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Future
Analytics

Dual Aspect in Residential Development

An Appraisal of Development Management
Standards in Ireland

Scheme: Ted Castles site and Dun Leary House, Dún
Laoghaire, Co. Dublin

KPMG Future Analytics
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Ardstone

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1 Introduction

KPMG Future Analytics, 1 Stokes Place, St. Stephen's Green, Dublin 2 (Chartered Town Planning and Development Consultants), have prepared this Dual Aspect Appraisal Report. This report has been prepared to inform the Applicant (Ardstone Homes) and Design Team preparing a planning application for a Strategic Housing Development on lands at the former Ted Castles site and Dun Leary House (a proposed Protected Structure), Old Dun Leary Road, Cumberland Street and Dunleary Hill, Dún Laoghaire, Co. Dublin. The purpose of this report is to present insights into the application and appraisal of dual aspect in new developments.

1.1 Report Structure

This Dual Aspect Appraisal Report comprises a further six sections:

Section 2 reviews existing literature on the topic of dual aspect.

Section 3 explores the practices applied in other jurisdictions in order to benchmark the Irish planning and development managements standards for dual aspect in residential development.

Section 4 presents an overview of dual aspect standards in Ireland.

Section 5 examines the approach and trends in how An Bord Pleanála assess dual aspect in new development proposals.

Section 6 conducts a detailed appraisal of the proposed development, with specific regard to dual aspect.

Section 7 concludes this report with a synopsis of the research findings.

2 Literature Review: Dual Aspect

The provision of two or more aspects for an apartment unit is associated with a number of advantages for the everyday amenity of residents. The primary function of dual aspects is to allow for the adequate ventilation of internal spaces and to increase the number of hours in which the unit receives daylight and sunlight throughout the day. Additionally, dual aspects allow for a greater choice of views and greater flexibility in the use of different rooms¹.

2.1 Ventilation

Ventilation removes air from the interior of a building and replaces it with fresh air from outside. In doing so it removes excess moisture and everyday pollutants that arise from cooking or cleaning, as well as excessive heat gains during the summer period. The role of ventilation in helping remove moisture and pollutants within a residence is reflected in Part F of the Irish Building Regulations (Figure 2.1). Ventilation also helps provide thermal comfort for residents when temperatures are high, as the movement of air over the skin helps evaporate perspiration².

Means of ventilation F1: Adequate and effective means of ventilation shall be provided for people in buildings. This shall be achieved by:

(a) limiting the moisture content of the air within the building so that it does not contribute to condensation and mould growth, and

(b) limiting the concentration of harmful pollutants in the air within the building.

Figure 2.1: F1 (Building Regulations 2019, Technical Document F, Ventilation).

Ventilation comprises the movement of air from outside a building into a building and back outside again. The dominant force that drives such movement is relative difference in atmospheric pressure, whereby air will move from a place of higher pressure to one of lower pressure³. Cross ventilation occurs where there are pressure differences between two sides of a building and wind is drawn into an inlet on a high-pressure side and drawn through and out the building at a low-pressure side⁴. As per Figure 2.2, there are typically pressure differences between both opposite and adjacent sides of a building. Cross ventilation may be typically associated with the movement of air through windows at opposite sides of a room or building. However,

“...in most practical circumstances corner locations may be assumed to provide for significantly enhanced air exchange and air movement, in comparison to single sided dwellings. Sometimes, they may actually be preferable to plans that fully penetrate the building, if only because the inlet and outlet openings are more often within a single open space.”⁵

¹ https://www.designingbuildings.co.uk/wiki/Dual_aspect_flat

² King, S. (2003) *Assessing SEPP 65 Applications: Essential Guide for the Uninitiated*: Sydney Masonic Centre, Thursday 19 June 2003: *Optimising ventilation and solar access*. NEERG Seminars.

³ Ibid.

⁴ https://www.designingbuildings.co.uk/wiki/Cross_ventilation

⁵ King, 2003.

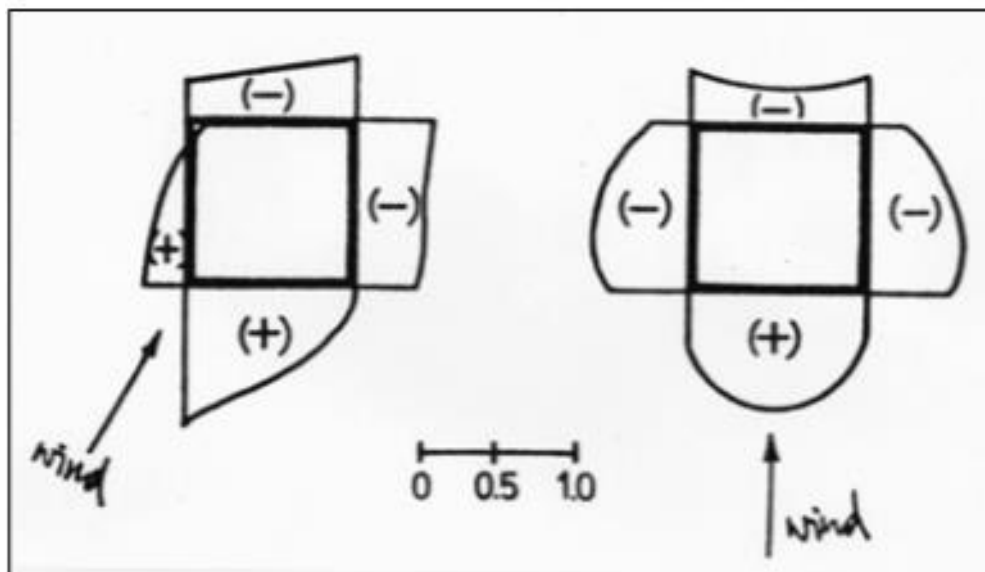


Figure 2.2: Pressure distributions (King, 2003).

As such, whether a dual aspect apartment has windows that are situated on opposite or adjacent walls, **it will still benefit from cross ventilation.**

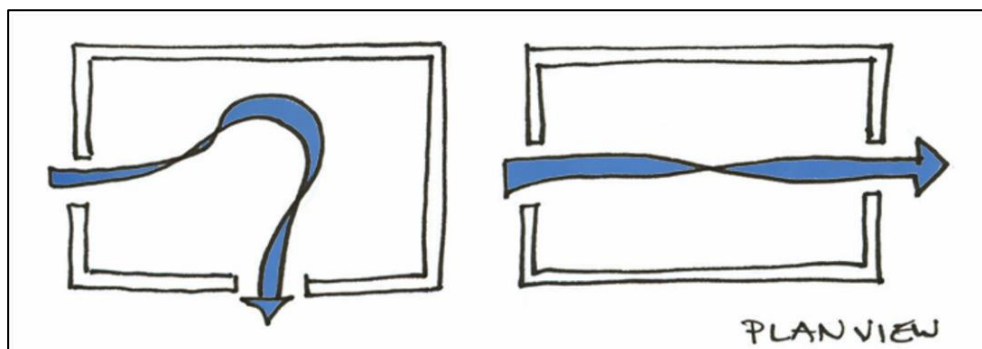


Figure 2.3: Cross ventilation (Moss Architecture, 2014).

A recurring challenge to achieving cross ventilation in apartment units arises from the fact that in typical building layouts, individual units do not span between the front and back of a building. As such, it may be possible to create only a single aspect along one façade, except for corner units which can enjoy two adjacent aspects at 90 degrees to each other. However, it is possible to achieve adequate ventilation for single-aspect units through mechanical interventions and design measures. According to Technical Guidance Document F of the 2019 Irish Building Regulations:

“For a dwelling with a single exposed façade, e.g. an apartment with only one exposed side, natural ventilation should be provided by the use of high and low level background ventilators.”

This is exhibited in Figure 2.4 below. Additionally, the provision of a balcony, which changes the distribution of pressure on the facades of a building, has been found to improve ventilation performance for single aspect units⁶.

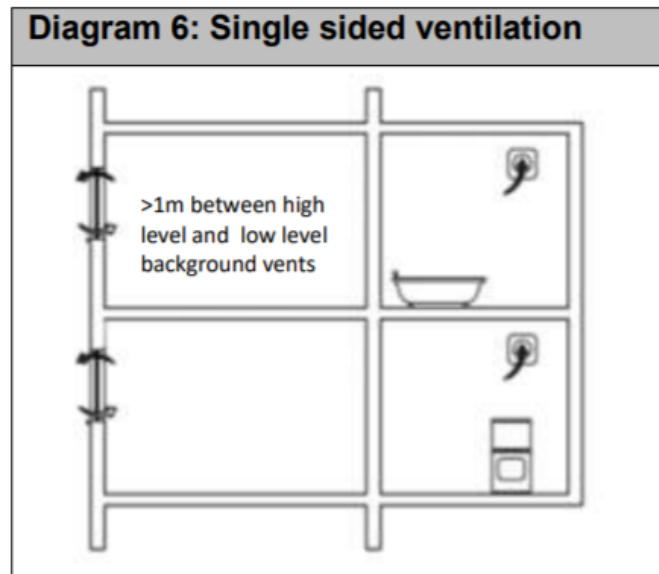


Figure 2.4: Single sided ventilation (Building Regulations 2019, Technical Document F, Ventilation).

2.2 Daylight

Daylight reception for residential units provides a variety of benefits for residents. Adequate daylight reduces the need for electric light while solar gain can help reduce heating demands, thereby improving energy efficiency and helping to save on lighting and heating costs. As such it is considered that:

“Using natural light or daylight for illumination is one of the hallmarks of a high performance building.”⁷

Adequate natural lighting also provides a variety of everyday physical and psychological benefits for residents. Though lighting preferences for different individuals are subjective, it is generally true that the more intricate or complex the activity someone is working on, the more light is required to maintain visual comfort. Inadequate lighting can lead to fatigue, headaches and irritability, thereby negatively affecting performance. Natural daylight represents the norm by which we perceive and discriminate visually between objects and so helps maintain visual comfort during periods of concentration. Further, when compared to artificial lighting, studies indicate that people are more comfortable with lower illuminance when the lighting is natural⁸. Such considerations are particularly important in the context of the Covid-19 pandemic which has seen a steep rise in the number of people working from home during daylight hours. People value access to daylight as it provides visual signals about the weather, season, their orientation and the

⁶ Mohamed, M.F., King, S., Behnia, M. and Prasad, D. (2011) *A study of single-sided ventilation and provision of balconies in the context of high-rise residential buildings*. World Renewable Energy Congress 8-13 May 2011, Linköping, Sweden.

⁷ Kilbert, C.J., *Sustainable Construction: Green Building Design and Delivery*.

⁸ Daylighting in Buildings, The European Commission, 20xx.

time of day. Daylight also has a significant influence on people's circadian rhythms, and so access to natural daylight throughout the day can help improve sleep behaviour and alertness⁹. Generally, dual aspect units will receive a greater amount of daylight throughout the day, as well as a superior distribution of daylight. An assessment of daylight received by generic dual and single aspect rooms conducted by Hodkinson Consultancy in 2017 indicates that the former receives a consistent distribution of daylight throughout. In contrast, daylight penetrates approximately half of the single aspect room, with the rear area dependant on artificial lighting. This is exhibited in Figure 2.5 below.

