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## **PROPOSED MIXED USE DEVELOPMENT AT CLONGRIFFIN**

### **DAYLIGHT RECEPTION**

**EXISTING RESIDENTIAL UNITS.**

**CLONGRIFFIN  
DUBLIN 13**

GERARD GANNON PROPERTIES

DKP-K00-6062-2P  
2019-08-09

## Document control

Document ID : **DKP-K00-6062**

Part 1 of 1

Circular	Issue >	1P	2P
Clients	Gerard Gannon Properties	x	x
Architects	CCK, Wilsons, Downey Architecture	x	x
Planning consultants	Downey Planning	x	x
Structural/civil engineer	Waterman-Moylan	x	
Quantity surveyor	MMP	x	

Issue		
1P	2018-11-30	Issue for pre planning
2P	2019-08-09	Issued for planning. Changed commercial area data.

### Status

N	No status
G	General Information
P	Planning
O	Outline/sketch design
S	Scheme design
D	Detail design
T	Tender
C	Construction
B	Build / Constructed

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## Contents

section	Page
1 Introduction .....	4
2 Executive Summary .....	5
3 Geographical project overview .....	6
4 Approach and methodology .....	7
5 Calculation results and conclusion .....	10

### Appendix

A	45 no. vertical sky component analysis across the site.
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# 1 Introduction

## 1.1 Report purpose.

This report gives information on the effects of the proposed mixed use development on daylight reception in the habitable rooms of “existing” dwellings within the development.

We note that whereas we refer to “existing” dwellings in this report there are technically no existing dwellings within the development in terms of what we normally refer to as existing dwellings.

The current application for proposed dwellings was previously applied for and granted permission albeit the current version has different quantities hence the “existing” dwellings are merely dwellings constructed earlier than current proposed dwellings in this application.

## 1.2 Introduction.

DKPartnership (DKP) have been commissioned by Gerard Gannon Properties to carry out the analysis and report for the proposed development at Clongriffin, Dublin 13.

## 1.3 Development details.

This report covers multiple mixed use apartment blocks located in Clongriffin, Dublin 13 and represents most of the remaining sites to be “filled-in” within the Clongriffin development.

This phase consists of 15 blocks with a total of 1950 residential units and +/- 22,727m<sup>2</sup> of commercial space.

The 15 blocks are applied for in 3 no. separate planning packages, this report covers all of the blocks.

The report therefore is applied in all of the 3 applications.

Table 1.1 below shows the details of the 3 no. planning applications.

Planning reference	Qty blocks	Block ID	No dwellings	Commercial space m2	Comments
SHD I	9	6, 8, 11, 17, 25, 26, 27, 28, 29	1030	2285	
SHD II	3	4, 5, 14	500	3125	
DCC I	3	3, 13, 15	420	17317	

Table 1.1

## 1.4 Policy and building regulation requirements.

There are no particular building regulations in relation day light / shadow effect standards other than recommendations outlined or referred to in the CIBSE lighting guide 10, BS 8206 and the BRE document “Site layout planning for daylight and sun light”.

The aforementioned documents do refer to a” right to a sky view” relating to existing buildings facing a new adjacent development in so far that it compares an existing sky view with the sky view when the new development is constructed. The difference, if any, must be within a certain acceptable threshold.

## 2 Executive summary

### 2.1 Project general.

The analysed “Development at Clongriffin, Dublin 13” consists of a total of 15 no. proposed mixed use apartment blocks mainly located in the remaining sites to be filled-in within the overall Clongriffin development.

These blocks had been granted permission previously albeit the new proposed version in most cases proposes a different mix of residential units and quantum of commercial areas.

### 2.2 Analysis conducted.

In this report the amount of daylight received in the habitable rooms in “existing” dwellings within the new proposed development was analysed.

### 2.3 Day light reception and building orientation.

Day light reception in existing units is or can be effected by the effects a new proposed mixed use development has on the amount of direct or blocked / partially blocked daylight it receives. i.e. orientation is not relevant to day light reception or daylight reception BRE calculations.

Day average day light factor analysis is equal to all orientations. Day light is often confused with sunlight or sunlight energy which is effected by orientation.

### 2.4 Note on “Existing” residential units.

We note that whereas we refer to “existing” dwellings/units in this report there are technically no existing dwellings/units within the development in terms of what we normally refer to as existing dwellings/units.

The current application for proposed dwellings was previously applied for and granted permission albeit the current version has different quantities hence the “existing” dwellings are merely dwellings constructed earlier than current proposed dwellings in this application.

### 2.5 Guideline / standards applied.

For this report we applied the recommendations and guideline of the following ;

- The Building Research Establishment (BRE) report, “Site layout planning for daylight and sunlight – a guide to good practice (referred to as the BRE Report).
- British Standard BS 8206:2008 Lighting for buildings – Part 2: Code of practice for day lighting. BS 8206:2008 contains guidance on the minimum recommended levels of interior day lighting.
- CIBSE guide 10 Day light and lighting for buildings.

### 2.6 Technical analysis.

Calculations were conducted in accordance with the BRE guidelines to determine the extent to which the proposed development could affect the sky view (component) and levels of daylight received in any habitable rooms of neighbouring buildings. We note that the comparison is made between the original granted planning permission and the current proposed plans with the main change being additional units and increased building heights & width.

In basic terms the change in sky views / day light reception between the original and current proposed should not be more than 0.8 its previous value unless other measures (increased glazed areas) have been taken to maintain sufficient day light reception.

### 2.7 Conclusion.

Based on the calculation results we conclude that the effects of the new proposed development compared with the original planning permission granted buildings are for the most part within the guidelines of the BRE report and that any of the marginal infringements have been designed out by the increased glazed area in the relevant facades.

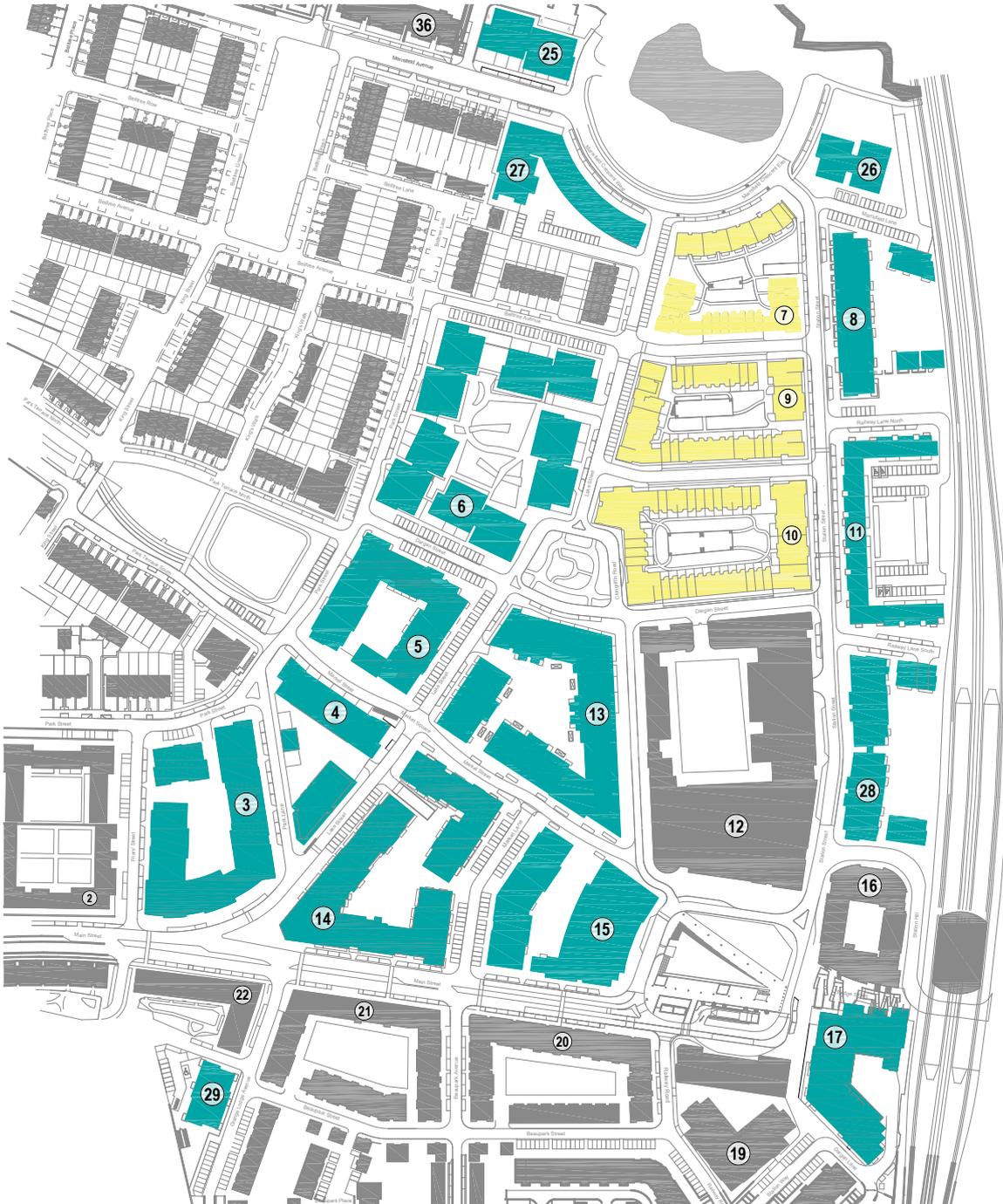
### 2.8 Mitigation measures / actions.

There are no actions or mitigation measures required based on the findings of this report.

### 3 Geographical overview

#### 3.1 Project overview.

The site map below is a basic over view of the project and location of the apartment blocks. As indicated in section 1.3 the planning application will be applied for in 3 different packages.



#### 3.2 Buildings 7, 9 and 10.

Buildings 7, 9 and 10 are not part of the current application but they have been taken into consideration in the daylight reception calculations based on their original planning permission configuration.

## 4 Approach and methodology

### 4.1 General approach.

This report covers the day light reception in existing dwellings within the new proposed development. The day light reception analysis is applied using the vertical sky component analysis in habitable rooms.

### 4.2 The nature and effects of day light and sun light.

When assessing the effects of proposed building projects on the potential to cause issues relating to light, it is important to recognise the distinction between daylight and sunlight. Daylight is the combination of all direct and indirect sunlight during the daytime, whereas sunlight (for the purposes of this report) comprises only the direct elements of sunlight. For example, on a cloudy or overcast day diffused daylight still shines through windows, even when sunlight is absent.

Any development within a built-up area has the potential to alter the amount of daylight and direct sun received by nearby residential properties.

Care should be taken when designing new buildings in built-up areas, especially when the proposed development is relatively tall or situated to the south of existing buildings, because in the northern hemisphere the majority of the sunlight comes from the south.

In Ireland (and other northern hemisphere countries) south-facing facades will, in general, receive the most sunlight, while the north facing facades will receive sunlight on only a handful of occasions, specifically early-mornings and late evenings during the summer months.

It is therefore important to ensure that buildings to the south of any development do not cause over shadowing to existing dwellings and therefore reduce their capacity to receive sunlight.

### 4.3 Assessment criteria.

National Policy / building regulations.

The government does not have an adopted policy on daylight, sunlight and the effects of overshadowing, and does not have targets, criteria or relevant planning guidance in the way it has for other environmental impacts such as noise, landscape or air quality.

However, there are a number of guidance documents which are relevant when considering daylight, sunlight and overshadowing in dwellings:

- **The Building Research Establishment (BRE) report, “Site layout planning for daylight and sunlight – a guide to good practice** (referred to as the BRE Report).

Although not Government guidance, this report is commonly referenced as the main guide in Ireland/UK in determining the minimum standards of daylight and sunlight and for determining the impact of a development.

- **British Standard BS 8206:2008 Lighting for buildings – Part 2: Code of practice for day lighting.**

BS 8206:2008 contains guidance on the minimum recommended levels of interior day lighting and introduces some of the calculation procedures used in the BRE Report.

- **CIBSE guide 10 Day light and lighting for buildings.**

CIBSE lighting guide 10, like BS 8206 contains guidance on the minimum recommended levels of interior day lighting and introduces recommended day light levels for general buildings.

#### 4.4 The BRE Report – “Site Layout and Planning for Daylight and Sunlight – A Guide to Good Practice”

The BRE report contains guidance on how to design developments, whilst minimising the impacts on existing buildings from overshadowing and reduced levels of daylight and sunlight.

The advice provided within the guide is not mandatory and should not be seen as an instrument of planning policy, its aim is to help rather than constrain the designer. Although it gives numerical guidance values, these should be interpreted with flexibility since natural lighting is one of many factors in site layout design.

