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RIALTO STUDENT ACCOMMODATION

DAYLIGHT RECEPTION

DAYLIGHT RECEPTION IN HABITABLE ROOMS IN NEIGHBOURING BUILDINGS

**SOUTH CIRCULAR ROAD
RIALTO
DUBLIN**

SHIPSEY/BARRY

DKP-J79-6062-1P
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Part 1 of 1

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Planning consultants	Tom Philips & Ass		✓
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1 Introduction

1.1 Report purpose.

This report gives information on the effects of the proposed development on daylight reception in the habitable rooms within the proposed development.

1.2 Introduction.

DKPartnership (DKP) have been commissioned by Kealan McLuskey and Shipsey/Barry to carry out the analysis and report for the proposed development at South Circular road, Rialto, Dublin.

1.3 Development details.

This report is in lieu of proposed student accommodation development located in South Circular Road, Rialto Dublin and consists of 313 student rooms and other social spaces spread over 6 floors including a basement level. There are no habitable/student rooms proposed in the basement.

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 project is a student accommodation block with an average of 6 student bedrooms and a common kitchen/dining/living space in a cluster (apartment).

2.2 Analysis conducted.

In this report the amount of daylight received in the student rooms within the new proposed development have been analysed due to their semi permanent occupation.

2.3 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.

2.4 Technical analysis.

Calculations were conducted in accordance with the BRE guidelines to determine effects on daylight in neighbouring buildings.

Adjacent left and right (A and C) and opposite (B) buildings (windows) have been identified as possibly be effected to some degree by daylight reception.

2.5 Conclusion.

Receptor C (adjacent left hand side) has no windows facing the new proposed development and the Receptor B (directly opposite) VSC angle does not change and are below the 25° VSC angle and do not need to be assessed. Some Receptor A (adjacent right hand side) windows are marginally below the maximum allowable change however these apartment are to be demolished and replaced by new apartment without any window facing the proposed new development.

We therefore conclude that the daylight reception in neighbouring buildings is within the constraints of the BRE Site report "Layout and Planning for Daylight and Sunlight" recommendations on day light reception.

2.6 Mitigation measures / actions.

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

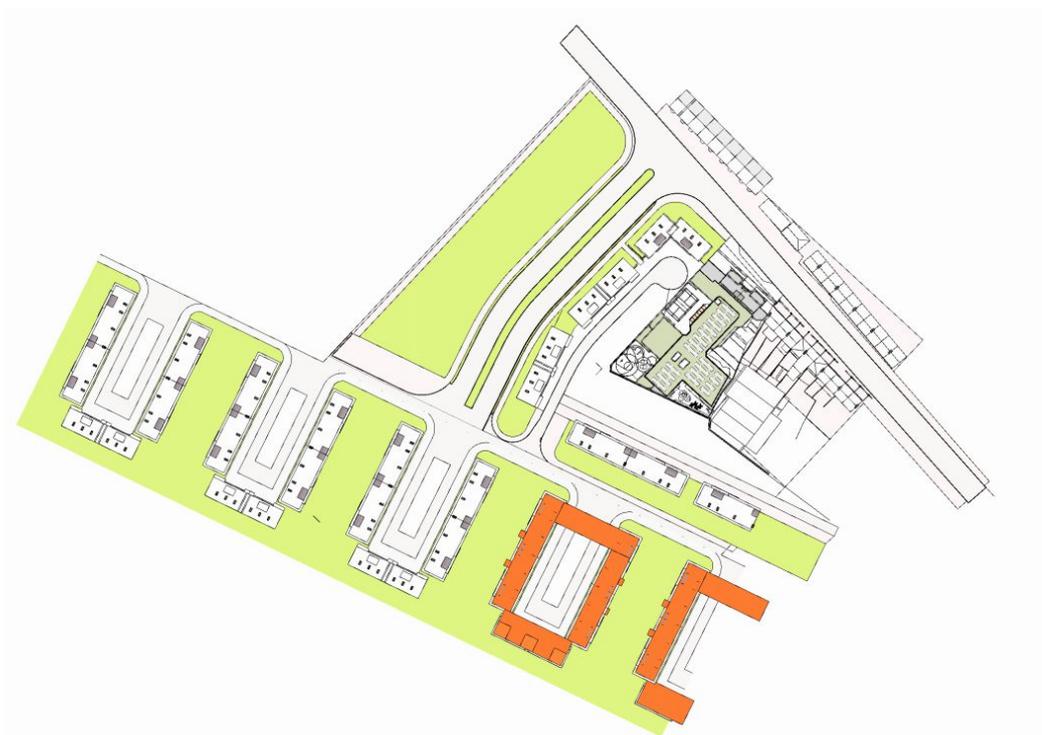
3 Geographical overview

3.1 Project site / site location overview.

The site map below is a basic over view of the project location on the South Circular Road with the a) exiting building and b) new proposed building.