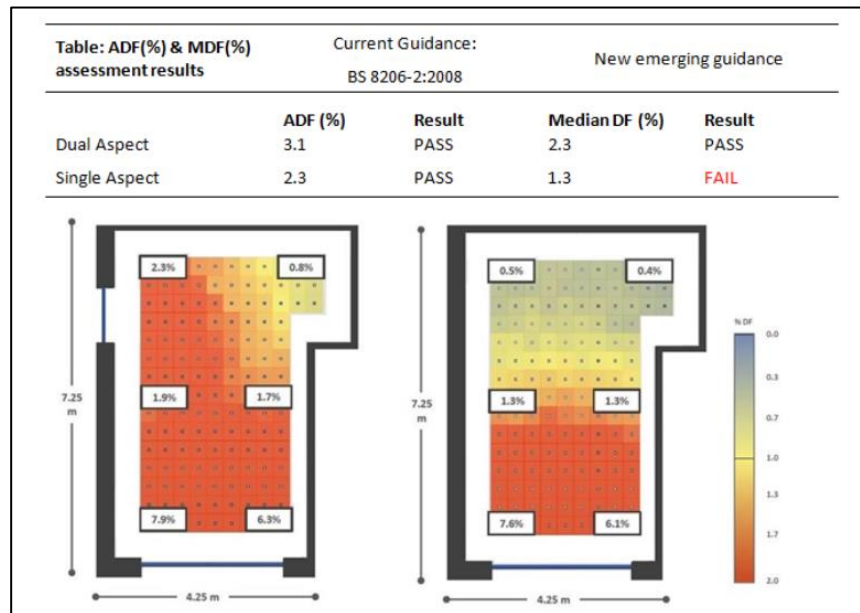


Figure 2.5: Dual aspect and single aspect comparative assessment – grid-based point daylight factor (Hodkinson Consultancy).

Given the above, there is understandably a general preference for the provision of dual aspects over single aspects for residential units, as both adequate daylight and ventilation are recognised as key factors for the health and amenity of residents. This preference is reflected in the Irish *Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities*, which call for a minimum of 50% of units within an apartment scheme in a suburban location to be dual aspect and 33% of units in more central and accessible urban locations to be dual aspect. However, there are some issues associated with the push for increased dual aspect provision.

2.3 Challenges in Implementation

In Ireland general requirements for dual aspect provision in new apartment developments are part of a larger trend to standardize various other aspects of apartment development and design, including floor areas, storage space and units per lift/stair core. Such standards represent a challenge for developers as they seek to balance unit size and layout with other considerations around density, building height, privacy and cost effectiveness. The *Design Standards for New Apartments* were published in March 2018 (and updated in 2020) by the Department of Housing, Planning and Local Government

⁹ Abidi, S. and Rajagopalan, P. (2020) Investigating Daylight in the Apartment Buildings in Melbourne, Australia. *Infrastructures*, 5 (10), pp. 81-94.

(now the Department of Housing, Local Government and Heritage), and was preceded by a short period of public consultation that lasted from December 2017 to January 2018. The provisions of the Design Standards are reviewed in detail in Section 4 of this report. Submissions received by the Department during the consultation period highlight several potential issues arising from prescriptive dual aspect standards, not all of which were resolved in the published Design Standards.

It was generally argued that requirements for high proportions of dual aspect units within new developments have the potential to drive up construction costs, with such costs likely to impact affordability for future purchasers or renters. A commonly utilised building layout for apartment developments is the ‘long corridor model’, whereby individual units are accessed from a single or double-loaded internal access corridor¹⁰. This has the advantage of limiting the number of lift/stair cores required in the development, as one or two cores situated either end of a block can serve a large number of units. However, such layouts lead to the proliferation of single aspect units, as one aspect will be used for access from the shared corridor while non-corner units will be surrounded on two other sides by neighbouring units¹¹. This leaves only a single façade free to provide an outward-facing aspect. Achieving the greater provision of dual aspect units means moving away from such models, and instead clustering a smaller number of units around a greater number of cores. This serves to reduce the number of corner units per core and allows for the greater provision of dual and triple aspects¹².

The lower ratio of units per core required to achieve a greater provision of dual aspect units presents several issues in relation to construction, development management and urban design. Typically, the delivery and maintenance of lift and stair cores for multi-unit residential developments are expensive. As such, a lower ratio of lift and stair cores to units presents significant costs for developers and building managers, both during construction and on an on-going basis after the development is delivered. It is likely that such costs will be passed on to potential residents in the form of higher costs to purchase or rent, thereby contributing to long-standing issues in Ireland around housing affordability¹³. Dual aspects also increase the property value of a unit, thereby further contributing to the overall price for potential residents. One submission raised the interesting question as to whether residents would in fact prefer a well-designed single aspect unit with good-quality finishes over the extra costs associated with a dual aspect unit¹⁴. As noted above, design measures such as the provision of a balcony, the inclusion of background ventilators and increased window sizes can help provide adequate ventilation and daylight reception for single aspect units. These considerations complicate the assumption that dual aspects represent the best-value proposition for residents in every case.

Recent years have seen a coordinated effort in Ireland to make more efficient use of available space for development. This is exemplified in the *National Planning Framework* (NPF), the overarching strategic document that sets our Irelands long-term spatial development up to 2040. The NPF lists ‘Compact Growth’ as a National Strategic Outcome for the country, under which it is stated that:

“Carefully managing the sustainable growth of compact cities, towns and villages will add value and create more attractive places in which people can

¹⁰ Section 7.2.3, *Auckland Design Manual*, Auckland Council.

¹¹ Levitt, D. and McCafferty, J. (2009) *The Housing Design Handbook: A Guide to Good Practice*. Routledge.

¹² The Decline of Apartment Development in Dublin: Key Issues.

¹³ Laylor, P. (2017) Submission to Apartment Design Guidelines.

¹⁴ Housing Agency (2016) *Workshop on Design Standards for Apartments – Feedback Report*.

live and work. All our urban settlements contain many potential development areas, centrally located and frequently publicly owned, that are suitable and capable of re-use to provide housing, jobs, amenities and services, but which need a streamlined and co-ordinated approach to their development, with investment in enabling infrastructure and supporting amenities, to realise their potential. Activating these strategic areas and achieving effective density and consolidation, rather than more sprawl of urban development, is a top priority.”¹⁵

Achieving compact growth requires the delivery of higher density residential developments. However, there is a risk that the delivery of high-density developments may be compromised by overly restrictive dual aspect standards. From a development perspective, a key benefit of single aspect units is that it is easier to deliver more of them. A greater number of units can be served by a smaller number of lift/stair cores and can be accessed through double loaded corridors. Single aspects also mean there are less complications in managing privacy and potential overlooking between units, particularly on constrained sites. Conversely, a higher proportion of dual aspect units requires a greater number of cores to serve fewer units. Unless compensated with increased building heights (which bring their own additional costs) this may result in an inefficient use of land and the inability to deliver residential development at the desired density.

The required provision of dual aspect units according to minimum rates also presents an issue from a design and placemaking perspective, particularly for urban and infill developments. It is generally considered good placemaking practice to create continuous and active frontages that address streets and public spaces. This both improves the visual quality of a block and provides passive overlooking, helping to improve safety and security. This is particularly important in relation to urban infill developments, where new developments will often have to fit into an existing established block pattern. Generally, a block with a number of central single aspect units and corner dual aspect units accessed from a shared interior corridor can be adapted to fit into existing urban street patterns. In contrast, the core block model required to maximise dual aspect units promotes the design of higher, free-standing apartment blocks. Such blocks stand out visually within the environment and are unlikely to fit neatly into existing patterns of developments in urban centre locations. Flexibility in terms of layout and design is required to achieve adequate placemaking depending on different site contexts. The *Urban Design Manual: A best practice guide* states that:

“The requirement to maximise dual aspect units needs to be balanced with the objective of creating a coherent block form. *Whilst most homes within the development should be dual aspect, single aspect homes could be provided where there is a demonstrable case in terms of benefits to the layout, consideration of the unit size and its orientation.”¹⁶*

Prescriptive minimum requirements for dual aspect provision risk hindering flexibility and the ability to effectively balance the delivery of dual aspect units with the creation of a coherent built environment.

Overall, it is considered that a flexible approach that balances quantitative standards around dual aspect, floor areas and core/unit ratios with more qualitative design considerations is required to achieve cost-effective development at appropriate densities. The provision of dual aspects should be considered a means to an end, not

¹⁵ National Planning Framework, p.14.

¹⁶ *The Urban Design Manual: A best practice guide*, p.78

an end in itself. Dual aspect units have a perceived advantage over single aspect units in that they provide improved ventilation and daylight reception. Though this is generally the case, other unit layouts and design measures can be utilised to help improve ventilation and daylight reception for single aspect units, so that they provide optimum amenity for residents. As noted above, the provision of balconies and background ventilators can help improve ventilation. Bay windows can help increase ventilation and maximise daylight reception throughout the day regardless of orientation and have the added benefit of improving overlooking onto public spaces¹⁷. Alternative unit layouts can incorporate a notched terrace, create an additional façade on which windows can be placed to improve ventilation and daylight without providing traditional dual aspects.

¹⁷ Levitt, D. and McCafferty, J. (2009) *The Housing Design Handbook: A Guide to Good Practice*. Routledge.

3 Existing Practices in Other Jurisdictions

In order to benchmark the Irish planning and development management standards for dual aspect in residential development, it was considered useful to explore what approaches are utilised in other jurisdictions' building regulations and statutory guidance frameworks. A number of locations have been chosen on the basis of their perceived maturity in adopting a comprehensive approach and framework for assessment.

3.1 National Case Study: Denmark

The requirements for building construction in Denmark are specified in the *Building Regulations* (2018) which have been designed to ensure building construction achieves minimum standards.

In relation to light conditions, the Regulations outline that buildings should be designed in a manner that the building interiors have appropriate light conditions:

“377. Buildings must have light conditions that ensure that no risk will occur to the health, safety and comfort of people. Sufficient daylight [...] must be ensured as well as sufficient electric lighting with due consideration of the use.”

Accordingly, the Regulations specify that due consideration should be had to the following during planning and construction:

1. Daylight should be used as a source of light to the extent it is possible.
2. Unnecessary consumption of energy should be avoided.
3. Unnecessary heat transfer to the rooms should be avoided.
4. Nuisance from direct sunlight should be avoided.
5. Blinding nuisance must be avoided.

In order to ensure adequate conditions, the Regulations require due consideration of distance and height compared to other buildings and free areas in the determination of the height and number of storeys of the building. It is additionally required that the height of the bedrooms and kitchen is established having regard to the depth and size of the room and the location of windows to allow for daylight to enter the room.

Furthermore, the Regulations specify that sufficient access to daylight may be documented by a glass surface without shadowing effect equivalent to a minimum of 10% of the floor area or by proving that the inside lighting intensity from daylight is 300 lux.

While the Regulations recognise the importance of ensuring satisfactory light conditions within buildings and set out requirements to ensure that the light conditions are favourable, they also place significant emphasis on the consideration of other aspects, such as consumption of energy and sound installation.

The Regulations set a series of minimum requirements for windows and skylights to ensure energy performance, inclusive of the energy balance and dimensions for reference window. They additionally specify that sound glass, other functional glass or glass with a lower solar heat transmittance (if the energy savings related to this solution can be proven) may be used if the energy balance requirement is met.

3.2 National Case Study: Netherlands

In the Netherlands, building demolition, construction and refurbishment must comply with the *Building Decree* (2012). The *Building Decree* comprises the technical regulations that depict the minimum requirements for all structures in the Netherlands which are discussed in the *Praktijkboek Bouwbesluit 2012* (Dutch Guide to the Building Decree).

With regard to light, the *Building Decree* requires that buildings are planned and constructed in a manner that sufficient daylight enters into the residential areas of buildings so as to ensure the wellbeing of future residents. Accordingly, it sets out the following requirements.

The *Building Decree* requires that all staying areas in residential units (e.g. bedrooms and living rooms) have an equivalent daylight area (i.e. window), determined in accordance with NEN 2057¹⁸, which is at least 10% of the floor area and 0.5 sq.m whichever is the greater. It is additionally required that windows are located at least 2m away from the site boundary (Figure 3.1).