The guidance should be applied appropriately to developments to assist in gaining the best development possible without adverse impacts. As well as advice, the report contains a methodology to assess levels of daylight, sunlight and over shadowing and contains criteria to determine the potential impacts of a new development on surrounding buildings.

The table below summarises the criteria used to assess the daylight reception in properties.

Table 4.1 details the BRE assessment criteria for daylight reception.

Analysis	Description	Acceptable parameters
Daylight reception criterion	Angle to sky from horizontal	Existing angles should not be effected more then 0.8 time its former value in relation to the glazed area/floor area fraction shown in table 4.2

Table 4.1

There are also recommendations with regards to minimum proposed glazed area in facades in relation to the available sky view component angle.

BS 8205 gives guidance on the minimum glazed area with different virtual sky component angles to maintain sufficient daylight reception.

Table 4.2 show minimum glazed areas fractions relative to the available sky view angle. (BS 8206)

Room depth	VSC <=25°	VSC >=25° <=45°	VSC >=45° <=65°	VSC >=65°	Comments
1 to 8	20%	20% - 31%	31% - 35%	35% - 40%	
8 – 11	25%	25% - 40%	40% - 44%	44% - 50%	
11 – 14	30%	30% - 47%	47% - 53%	53% - 60%	
14 - 20	35%	35% - 54%	54% - 61%	61% - 70%	

Table 4.2

#### 4.5 Day light reception analysis, Sky view component.

The day light assessment is the effects the proposed development has on adjoining existing buildings.

The assessment of daylight is required for windows serving rooms in adjoining dwellings where daylight is required including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be assessed.

The guidelines also apply to any room that may have a reasonable expectation of daylight, including schools, hospitals, hotels and some offices.

When assessing daylight, the numerical criteria must be viewed with flexibility and should be considered against other site layout constraints. In addition, it is important to consider whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and not taking more than its fair share of light.

The assessment takes on several specific stages:

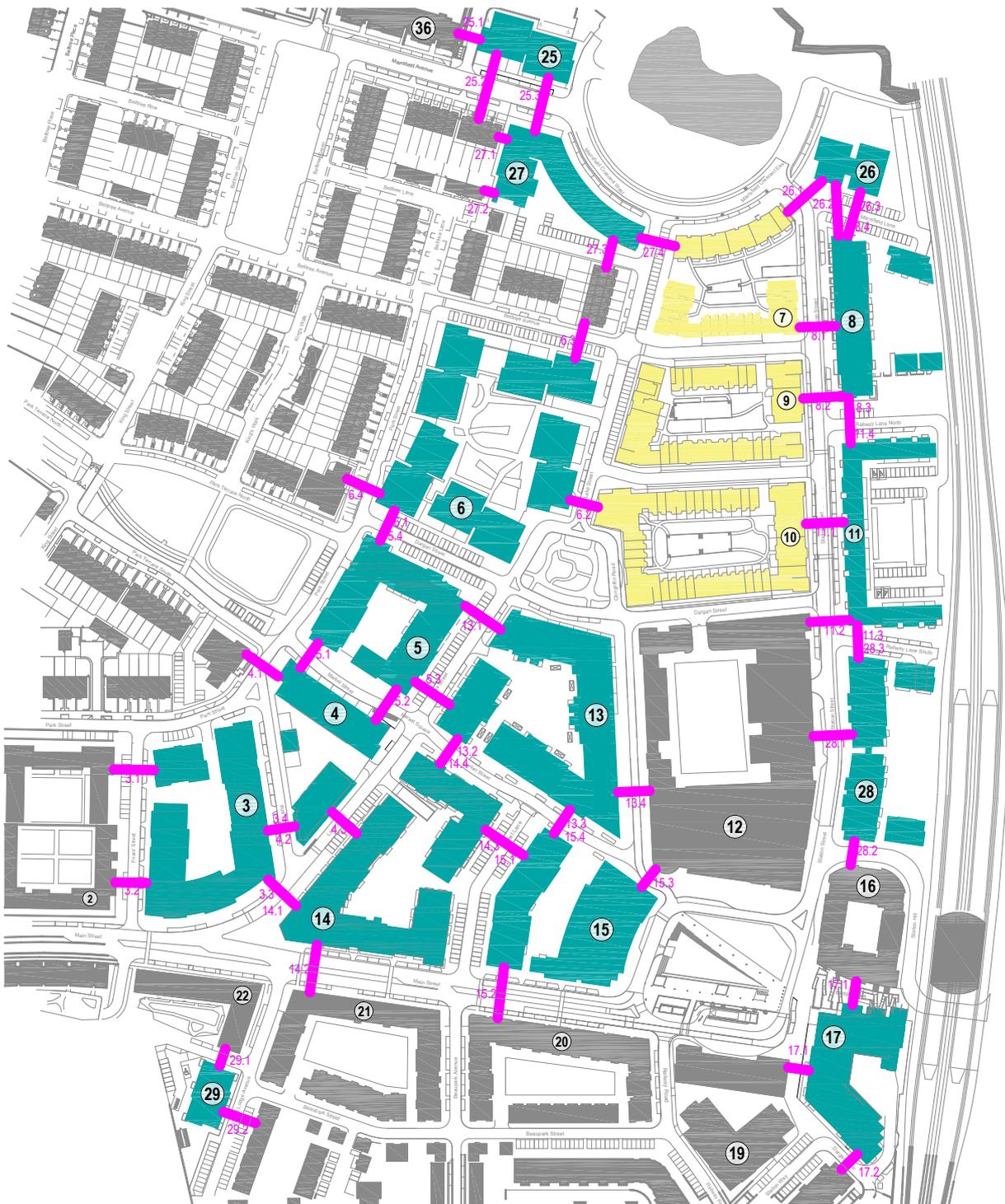
- 1) **The Distance Test:** loss of light to windows need not be analysed if the distance from the existing window to the development is three or more times its height above the centre of the existing window;
- 2) **The 25° Rule:** loss of light to windows need not be analysed if the angle to the horizontal subtended by the new development from the centre of the existing window is less than 25° (an angle of 25° equates to a VSC of 27%)
- 3) **Daylight Assessment:** diffuse daylight of an existing building may be adversely affected by a proposed development if either:
  - a. the vertical sky component measured at the centre of an existing main window is less than 27%, **and** less than 0.8 times its former value; or
  - b. the area of the working plane which can receive direct skylight is reduced to less than 0.8 times its former value.

#### 4.6 Basis of room or dwelling selection.

The virtual sky component assessment has been targeted to rooms and dwellings who are perceived to be in challenging locations i.e. basement rooms, ground floor rooms and dwellings/rooms facing close by new proposed tall buildings on the basis that if these rooms pass the minimum requirements all rooms at higher levels will definitely pass the minimum recommendations as a result of the improving vertical sky view angle.

#### 4.7 Selected rooms / dwellings location map.

A total of 101 room locations have been selected on the basis that these locations are more daylight challenging.



## 5 Calculation results

### 5.1 Distance test.

We would normally execute a distance test to any selected rooms to determine if any further calculations are required to establish the effects on sky views however despite the fact that in some circumstances the distance test alone would have sufficed, we have executed the full VSC calculations for all selected neighbouring buildings habitable rooms.

### 5.2 Vertical sky component (VSC).

The VSC has been calculated for all of the potentially affected windows within the adjacent properties. When undertaking a daylight assessment, the BRE Report suggests a VSC of 27% or more should be achieved if a room is to have adequate day light. However, this level need not be applied to rooms which do not require high levels of natural light such as garages, storage rooms, etc.

It also suggests that when existing levels of daylight are below 27% VSC, a reduction of more than 20% from the existing level will be noticeable to the inhabitants, i.e. an impact will occur.

BS 8206 defines an unobstructed sky view as a 36.8% (40%) visible sky line.

BS 8206 also gives guidance on the recommended glazed area per habitable room versus the achieved line of light or sky angle.

### 5.3 Calculated sections.

The table below shows the selected sky view component section analysed.

Obstruction	View point 1	View point 2	View point 3	View point 4
Block 3	3.1 Block 2	3.2 Block 2	3.3 Block 14	3.4 Block 4
Block 4	4.1 Houses	4.2 Block 3	4.3 Block 14	
Block 5	5.1 Block 4	5.2 Block 4	5.3 Block 13	5.4 Block 6
Block 6	6.1 Block 5	6.2 Block 10	6.3 Houses	6.4 Houses
Block 8	8.1 Block 7	8.2 Block 9	8.3 Block 11	8.4 Block 26
Block 11	11.1 Block 10	11.2 Block 12	11.3 Block 28	11.4 Block 8
Block 13	13.1 Block 5	13.2 Block 14	13.3 Block 15	13.4 Block 12
Block 14	14.1 Block 3	14.2 Block 21	14.3 Block 15	14.4 Block 13
Block 15	15.1 Block 14	15.2 Block 20	15.3 Block 16	
Block 17	17.1 Block 19	17.2 Block 18	17.3 Block 5	17.4 Block 5
Block 25	25.1 Block 33	25.2 Houses	25.3 Block 27	
Block 26	26.1 Block 7	26.2 Block 8	26.3 Block 8	
Block 27	27.1 Houses	27.2 Houses	27.3 Block Houses	
Block 28	28.1 Block 12	28.2 Block 16	28.3 Block 11	
Block 29	29.1 Block 22	29.2 Houses		

### 5.4 Limited illustrations in this section.

To illustrate all 45 single point sectional street views and result tables in this section would take up considerable space and we have therefore selected 4 no. view points c/w illustrations/result tables as examples with the remainder of the 45 points listed in appendix A.

**5.5 Receptors 36 - Block 36 (Marshfield). Obstruction : Block 25.**

Block 25 theoretically effects the day light reception in any habitable rooms in block 27, the houses across on Marrisfield avenue and the adjacent Marrisfield block 36.

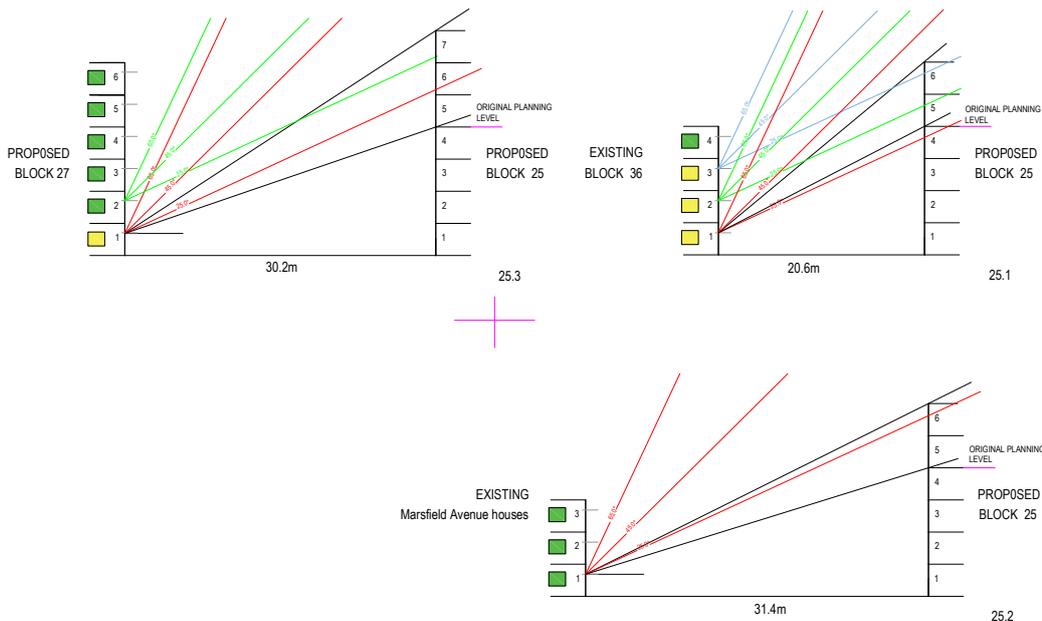
Only Marrisfield block 36 shows and the ground floor of block 27 a change factor in day light reception marginally beyond the maximum recommended 0.8 however given that the effected windows in Block 36 relate to bed rooms and that the glazed area of these window wall areas are excess of 35% the day light reception (ADF) will be in excess of 2% and in excess of the BRE recommended 1%.

The glazed area of the window walls in the new proposed block 27 have been increased to allow for (more then) sufficient day light reception.