Site with existing
cinema building



Site with new
proposed building

4 Approach and methodology

4.1 General approach.

This report covers the day light reception in new proposed dwellings within the new proposed development. Day light reception is in first instance assessed using the vertical sky angle approach and when issues arise or a second calculation is warranted the average day light factor calculation is applied.

4.2 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.

4.3 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 sun light.

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 flexibly 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

4.4 Daylight assessment neighbouring buildings.

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 flexibly 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° (as 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 (VSC) 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.
- c. If the change of a single VSC analyses is beyond the BRE recommendation a multiple VSC analyses is to be assessed based on location of the various obstacles to determine the average VSC.

4.5 Basis of neighbouring building (room) selection.

In general the vertical sky component or angle analysis is directed at adjacent buildings which maybe effected by the proposed development with regards to daylight reception.

4.6 Selected rooms / dwellings location map.

For this analysis the buildings who maybe effected are opposite and lift and right of the proposed development.

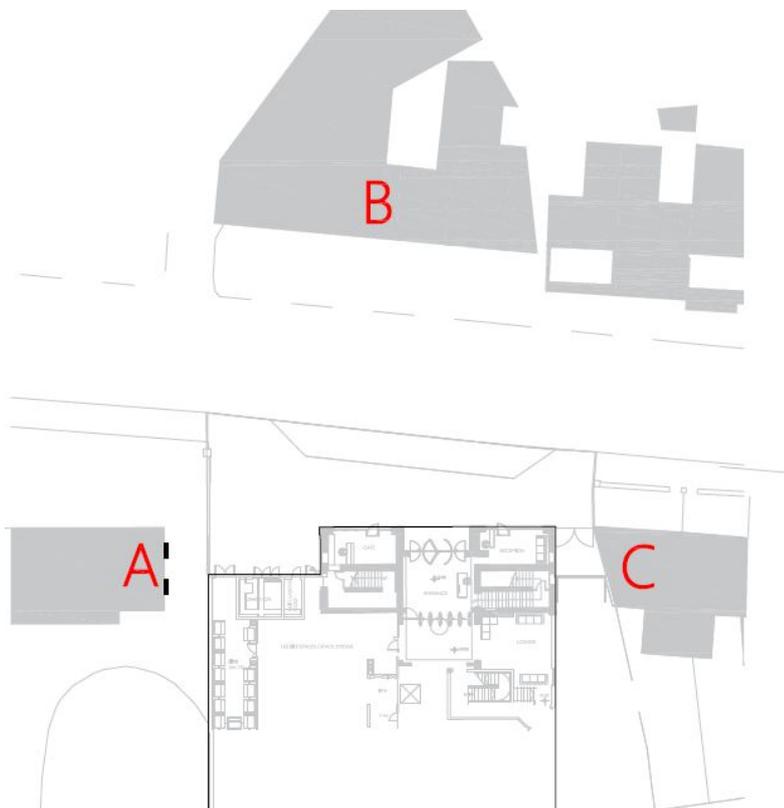
Receptor A : 3 storey apartment block (to be replaced) on the right hand side of the proposed development.

Receptor B : 2 storey dwelling(s) opposite the proposed development.

Receptor C: 2 storey dwelling on the left hand side of the proposed development.

Receptor A : The 3 storey apartment block (A) is due to be replaced by DCC and although we have assessed the day light impacts this may not be relevant.

Receptor C : The 2 storey dwelling on the left hand side of the proposed dwelling has no windows facing the new development and the dwelling is also in the ownership of the developer.

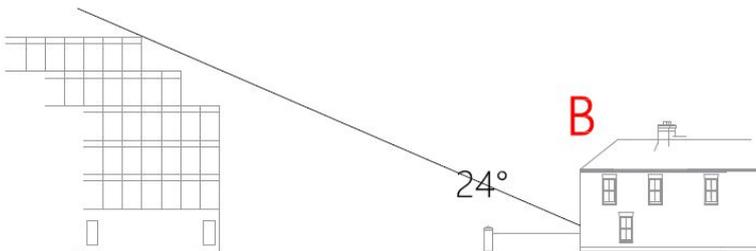
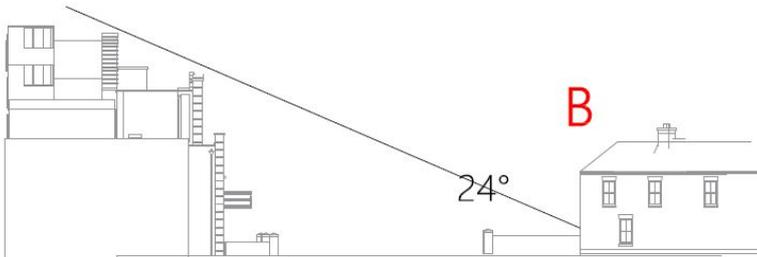