Figure 3.1: Plot boundary (Praktijkboek Bouwbesluit 2012).

Moreover, if the subject site is located adjacent to a public road, water body or open space, then the aforementioned distance is required to be observed with respect to the centre of such road, water body or open space. The *Building Decree* additionally stipulates that obstacles to the entry of daylight into staying areas, such as awning, a balcony above a window, a shed and a boundary fence, must also be taken into consideration.

3.3 National Case Study: Sweden

In Sweden, the mandatory provisions relating to the construction of new buildings are contained within the Swedish National Board of Housing, Building and Planning's (Boverket's) *Building Regulations* which have specific regard to the European construction standards.

¹⁸ A determination method of the equivalent daylight area of a space.

In relation to light, the *Building Regulations* require that buildings are designed and orientated to ensure specific rooms or separable areas of rooms have satisfactory access to direct daylight (daylight through windows directly from the outside):

“Rooms or separable parts of rooms where people are present other than occasionally shall be designed and oriented to ensure adequate access to direct daylight is possible, if this does not compromise the room’s intended use.”

Accordingly, it is recommended that the area of window glazing in these rooms is calculated in accordance with principles contained within standard SS-EN 17037:2018. The Regulations additionally specify that at the very least the window glazing areas in these rooms should be 10% of the respective floor area to ensure access to direct sunlight. For other rooms, it is recommended that the area of window glazing is calculated by a daylight factor of 1.0%.

Moreover, the Building Regulations specify that in common areas associated with dwellings for individual people, access to indirect daylight (light from the outside which comes into the room other than through the window) is adequate.

Furthermore, the Regulations set out that a minimum of one room or separate area of a room in dwellings which are used other than occasionally should additionally have access to direct sunlight (non-reflected sunlight in rooms).

3.4 City Case Study: Toronto, Canada

The City of Toronto developed a series of Design Guidelines to provide specific design direction for the development of low-rise, mid-rise and tall buildings, namely the *Townhouse and Low-Rise Apartment Guidelines*, *Performance Standards for Mid-Rise Buildings* and the *Tall Building Design Guidelines*.

3.4.1 Townhouse and Low-Rise Apartment Guidelines

The *Townhouse and Low-Rise Apartment Guidelines* (2018) provide design direction for townhouses and low-rise apartment buildings of four storeys or less in height. The principal objective of the Guidelines is *“to provide clarity and some flexibility in creating building designs and development layouts that reflect the goals and policies of the Official Plan”*. In this regard, the Guidelines provide specific and often measurable directions related to their guiding principles, one of which is to create comfortable living conditions by providing access to sunlight.

The Guidelines acknowledge the importance of adequate sunlight inside a dwelling and accordingly require apartment developments to provide appropriate separation distances between facing buildings and adequate building setbacks. In order to ensure this aspect of design is adequately addressed, the Guidelines set out appropriate minimum separation distances between facing buildings which increase as the height of the main building face increases (Table 3.1).

Table 1: Facing Distance (D) **, ***		
Main Building Face Height (H)	Approx. no. of Storeys	Minimum Facing Distance (D)
Less than 9.5m	2 - 2.5	11.0m*
9.5m - 11.5m	3 - 3.5	13.0m*
More than 11.5m	3.5 - 4	15.0m
<p>*Additional 1.0m facing distance is required when below-grade entrances and/or below-grade private outdoor amenity spaces are provided.</p> <p>**Where facing buildings differ in height, use the average of the two.</p> <p>***The main building face height is measured from the average grade of the building frontage to the top of the roof or soffit.</p>		

Table 3.1: Facing distance (Townhouse and Low-Rise Apartment Guidelines).

Furthermore, the Guidelines require that any additional height beyond the main building face height fits under a 45 degree angular plane originating from the top of the main building face height. It is additionally required that building element projections, such as balconies, setback areas, streets, mews, and amenity areas are limited to protect access to light.

The Guidelines note that when the appropriate facing distance is combined with effective angular planes, five hours of direct sunlight can be achieved within the units that face east, west, and south, during the solstices. Direct sunlight can even reach into the lowest units, improving usability and enjoyment.

3.4.2 Performance Standards for Mid-Rise Buildings

The *Performance Standards for Mid-Rise Buildings* (2010) provide guidance for the development of mid-rise buildings (buildings between four and 11 storeys) on the Avenues. A key objective of the Performance Standards is to design mid-rise buildings in a manner appropriate to the Avenues.

In relation to sunlight, the Performance Standards outline that buildings should be designed in a manner that sidewalks and subsequently the buildings will enjoy at least five hours of sunlight daily between spring equinox and autumn equinox and accordingly require that mid-rise buildings apply angular planes and setbacks.

The Performance Standards set out that an angular plane should be taken from a height equivalent to 80% of the R.O.W. width and subsequent storeys must fit within a 45 degree angular plane from this point. Furthermore, they specify that there should be setbacks at upper storeys between new and existing mid-rise buildings to increase access to sunlight.

3.4.3 Tall Building Design Guidelines

The *Tall Building Design Guidelines* (2013) provide design direction for buildings of 12 or more storeys in height. The Guidelines, through the provision of specific and sometimes measurable directions, illustrate how the policy objectives of the Official Plan can be achieved.

The importance of access to natural light in the building interior in contributing to residential liveability is recognised by the Guidelines and they seek to ensure adequate access to same. Accordingly, they set out minimum separation distances between buildings, floor plate sizes and shapes and tower orientation and articulation.

In order to maximize the environmental quality of building interiors, inclusive of daylighting, the Guidelines specify that a minimum separation distance of 25m should be provided between towers (Figure 3.2).

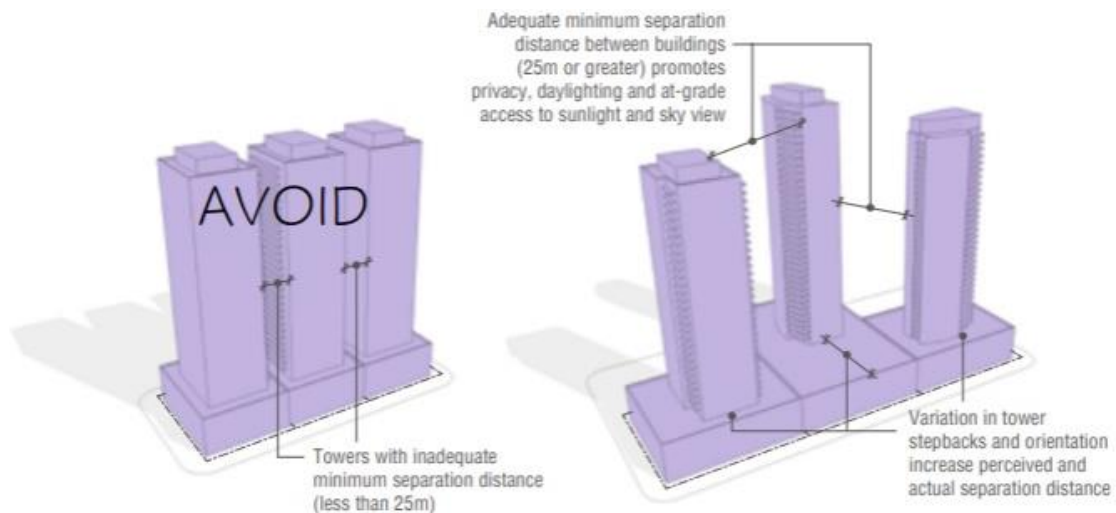


Figure 3.2: Separation distances between towers (Tall Building Design Guidelines).

Furthermore, the Guidelines limit the tower floor plate to 750 sq.m or less per floor, including all built area within the building, but excluding balconies to allow for the passage of natural light into interior spaces (e.g. shallow rather than deep floor plans). They additionally specify that towers should be oriented and articulated in relation to the seasonal paths of the sun across the sky.

3.5 Concluding Remarks

The building regulations and guidelines adopted in Denmark, the Netherlands, Sweden and Toronto recognise the importance of ensuring satisfactory light conditions within dwellings in the creation of comfortable living conditions. Accordingly, they seek to ensure that developments are planned and constructed in a manner that sufficient light enters into each dwelling.

Unlike Ireland, Denmark, the Netherlands, Sweden and Toronto do not prescribe requirements regarding dual aspect units (refer to Section 4 below). However, they, through the application of numerous other minimum standards and requirements (e.g. separation distances, areas of window glazing, the height of bedrooms and kitchens and

the orientation and articulation of buildings) ensure that the availability of light inside dwellings is maximised.

In conclusion, Denmark, the Netherlands, Sweden and Toronto do not utilise dual aspect ratios as an instrument to assess the quality of residential liveability but apply a comprehensive approach and framework for its assessment of same.

4 Dual Aspect Standards in Ireland

Dual aspect standards for new developments in Ireland are set under the *Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities*. After a two-month consultation period between December 2017 and January 2018 the *Design Standards for New Apartments* were published in March 2018. They update the previous 2015 apartment design standards and aim to support a shift towards greater levels of apartment living in Ireland as a means to help meet current and future housing demand. The Guidance Document was further updated in December 2020 to introduce a Specific Planning Policy Requirement (SPPR 9) restricting co-living developments.

The *Design Standards for New Apartments* set minimum standards for, inter alia, overall apartment floor areas, the floor areas of individual rooms and private and communal amenity spaces. These minimum requirements are dependent on the number of bedrooms provided and the number of persons intended to occupy each unit, with greater floor areas required for higher occupancy units. They also include specific guidance and standards for build-to-rent and shared accommodation developments.

Specific Planning Policy Requirement 4 (SPPR 4) of the Design Standards sets out the minimum dual aspect provision for new apartment developments in different locations. For developments in central and accessible urban locations, a minimum of 33% dual aspect units is required. For developments in suburban or intermediate locations there is an objective to generally provide a minimum of 50% dual aspect units. The Design Standards also allow for building refurbishment schemes or urban infill schemes on sites of up to 0.25ha to provide dual aspect provision below the rate of 33%, provided an overall high quality of design is achieved. However, such cases are to be left to the relevant planning authorities' discretion and permitted only on a case-by-case basis.

Specific Planning Policy Requirement 4

In relation to the minimum number of dual aspect apartments that may be provided in any single apartment scheme, the following shall apply:

- (i) *A minimum of 33% of dual aspect units will be required in more central and accessible urban locations, where it is necessary to achieve a quality design in response to the subject site characteristics and ensure good street frontage where appropriate.*
- (ii) *In suburban or intermediate locations it is an objective that there shall generally be a minimum of 50% dual aspect apartments in a single scheme.*
- (iii) *For building refurbishment schemes on sites of any size or urban infill schemes on sites of up to 0.25ha, planning authorities may exercise further discretion to consider dual aspect unit provision at a level lower than the 33% minimum outlined above on a case-by-case basis, but subject to the achievement of overall high design quality in other aspects.*

Figure 4.1: Minimum dual aspect requirements (*Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities*).

The Design Standards note the benefit of dual aspect units and state that “*dual-aspect apartments, as well as maximising the availability of sunlight, also provide for cross ventilation and should be provided where possible*” (p.15). However, they also acknowledge the difficulty in providing dual aspect units in urban contexts:

“In duplex type or smaller apartment blocks that form part of mixed housing schemes in suburban areas, dual aspect provision is generally achievable.

*In more urban schemes, where there may be a terraced or perimeter block pattern wholly or partly fronting a street, this may not be the case. **Ultimately, the daylighting and orientation of living spaces is the most important objective.***” (p.15)

The underscored implies that achieving adequate daylight reception and orientation for units is the primary objective for new developments, and that **dual aspect provision is a means to achieve this objective, rather than an end in itself.**

With regard to single aspect units, it is stated that south, west or east facing are preferable to north facing units in order to maximise sunlight. North facing units are defined as those that “*face predominantly [over 50% of the façade] north, north-west or north-east and fall within a 45 degree angle of 0° (i.e. due north)*” (p.15). This is illustrated in Figure 4.2 below. While north facing single aspect units are generally less favourable, they can be considered acceptable if overlooking a significant amenity space or feature such as a park, garden or body of water.

