

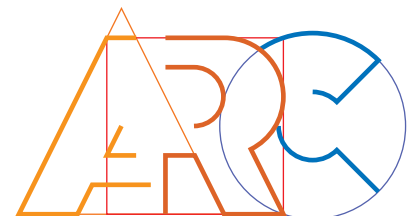
**ADDENDUM SUNLIGHT AND DAYLIGHT ACCESS ANALYSIS**

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**ORAL HEARING • RESPONSE TO ISSUES RAISED BY AN BORD PLEANÁLA**  
**ST. JOSEPH'S HOUSE AND ADJOINING PROPERTIES, BREWERY ROAD AND LEOPARDSTOWN ROAD, DUBLIN 18**

ABP REF. ABP-311540-21

MARCH 2022





## **Amy Hastings BCL BL MSc (Spatial Planning) MIPI - Biography**

I have worked as a partner in ARC Consultants since 2004. I qualified as a planner and a barrister and have worked as a planning consultant in private practice since 2002. My role in ARC is the provision of environmental assessment services, planning services and planning legal services. Since 2004, I have undertaken hundreds of assessments of sunlight and daylight access, as part of planning applications, planning enforcement matters and rights to light cases. I conducted research into the relationship between rights to light law and the origins of modern town planning while undertaking a Masters in Spatial Planning at the Dublin Institute of Technology. Relevant publications include an article entitled 'Rights to Light Law and the Potential for Use of its Principles in the Assessment of Planning Applications under the Planning and Development Act 2000, as amended' as published in the *Irish Planning and Environment Law Journal* [(2011) 18(2) IPELJ 74]. I have also delivered continuous professional development lectures on the subject of sunlight and daylight access analysis to planning professionals and was an occasional lecturer on the subject of sunlight and daylight access analysis to the UCD School of Architecture, Planning and Environmental Policy.

### **Introduction**

ARC Architectural Consultants Ltd was retained by the Applicant, Homeland Silverpines Limited, to prepare an assessment of sunlight and daylight access within the proposed Strategic Housing Development on lands at St. Josephs House and adjoining properties, Brewery Road and Leopardstown Road, Dublin 18 (ABP Ref. ABP-311540-21). ARC also carried out an assessment of the impact of the proposed development on sunlight and daylight access to the surrounding area, which is included in Chapter 18 of the Environmental Impact Assessment Report submitted with the application.

An Bord Pleanála's agenda for the Oral Hearing (set out in a letter of 7th February 2022) included a number of issues related to sunlight and daylight access. These issues are set out in italics below and followed by a short response from ARC.

### **Item (a)1: Sunlight access to open spaces**

*Notwithstanding the exclusion of the area of communal open 5 and visual amenity space 6 from the open space calculation, it has been stated that the quality of these spaces, including compliance with BRE Guideline targets for sunlighting of amenity areas, could potentially be of a higher standard. In this regard consideration of the omission of upper floors of Block D or other amendments may assist, although it is acknowledged that the quality of the spaces and the scheme is based on balance. The applicant has requested to provide further justification and any relevant material or evidence as to the effectiveness of such an intervention/any intervention and associated impact on the design.*

The subject application proposes seventeen open spaces (please see Figure 1). Detailed quantitative analysis was carried out on the proposed open spaces as follows:

- Communal Open Space Areas (Eight Spaces: Spaces 01, 02, 03, 04, 05, 07, 14, 15)
- Visual Amenity Open Space Areas (Four Spaces: Spaces 06, 08, 12, 13)
- Public Open Space Areas (Three Spaces: Space 09, 10, 11)
- Crèche Open Space Areas (Two Spaces: Crèche Space 1 and 2).

ARC's *Assessment of Sunlight & Daylight Access within the Proposed Development* (as submitted with the application) illustrated that, under the original design, all but two of those open spaces (Communal Open Space 05 and Visual Amenity Space 06) proposed open spaces are predicted to receive a level of sunlight in excess of the level recommended by the BRE Guide for amenity spaces and will appear adequately sunlit throughout the year within the meaning of the BRE Guide.

