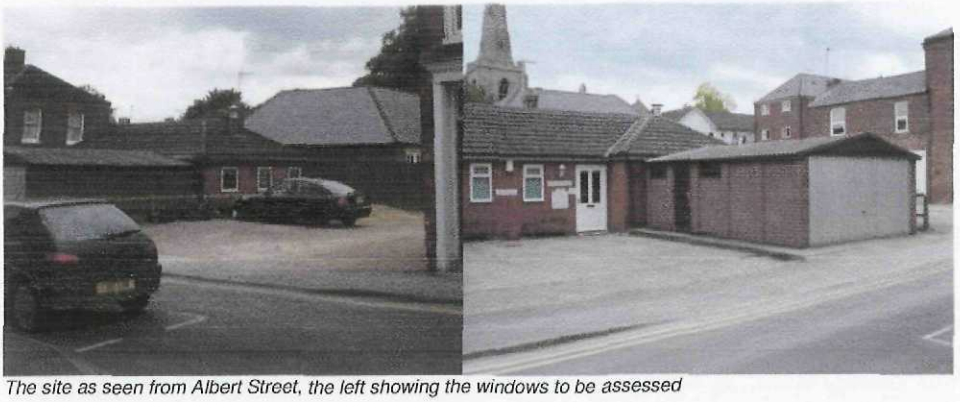
Site as Existing

This analysis relates a development on a parcel of land on Albert Street, Holbeach, as identified on the visual below.



The site amounts to 84.7sq.m / 0.02 acres. The site is approx. 6m wide and is approx. 13m deep. The site is defined by Albert Street on the Eastern edge, by edging setts along the Northern edge and by fencing on the South and West edges.

Adjacent to the site on the left, as viewed from the street, is a single storey dentists surgery of brick with a concrete tile roof, three obscured windows are present on the North elevation which face onto the proposed site.



The site as seen from Albert Street, the left showing the windows to be assessed

Vertical Sky Component Analysis

Proposals as Existing

The proposals submitted for planning are shown below. The Living Room and Garden areas are adjacent to the windows mentioned and are thought likely to obscure the light entering these rooms. The approximate positions of these windows is shown on the drawing below.