25.1 BLOCK 25 Obstacle		BLOCK 36 Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	33.3	24%	46.5	18%	0.78
LV1	Window	First	24.6	27%	40.5	21%	0.77
LV2	Window	Second	14.6	31%	33.3	24%	0.76
LV3	Window	Third	3.6	36%	24.6	27%	0.77

25.2 BLOCK 25 Obstacle		MARRSFIELD AV HO Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	17.4	30%	26.7	27%	0.88
LV1	Window	First	12.3	32%	22.2	28%	0.88
LV2	Window	Second	7.1	34%	17.4	30%	0.89

25.3 BLOCK 25 Obstacle		BLOCK 27 Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	18.9	30%	33.3	24%	0.80
LV1	Window	First	13.4	32%	28.9	26%	0.81
LV2	Window	Second	7.7	34%	24.1	27%	0.80
LV3	Window	Third	1.7	37%	18.9	30%	0.82
LV4	Window	Fourth	0	37%	13.4	32%	0.87
LV5	Window	Fifth	0	37%	7.7	34%	0.94



5.6 Receptors Block 3, Park street houses, Block 14. Obstruction : Block 4.

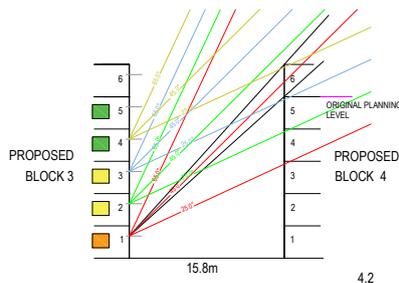
Block 4 theoretically effects the day light reception in any habitable rooms in block 3, the houses across on Park street and block 14.

None of the rooms show a change factor in day light reception beyond the maximum recommended 0.8 and the glazed area of the window walls in the new proposed blocks 3 and 14 have been increased to allow for (more then) sufficient day light reception.

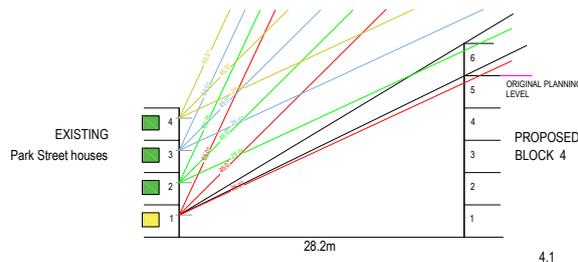
4.1 BLOCK 4 Obstacle Ex. Park St Hs Receptor			Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	26.2	27%	31.2	25%	0.93
LV1	Window	First	20.7	29%	26.2	27%	0.92
LV2	Window	Second	14.8	31%	20.7	29%	0.93
LV3	Window	Third	8.5	34%	14.8	31%	0.93

4.2 BLOCK 4 Obstacle BLOCK 3 Receptor			Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	42.1	20%	48.1	18%	0.88
LV1	Window	First	34.8	23%	42.1	20%	0.86
LV2	Window	Second	25.9	27%	34.8	23%	0.87
LV3	Window	Third	15.4	31%	25.9	27%	0.87
LV4	Window	Fourth	3.8	36%	15.4	31%	0.87
LV5	Window	Fifth	0	37%	3.8	36%	0.98

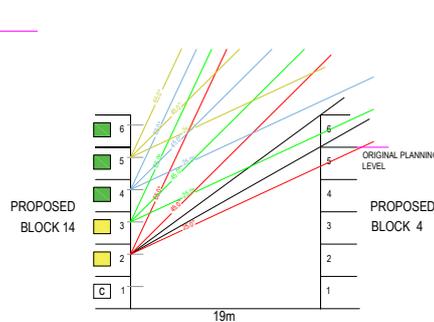
4.3 BLOCK 4 Obstacle BLOCK 14 Receptor			Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	36.6	22%	42.3	20%	0.90
LV1	Window	First	29.5	25%	36.4	22%	0.89
LV2	Window	Second	21.6	29%	29.5	25%	0.89
LV3	Window	Third	12.7	32%	21.6	29%	0.89
LV4	Window	Fourth	3.1	36%	12.7	32%	0.90
LV5	Window	Fifth	0	37%	3.1	36%	0.98



4.2



4.1



4.3



5.7 Receptors Block 5, Block 10, Park street houses, Belltree avenue houses. Obstruction : Block 6.

Block 6 theoretically effects the day light reception in any habitable rooms in block 5, the houses across on Bell tree avenue / Park street and block 10.

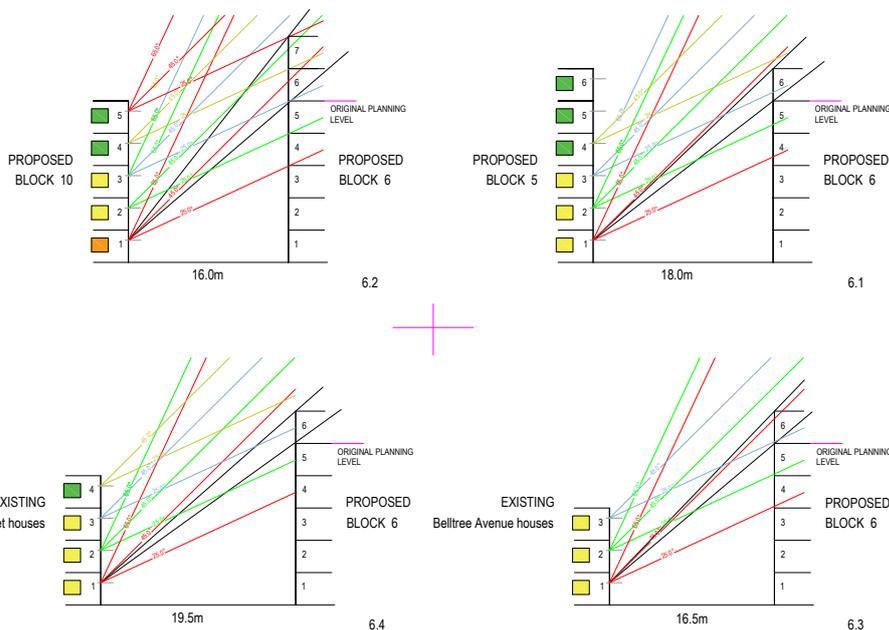
Only block 10 shows a change factor in day light reception marginally beyond the maximum recommended 0.8 however given that the effected windows in Block 10 are still to be “designed” and can have an increased glazed area of +/- 40% of the relevant window wall to ensure that sufficient day light is received in these rooms.

6.1 BLOCK 6 Obstacle			BLOCK 5 Receptor		Original planning		Proposed	
			Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	37.9	22%	43.8	20%	0.89	
LV1	Window	First	30.9	25%	37.9	22%	0.89	
LV2	Window	Second	19.9	29%	28.4	26%	0.88	
LV3	Window	Third	13.3	32%	22.7	28%	0.89	
LV4	Window	Fourth	3.2	36%	13.3	32%	0.89	
LV5	Window	Fifth	0	37%	3.2	36%	0.98	

6.2 BLOCK 6 Obstacle			BLOCK 10 Receptor		Original planning		Proposed	
			Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	41.2	20%	52.1	16%	0.79	
LV1	Window	First	33.9	24%	47.2	18%	0.76	
LV2	Window	Second	25.2	27%	41.2	20%	0.76	
LV3	Window	Third	14.9	31%	33.9	24%	0.76	
LV4	Window	Fourth	3.6	36%	25.2	27%	0.76	

6.3 BLOCK 6 Obstacle			Ex. Belltree Hs Receptor		Original planning		Proposed	
			Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	40.4	21%	46.3	18%	0.89	
LV1	Window	First	33.1	24%	40.4	21%	0.88	
LV2	Window	Second	24.5	27%	33.1	24%	0.87	

6.4 BLOCK 6 Obstacle			Ex. Park St Hs Receptor		Original planning		Proposed	
			Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	35.7	23%	41.5	20%	0.90	
LV1	Window	First	28.9	26%	35.7	23%	0.89	
LV2	Window	Second	21.1	29%	28.9	26%	0.91	
LV3	Window	Third	12.3	32%	21.1	29%	0.89	



5.8 Receptors Block 7 and Block 8. Obstruction : Block 26 .

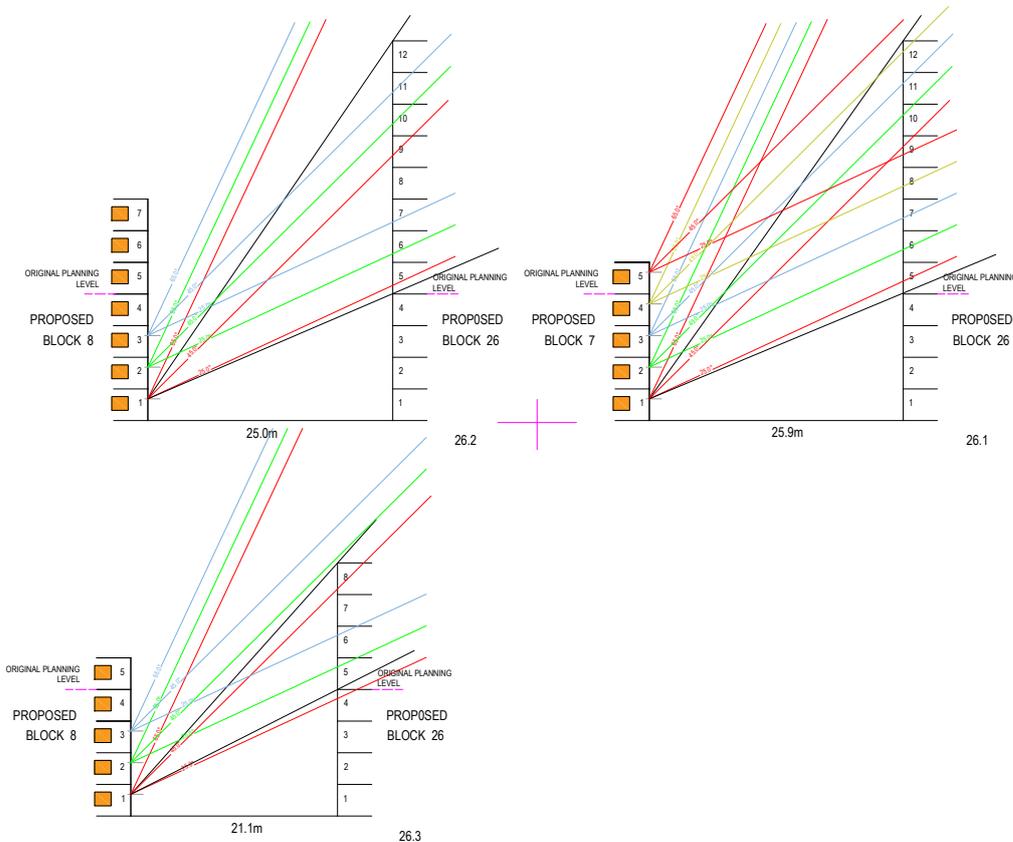
Block 26, from all blocks has the largest change (in height) and theoretically effects the day light reception in any habitable rooms in block 7 and block 8.

This change in height has shown the change factor in block 8 is deemed acceptable whereas the day light reception in the assumed block 7 is beyond the minimum recommendation of the BRE report.

Block 7 however is not part of this planning application and indeed has an expired planning permission and can be re-designed to accommodate the required day light reception by having an increased glazed area of +/- 35% of the relevant window wall to ensure that sufficient day light is received in these rooms.