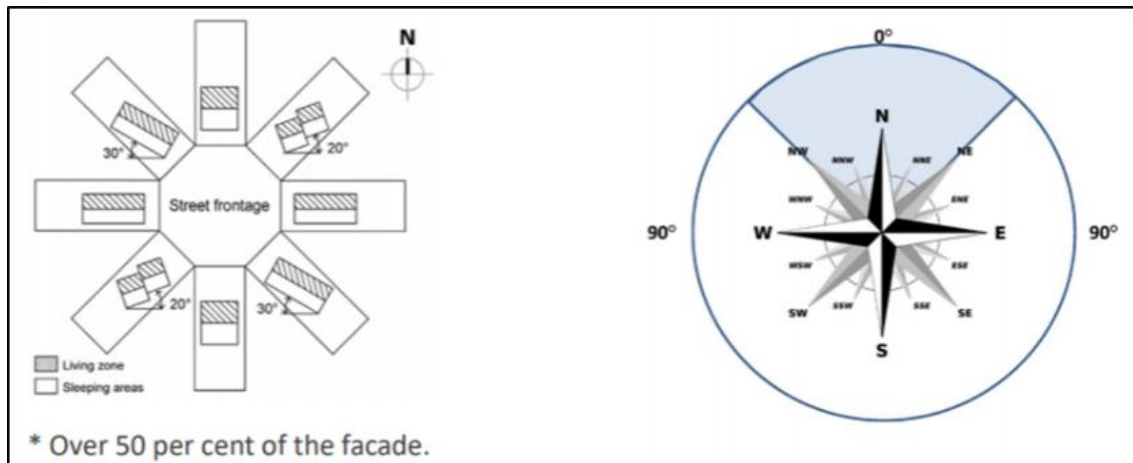


Figure 4.2: Building orientation (*Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities*).

The Design Standards do not contain specific details as to what sort of unit layout is considered to provide dual aspects. Traditional generic dual aspect units will enjoy outward-facing aspects on opposite or adjoining facades (Figure 4.3). However, the Design Standards do not prohibit unit layouts that employ alternative means to provide dual aspects. This further emphasises that the overall ambition of the Design Standards is to achieve adequate daylight reception for residential units. The provision of units with traditional dual aspect layouts is but one means by which to achieve greater daylight reception, and not the end goal of the Design Standards in itself. As such, it is suggested that the application of the general standards for dual aspect provision under **SPPR 4** **should not be utilised as a blunt instrument against which developers must achieve strict compliance, but rather should prioritise the delivery of units with adequate orientations and levels of daylight reception as a means to secure high levels of amenity for residents.**

Such an approach is supported by the treatment of dual aspect provision in new developments by An Bord Pleanála. As detailed in Section 5 of this report, An Bord Pleanála have adopted a flexible approach in evaluating dual aspect provision, with various non-traditional layouts considered an acceptable means by which to provide dual aspects.

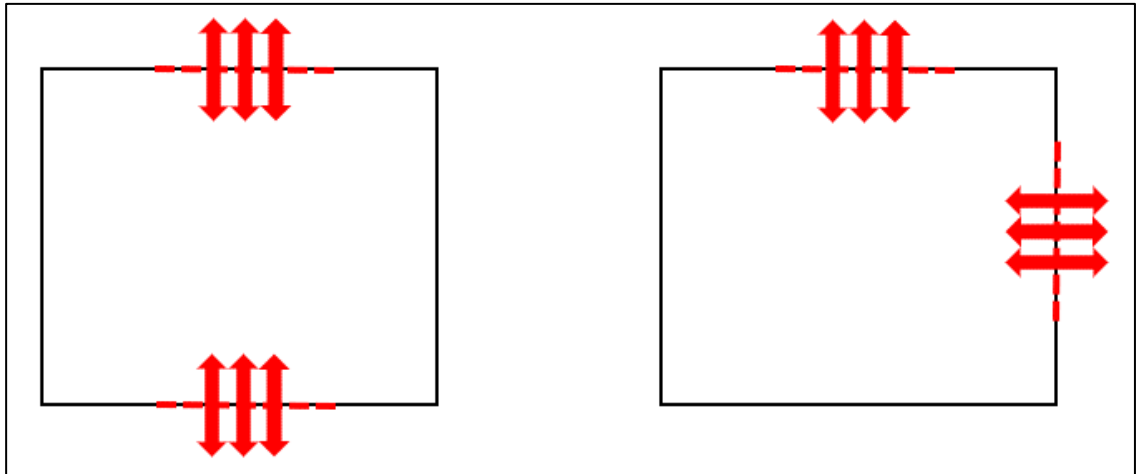


Figure 4.3: Traditional dual aspect arrangement for apartment units, with location of outward-facing facades highlighted in red.

5 Trends in Dual Aspect Assessment in Ireland (An Bord Pleanála)

KPMG Future Analytics conducted a review of Strategic Housing Developments (SHDs) located in Ireland's urban centres that have been granted planning permission by An Bord Pleanála. A substantial number of SHD applications were reviewed, based on the relevant Inspectors Reports from the Board and supporting documentation, such as planning reports and architectural drawings, where available. This review examined how dual aspect provision is treated by the Board in the context of large-scale residential developments, in order to inform the Applicant and Design Team associated with a forthcoming residential development at the former Ted Castles site and Dun Leary House, Old Dun Leary Road, Cumberland Street and Dunleary Hill, Dún Laoghaire, Co. Dublin, which is understood to likely be submitted to An Bord Pleanála as a Strategic Housing Development. The findings of this review are detailed below.

The treatment of dual aspect in the assessment of SHDs by An Bord Pleanála (ABP) reveals wide variance around how the provision of dual aspect units is prioritised in new developments. The *Design Standards for New Apartments* require that a minimum of 33% of units in new apartment schemes in central and accessible urban locations be dual aspect. In short, for developments in suburban or intermediate locations, it is generally required that 50% of units be dual aspect. As per Section 4, the Design Standards do not detail what sort of unit layout is considered to constitute dual aspect provision.

A review of SHD applications that have been granted planning permission by ABP reveal a lack of consensus around what constitutes dual aspect, and how the requirements under SPPR 4 are applied on a case by case basis. In several cases, units that were presented as dual aspect by an applicant were discounted by the Board's Inspectors as single aspect. In other cases, innovative, non-traditional dual aspect arrangements that utilised alternative unit layouts were found acceptable by the Board. This review also revealed some flexibility in the application of the 33% and 50% dual aspect rates that are generally required for new developments, with requirements sometimes relaxed due to site specific constraints and the overall quality and residential amenity provided by a proposed development.

The review of SHDs granted permission by the Board, which is set out in detail below, is considered to have established the following:

- The Board do not adopt a strict definition as to how dual aspects in new developments should be achieved. Alternative unit layouts and other solutions are considered an acceptable means by which to achieve dual aspects, depending on the provision of suitable levels of amenity for residents.
- Dual aspect units in which both aspects face north are considered acceptable by the Board.
- The Board has allowed for some flexibility in the application of SPPR 4 regarding the required rates of dual aspect units in a new development. This implies that these rates should be considered general guidelines rather than strict prescriptive standards. However, in situations whereby the Board have permitted a deviation below the SPPR recommendations, the subject scheme has tended to include compensatory design measures such as wrap around windows, increased floor to

ceiling heights etc whereby the units benefitted from what was deemed as adequate daylight penetration. Furthermore, the deviations below the recommended standards have tended to be minor with no precedent established for substantial reductions below the recommended standards.

- Overall, the Board adopts a qualitative rather than a quantitative approach to assessing dual aspect provision in new developments. The quantity of proposed dual aspect units is superseded by the quality of those units and their contribution to the quality of life for future residents.

5.1 What is considered Dual Aspect?

The review revealed several instances of the Board's Inspectors discounting units that were classified by an applicant as dual aspect. In such cases these units were not considered to properly provide dual aspects as they did not make an adequate contribution to daylight reception or cross ventilation.

Under **Reg. Ref. 304177** planning permission was granted for modifications to a residential scheme (previously permitted and amended under Reg. Ref. 16/37233 and PL28.249400) for 274 no. apartment units at Blackrock, Co. Dublin. The applicant stated that 50% of the overall units were dual aspect. However, some proposed dual aspect units were provided a second aspect by way of the inclusion of a secondary side window onto a balcony or living area. These side windows were not considered to contribute to the amenity of the unit in terms of light reception or cross ventilation, and such units were discounted as single aspect by the Board's Inspector. In the Inspectors Report it was specifically stated that:

*"I would question the dual aspect nature of some of the units in Block A, in particular apartment 3A1, apartments 5A1 and above, and apartment 12A3 and above, which equates to eleven apartments in Block A. **These units are provided with a second side window to a balcony/living room which do not contribute to the apartment in terms of cross ventilation or contribution of a significant addition of light and they should not in my view be classified as dual aspect.** These apartments as single aspect units are, however, acceptable in terms of design (with the exception of 3A1 which is discussed further hereunder), given their eastern orientation which benefits from overlooking of the formal garden, which is a significant amenity feature."*

It was further stated:

*"With regard to apartment 3A1, which is one bed apartment located on the other side of the parking entrance to 2A1, this unit adjoins the public footpath with a bedroom window directly at the footpath edge with no privacy strip provided, and also no privacy strip/landscaped edge between the patio and footpath. **A second bedroom window is provided to this one bed unit, where a small side bedroom window is proposed onto the balcony, resulting in the categorisation of this unit as a dual aspect unit. I do not consider this to be a quality dual aspect unit.**"*

Under **Reg. Ref. 307313** planning permission was granted for 123 no. apartments at Ballincollig, Co. Cork. The applicant presented 54 no. units (representing 43.9% of the

total units) as dual aspect. However, as stated below, the Board's Inspector discounted 11 of the proposed dual aspect units as single aspect:

*"The Housing Quality Assessment Report submitted with the application notes the predominant east-west orientation of apartments and the availability of views north to the Lee Valley hills. The application states that a minimum of 54 no. units / 43.9% of the apartments are dual aspect. **Notwithstanding this stated level of provision, I do not consider that 11 of the identified units could be properly described as dual aspect. The level of provision therefore falls to approx. 34%.** This is below the 50% requirement of SPPR4(ii) for suburban or intermediate locations, however, the subject site is regarded as a town centre site close to quality public transport. The blocks are generally orientated along a north-south axis to maximise easterly and westerly aspects. The reduced standard of provision of 33% outlined in section 3.17 and SPPR4 may therefore be regarded as acceptable in this case. I therefore consider that the requirements of SPPR4 are satisfied."*

These 11 no. units are not identified in the Inspector's Report, and it is not explicitly stated as to why these units were considered to be single aspect. However, based on an examination of the architectural drawings prepared by Wilson Architecture and submitted in support of the application, it is surmised that the Inspector was referring to the 11 no. units marked in red in Figure 5.1 below. The second aspect of these units seems to arise from of a small window adjoining a balcony. As per Figure 5.2, the estimated width of these windows is below 1m. As such, they may be considered to not significantly contribute to daylight or cross-ventilation. This is in contrast to Reg. Ref. 307332 and Reg. Ref. 304823 which are examined below, and which provide non-traditional second aspects that are approximately 3m and 2.6m wide respectively. These longer aspects were considered by the Board to provide dual aspects, suggesting that the quality of such aspects is prioritised over their layout or orientation.