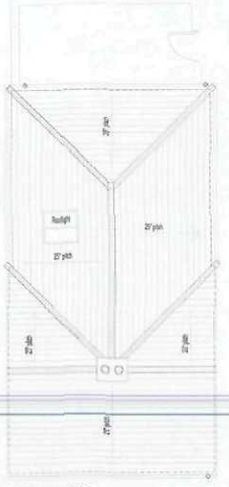
GROUND FLOOR PLAN

AREA OF FLAT - 53sq.m

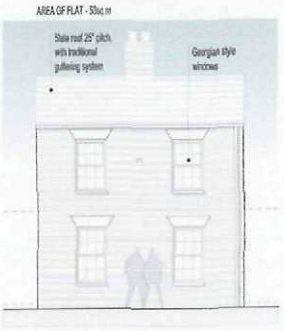


FIRST FLOOR PLAN

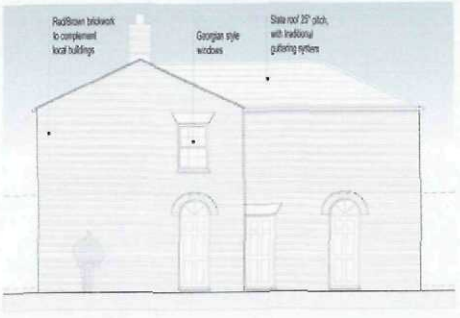
AREA FF FLAT - 53sq.m



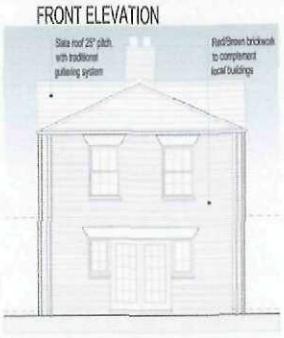
ROOF PLAN



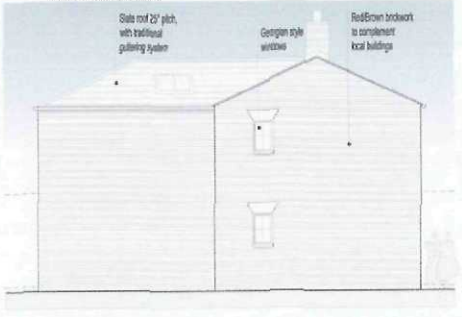
FRONT ELEVATION



SIDE ELEVATION



REAR ELEVATION



SIDE ELEVATION

ALBERT ST, HOLBEACH

Proposed Floor Plans and Elevations

PROJECT No: 1496 SCALE: 1:100@A3

DRAWING No: AK0001_E DATE: 09th September 2011

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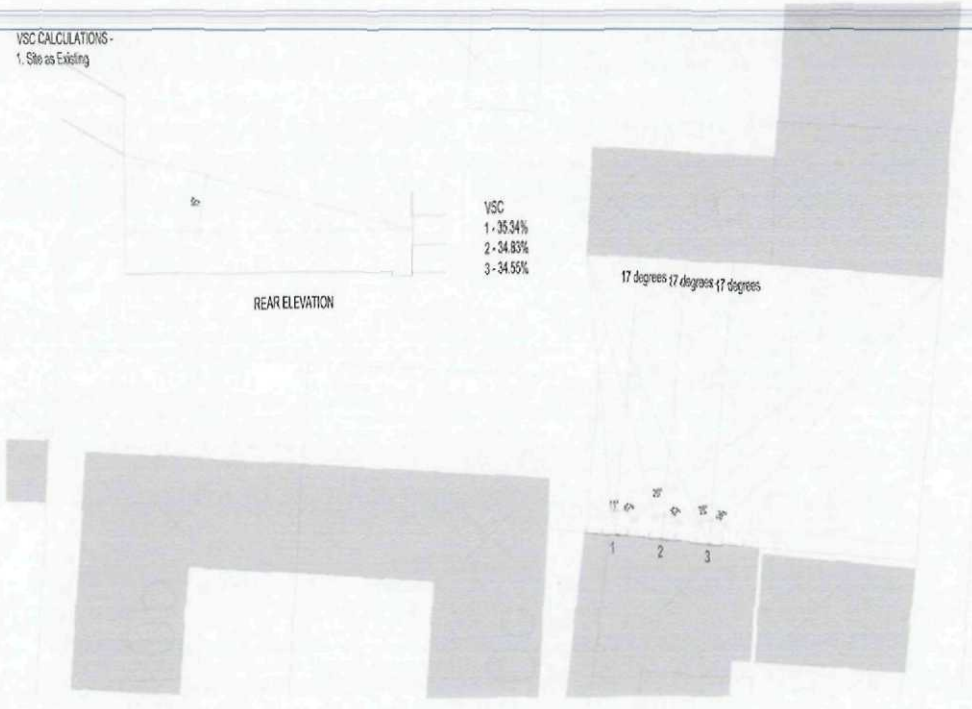
Vertical Sky Component Analysis

Analysis

The following situations have been analysed:

1. Existing scenario with no buildings on the site.
2. Situation of the permitted house under Permission ref. H09-1069/04
3. Current proposal for two flats
4. Modified footprint for the two flats to demonstrate less than 20% loss of daylight in accordance with the criteria that this has perceived negligible impact.

1. Calculation: Existing Scenario
It is assumed for the purposes of the calculations that No. 8 Albert Street is acting as an plan obstruction, the eaves height at the rear of No. 8 sets the elevations angle.