26.1 BLOCK 26		BLOCK 7	Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	22.4	28%	54.8	15%	0.54
LV1	Window	First	16.1	31%	52.3	16%	0.53
LV2	Window	Second	9.2	34%	49.4	17%	0.52
LV3	Window	Third	2.1	36%	46.1	18%	0.51
LV4	Window	Fourth	0	37%	42.5	20%	0.55

26.2 BLOCK 8		BLOCK 26	Existing / Current / original										Proposed										
Receptor	Obstacle		Horz 1	Vert 1	Horz 2	Vert 2	Horz 3	Vert 3	Horz 4	Vert 4	Horz sum	VSC	Horz 1	Vert 1	Horz 2	Vert 2	Horz 3	Vert 3	Horz 4	Vert 4	Horz sum	VSC	Change
LV1	Window	Ground	18	28.5	36	0	67	23.2	37	0	158	32%	18	28.5	36	0	67	55.1	37	0	158	26%	0.83
LV2	Window	First	18	22.1	36	0	67	16.6	37	0	158	33%	18	22.1	36	0	67	53.2	37	0	158	27%	0.81
LV3	Window	Second	18	16.2	36	0	67	9.5	37	0	158	35%	18	16.2	36	0	67	50.4	37	0	158	28%	0.80
LV4	Window	Third	18	9.4	36	0	67	2.5	37	0	158	36%	18	9.4	36	0	67	47.2	37	0	158	28%	0.79
LV5	Window	Fourth	18	2.5	36	0	67	0	37	0	158	37%	18	2.5	36	0	67	44.4	37	0	158	29%	0.80
LV6	Window	Fifth	18	0	36	0	67	0	37	0	158	37%	18	0	36	0	67	40.2	37	0	158	30%	0.82
LV7	Window	Sixth	18	0	36	0	67	0	37	0	158	37%	18	0	36	0	67	35.6	37	0	158	31%	0.84



5.9 Receptors Block 16, 18 & 19. Obstruction : Block 17.

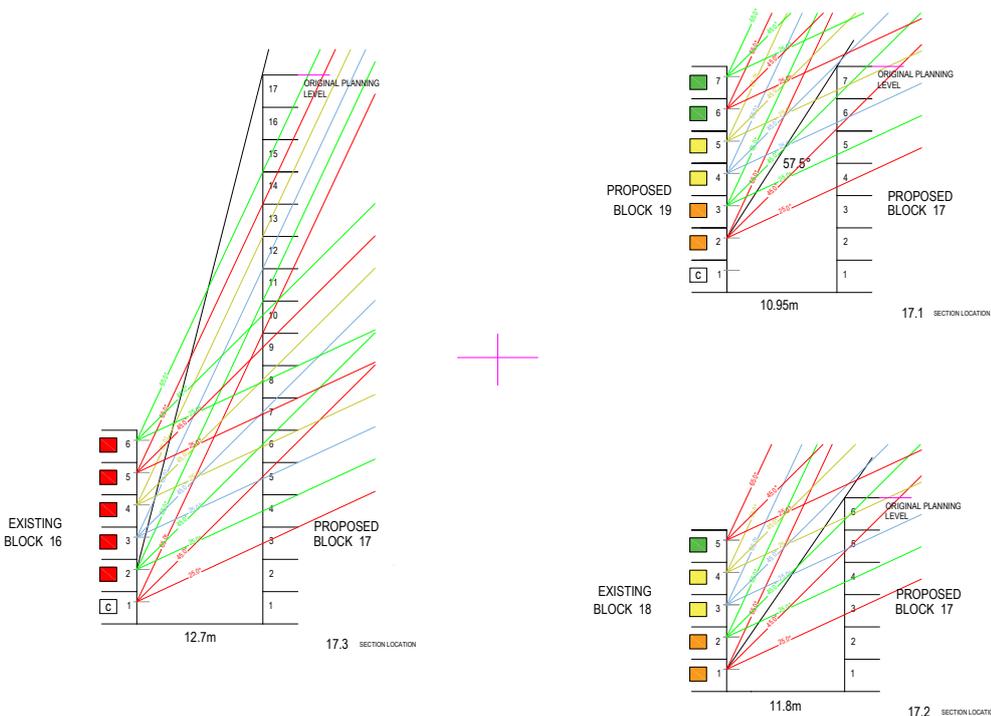
Block 17 has not changed in height / width and therefore there is no change to any day light reception in the habitable room in neighbouring blocks or in other words the day light change factor between the original planning permission granted and the current proposal = 1.

Actual day light reception in the habitable rooms in block 16 is addressed in section 7.

17.1 BLOCK 17 Obstacle		BLOCK 19 Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	61.8	12%	61.8	12%	1.00
LV1	Window	First	57.5	14%	57.5	14%	1.00
LV2	Window	Second	51.9	16%	51.9	16%	1.00
LV3	Window	Third	44.4	19%	44.4	19%	1.00
LV4	Window	Fourth	34.4	23%	34.4	23%	1.00
LV5	Window	Fifth	21.2	29%	21.2	29%	1.00
LV6	Window	Sixth	5.3	35%	5.3	35%	1.00

17.2 BLOCK 17 Obstacle		BLOCK 18 Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	57.5	14%	57.5	14%	1.00
LV1	Window	First	49.9	17%	49.9	17%	1.00
LV2	Window	Second	42.4	20%	42.4	20%	1.00
LV3	Window	Third	32.5	24%	32.5	24%	1.00
LV4	Window	Fourth	19.9	29%	19.9	29%	1.00

17.3 BLOCK 17 Obstacle		BLOCK 16 Receptor	Original planning		Proposed		
			Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	76.6	6%	76.6	6%	1.00
LV1	Window	First	75.8	7%	75.8	7%	1.00
LV2	Window	Second	74.8	7%	74.8	7%	1.00
LV3	Window	Third	73.8	7%	73.8	7%	1.00
LV4	Window	Fourth	72.5	8%	72.5	8%	1.00
LV5	Window	Fifth	71.1	8%	71.1	8%	1.00



### 5.10 VSC Conclusion.

Based on the calculation results as shown in appendix A we conclude that the effects of new proposed development compared with the original planning permission granted buildings are within the guidelines of the BRE report and that any of the marginal infringements have been designed out by the increased in glazed area in the relevant facades.

Quick overview on the effects on sky view angle changes between original planning permission granted and current proposals.

ID	OK	<=5% over	<=10% over	>10%	Virtual block
Obstruction	View point 1	View point 2	View point 3	View point 4	
Block 3	3.1 Block 2	3.2 Block 2	3.3 Block 14	3.4 Block 4	
Block 4	4.1 Houses	4.2 Block 3	4.3 Block 14		
Block 5	5.1 Block 4	5.2 Block 4	5.3 Block 13	5.4 Block 6	
Block 6	6.1 Block 5	6.2 Block 10	6.3 Houses	6.4 Houses	
Block 8	8.1 Block 7	8.2 Block 9	8.3 Block 11	8.4 Block 26	
Block 11	11.1 Block 10	11.2 Block 12	11.3 Block 28	11.4 Block 8	
Block 13	13.1 Block 5	13.2 Block 14	13.3 Block 15	13.4 Block 12	
Block 14	14.1 Block 3	14.2 Block 21	14.3 Block 15	14.4 Block 13	
Block 15	15.1 Block 14	15.2 Block 20	15.3 Block 16		
Block 17	17.1 Block 19	17.2 Block 18	17.3 Block 5	17.4 Block 5	
Block 25	25.1 Block 33	25.2 Houses	25.3 Block 27		
Block 26	26.1 Block 7	26.2 Block 8	26.3 Block 8		
Block 27	27.1 Houses	27.2 Houses	27.3 Block 7		
Block 28	28.1 Block 12	28.2 Block 16	28.3 Block 11		
Block 29	29.1 Block 22	29.2 Houses			

Table 5.3

Blocks 7, 9 and 10 are virtual blocks with previous planning permissions expired and are not part of this planning application and can be re-designed to accommodate the required day light reception by having an increased glazed area of +/- 35% of the relevant window wall to ensure that sufficient day light is received in these rooms.

The minor infringements (yellow) technically mean that the glazed area of the receptors are to be increased from 20% glazed area of the relevant window wall to between 21% and 31% which have been addressed in the current design with a glazed area of the effected façade well over 35% of the relevant room window walls.



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# APPENDIX A

DKP-K00-6062-A

APPENDIX TO

DAYLIGHT RECEPTION REPORT DKP-K00-6062

**SKY VIEW CROSS SECTIONS AND CALCULATION TABLES**

Contents

Obstruction	View point 1		View point 2		View point 3		View point 4	
Block 3	3.1	Block 2	3.2	Block 2	3.3	Block 14	3.4	Block 4
Block 4	4.1	Houses	4.2	Block 3	4.3	Block 14		
Block 5	5.1	Block 4	5.2	Block 4	5.3	Block 13	5.4	Block 6
Block 6	6.1	Block 5	6.2	Block 10	6.3	Houses	6.4	Houses
Block 8	8.1	Block 7	8.2	Block 9	8.3	Block 11	8.4	Block 26
Block 11	11.1	Block 10	11.2	Block 12	11.3	Block 28	11.4	Block 8
Block 13	13.1	Block 5	13.2	Block 14	13.3	Block 15	13.4	Block 12
Block 14	14.1	Block 3	14.2	Block 21	14.3	Block 15	14.4	Block 13
Block 15	15.1	Block 14	15.2	Block 20	15.3	Block 16		
Block 17	17.1	Block 19	17.2	Block 18	17.3	Block 5	17.4	Block 5
Block 25	25.1	Block 33	25.2	Houses	25.3	Block 27		
Block 26	26.1	Block 7	26.2	Block 8	26.3	Block 8		
Block 27	27.1	Houses	27.2	Houses	27.3	Block Houses		
Block 28	28.1	Block 12	28.2	Block 16	28.3	Block 11		
Block 29	29.1	Block 22	29.2	Houses				



## Block 3

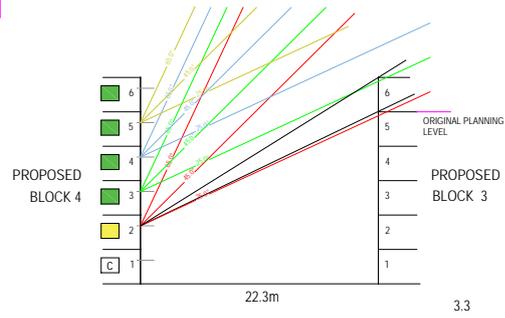
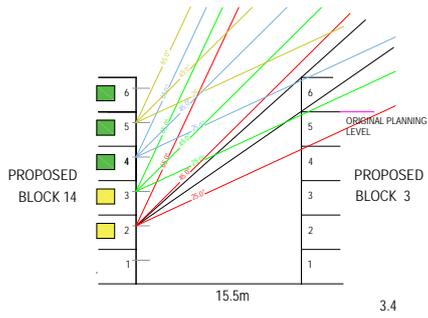
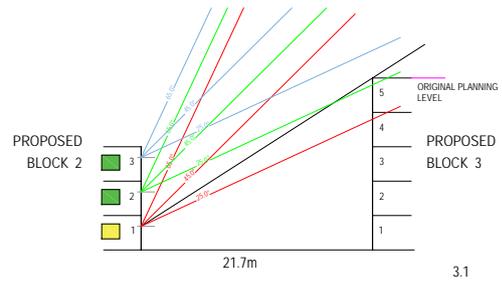
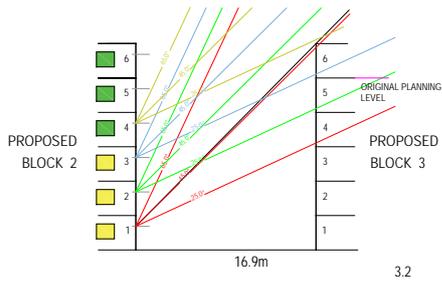
3.1		BLOCK 3 Obstacle	BLOCK 2 Receptor	Original planning		Proposed		Change
				Angle	VSC	Angle	VSC	
LV0	Window		Ground	32.9	24%	32.9	24%	1.00
LV1	Window		First	26.4	27%	26.4	27%	1.00
LV2	Window		Second	19.1	29%	19.1	29%	1.00

3.2		BLOCK 3 Obstacle	BLOCK 2 Receptor	Original planning		Proposed		Change
				Angle	VSC	Angle	VSC	
LV0	Window		Ground	39.7	21%	45.6	19%	0.89
LV1	Window		First	32.5	24%	39.7	21%	0.89
LV2	Window		Second	24	27%	32.5	24%	0.89
LV3	Window		Third	14.2	31%	24	27%	0.88
LV4	Window		Fourth	3.4	36%	14.2	31%	0.88
LV5	Window		Fifth	0	37%	3.4	36%	0.98

3.3		BLOCK 3 Obstacle	BLOCK 4 Receptor	Original planning		Proposed		Change
				Angle	VSC	Angle	VSC	
LV0	Window		Ground	32.2	24%	37.8	22%	0.92
LV1	Window		First	25.8	27%	32.2	24%	0.90
LV2	Window		Second	18.6	30%	25.8	27%	0.91
LV3	Window		Third	10.8	33%	18.6	30%	0.91
LV4	Window		Fourth	2.6	36%	10.8	33%	0.92
LV5	Window		Fifth	0	37%	2.6	36%	0.99

3.4		BLOCK 3 Obstacle	BLOCK 14 Receptor	Original planning		Proposed		Change
				Angle	VSC	Angle	VSC	
LV0	Window		Ground	42.1	20%	48.1	18%	0.88
LV1	Window		First	34.4	23%	42.1	20%	0.86
LV2	Window		Second	25.9	27%	34.8	23%	0.87
LV3	Window		Third	15.4	31%	25.9	27%	0.87
LV4	Window		Fourth	3.8	36%	15.4	31%	0.87
LV5	Window		Fifth	0	37%	3.8	36%	0.98



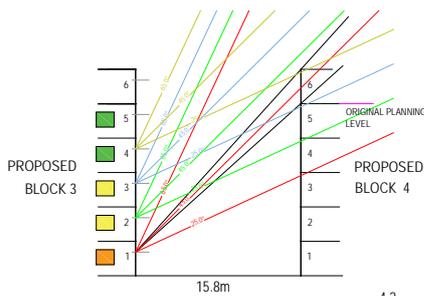


Block 4

4.1 BLOCK 4			Ex. Park St Hs		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0	Window	Ground	26.2	27%	31.2	25%	0.93		
LV1	Window	First	20.7	29%	26.2	27%	0.92		
LV2	Window	Second	14.8	31%	20.7	29%	0.93		
LV3	Window	Third	8.5	34%	14.8	31%	0.93		