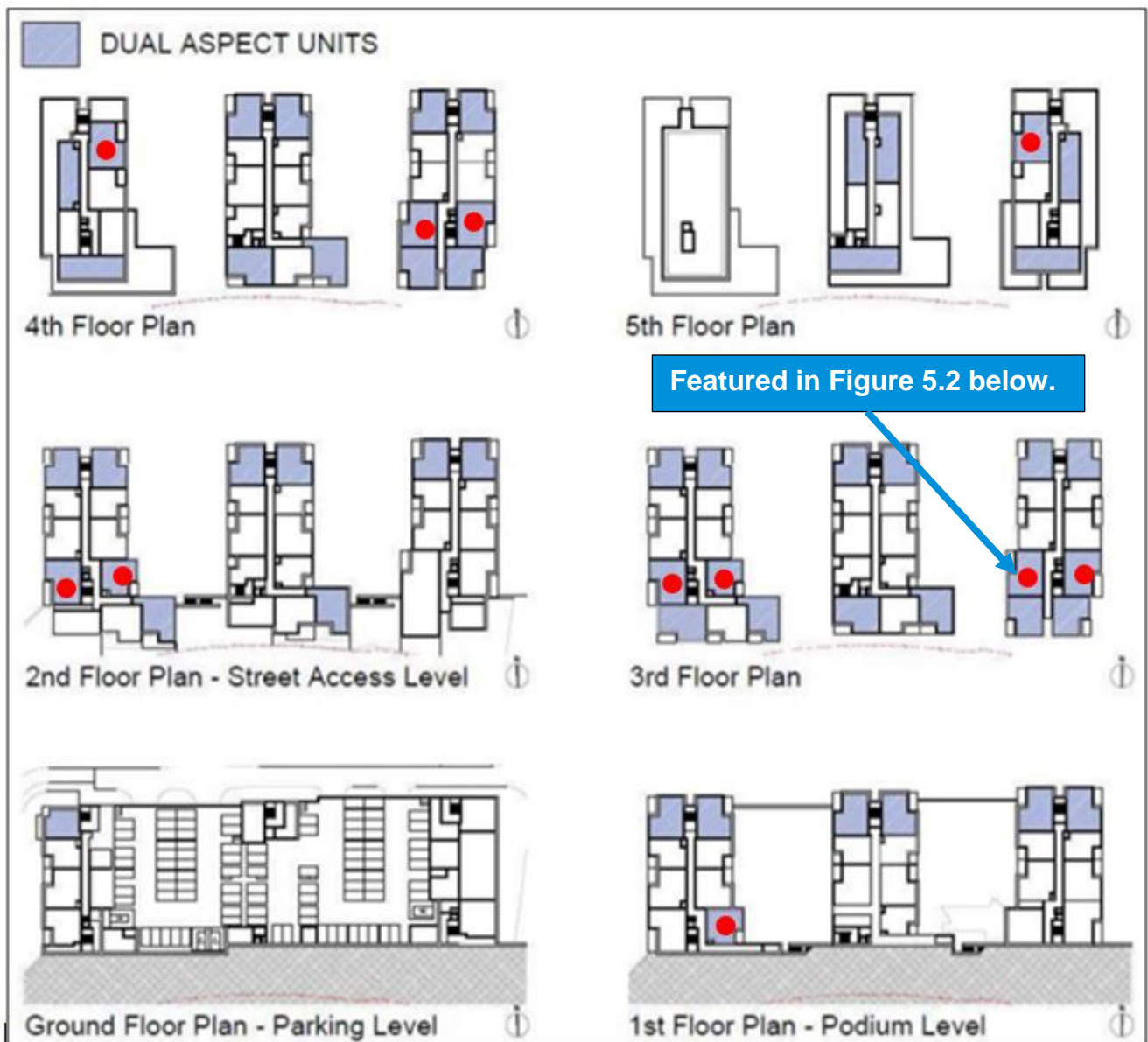


Figure 5.1: Proposed dual aspect units for Reg. Ref. 307313, with estimated discounted units marked in red (Wilson Architecture).

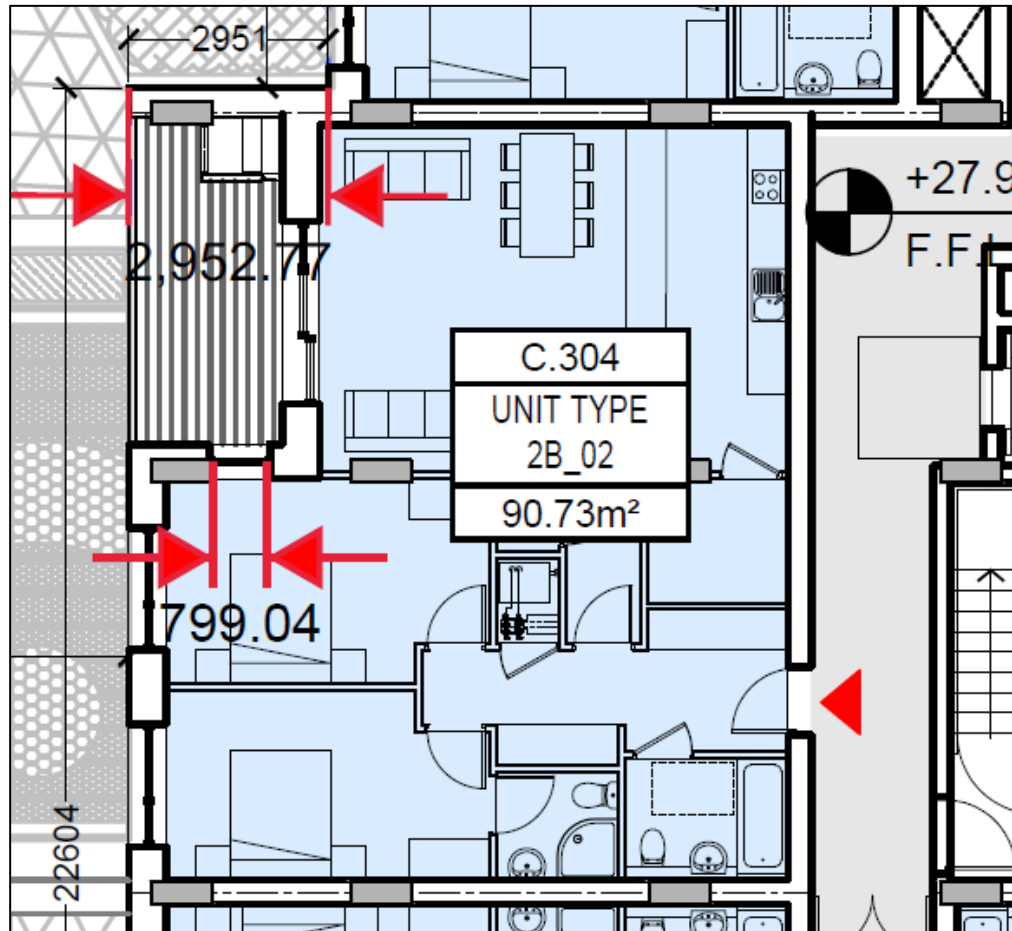


Figure 5.2: Estimated width of secondary aspect under Reg. Ref. 307313.

Under **Reg. Ref. 307415** 200 no. units were granted planning permission at Leopardstown, Dublin 18. In this case the applicant stated that 86% of the proposed units were dual aspect. Similar to the above, several proposed dual aspect units relied on the provision of a secondary side window adjoining a balcony. Similar to the above, some of these windows were less than 1m wide (Figure 5.3). As such, the Board's Inspector did not consider such units to be dual aspect and discounted them from the overall provision of dual aspect units in the development. It was specifically stated:

*"The documentation submitted states 86% of the proposed apartments are dual aspect, with 54% dual aspect to living/dining areas. I note the CE Report states some of the apartments are not considered dual aspect namely nos. 141, 142, 145, 148, and 149), nevertheless, it would appear from initial examination that the development currently achieves the 50% minimum proportion of 'true' dual aspect. **I concur with the submission that the apartments listed are not true dual aspect units and that this scenario applies to the units on the floors above and below the quoted units on the fourth floor plan. I note from the schedule submitted there are similar single aspect units in the other blocks, which are relying on a secondary side window onto a balcony to be classified as dual aspect, which I do not consider acceptable. In addition it would appear some instances units are mis-labelled as dual aspect.** I have examined all the units and by my calculation 43.5% of the units are single aspect and 56.5% are dual aspect. The proposal is therefore in compliance with SPPR 4, where*

50% of units are required to be dual aspect. I note 32 of the 87 single aspect units are north facing, however, the overall proportion of north facing units is limited and I consider overall the layout and amenity of the apartments is to a high standard.”

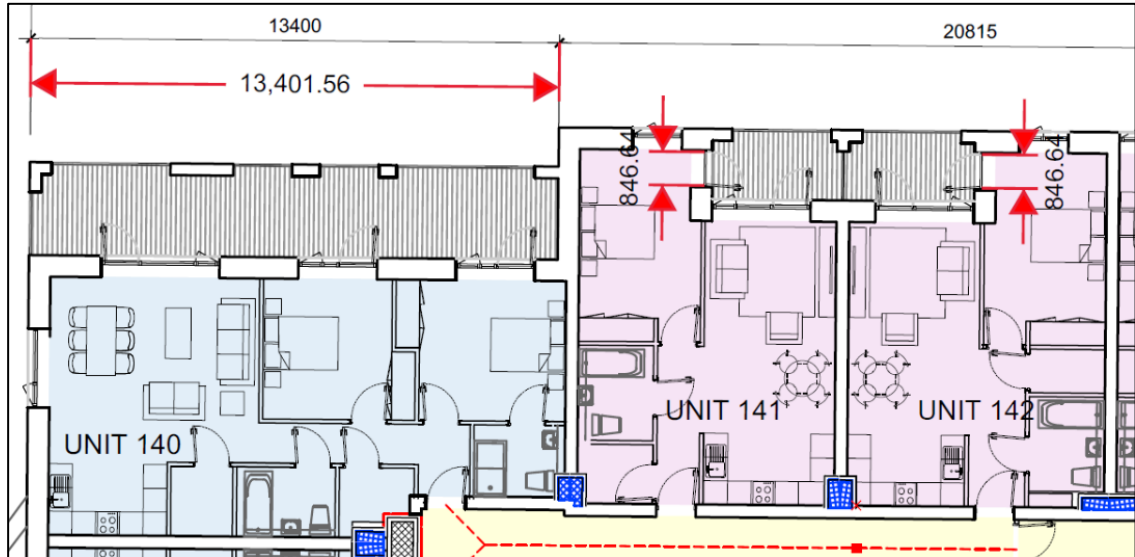


Figure 5.3: Units 141 and 142 with length of secondary aspect highlighted in red (KMD Architecture).