1. Results and Analysis

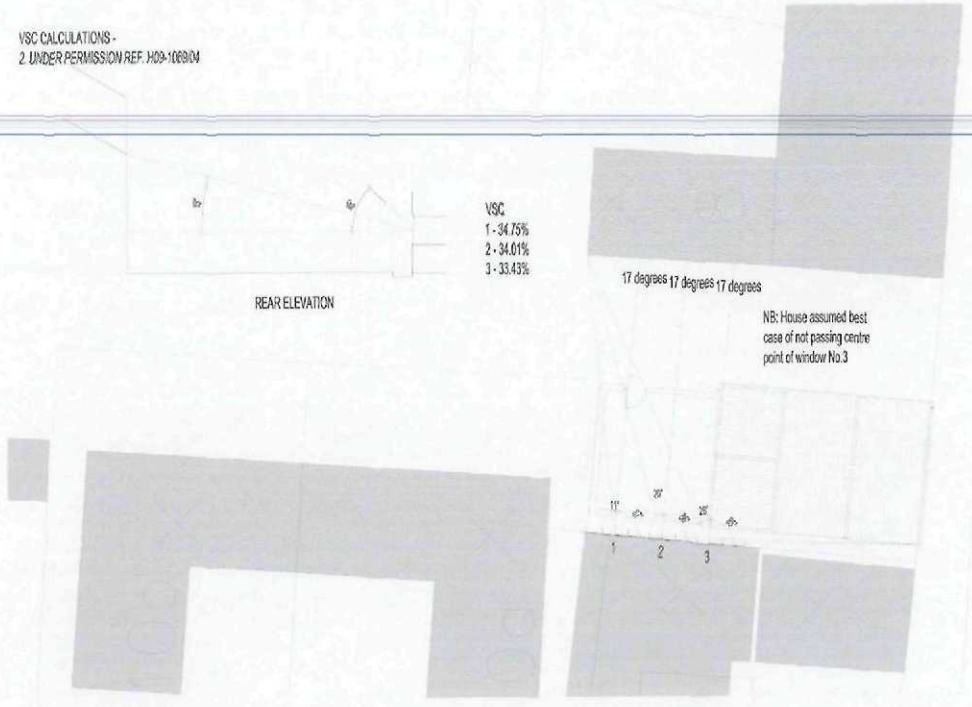
VSC
1 - 35.34%
2 - 34.83%
3 - 34.55%

The study shows a good level of daylight to each of the windows, as related to the maximum achievable value of 39.6%.

The levels at which there is considered to be a noticeable reduction in the amount of skylight, being 0.8 of the existing value are shown calculated below:-
1 - 28.34%
2 - 27.86%
3 - 27.64%

Vertical Sky Component Analysis

2. Calculation: Permission for 2 bed house
It is assumed for the purposes of the calculations that No. 8 Albert Street and the proposed house are acting as plan obstructions, the eaves height at the rear of No. 8 have been taken for the elevation angle as it is believed that this house would not have passed in front of the centre point of the window, albeit by a matter of 100mm or so.



2. Results and Analysis

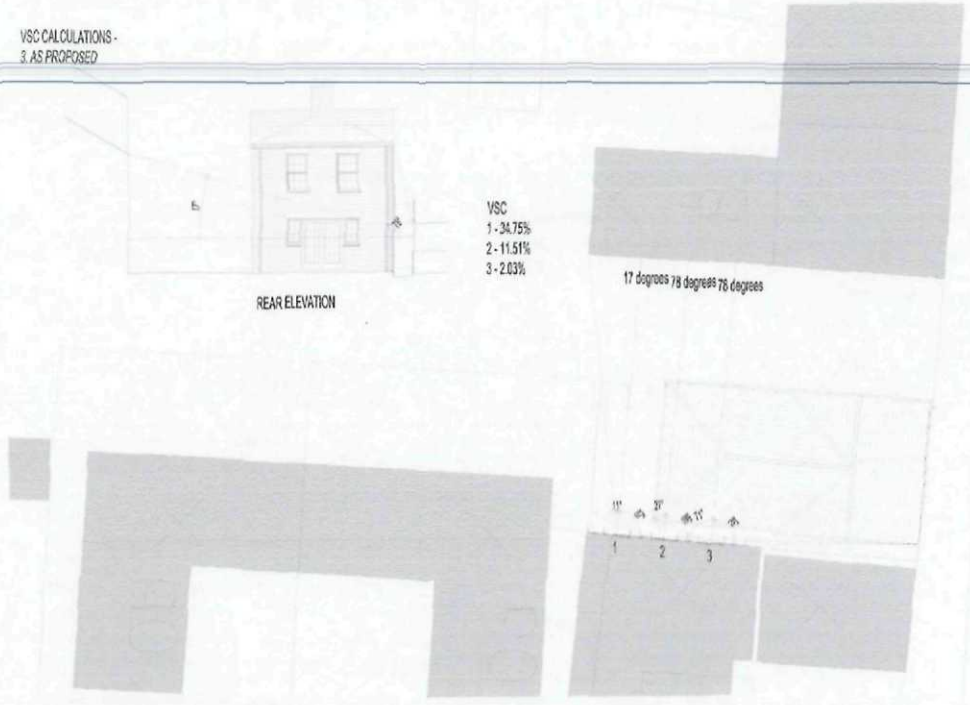
VSC
1 - 34.75%
2 - 34.01%
3 - 33.43%

The study shows a good level of daylight to each of the windows, as related to the existing levels and the 0.8 calculation.