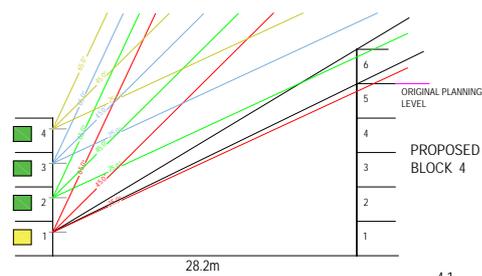
4.2 BLOCK 4			BLOCK 3		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0	Window	Ground	42.1	20%	48.1	18%	0.88		
LV1	Window	First	34.8	23%	42.1	20%	0.86		
LV2	Window	Second	25.9	27%	34.8	23%	0.87		
LV3	Window	Third	15.4	31%	25.9	27%	0.87		
LV4	Window	Fourth	3.8	36%	15.4	31%	0.87		
LV5	Window	Fifth	0	37%	3.8	36%	0.98		

4.3 BLOCK 4			BLOCK 14		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0	Window	Ground	36.6	22%	42.3	20%	0.90		
LV1	Window	First	29.5	25%	36.4	22%	0.89		
LV2	Window	Second	21.6	29%	29.5	25%	0.89		
LV3	Window	Third	12.7	32%	21.6	29%	0.89		
LV4	Window	Fourth	3.1	36%	12.7	32%	0.90		
LV5	Window	Fifth	0	37%	3.1	36%	0.98		

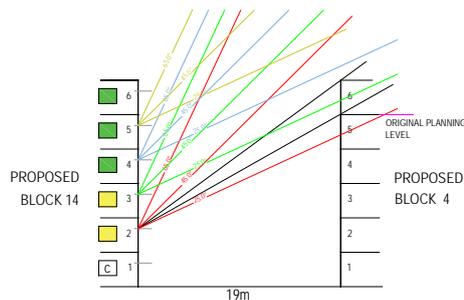


4.2

EXISTING  
Park Street houses



4.1



4.3



Block 5

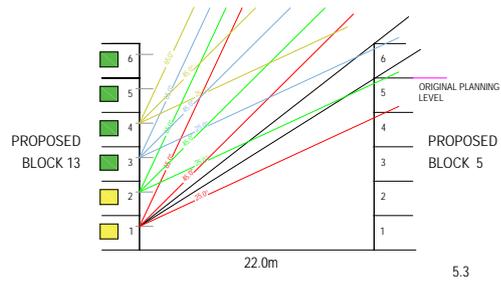
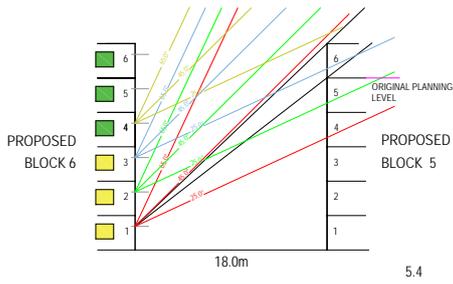
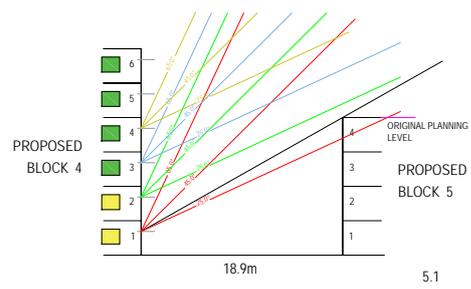
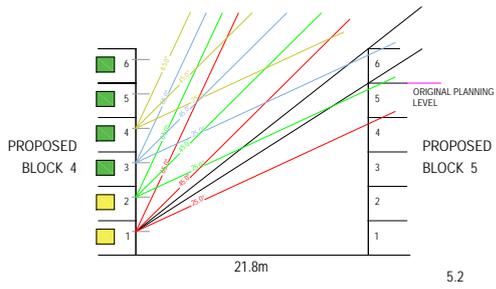
5.1 BLOCK 5			BLOCK 4		Original planning			Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	29.7	25%	29.7	25%	1.00			
LV1	Window	First	21.7	29%	21.7	29%	1.00			
LV2	Window	Second	12.7	32%	12.7	32%	1.00			
LV3	Window	Third	3.1	36%	3.1	36%	1.00			
LV4	Window	Fourth	0	37%	0	37%	1.00			
LV5	Window	Fifth	0	37%	0	37%	1.00			

5.2 BLOCK 5			BLOCK 4		Original planning			Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	32.7	24%	38.4	22%	0.90			
LV1	Window	First	26.3	27%	32.7	24%	0.91			
LV2	Window	Second	19	29%	26.3	27%	0.91			
LV3	Window	Third	11.1	33%	19	29%	0.91			
LV4	Window	Fourth	2.7	36%	11.1	33%	0.90			
LV5	Window	Fifth	0	37%	2.7	36%	0.99			

5.3 BLOCK 5			BLOCK 13		Original planning			Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	32.5	24%	38.1	22%	0.90			
LV1	Window	First	26.1	27%	32.5	24%	0.91			
LV2	Window	Second	18.9	30%	26.1	27%	0.90			
LV3	Window	Third	11	33%	18.9	30%	0.92			
LV4	Window	Fourth	2.7	36%	11	33%	0.90			
LV5	Window	Fifth	0	37%	2.7	36%	0.99			

5.4 BLOCK 5			BLOCK 6		Original planning			Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	37.9	22%	43.8	20%	0.89			
LV1	Window	First	30.9	25%	37.9	22%	0.89			
LV2	Window	Second	22.7	28%	30.9	25%	0.89			
LV3	Window	Third	13.7	32%	22.7	28%	0.89			
LV4	Window	Fourth	3.2	36%	13.3	32%	0.89			
LV5	Window	Fifth	0	37%	3.2	36%	0.98			





Block 6

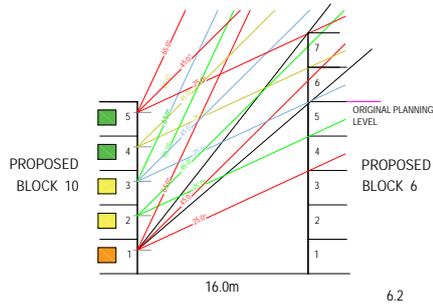
6.1 BLOCK 6			BLOCK 5		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	37.9	22%	43.8	20%	0.89			
LV1	Window	First	30.9	25%	37.9	22%	0.89			
LV2	Window	Second	19.9	29%	28.4	26%	0.88			
LV3	Window	Third	13.3	32%	22.7	28%	0.89			
LV4	Window	Fourth	3.2	36%	13.3	32%	0.89			
LV5	Window	Fifth	0	37%	3.2	36%	0.98			

6.2 BLOCK 6			BLOCK 10		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	41.2	20%	52.1	16%	0.79			
LV1	Window	First	33.9	24%	47.2	18%	0.76			
LV2	Window	Second	25.2	27%	41.2	20%	0.76			
LV3	Window	Third	14.9	31%	33.9	24%	0.76			
LV4	Window	Fourth	3.6	36%	25.2	27%	0.76			

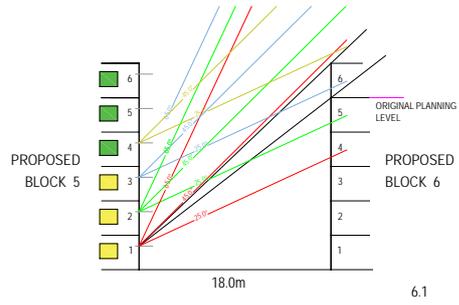
6.3 BLOCK 6			Ex. Belltree Hs		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	40.4	21%	46.3	18%	0.89			
LV1	Window	First	33.1	24%	40.4	21%	0.88			
LV2	Window	Second	24.5	27%	33.1	24%	0.87			

6.4 BLOCK 6			Ex. Park St Hs		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	35.7	23%	41.5	20%	0.90			
LV1	Window	First	28.9	26%	35.7	23%	0.89			
LV2	Window	Second	21.1	29%	28.9	26%	0.91			
LV3	Window	Third	12.3	32%	21.1	29%	0.89			

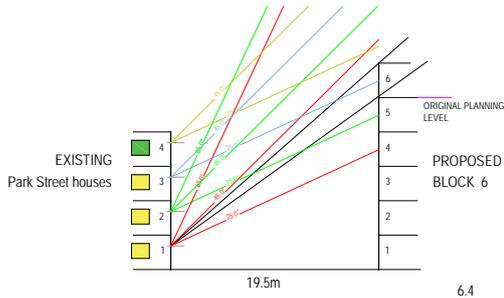




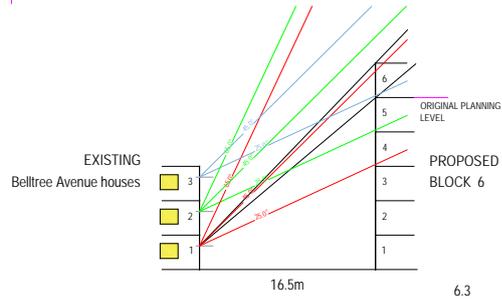
6.2



6.1



6.4



6.3



## Block 8

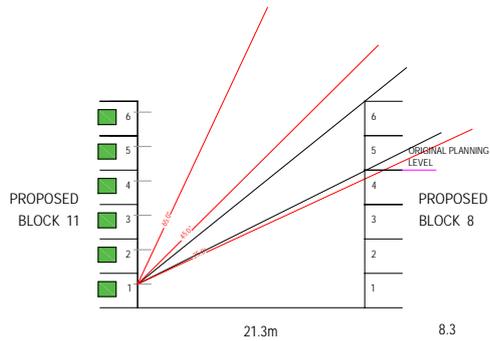
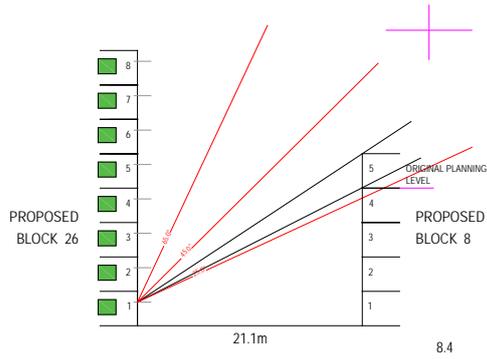
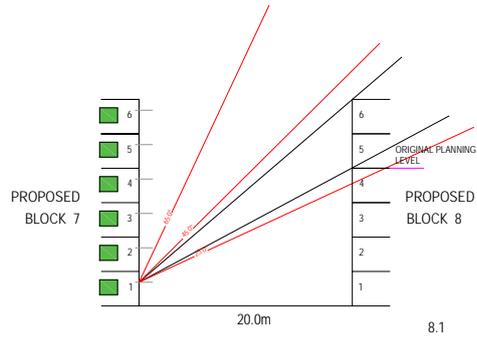
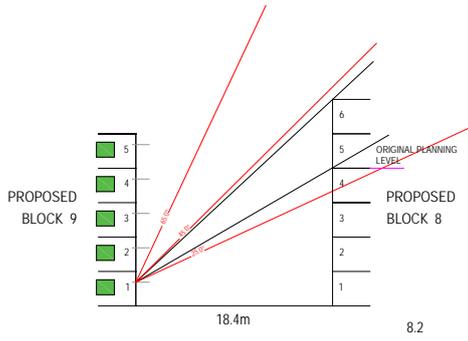
8.1 BLOCK 8			BLOCK 7		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	28.3	26%	40.8	21%	0.81			
LV1	Window	First	20.6	29%	34.9	23%	0.81			
LV2	Window	Second	12	32%	28.3	26%	0.80			
LV3	Window	Third	2.9	36%	20.6	29%	0.80			
LV4	Window	Fourth	0	37%	12	32%	0.88			
LV5	Window	Fifth	0	37%	2.9	36%	0.99			

8.2 BLOCK 8			BLOCK 9		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	30.3	25%	43.1	20%	0.79			
LV1	Window	First	22.2	28%	37.2	22%	0.79			
LV2	Window	Second	13	32%	30.3	25%	0.79			
LV3	Window	Third	3.2	36%	22.2	28%	0.79			
LV4	Window	Fourth	0	37%	13	32%	0.87			

8.3 BLOCK 8			BLOCK 11		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	26.8	27%	39	21%	0.81			
LV1	Window	First	19.4	29%	33.4	24%	0.81			
LV2	Window	Second	11.3	33%	26.8	27%	0.82			
LV3	Window	Third	2.7	36%	19.4	29%	0.81			
LV4	Window	Fourth	0	37%	11.3	33%	0.89			
LV5	Window	Fifth	0	37%	2.7	36%	0.99			