In response to the issues raised by An Bord Pleanála in relation to Open Spaces 05 and 06, the Applicant proposes a number of changes to Blocks B and D to improve sunlight access to open spaces. These changes are as follows:

- The removal of the 4 storey return to the Southeast of Block B to improve separation distances between Blocks B and C, while enhancing the communal open space provision with an added play space.
- In addition, the top floor level of Block B has been amended with a setback penthouse arrangement to articulate the roof scape in line with similar setback provided on Block A and D.
- Reduction in height by one storey on the primary building of Block D from 8 storeys to 7 storeys (6 storey + penthouse) with 9 storey popup on the corner. This reduces the density, height and scale which results in a reduction in the visual impact with existing adjoining residential properties while also improving sunlight access to the communal open spaces.



Figure 1 Indicative diagram showing location of open spaces within the proposed development assessed as part of this analysis. Communal open spaces are shown in red (Open Spaces 01, 02, 03, 04, 05, 07, 14 and 15). Public open spaces are shown in green (Open Spaces 09, 10, 11). Visual Amenity Open Spaces are shown in purple (Open Spaces 06, 08, 12 and 13). Creche Open Spaces are shown in yellow (Creche Open Spaces 1 and 2).

ARC assessed the potential for these amendments to the proposed development to improve sunlight access to open spaces 05 and 06 with reference to the Building Research Establishment's *Site layout planning for daylight and sunlight: a guide to good practice* (the BRE Guide). The BRE Guide suggest, at Section 3.3, 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 sunlight on 21st March. In order to calculate sunlight access to open spaces, ARC constructed a three dimensional digital model of the proposed development and of existing buildings based on drawings and three dimensional models supplied by the Design Team and used proprietary sunlight analysis software to calculate the proportion of proposed open spaces in sunlight at regular intervals on 21st March. Section 3.3.9 of the BRE Guide provides that the "question of whether trees or fences should be included in the calculation depends upon the type of shade they produce. Normally trees and shrubs need not be included, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees)." Given this, existing and proposed landscaping was not included in the assessment model. The results of ARC's analysis are set out in Table 1 below.



**Table 1: Proposed Open Space Areas – Approximate areas in sunshine on 21st March**

Time	Space 05		Space 06	
	As per original application (1,027 sq m)	Adjusted Proposed (1,027 sq m)	As per original application (369 sq m)	Adjusted Proposed (532 sq m)
0900	0%	0%	0%	0%
0930	0%	0%	0%	0%
1000	0%	0%	0%	0%
1030	0%	0%	0%	0%
1100	8%	8%	0%	0%
1130	12%	13%	0%	0%
1200	33%	41%	0%	7%
1230	37%	45%	0%	12%
1300	39%	48%	9%	34%
1330	53%	61%	24%	57%
1400	41%	52%	55%	77%
1430	56%	60%	84%	80%
1500	50%	53%	83%	65%
1530	55%	55%	29%	18%
1600	39%	39%	6%	3%
1630	29%	29%	0%	0%
1700	16%	16%	0%	0%
1730	13%	13%	0%	0%
1800	4%	4%	0%	0%
<b>Comment</b>	ARC's analysis indicates that, as a result of the design changes now proposed, Open Space 05 (a communal open space) will achieve in excess of two hours of sunshine over at least half its area on 21st March (i.e. greater than then BRE Guide recommendation for sunlight access).		Open Space 06, a visual amenity space, will be considerably enlarged as a result of the design changes now proposed. While Open Space 06 is unlikely to achieve the BRE Guide recommendation, the larger space now proposed is likely to receive sunlight over more than half of its area for a longer period (i.e. more than 1.5 hours) than would have been the case for the space as originally proposed. Open Space 06 will also receive some sunlight over a longer period on 21st March than the originally proposed space.	