However it is noted that for window No. 3 this value would reduce to 20.78% should the house be level with the centre point of the window or beyond. As the values are taken at the centre of the window this increases the elevation angle to 45 degrees from 17 degrees.

Vertical Sky Component Analysis

3. Calculation: Proposal for 2 Flats as originally submitted
It is assumed for the purposes of the calculations that No. 8 Albert Street and the proposed flats are acting as plan obstructions, the eaves height at the rear of No. 8 and the rear part of the new building have been taken for the elevation angle.



3. Results and Analysis

1 - 34.75%
2 - 11.51%
3 - 2.03%

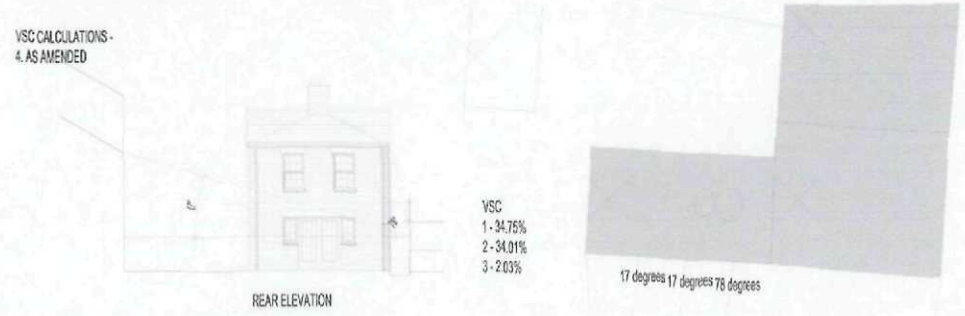
The study shows a good level of daylight to window No. 1, as related to the existing levels and the 0.8 calculation, however light to windows Nos. 2&3 is much reduced and is below these values.

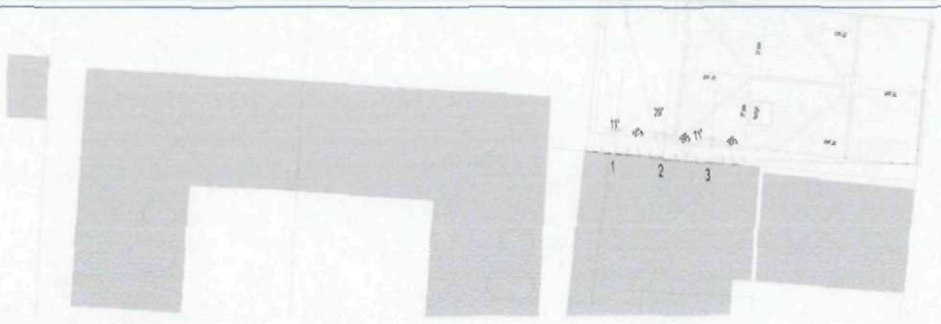
Proposal to obviate impact

Reduce the length of the building to at least the centre point of window No.2 such that the elevation angle can be improved from 78 degrees to 17 degrees. This will assist greatly with the amount of light entering Window No. 2. Windows Nos. 2&3 both light the same room and it has been considered reasonable that light can be maintained from one only.

Vertical Sky Component Analysis

4. Calculation: Modified Scheme
It is assumed for the purposes of the calculations that No. 8 Albert Street and the proposed flats are acting as plan obstructions, the eaves height at the rear of No. 8 and the rear part of the new building have been taken for the elevation angle. The building has been reduced in length so the building would not pass in front of the centre point of window No.2, further to this and the proposal related to situation 3 the building has been reduced further so that no part of the structure passes in front of the window.





4. Results and Analysis

VSC
1 - 34.75%
2 - 34.01%
3 - 2.03%

The study shows a good level of daylight to window Nos. 1&2, as related to the existing levels and the 0.8 calculation, however light to windows No. 3 remains at the reduced level.

Conclusion

The last of these options is illustrated on revised drawing ref.1496AK0001F which reduces the length of the proposed building from 11.2m to 10.2m.

We conclude that with these amendments the proposals are acceptable in terms of daylight provision to the obscure glazed windows serving the 2 dental practice surgeries.

There are two windows into one surgery within the Dental Practice and it was agreed reasonable to ensure that one of these windows was not disadvantaged by the construction of the development.

The daylight into window No. 1 is not affected by these proposals and daylight into window No. 2 of the Dental Surgery fulfils the criteria contained in BRE209.