8.4 BLOCK 8			BLOCK 26		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	17.1	30%	33.6	24%	0.79			
LV1	Window	First	19.1	29%	27.1	26%	0.89			
LV2	Window	Second	11.4	33%	19.6	29%	0.91			
LV3	Window	Third	2.8	36%	11.4	33%	0.90			
LV4	Window	Fourth	0	37%	2.8	36%	0.99			





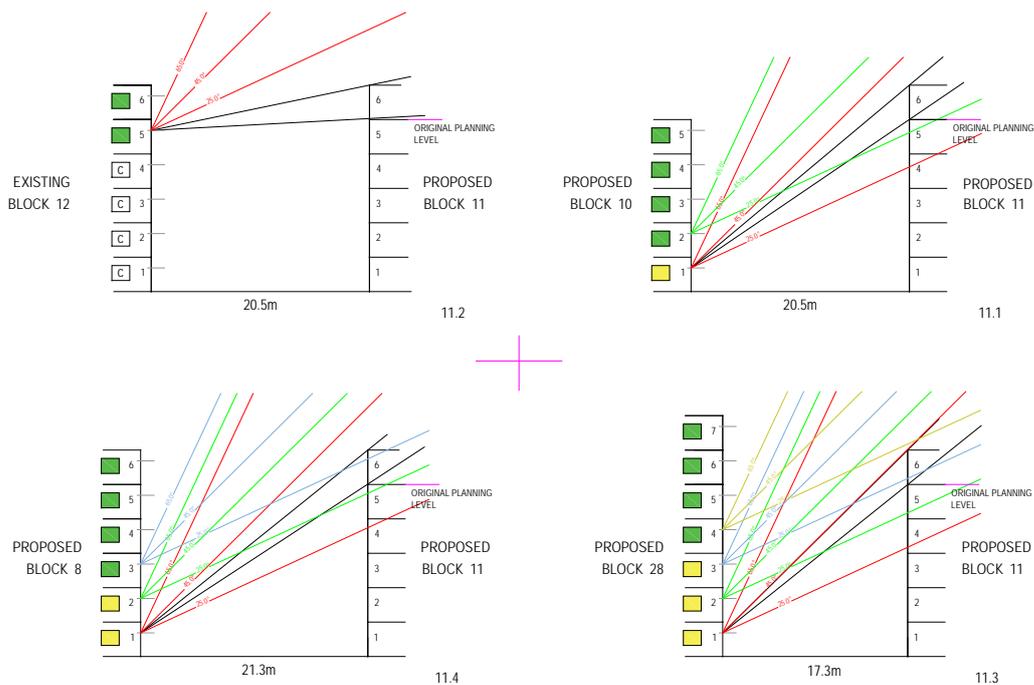
Block 11

11.1 BLOCK 11 Obstacle			BLOCK 10 Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	34.4	23%	40.2	21%	0.90		
LV1	Window	First	27.7	26%	34.4	23%	0.90		
LV2	Window	Second	20.6	29%	28.8	26%	0.89		
LV3	Window	Third	11.8	33%	20.2	29%	0.89		
LV4	Window	Fourth	2.8	36%	11.8	33%	0.90		

11.2 BLOCK 11 Obstacle			BLOCK 12 Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	34.4	23%	40.2	21%	0.90		
LV1	Window	First	27.7	26%	34.4	23%	0.90		
LV2	Window	Second	20.2	29%	27.7	26%	0.91		
LV3	Window	Third	11.9	33%	20.2	29%	0.89		
LV4	Window	Fourth	2.8	36%	11.8	33%	0.90		
LV5	Window	Fifth	0	37%	2.8	36%	0.99		

11.3 BLOCK 11 Obstacle			BLOCK 28 Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	38.9	22%	44.9	19%	0.89		
LV1	Window	First	31.8	25%	38.9	22%	0.89		
LV2	Window	Second	23.4	28%	31.8	25%	0.89		
LV3	Window	Third	13.8	32%	23.4	28%	0.88		
LV4	Window	Fourth	3.4	36%	13.8	32%	0.89		
LV5	Window	Fifth	0	37%	3.4	36%	0.98		



Block 13

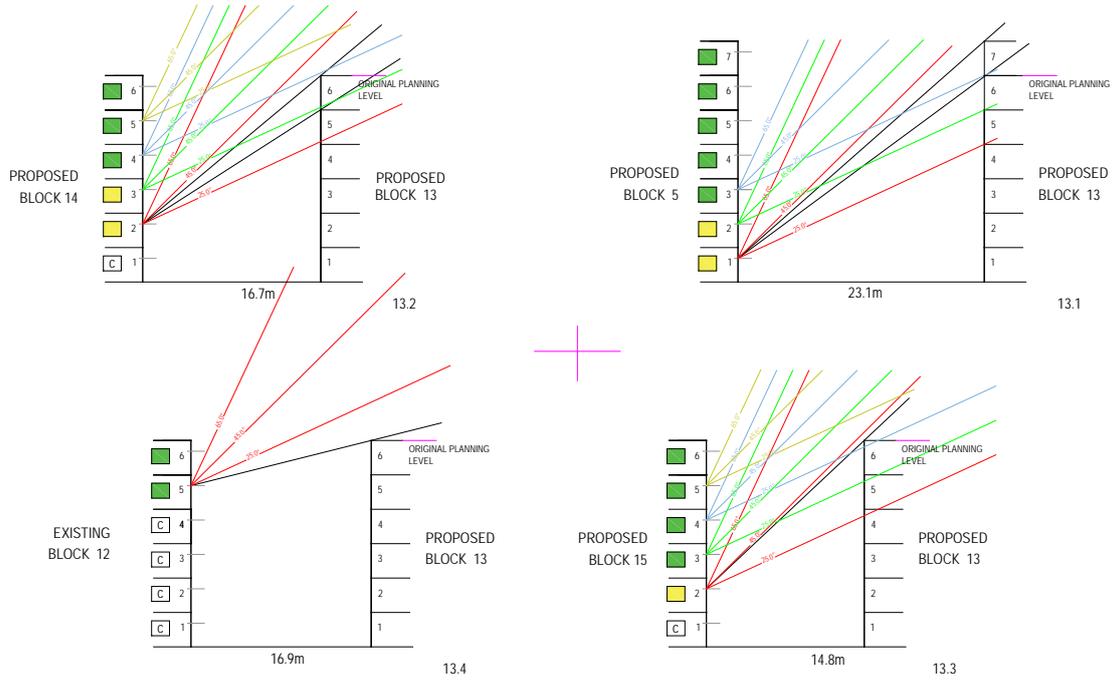
13.1 BLOCK 13			BLOCK 5		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	Angle	VSC	Change
LV0	Window	Ground	36.8	22%	41.6	20%	0.91			
LV1	Window	First	31.2	25%	36.8	22%	0.92			
LV2	Window	Second	25	27%	31.2	25%	0.91			
LV3	Window	Third	18	30%	25	27%	0.91			
LV4	Window	Fourth	10.5	33%	18	30%	0.91			
LV5	Window	Fifth	2.4	36%	10.5	33%	0.92			
LV6	Window	Sixth	0	37%	2.5	36%	0.99			

13.2 BLOCK 13			BLOCK 14		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	Angle	VSC	Change
LV0	Window	Ground	46	18%	46	18%	1.00			
LV1	Window	First	40	21%	40	21%	1.00			
LV2	Window	Second	32.8	24%	32.8	24%	1.00			
LV3	Window	Third	24.2	27%	24.2	27%	1.00			
LV4	Window	Fourth	14.3	31%	14.3	31%	1.00			
LV5	Window	Fifth	3.5	36%	3.5	36%	1.00			

13.3 BLOCK 13			BLOCK 15		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	Angle	VSC	Change
LV0	Window	Ground	49.4	17%	49.4	17%	1.00			
LV1	Window	First	43.1	20%	43.1	20%	1.00			
LV2	Window	Second	36	22%	36	22%	1.00			
LV3	Window	Third	26.9	27%	26.9	27%	1.00			
LV4	Window	Fourth	16.1	31%	16.1	31%	1.00			
LV5	Window	Fifth	3.9	36%	3.9	36%	1.00			

13.4 BLOCK 13			BLOCK 12		Original planning			Proposed		
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	Angle	VSC	Change
LV0	Window	Ground	46	18%	46	18%	1.00			
LV1	Window	First	40	21%	40	21%	1.00			
LV2	Window	Second	32.8	24%	32.8	24%	1.00			
LV3	Window	Third	24.2	27%	24.2	27%	1.00			
LV4	Window	Fourth	14.2	31%	14.2	31%	1.00			
LV5	Window	Fifth	3.5	36%	3.5	36%	1.00			





## Block 14

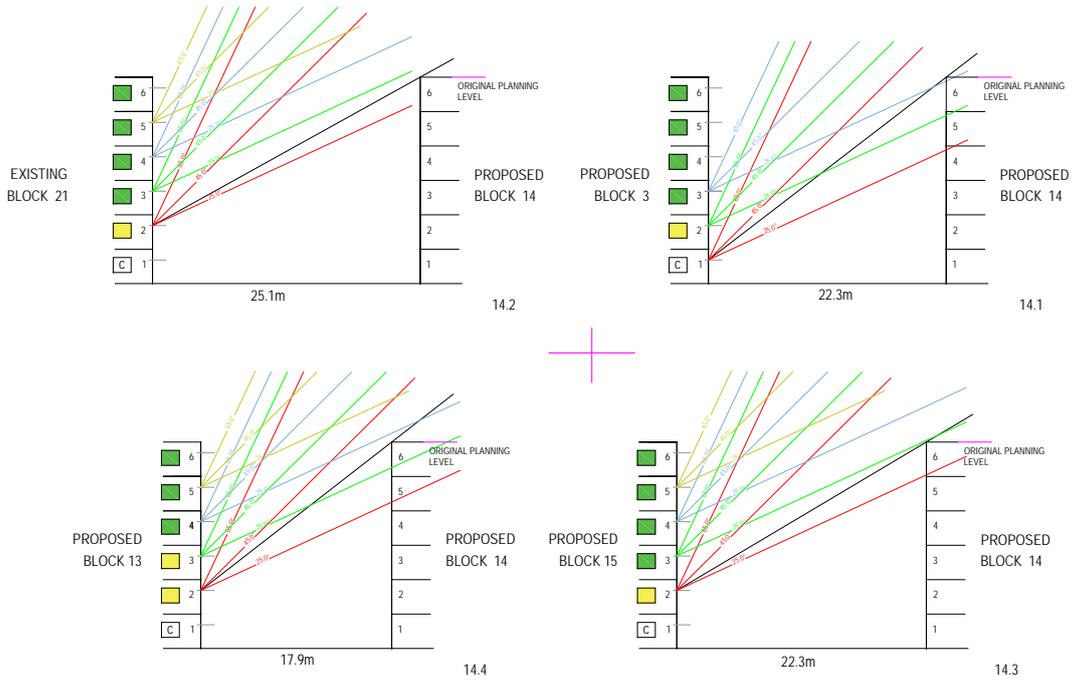
14.1 BLOCK 14			BLOCK 3		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	36.8	22%	36.8	22%	1.00			
LV1	Window	First	32.2	24%	32.2	24%	1.00			
LV2	Window	Second	25.8	27%	25.8	27%	1.00			
LV3	Window	Third	18.6	30%	18.6	30%	1.00			
LV4	Window	Fourth	10.8	33%	10.8	33%	1.00			
LV5	Window	Fifth	2.6	36%	2.6	36%	1.00			

14.2 BLOCK 14			BLOCK 21		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	34.5	23%	34.5	23%	1.00			
LV1	Window	First	29.2	25%	29.2	25%	1.00			
LV2	Window	Second	23.2	28%	23.2	28%	1.00			
LV3	Window	Third	16.7	31%	16.7	31%	1.00			
LV4	Window	Fourth	9.5	34%	9.5	34%	1.00			
LV5	Window	Fifth	2.3	36%	2.3	36%	1.00			

14.3 BLOCK 14			BLOCK 21		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	36.4	22%	36.4	22%	1.00			
LV1	Window	First	32.1	24%	32.1	24%	1.00			
LV2	Window	Second	24.7	27%	24.7	27%	1.00			
LV3	Window	Third	17.8	30%	17.8	30%	1.00			
LV4	Window	Fourth	10.3	33%	10.3	33%	1.00			
LV5	Window	Fifth	2.3	36%	2.3	36%	1.00			

14.4 BLOCK 14			BLOCK 13		Original planning			Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	44	19%	44	19%	1.00			
LV1	Window	First	38.1	22%	38.1	22%	1.00			
LV2	Window	Second	31	25%	31	25%	1.00			
LV3	Window	Third	22.8	28%	22.8	28%	1.00			
LV4	Window	Fourth	13.4	32%	13.4	32%	1.00			
LV5	Window	Fifth	3.3	36%	3.3	36%	1.00			