As indicated above, as a result of the design changes now proposed, Communal Open Space 05 (a communal open space) will achieve in excess of two hours of sunshine over at least half its area on 21st March and, therefore, will appear adequately sunlit throughout the year within the meaning of the BRE Guide. While Visual Amenity Open Space 06 is likely to receive slightly less than two hours of sunlight over half its area on 21st March, the design changes now proposed result in a significant increase in the size of this space as well as an increase in the proportion of the space receiving sunlight and the duration for which the space receives sunlight. As noted above, the other thirteen open spaces proposed as part of the subject development are predicted to appear adequately sunlit throughout the year within the meaning of the BRE Guide.



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**Item (a)3: No galley type kitchens are proposed**

*While the Board notes the extensive compliance with BRE targets for combined kitchen/living/dining rooms of 2% ADF value, 1.5% for living rooms and 1% for bedrooms. However, it also notes that some apartments appear to have been designed as galley type kitchens (no windows) separate from the living/dining rooms. The applicant is requested to confirm the BRE Guidance methodology employed in respect of these apartments, and where non-daylight galley kitchens are proposed to provide the appropriate justification, and explanation.*

The subject application does not propose any galley type or enclosed windowless kitchens. On the application drawings, a number of kitchen / living / dining rooms are illustrated as having a counter (e.g. a kitchen island) separating the kitchen area from the living area, but it is ARC's instruction that this counter is not a floor-to-ceiling partition. As indicated in ARC's *Assessment of Sunlight & Daylight Access within the Proposed Development* as submitted with the application, ARC's assessment assumes that all kitchen / living / dining rooms are open plan and that these rooms are not split up by walls or fixed furniture (e.g. a kitchen island). The full area of kitchen / living / dining rooms was assessed for daylight access as indicated in yellow on the diagrams at Figures 1 to 6 in ARC's *Assessment of Sunlight & Daylight Access within the Proposed Development*.

**Item (b): Quality of Residential Amenity & Open Spaces for Neighbouring Properties**

*While it is noted that there will some reduction in daylight accessing a number of the residents and buildings surrounding the proposed site, it is considered that this is primarily an issue when considered in combination with the potential overshadowing of the private amenity space of a number of gardens (Sir Ivor Mall) from Block F. The applicant is requested to respond to this with further elaboration in its sunlight/daylight report Block F by either (a) omitting the end apartments proximate to this boundary, i.e. apartment nos. 12, 24 and 36, thereby increasing the separation distance to 11 m and potentially mitigating the overshadowing impacts, or (b) submit further elaboration to justify the design.*

In response to the issues raised by An Bord Pleanála, the revised design for the subject development proposes the removal of unit nos. 12, 24 and 36 from Block F. ARC has assessed the impact of all proposed revisions to the design on sunlight and daylight access to the neighbouring houses and gardens at Sir Ivor Mall and Silver Pines - that assessment has been submitted to An Bord Pleanála as a revised Environmental Impact Assessment Report chapter (Chapter 18) and associated shadow diagrams.

ARC's analysis indicates that the impact of the proposed development (both as originally proposed and as now revised) on sunlight access to rear gardens at Sir Ivor Mall and Silver Pines does not fall within adverse ranges within the meaning of the BRE Guide. As such, the BRE Guide would suggest that the impact of shadows cast by the proposed development on rear gardens at Sir Ivor Mall and Silver Pines will not be noticeable. The potential impacts are discussed in more detail in Chapter 18 of the EIAR.

Notwithstanding this, it should be noted that the changes to Block F now proposed will reduce the impact of shadows cast by the proposed development on sunlight access to the rear gardens of a number of houses, including Nos. 25 (Zone 15) and 26 Silver Pines (Zone 16). For the purposes of this response document, the results of ARC's analysis of the potential impacts on sunlight access to Nos. 25 and 26 Silver Pines are reproduced in Table 3 below and compared with the results of the analysis of the development as originally proposed.