Notably, **Reg. Ref. 304469** provides a contrast to the above cases in that it saw units with a window adjoining the side of a balcony accepted as dual aspect. Under Reg. Ref. 304469 planning permission was granted for 253 no. apartments at Upper Kilmacud Road, Dundrum, Dublin 14. It was submitted by the applicant that 59% of the overall units provided dual or triple aspects. A third-party submission made in respect of the proposed development questioned the legitimacy of some of the proposed dual aspect units based on the fact that both aspects faced onto the same balcony (Figure 5.4). However, in this case the Board’s Inspector accepted such units as dual aspect and noted that they exceeded minimum requirements relating to floor area. It was stated:

*“Similarly, **Apt. A01 05 specifically identified by the objector has dual aspect, albeit both face onto the balcony. Of note, it is a one-bedroom unit.** The proposed apartments are generous in size and all are in excess of the minimum unit size required. More than adequate storage is also provided. A high standard of accommodation will be provided for future occupants.”*

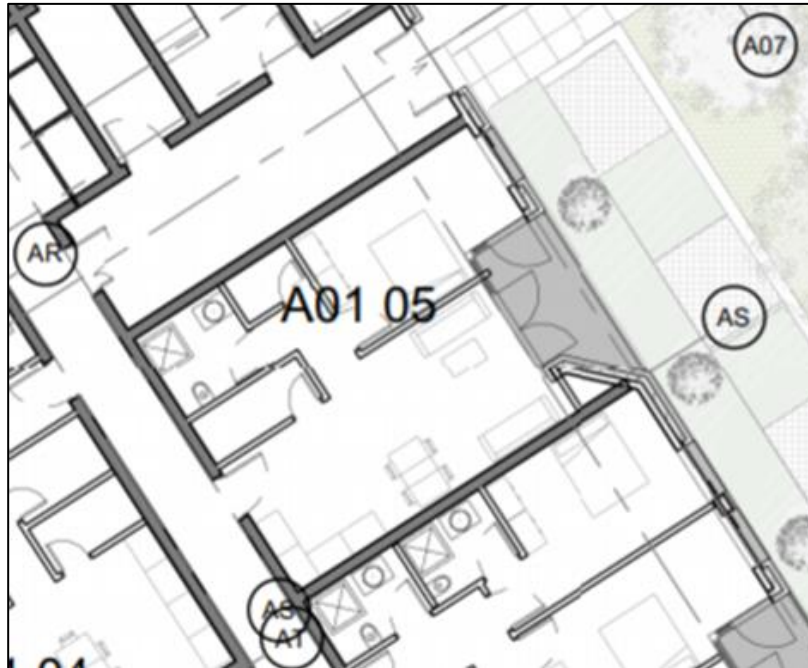


Figure 5.4: Proposed dual aspect unit A01 05 under Reg. Ref. 304469 (Henry J Lyons).

The above cases may seem to imply that the Board generally considers only traditional dual aspect layouts to provide sufficient ventilation and daylight to meet the requisite standards under the *Design Standards for New Apartments*. However, there are several examples of the Board accepting alternative unit layouts and non-conventional dual aspect solutions.

Under **Reg. Ref. 307332** planning permission was granted for 151 no. apartments at Deansgrange, Co. Dublin. The layout of the proposed development utilised a 'saw-tooth' design in order to increase the number of dual aspect units within the proposed development (Figure 5.5). As per Figure 5.6 below, each 'tooth' provided a bay 3m in length. The length of these bays was considered sufficient to provide an additional aspect for each unit. It was specifically stated:

*"I note that the Planning Authority has raised concern in relation to the form that dual aspect units take along the north end of the site, with the incorporation of a saw-tooth façade to facilitate secondary aspects. **I consider this design approach acceptable and an innovative solution to increasing the number of dual aspect units in the development. The saw-tooth design projects out the façade in excess of 3m for each bay. This provides a secondary easterly aspect that will facilitate good alternative access to light and ventilation into the living-room of the units.**"*

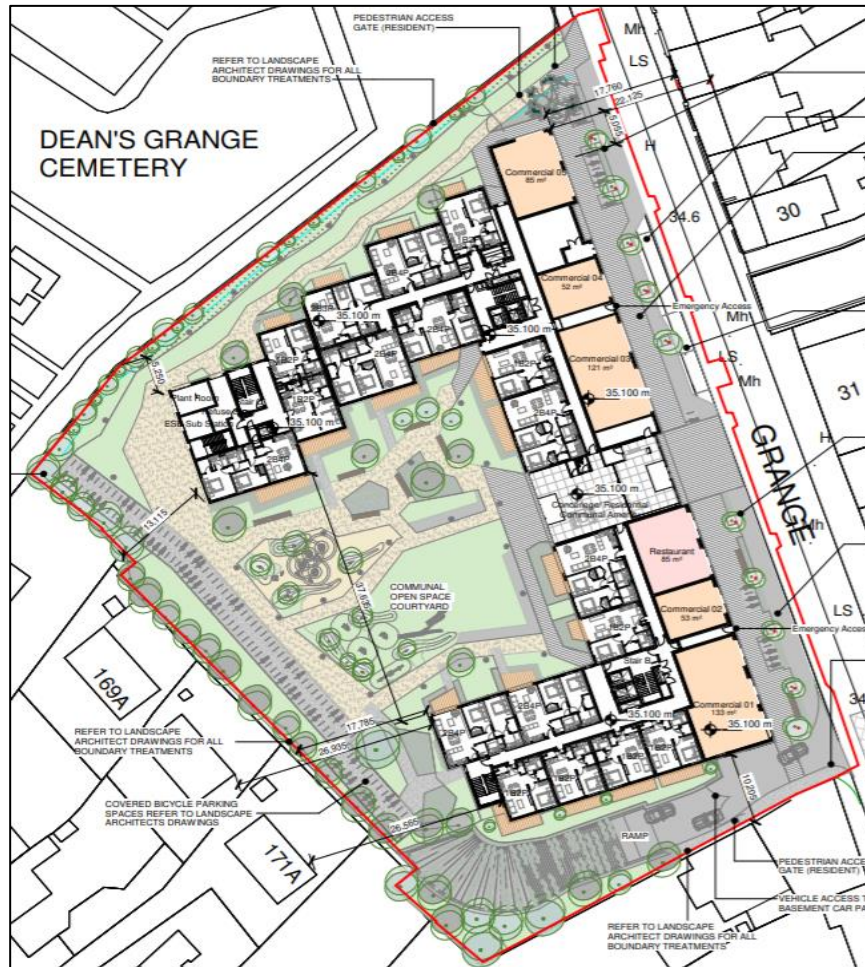


Figure 5.5: Proposed site plan for Reg. Ref. 307332 (Reddy Architecture and Urbanism).



Figure 5.6: Second floor dual aspect units for Reg. Ref. 307332 (Reddy Architecture and Urbanism).

The development granted permission under **Reg. Ref. 304823** for 210 no. units at Killiney, Co. Dublin incorporated a similar saw-tooth layout for one of its blocks to increase the number of dual aspect units in the development (Figure 5.7). In this case it was stated:

*“98 or 46% of the proposed apartments would have dual aspect, which exceeds the minimum of 33% required for accessible locations under SPPR4. **This figure includes 20 apartments on the northern side of Block B where a saw-tooth arrangement of windows, balconies and winter gardens is used to avoid have single aspect apartments facing mainly north.** The development would still meet SPPR4 even if those units are not regarded as properly dual aspect.”*

An excerpt from the architectural drawings prepared and submitted by O’Mahony Pike Architects in support of the proposed development is included in Figure 5.8 below. It is highlighted that, similar to Reg. Ref. 307332, the length of the protruding bay is approximately 2.6m. As noted above, this implies that such aspects are permissible providing that they are of sufficient width and quality.



Figure 5.7: Dual aspect locations for development under Reg. Ref. 304823 (O'Mahony Pike Architects).

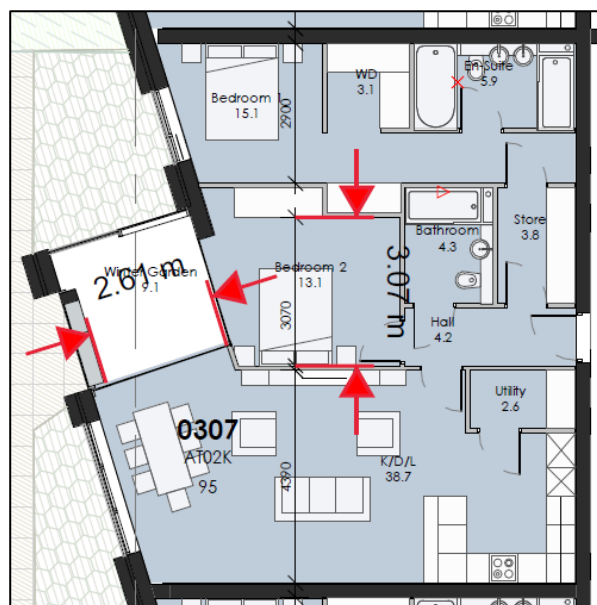


Figure 5.8: Unit 0307 under Reg. Ref. 304823, with length, of secondary 'tooth' aspect measured in red (O'Mahony Pike Architects).

The development granted permission under **Reg. Ref.308946** for 140 no. apartments at Newtownpark Avenue, Blackrock Co. Dublin included 'wrap around' windows as part of their dual aspect calculation. By including 'wrap around' windows the dual aspect percentage calculated by the applicant was 60%. The Board's Inspector disagreed with the applicant's assessment and did not consider such units to qualify as dual aspect

units. Upon review of the proposed scheme, the Inspector calculated 47% of the units to constitute dual aspect and considered this to be acceptable on the basis that it was marginally below the 50% standard.

“The applicant has stated that 60% dual aspect (84 units) is provided. On review of the drawings it is noted that c. 71% of the units in Block C are single aspect and c.57% on Block D. A number of units (18) have ‘wrap around’ window which is classified as dual aspect. A more appropriate figure for dual aspect is 47% (66 units) which is marginally below the apartment standards. This is considered acceptable.”

The development granted permission under **Reg. Ref.308418** for 193 no. apartments at Shanganagh Road, Shankill, Dublin 18 were informed by the Bord’s Opinion that units should only be counted that are ‘true’ dual aspect. The Bord defined ‘true’ dual aspect as **‘a unit with at least two separate windows on different walls, without an immediate obstruction’**. This is as close to a robust definition of dual aspect in the planning sphere and should be used as a basis when calculating the distribution of dual aspect units across a residential apartment scheme. When assessing the proposed dual aspect units, The Board’s Inspector stated:

“The units in Block B have a north east aspect and the projection integrates an additional south facing aspect into the design. Likewise, the units in Block C have a north west aspect and the projection integrates an additional south facing aspect into the design. I consider the design of these units allows for unobstructed views south. The location of the balconies allows these units to benefit from morning or evening sunlight. I consider the overall design will allow additional ventilation and add significantly to the light entering the units. It is my opinion that the design of these units, in combination with the aspects provided, allows these units to be considered as dual aspect. Therefore I consider the proposal can comply with SPPR 4 of the apartment guidelines.”

The development granted permission under **Reg. Ref.308157** for 628 no. build-to-rent apartments at Marmalade Lane, Wyckham Avenue, Dundrum, Dublin 16 stated that the dual aspect calculation of the proposed development was 59%. The planning authority recommended refusal of permission on the basis that the proposed development would fail to provide an adequate level of residential amenity for future occupants of the scheme and would be contrary to the proper planning and sustainable development of the area. The planning authority raised concerns in relation to the classification of some units as being dual aspect and the Bord’s Inspector concurred noting that many of the classified dual aspect units were relying on corner/bay windows and were in effect single aspect units. The Bord’s Inspector reviewed the proposal and concluded that 40% of the proposed units were dual aspect not 59%, but determined that subject site was in close proximity to good transport links, a major centre and employment uses and therefore was only required to provide 33% of units as dual aspect.

“By my calculation approximately 40% of the proposed units are dual aspect. Many of the units cited as being dual aspect are not maximising sunlight to the apartment given the limited scale of the window on a corner elevation, nor are they providing an opportunity for improved cross ventilation. Having regard to all of the above, I am of the opinion that approximately 40% of the units proposed are dual aspect units. I am also of the opinion that given the locational context of the site, close to good public transport links, in walking distance of a designated Major Centre, close to a number of employment

generating areas that the 33% requirement for dual aspect units applies in this instance and am satisfied with the quantum of approximately 40% provided.”