Block 15

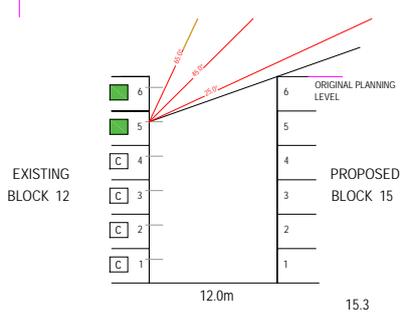
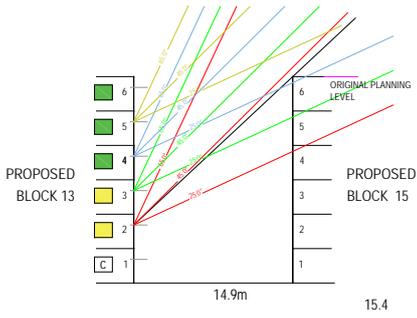
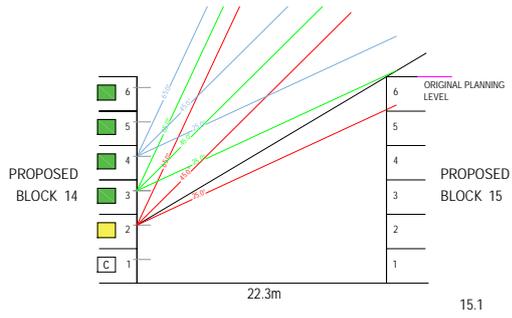
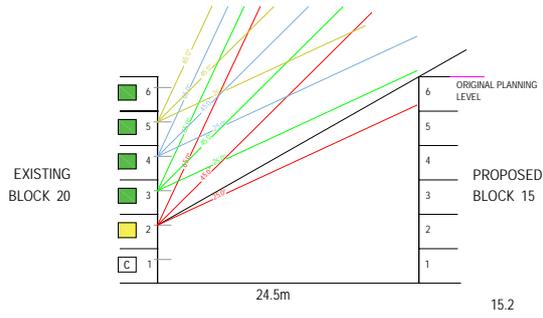
15.1 BLOCK 15			BLOCK 14		Original planning		Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	34.6	23%	34.6	23%	34.6	23%	1.00
LV1	Window	First	30.9	25%	30.9	25%	30.9	25%	1.00
LV2	Window	Second	24.7	27%	24.7	27%	24.7	27%	1.00
LV3	Window	Third	17.8	30%	17.8	30%	17.8	30%	1.00
LV4	Window	Fourth	10.3	33%	10.3	33%	10.3	33%	1.00
LV5	Window	Fifth	2.5	36%	2.5	36%	2.5	36%	1.00

15.2 BLOCK 15			BLOCK 20		Original planning		Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	35.2	23%	35.2	23%	35.2	23%	1.00
LV1	Window	First	29.8	25%	29.8	25%	29.8	25%	1.00
LV2	Window	Second	23.7	28%	23.7	28%	23.7	28%	1.00
LV3	Window	Third	17.1	30%	17.1	30%	17.1	30%	1.00
LV4	Window	Fourth	9.9	34%	9.9	34%	9.9	34%	1.00
LV5	Window	Fifth	2.4	36%	2.4	36%	2.4	36%	1.00

15.3 BLOCK 15			BLOCK 12		Original planning		Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	55.2	15%	55.2	15%	55.2	15%	1.00
LV1	Window	First	49.4	17%	49.4	17%	49.4	17%	1.00
LV2	Window	Second	41.9	20%	41.9	20%	41.9	20%	1.00
LV3	Window	Third	32.1	24%	32.1	24%	32.1	24%	1.00
LV4	Window	Fourth	19.6	29%	19.6	29%	19.6	29%	1.00
LV5	Window	Fifth	4.9	36%	4.9	36%	4.9	36%	1.00

15.4 BLOCK 15			BLOCK 13		Original planning		Proposed		
Obstacle			Receptor		Angle	VSC	Angle	VSC	Change
LV0	Window	Ground	49.2	17%	49.2	17%	49.2	17%	1.00
LV1	Window	First	43.3	20%	43.3	20%	43.3	20%	1.00
LV2	Window	Second	35.9	23%	35.9	23%	35.9	23%	1.00
LV3	Window	Third	26.8	27%	26.8	27%	26.8	27%	1.00
LV4	Window	Fourth	16	31%	16	31%	16	31%	1.00
LV5	Window	Fifth	3.9	36%	3.9	36%	3.9	36%	1.00



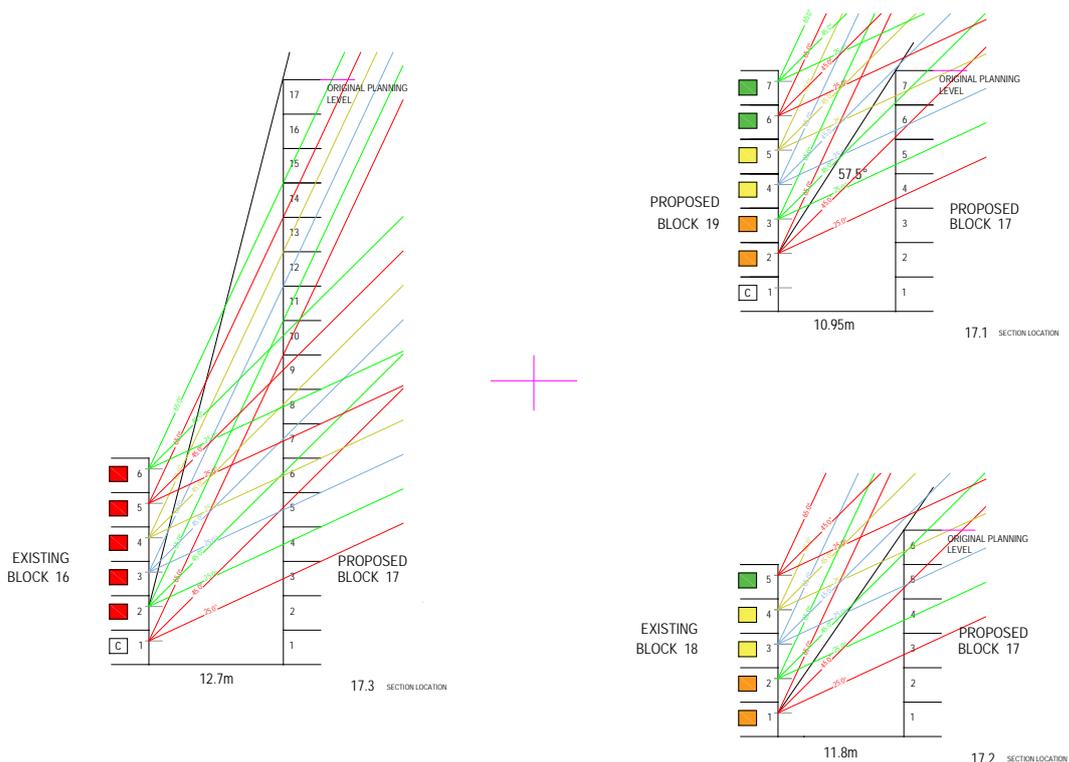


Block 17

17.1 BLOCK 17			BLOCK 19		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0 Window	Ground		61.8	12%	61.8	12%	1.00		
LV1 Window	First		57.5	14%	57.5	14%	1.00		
LV2 Window	Second		51.9	16%	51.9	16%	1.00		
LV3 Window	Third		44.4	19%	44.4	19%	1.00		
LV4 Window	Fourth		34.4	23%	34.4	23%	1.00		
LV5 Window	Fifth		21.2	29%	21.2	29%	1.00		
LV6 Window	Sixth		5.3	35%	5.3	35%	1.00		

17.2 BLOCK 17			BLOCK 18		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0 Window	Ground		57.5	14%	57.5	14%	1.00		
LV1 Window	First		49.9	17%	49.9	17%	1.00		
LV2 Window	Second		42.4	20%	42.4	20%	1.00		
LV3 Window	Third		32.5	24%	32.5	24%	1.00		
LV4 Window	Fourth		19.9	29%	19.9	29%	1.00		

17.3 BLOCK 17			BLOCK 16		Original planning		Proposed		
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change		
LV0 Window	Ground		76.6	6%	76.6	6%	1.00		
LV1 Window	First		75.8	7%	75.8	7%	1.00		
LV2 Window	Second		74.8	7%	74.8	7%	1.00		
LV3 Window	Third		73.8	7%	73.8	7%	1.00		
LV4 Window	Fourth		72.5	8%	72.5	8%	1.00		
LV5 Window	Fifth		71.1	8%	71.1	8%	1.00		

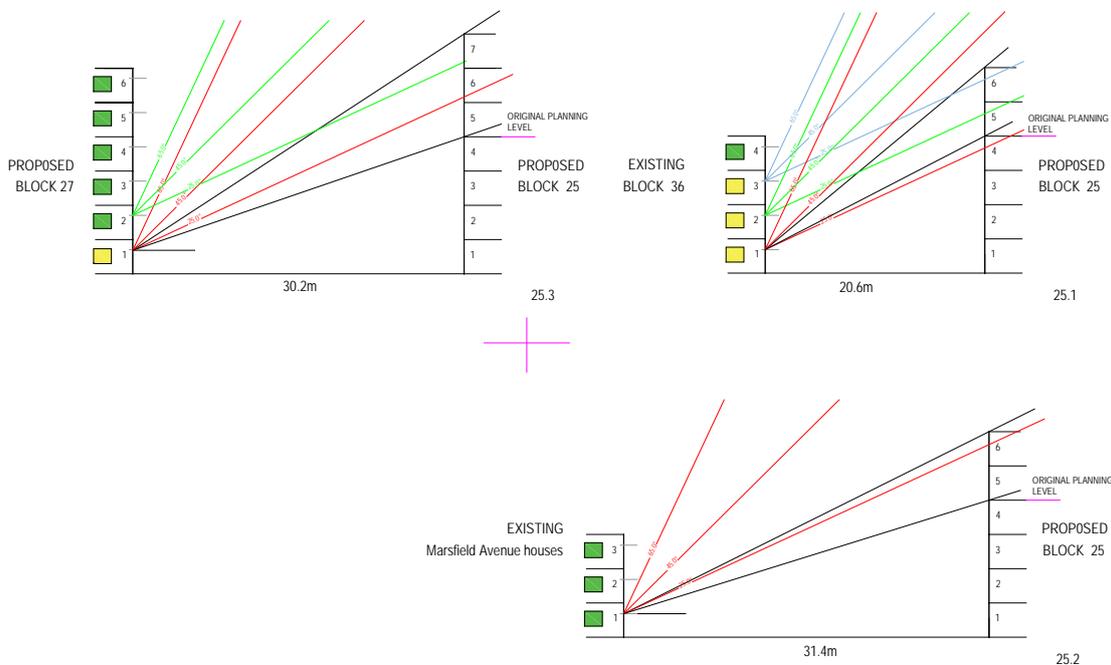


Block 25

25.1 BLOCK 25 Obstacle			BLOCK 36 Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	33.3	24%	46.5	18%	0.78		
LV1	Window	First	24.6	27%	40.5	21%	0.77		
LV2	Window	Second	14.6	31%	33.3	24%	0.76		
LV3	Window	Third	3.6	36%	24.6	27%	0.77		

25.2 BLOCK 25 Obstacle			MARSFIELD AV HO Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	17.4	30%	26.7	27%	0.88		
LV1	Window	First	12.3	32%	22.2	28%	0.88		
LV2	Window	Second	7.1	34%	17.4	30%	0.89		

25.3 BLOCK 25 Obstacle			BLOCK 27 Receptor		Original planning		Proposed		Change
			Angle	VSC	Angle	VSC			
LV0	Window	Ground	18.9	30%	33.3	24%	0.80		
LV1	Window	First	13.4	32%	28.9	26%	0.81		
LV2	Window	Second	7.7	34%	24.1	27%	0.80		
LV3	Window	Third	1.7	37%	18.9	30%	0.82		
LV4	Window	Fourth	0	37%	13.4	32%	0.87		
LV5	Window	Fifth	0	37%	7.7	34%	0.94		