Insofar as impacts on sunlight access to amenity spaces / gardens are concerned, the BRE Guide provides that "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." [Emphasis added.] This suggests that where a garden or amenity area can receive two hours of sun over half its area on 21 March notwithstanding the construction of a proposed development, loss of sunlight as a result of additional overshadowing is not likely to be noticed.

In order to calculate the impact of sunlight access on these gardens, ARC constructed a three dimensional digital model of the proposed development and of existing buildings based on drawings and three dimensional models supplied by the Design Team and used proprietary sunlight analysis software to calculate the proportion of proposed open spaces in sunlight at regular intervals on 21st March. Section 3.3.9 of the BRE Guide provides that the "question of whether trees or fences should be included



Figure 2: Indicative diagram showing location of sample gardens (in green) assessed under Chapter 18 of the Environmental Impact Assessment Report. Zone 15 refers to No. 25 Silver Pines and Zone 16 refers to No. 26 Silver Pines.

in the calculation depends upon the type of shade they produce. Normally trees and shrubs need not be included, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees).” Given this, existing and proposed landscaping was not included in the assessment model. The results of ARC’s analysis are set out in Table 3 below.

Time	Zone 15 25 Silver Pines			Zone 16 26 Silver Pines		
	Existing	Proposed Original Application	Adjusted Proposed	Existing	Proposed Original Application	Adjusted Proposed
08:00	25%	0%	0%	52%	0%	0%
09:00	68%	0%	0%	99%	0%	0%
10:00	77%	42%	65%	100%	0%	0%
11:00	82%	82%	82%	94%	94%	94%
12:00	85%	76%	85%	87%	87%	87%
13:00	83%	47%	82%	82%	82%	82%
14:00	75%	4%	29%	71%	43%	71%
15:00	65%	0%	4%	62%	0%	24%
16:00	59%	15%	28%	53%	17%	32%
17:00	29%	21%	29%	9%	9%	9%
18:00	0%	0%	0%	0%	0%	0%



As noted above, the potential impact of shadows cast by the proposed development (either as originally proposed or as now revised) on sunlight access to these rear gardens does not fall within adverse ranges within the meaning of the BRE Guide. However, Table 3 also shows that the design changes to Block F suggested by An Bord Pleanála and now proposed by the Applicant are likely to improve sunlight access to Zone 15 (the garden to the rear of No. 25 Silver Pines) in the morning and over the course of the afternoon and to Zone 16 (the garden to the rear of No. 26 Silver Pines) over the course of the afternoon.

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### **Summary**

- **Item (a) 1: Sunlight access to open spaces:** As a result of the design changes now proposed, Communal Open Space 05 (a communal open space) will achieve the BRE Guide recommendation for sunlight access and will appear adequately sunlit throughout the year within the meaning of the BRE Guide. While Visual Amenity Open Space 06 is likely to receive slightly less than the BRE Guide recommendation for sunlight, the design changes now proposed increase the size and the amount of sunlight to the space. The other thirteen open spaces proposed as part of the subject development are predicted to appear adequately sunlit throughout the year within the meaning of the BRE Guide.
- **Item (a) 3: No galley type kitchens are proposed:** The subject application does not propose any galley type or enclosed windowless kitchens. ARC's analysis indicates that all kitchen / living / dining rooms in unit types throughout the proposal are likely to receive a level of daylight access in excess of the recommended 2% Average Daylight Factor for mixed function rooms.
- **Item (b): Quality of Residential Amenity & Open Spaces for Neighbouring Properties:** The revised design for the subject development proposes the removal of unit nos. 12, 24 and 36 from Block F. These changes will result in a lesser impact on sunlight access to some rear gardens at Sir Ivor Mall and Silver Pines - please see Addendum No. 1 of the Environmental Impact Assessment Report chapter (Chapter 18) and associated shadow diagrams. It should be noted that ARC's analysis indicates that the impact of the proposed development (both as originally proposed and as now revised) on sunlight access to rear gardens at Sir Ivor Mall and Silver Pines does not fall within adverse ranges within the meaning of the BRE Guide.