5 Calculation results

5.1 Calculation data and analyses.

Receptor C : (Left hand side of the proposed development) As per point 4.6 receptor location C need not to be analysed as the dwelling has no windows facing the new proposed development.

Receptor B : (Opposite the proposed development) Receptor B has VSC angles below the 25° and does not need to be further analysed.



Receptor A : Right hand side of the proposed development.

Receptor location A has 2 windows at each level (Ground floor GF, First floor FF and Second floor SF) facing the new development. These windows are for the living room and bed room. The living room also has a window not facing the new development.



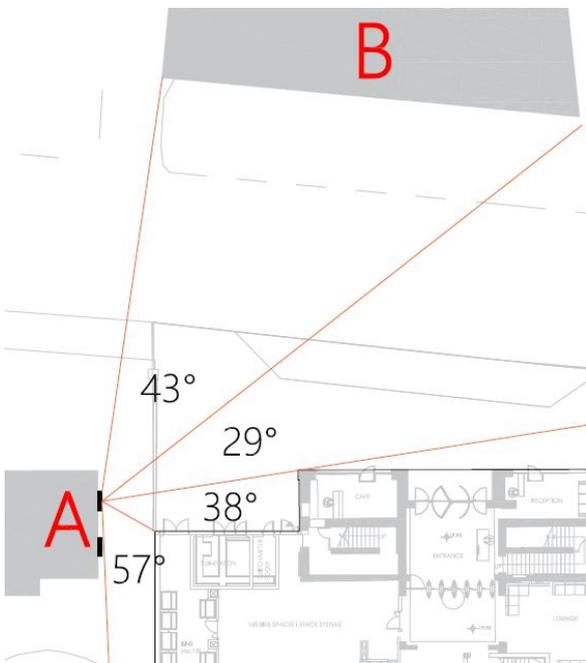
The following table represents the single point VSC angles (a single VSC angle facing nearest obstacle)

Single point VSC facing nearest obstacle.

Receptor			Existing		Proposed		Change
			Angle	1 xVSC	Angle	1 x VSC	
A1	Living/dining window	Ground	37	22%	67	10%	0.44
A2	Bedroom window	Ground	37	22%	67	10%	0.44
A3	Living/dining window	First	28	26%	58	13%	0.52
A4	Bedroom window	First	28	26%	58	13%	0.52
A5	Living/dining window	Second	20	29%	41	20%	0.70
A6	Bedroom window	Second	20	29%	41	20%	0.70

We note that the change in VSC is beyond the recommendations of the BRE report however these are based on a single point angle whereas the actual day light reception (VSC) is a multiplication of numerous VSC angle on the horizontal plane.

The picture below illustrates the basic VSC angles to be considered in a window (receptor)



The following table represents the multiple point VSC angles (a single VSC angle facing nearest obstacle)

Multiple point VSC facing all obstacles on the horizontal plane

Receptor			Existing		Proposed		Change
			Angle	n xVSC	Angle	n xVSC	
A1	Living/dining window	Ground	26	27%	39	21%	0.80
A2	Bedroom window	Ground	26	27%	41	20%	0.77
A3	Living/dining window	First	23	28%	35	23%	0.82
A4	Bedroom window	First	23	28%	37	22%	0.79
A5	Living/dining window	Second	18	30%	31	25%	0.82
A6	Bedroom window	Second	18	30%	33	24%	0.81

We note that the change in VSC is only marginally beyond the recommendations (0.80) of the BRE report when considering multiple VSC angles.

5.2 Summery and conclusion.

To summarise.

Receptor C has no windows facing the new proposed development and the Receptor B VSC angle does not change and are below the 25° VSC angle and do not need to be assessed.

Some Receptor A windows are marginally below the maximum allowable change however these apartment are to be demolished and replaced by new apartment without any window facing the proposed new development.

We therefore conclude that the daylight reception in neighbouring buildings is within the constraints of the BRE Site report “Layout and Planning for Daylight and Sunlight” recommendations on day light reception.