5.2 Daylight and Orientation

As noted above, a key benefit of dual aspects is the provision of greater sunlight and daylight, which has a positive impact on the amenity of residents. South-, east- and west-facing aspects are generally preferred to north-facing aspects as a means to maximise sunlight, with north-facing aspects defined as those that fall within 45 degrees of due north. However, north facing single aspect units are considered acceptable when overlooking a significant amenity space or feature. For reference, the *Design Standards for New Apartments* specifically state:

“Where single aspect apartments are provided, the number of south facing units should be maximised, with west or east facing single aspect units also being acceptable. Living spaces in apartments should provide for direct sunlight for some part of the day. North facing single aspect apartments may be considered, where overlooking a significant amenity such as a public park, garden or formal space, or a water body or some other amenity feature. Particular care is needed where windows are located on lower floors that may be overshadowed by adjoining buildings.” (p.15)

The Guidelines do not state whether a unit with two aspects, in which both aspects face predominantly north, are considered dual or single aspect. However, the decision made under **Reg. Ref. 304469** seems to establish that dual north facing aspects are considered acceptable to the Board, if an overall high standard of accommodation is achieved. As noted above, it was submitted by the applicant that 59% of the overall units provided dual or triple aspects. In some cases, proposed dual aspect units had two north facing windows, and the legitimacy of these units as dual aspect was questioned in a third-party submission. The Inspector confirmed that these units were considered to have dual aspects, and noted the quality of the proposed units, which exceeded minimum standards for floor area and storage space. It was stated:

*“One of the objectors queries the identification of certain apartments as being dual aspect and identifies Apt. A02 20 as an example. I note that this apartment has north facing windows both on the north-west and the north-east. **While it clearly falls within the definition of ‘north facing’ as defined by the Apartment Guidelines, it is nonetheless dual aspect.**” Similarly, Apt. A01 05 specifically identified by the objector has dual aspect, albeit both face onto the balcony. Of note, it is a one-bedroom unit.*

*The proposed apartments are generous in size and all are in excess of the minimum unit size required. More than adequate storage is also provided. **A high standard of accommodation will be provided for future occupants.***

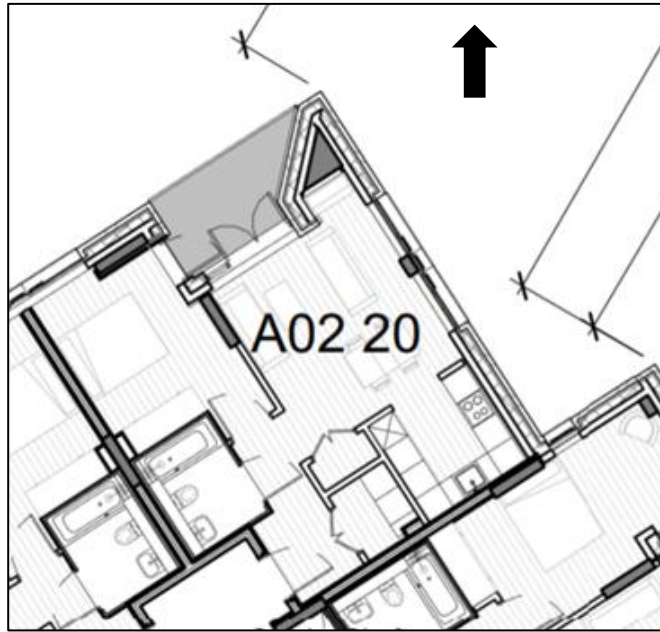


Figure 5.9: Unit A02 20 under Reg. Ref. 304469 (Henry J Lyons).

As noted in Section 2 of this report, bay windows are a design measure that allow for the greater penetration of daylight into single aspect units. Their contribution to the amenity of single aspect units is recognised under **Reg. Ref. 304383**. The development granted planning permission under Reg. Ref. 304383 (for 492 no. BTR units at Naas Road, Walkinstown, Dublin 12) incorporated a bay window configuration to maximise the quantum of dual aspect units in the proposed development. These bay windows were considered to be of sufficient size to allow for adequate sunlight reception. It was stated:

*“The applicant states that 48% of apartments are dual aspect and this is achieved by the creation of a bay window configuration, mainly along the northern Naas Road elevation. The guidelines require at least 33% to be dual aspect at such a central and accessible location. The planning authority are not convinced by the applicant’s calculation of dual aspect apartments. **However, I am satisfied that the bulk of apartments either have a favourable orientation for single aspect units or have been provided with a suitably generous bay window arrangement that allows direct sunlight to penetrate units for a proportion of the day.** In addition, given the variety and quantum of compensatory communal facilities, the proposed unit configuration and orientation is acceptable and complies with the guidelines in that respect.”*



Figure 5.10: Render of proposed development under Reg. Ref. 304383 (Reddy Architecture and Urbanism).

5.3 Relaxation in Recommended Standards

In each of the above examples, whether all proposed dual aspect units were considered acceptable or some were discounted as single aspect, the general requirements for 33% or 50% dual aspect provision were met. However, there are some cases in which the Board seem to have relaxed the 50% requirement for developments in suburban locations, based on site context and the overall quality of the proposed development. It is noted that despite such cases, it does appear as though dual aspect provision equivalent to 33% of overall units is the minimum which the Board are willing to accept.

As above, under **Reg. Ref. 304177** several proposed dual aspect units were discounted as single aspect on the grounds that secondary wide windows adjoining a balcony or living area were not considered to provide sufficient daylight or ventilation. As such, the Board's Inspector considered the provision of dual aspect units for the proposed development to be 46%, below the 50% generally required for suburban locations. This deficit was considered acceptable by the Inspector given constraints associated with the subject site. Specifically, it was stated:

*"I calculate in Block A and B that 46% of the units are dual aspect units. While this is below the minimum of 50% established by SPPR4, **I note the guidelines state that they 'shall generally be a minimum of 50%'**, and given the site context and constraints of this last remaining block of development and considering the context of the site which is an accessible urban location, with an exceptional landscape setting, and a requirement to ensure an appropriately scaled and quality design to define the edge of this garden and develop a quality pedestrian priority streetscape / street frontage,*

I consider the achievement of above 33% acceptable and the figure of 46% to be marginally below the stated 50% figure. I consider SPPR4 has been achieved.

Reg. Ref. 301991, which saw planning permission granted for 413 no. units apartments at Jacob's Island, Ballinure, Mahon, Cork, is another example of the Board allowing some flexibility in the rate of dual aspect units required. In this case the 33% requirement for central and urban locations was applied to each apartment block within the whole development, as well as the overall development. It was noted in the Inspectors Report that more than 33% of the overall units would be dual aspect, However, it was also noted that within Block 10 of the development only 24 out of 59 units would be dual aspect, equating to 32.2% of the units within the block. This slight deficient was considered acceptable, given that single aspect units would have a north-west/south-east orientation.

"Specific Planning Policy Requirement 4 of the guidelines relate to dual aspect apartments and requires that a minimum of 33% of dual aspect units will be required in more central and accessible urban locations, such as the subject application. In this instance, the applicant has stated that 240 of the 413 apartments are dual aspect, this would amount to greater than a minimum of 33%. However, I note that block 10 would accommodate 59 units, 24 (32.2%) of those would be single aspect. Given the northwest/southeast orientation of these units and the only marginally below minimum requirement target, I am satisfied that these units will provide an acceptable level of living standards in accordance with the guidelines."

5.4 Concluding Remarks

The foregoing analysis is considered to have established the following conclusions:

- The Board do not adopt a strict definition as to how dual aspects in new developments should be achieved. Alternative unit layouts and other solutions are considered an acceptable means by which to achieve dual aspect, depending on their quality and the provision of suitable levels of amenity for residents. However, recent precedent has revealed that *a unit with at least two separate windows on different walls, without an immediate obstruction* provides an appropriate benchmark when qualifying the ratio of dual aspect units in a proposed scheme.
- Dual aspect units in which both aspects face north are considered acceptable by the Board where a high standard of quality and overall residential amenity is provided.
- The Board has allowed for some flexibility in the application of SPPR 4 regarding the required rates of dual aspect units in a new development. This implies that these rates should be considered general guidelines rather than strict prescriptive standards.
- Overall, the Board adopts a qualitative rather than quantitative approach to assessing dual aspect provision in new developments. The quantity of proposed dual aspect units is superseded by the quality of those units and their contribution to the quality of life for future residents.

6 Appraisal of Dual Aspect in the Subject Proposed Development

This section conducts a detailed appraisal of the dwelling units proposed within the 'mixed-use' development at the former Ted Castle site and Dun Leary House (a proposed Protected Structure), Old Dunleary Road, Dún Laoghaire, Co. Dublin. The site is a brownfield infill site within a central urban location and has a net site area of approximately 0.3 ha. The site is bound by Old Dunleary Road to the north, De Vesce garden to the south, Cumberland street to the west and Clearwater Cove apartments to the east. The site is located within 5 minutes walking distance of Salthill/Monkstown DART station. The site also benefits from panoramic views to Dún Laoghaire Harbour and Dublin Bay to its north, and views to De Vesce Gardens immediately to its south.



Figure 6.1: Site context.

6.1 Scheme Appraisal

The scheme design aims at maximising the development potential of the site given its central location and proximity to a high capacity transport corridor. The proposed scale of development is consistent with the zoning for the site within Dún Laoghaire-Rathdown County Development Plan 2016-22. The site is also earmarked as a potential opportunity site within the Dún Laoghaire Urban Framework Plan.

The proposed development is for 146 no. dwelling units, associated communal amenity areas, co-working office space, gym and a retail unit at street level addressing Old Dunleary Road. The residential element of the development comprises of 34 no. studio units, 77 no. 1-bed apartment units, and 35 no. 2-bed units. The scheme ranges in height from 5-8 storeys. The surrounding built context of the site consists of mid-rise buildings ranging in height from 5-7storeys.

The site is constrained by its terrain, that drops markedly to the north-east corner of the site. The level difference in the site has been addressed by the developments design, through the inclusion of a partial basement and podium level courtyard. The site is also

constrained by its inner-city location that needs to be addressed carefully due to its proximity to neighbouring buildings. To its east, the site lies adjacent to Clearwater Cove apartments which is a 6/7 storey building. The building has openings and balconies looking onto the site along its western and southern facades. To its immediate west, the site is bound by Cumberland Street and further to the west by De Veschi Apartments. This building ranges in height between 4-6 storeys, with the penthouse-level set back from the street. The minimum set back from the site to this building is 15m at the south-west corner of the site. This façade is also lined with several openings and balconies overlooking Cumberland Street and the subject site.



Figure 6.2: De Veschi Apartments.



Figure 6.3: Clearwater Cove Apartments.

6.2 Dual Aspect Ratios

The *Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities* (2020) requires apartment schemes to deliver at least 33% dual aspect units in central and accessible urban locations (Specific Planning Policy Requirement - SPPR 4). Only sites near to city or town centre locations, and close to high quality public transport qualify under this. In a suburban and intermediary location, the minimum requirement is 50% dual aspect units. The subject site is located within the Metropolitan area of Dublin City and within the town centre of Dún Laoghaire. The site is also within a 5-minute walking catchment of a high capacity transport corridor (DART) and thereby satisfies this standard set by the Guidelines.

The Guidelines allow relaxations for urban infill schemes on sites up to 0.25 ha, on a case by case basis, depending on the overall design quality. It has to be noted that the subject site is an infill development scheme, with a net development area of approximately 0.3ha. Although this is above the threshold area stated by the 2020 Guidelines, consideration must be given to the added site constraints presented by the inclined terrain and inner-city location of the site.

The application is for the construction of 146no. apartment units and associated residential/retail uses. Of these 65no. units satisfied requirements for dual aspect established in Section 5 of this report. This will produce a dual aspect unit ratio of 44.5% within the development. In addition, a series of compensatory design measures have been introduced into the scheme including floor to ceiling height windows to improve the level of daylight penetration to these units.