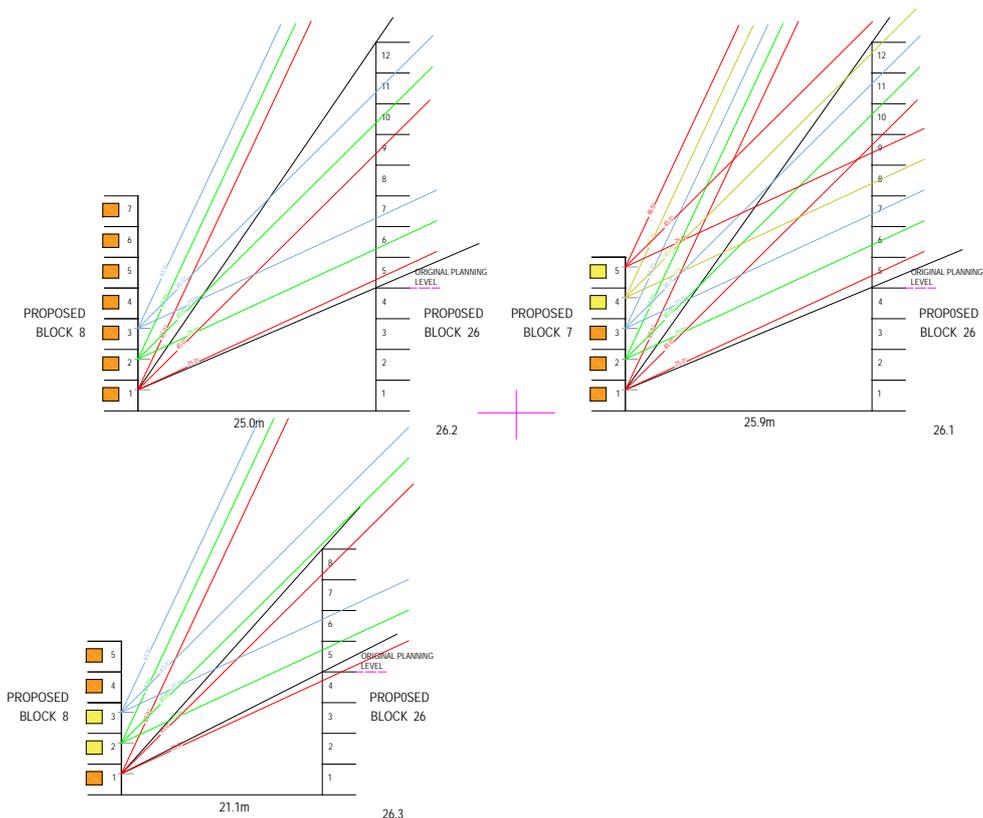


Block 26

26.1 BLOCK 26			BLOCK 7		Original planning			Proposed		
	Obstacle	Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	22.4	28%	54.8	15%	0.54			
LV1	Window	First	16.1	31%	52.3	16%	0.53			
LV2	Window	Second	9.2	34%	49.4	17%	0.52			
LV3	Window	Third	2.1	36%	46.1	18%	0.51			
LV4	Window	Fourth	0	37%	42.5	20%	0.55			

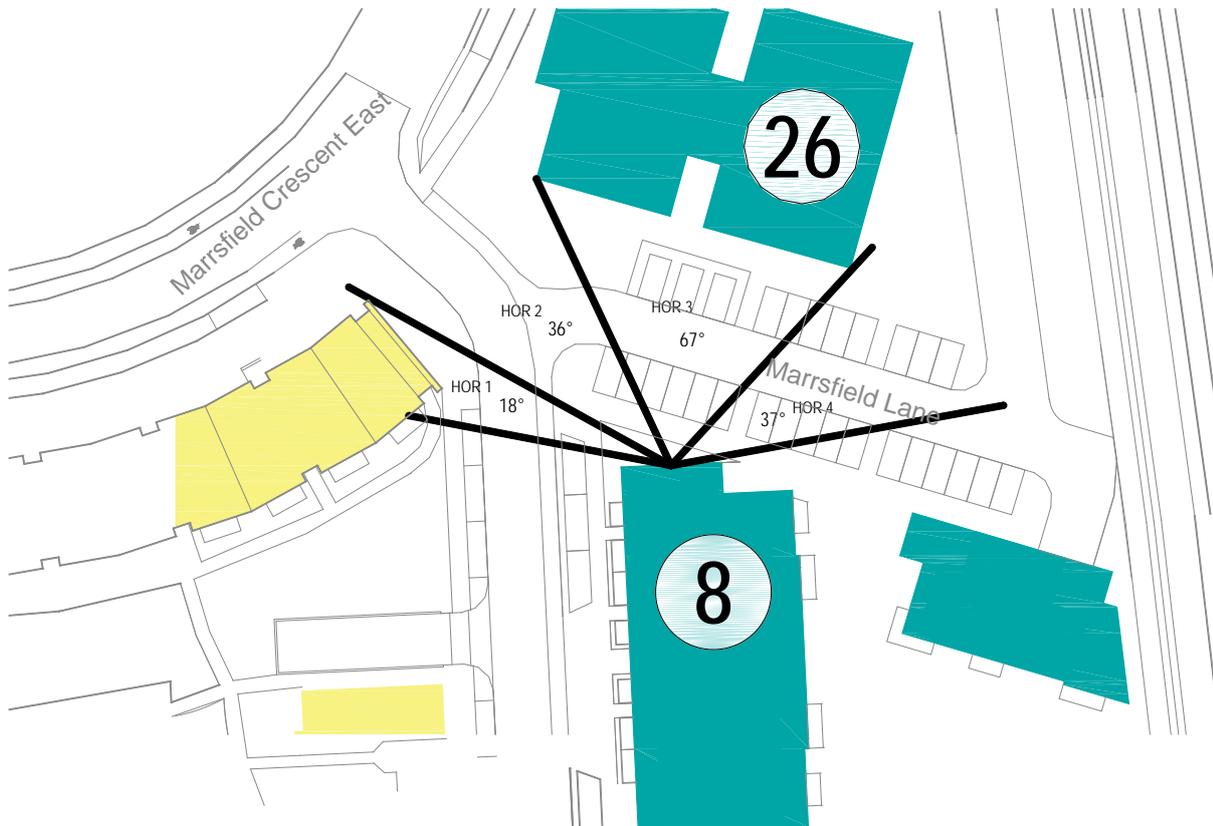
26.2 BLOCK 26			BLOCK 8		Original planning			Proposed		
	Obstacle	Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	23.2	28%	55.1	15%	0.53			
LV1	Window	First	16.6	31%	53.2	16%	0.51			
LV2	Window	Second	9.5	34%	50.4	17%	0.51			
LV3	Window	Third	2.2	36%	47.2	18%	0.50			
LV4	Window	Fourth	0	37%	43.3	20%	0.54			
LV5	Window	Fifth	0	37%	39.3	21%	0.58			
LV6	Window	Sixth	0	37%	33	24%	0.65			

26.3 BLOCK 26			BLOCK 8		Original planning			Proposed		
	Obstacle	Receptor	Angle	VSC	Angle	VSC	Change			
LV0	Window	Ground	26.9	27%	48.4	18%	0.67			
LV1	Window	First	19.5	29%	44.1	19%	0.66			
LV2	Window	Second	11.3	33%	39.2	21%	0.66			
LV3	Window	Third	2.6	36%	33.5	24%	0.66			
LV4	Window	Fourth	0	37%	26.9	27%	0.73			



Block 26  
SECOND ASSESSMENT

26.2	BLOCK 8	BLOCK 26	Existing / Current / original										Proposed										
			Receptor	Obstacle	Horz 1	Vert 1	Horz 2	Vert 2	Horz 3	Vert 3	Horz 4	Vert 4	Horz sum	VSC	Horz 1	Vert 1	Horz 2	Vert 2	Horz 3	Vert 3	Horz 4	Vert 4	Horz sum
LV1	Window	Ground	18	28.5	36	0	67	23.2	37	0	158	32%	18	28.5	36	0	67	55.1	37	0	158	26%	0.83
LV2	Window	First	18	22.1	36	0	67	16.6	37	0	158	33%	18	22.1	36	0	67	53.2	37	0	158	27%	0.81
LV3	Window	Second	18	16.2	36	0	67	9.5	37	0	158	35%	18	16.2	36	0	67	50.4	37	0	158	28%	0.80
LV4	Window	Third	18	9.4	36	0	67	2.5	37	0	158	36%	18	9.4	36	0	67	47.2	37	0	158	28%	0.79
LV5	Window	Fourth	18	2.5	36	0	67	0	37	0	158	37%	18	2.5	36	0	67	44.4	37	0	158	29%	0.80
LV6	Window	Fifth	18	0	36	0	67	0	37	0	158	37%	18	0	36	0	67	40.2	37	0	158	30%	0.82
LV7	Window	Sixth	18	0	36	0	67	0	37	0	158	37%	18	0	36	0	67	35.6	37	0	158	31%	0.84

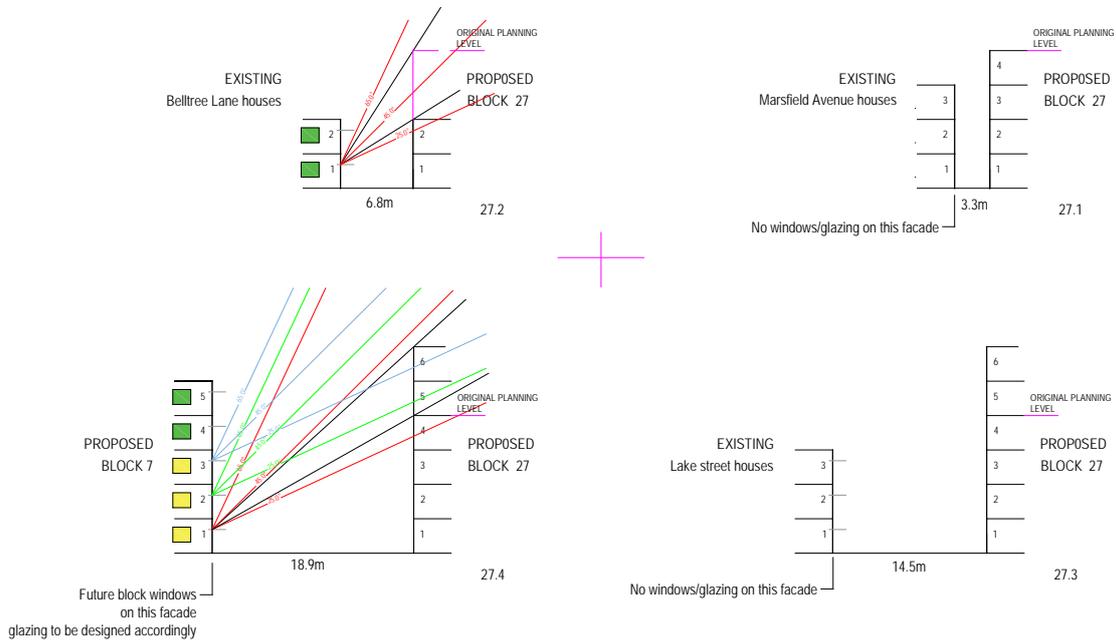


Block 27

27.1 BLOCK 27			MARSFIELD AV HO		Original planning		Proposed	
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	73.8	7%	73.8	7%	1.00	
LV1	Window	First	67.9	10%	67.9	10%	1.00	
LV2	Window	Second	55.9	15%	55.9	15%	1.00	

27.2 BLOCK 27			BELLTREE LANE H		Original planning		Proposed	
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	57.7	14%	32.1	24%	1.74	
LV1	Window	First	47.9	18%	8.5	34%	1.89	

27.4 BLOCK 27			BLOCK 7		Original planning		Proposed	
Obstacle	Receptor		Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	29.7	25%	43.1	20%	0.78	
LV1	Window	First	21.7	29%	36.6	22%	0.79	
LV2	Window	Second	12.7	32%	29.7	25%	0.79	
LV3	Window	Third	3.1	36%	21.7	29%	0.80	
LV4	Window	Fourth	0	37%	12.7	32%	0.88	



Block 28

28.1 BLOCK 28			BLOCK 12		Original planning		Proposed	
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	44.5	19%	44.5	19%	1.00	
LV1	Window	First	39.6	21%	39.6	21%	1.00	
LV2	Window	Second	33.9	24%	33.9	24%	1.00	
LV3	Window	Third	27.3	26%	27.3	26%	1.00	
LV4	Window	Fourth	19.8	29%	19.8	29%	1.00	
LV5	Window	Fifth	11.6	33%	11.6	33%	1.00	

28.2 BLOCK 28			BLOCK 16		Original planning		Proposed	
Obstacle		Receptor	Angle	VSC	Angle	VSC	Change	
LV0	Window	Ground	59.3	13%	59.3	13%	1.00	
LV1	Window	First	54.8	15%	54.8	15%	1.00	
LV2	Window	Second	49	17%	49	17%	1.00	
LV3	Window	Third	41.5	20%	41.5	20%	1.00	
LV4	Window	Fourth	31.7	25%	31.7	25%	1.00	
LV5	Window	Fifth	19.3	29%	19.3	29%	1.00	