Since the site is located within a central and accessible location it qualifies for the minimum 33% dual aspect ratio. The current provision of dual aspect units in the scheme is slightly above this minimum requirement set by the 2020 Guidelines. The scheme is therefore compliant with SPPR 4 of the section 28 Ministerial guidelines (2020 Apartment Guidelines) that supplants any local development plan. The distribution of dual aspect units by floor is presented in Table 6.1 below.

Table 6.1 Distribution of dual aspect units.

Floor number	Studio		1-Bed		2- Bed			
	Total	Dual Aspect	Total	Dual Aspect	Total	Dual Aspect	Total	Dual Aspect
Level 00	-		-		-		-	
Level 01	7	0	11	2	3	2	21	4
Level 02	5	1	8	3	9	7	22	11
Level 03	6	1	11	4	7	6	24	11
Level 04	6	1	14	6	6	5	26	12
Level 05	5	0	14	7	4	3	23	10
Level 06	5	1	12	7	4	3	21	11
Level 07	-		7	4	2	2	9	6
Total	34	4	77	33	35	28	146	65 44.5%

The proposed scheme has a total of 11 no. north-facing single aspect units. The 2020 Guidelines consider all units predominantly (over 50% of the façade) facing north, north-west, and north-east, that falls within a 45-degree angle of due north (0°) as a 'north facing unit'. As per Section 3.18 of the 2020 Guidelines, 'north-facing single aspect apartments may be considered where overlooking a significant amenity such as a public park, garden or formal space, or a water body or some other amenity feature'. The

proposal has incorporated retail units at ground level along the north façade of the building. All above ground level units along the north façade of this development will have panoramic views of Dún Laoghaire Harbour and Dublin Bay. It has to be noted that 16 no. units in the development have been designed with no balconies/terraces. These units have been allocated dedicated south facing private terrace at Level 5 as a compensatory amenity measure.

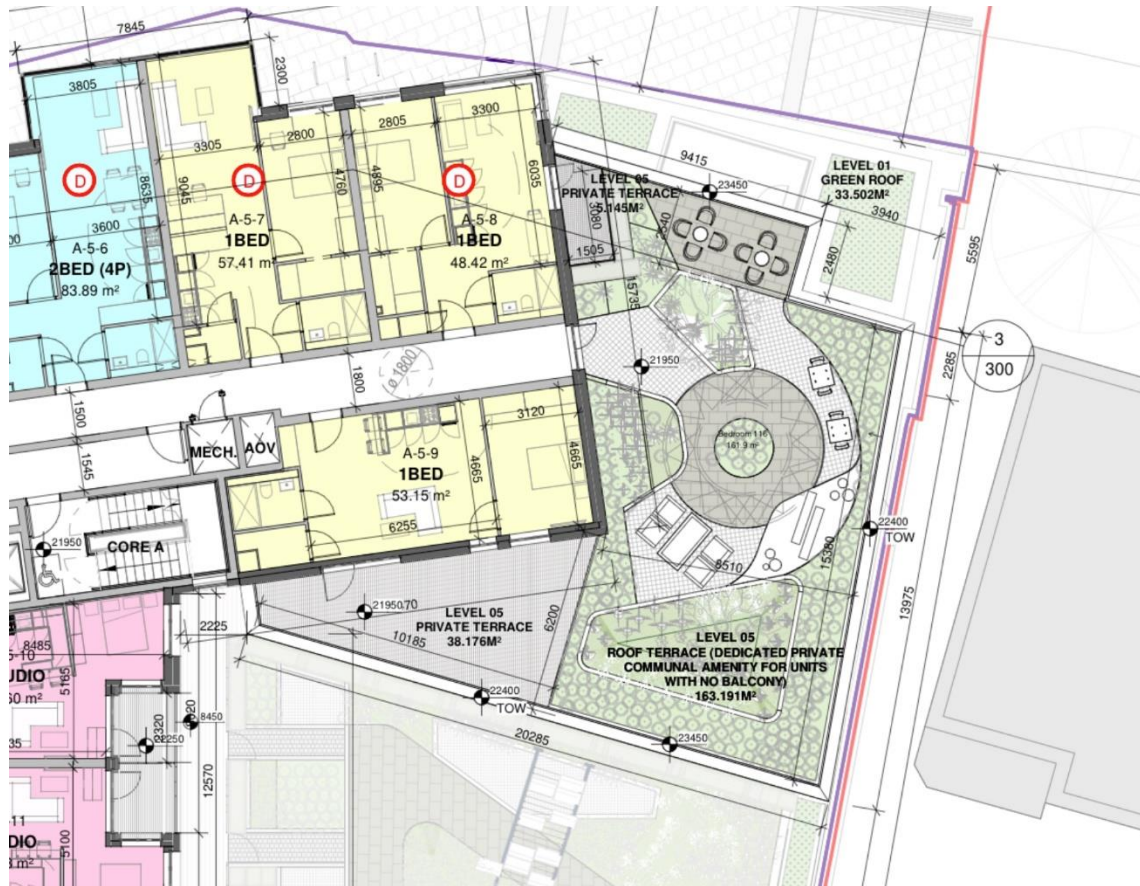


Figure 4 Compensatory amenity measure provided in the development

6.3 Concluding Remarks

The *National Planning Framework* lists 'Compact Growth' as a National Strategic Outcome and requires 40% of all new homes nationally to be delivered within the built fabric of existing settlements. This can only be attained by delivering a large quantum of quality high-density developments. National Policy Objective 13 asks planning authorities to allow tolerances in planning standards to enable developments within urban areas in order to achieve targeted growth. The subject site is located within central and accessible location, within walkable distance of Salthill Monkstown DART station. The site overlooks Dublin Bay to its north and the De Vesce Gardens public park to the south. Such centrally located and accessible sites must be enabled to reach its maximum potential to help meet current and future housing demand while enjoying a higher quality of life.

Apart from dual aspect, there are a number of other factors that contribute to the quality of apartment units. Planning authorities should not rely on blanket rules to

assess applications but weigh the benefits of the site – from its location, accessibility to public transport, landscape setting etc. and design aspects such as the size of the units, the arrangement of space within the unit, natural lighting entering units, acoustics, heating, sky visibility, etc. **Well-designed high-quality outcomes can be attained within smaller inner-city sites by incorporating alternative solutions that are based on performance criteria.**

As demonstrated in Section 3, unlike Ireland, a lot of other countries of similar temperaments do not use minimum dual aspect ratio as a tool to assess the quality of apartment living. They tend to employ other criteria such as separation distances, area of window glazing, the height of habitable rooms to ensure optimum amount of natural daylight is available in all dwellings. As per the *Building Regulations 2009 Document F on Ventilation*, alternate innovative solutions are acceptable to provide ventilation for habitable rooms. The 2020 Apartment Guidelines also considers daylight and orientation of living areas as more important factors to determine the quality of dwelling units (Section 3.16). But more weight is laid on achieving the minimum dual aspect requirement as its identified as a Specific Planning Policy Requirement (SPPR 4). Daylight provision in developments is identified as a subcategory within SPPR3 of the *Urban Development and Building Heights Guidelines for Planning Authorities December 2018*. Adequate daylighting and ventilation of a dwelling depend on a number of design aspects such as depth of the unit and ceiling height of the unit. Such microclimate assessments are outside the scope of this report.

The proposed scheme satisfies SPPR 4 requirement set by the 2020 Apartment Guidelines in relation to the minimum number of dual aspect units.

- The proposed development qualifies for 33% dual aspect units owing to its location within Dublin Metropolitan Area and accessibility to a high capacity transport corridor (within 5 minutes walkable distance of Salthill/Monkstown DART station).
- Our design appraisal has identified 65 no. (44.5%) dual aspect units within the proposed development. These include corner units and triple aspect units. The development complies with the minimum requirement set by guidelines.
- The proposed scheme also includes 11 no. (7.5%) of single aspect north facing units. These units benefit from views onto of Dún Laoghaire Harbour and Dublin Bay. As per Section 3.18 of the Guidelines *“north facing single aspect, apartments may be considered where overlooking a significant amenity such as a public park, garden, formal space or a water body”*.

In terms of private amenity space, 130 of the 146 units benefit from direct access to either an adjoining terrace at ground floor level or secure dedicated balconies and terraces at upper floor levels. Due to the predominantly north facing orientation of the remaining 16 units, it is proposed that private amenity space be allocated in the form of a dedicated communal terrace, additional to the other communal spaces provided for the future residents of the scheme.

It can be concluded from the assessment that the proposed development maximises the use of available resources on this centrally located and accessible site without compromising on the quality of the dwelling units or quality of life of future residents.

7 Conclusion

This Dual Aspect Appraisal Report has been prepared to inform the Applicant (Ardstone Homes) and the Design Team in the preparation of a planning application for a Strategic Housing Development on lands at the former Ted Castles site and Dun Leary House, Old Dun Leary Road, Cumberland Street and Dunleary Hill, Dún Laoghaire, Co. Dublin. The purpose in undertaking this report was to present relevant insights into the provision and appraisal of dual aspect units in new residential developments.

Section 2 of this report comprised a literature review that examined the benefits of dual aspects in terms of ventilation and daylight reception, both of which are key considerations for providing adequate residential amenity. It was established that both opposite and adjoining aspects provide improved cross ventilation and daylight reception. Though generally preferable to single aspect units, it was also established that design interventions such as bay windows, balconies and the incorporation of background ventilators can help optimise the amenity of single aspect units. The literature review also explored some potential challenges in the implementation of strict minimum standards for dual aspect provision in new developments relating to cost-effectiveness, density and placemaking.

Section 3 presented four international case studies – Denmark, the Netherlands, Sweden and Canada – and examined the treatment of dual aspect provision in the relevant planning guidance and building regulations. In each case these regulations did not prescribe minimum requirements for dual aspect provision. Instead they apply minimum standards and requirements, such as separation distances, window size and treatment, orientation and room height, in order to maximise the daylight received by new dwellings and ensure adequate residential amenity.

Section 4 set out the requirements for dual aspect provision in Ireland under the Design Standards for New Apartments. Though the design standards set minimum required rates of dual aspect provision for new developments (33% or 50% depending on site location), they do define what unit layouts are considered to provide dual aspects. The Design Standards also highlight that adequate daylighting and orientation are to be prioritised for new developments. As such it was inferred that the dual aspect requirements should not be treated as a blunt instrument against which to check compliance, but should be utilised to help inform the delivery of units that provide adequate daylight reception and maximise residential amenity.

Section 5 of this report examined the treatment of dual aspect provision by An Bord Pleanála in their assessment of Strategic Housing Developments that have been granted planning permission. Overall, it has been established that the Board adopt a flexible approach to the implementation of the Design Standards for New Apartments, with overall quality and residential amenity prioritised over strict compliance with minimum standards for dual aspect provision.

Section 6 provided an assessment of dual aspect provision for the proposed development comprising 146no. residential units at the former Ted Castle site, Old Dunleary Road, Dún Laoghaire, Co. Dublin. The proposed urban infill development is located within 5 minutes walking distance of the DART, and provides 65 no. dual aspect units, resulting in a dual aspect ratio of 44.5%. This is above the minimum 33% required for developments in accessible urban locations.

In conclusion, it is asserted that a qualitative approach to the provision of dual and single aspect units, that prioritises the delivery of adequate daylight reception and ventilation, is required to maximise both the efficiency and residential amenity of new developments. Such an approach is consistent with the Design Standards for New Apartments and An Bord Pleanála's prior treatment of dual aspect provision in Strategic Housing Developments. The proposed development at the former Ted Castle site, Old Dunleary Road, Dún Laoghaire, Co. Dublin meets all requisite standards under the Design Standards and will provide a high level of quality and amenity for future residents.

APPENDIX 1 - Floor Plans Locating Dual Aspect Units

First Floor Plan-L01



Second Floor Plan-L02



Third Floor Plan-L03



Fourth Floor Plan-L04



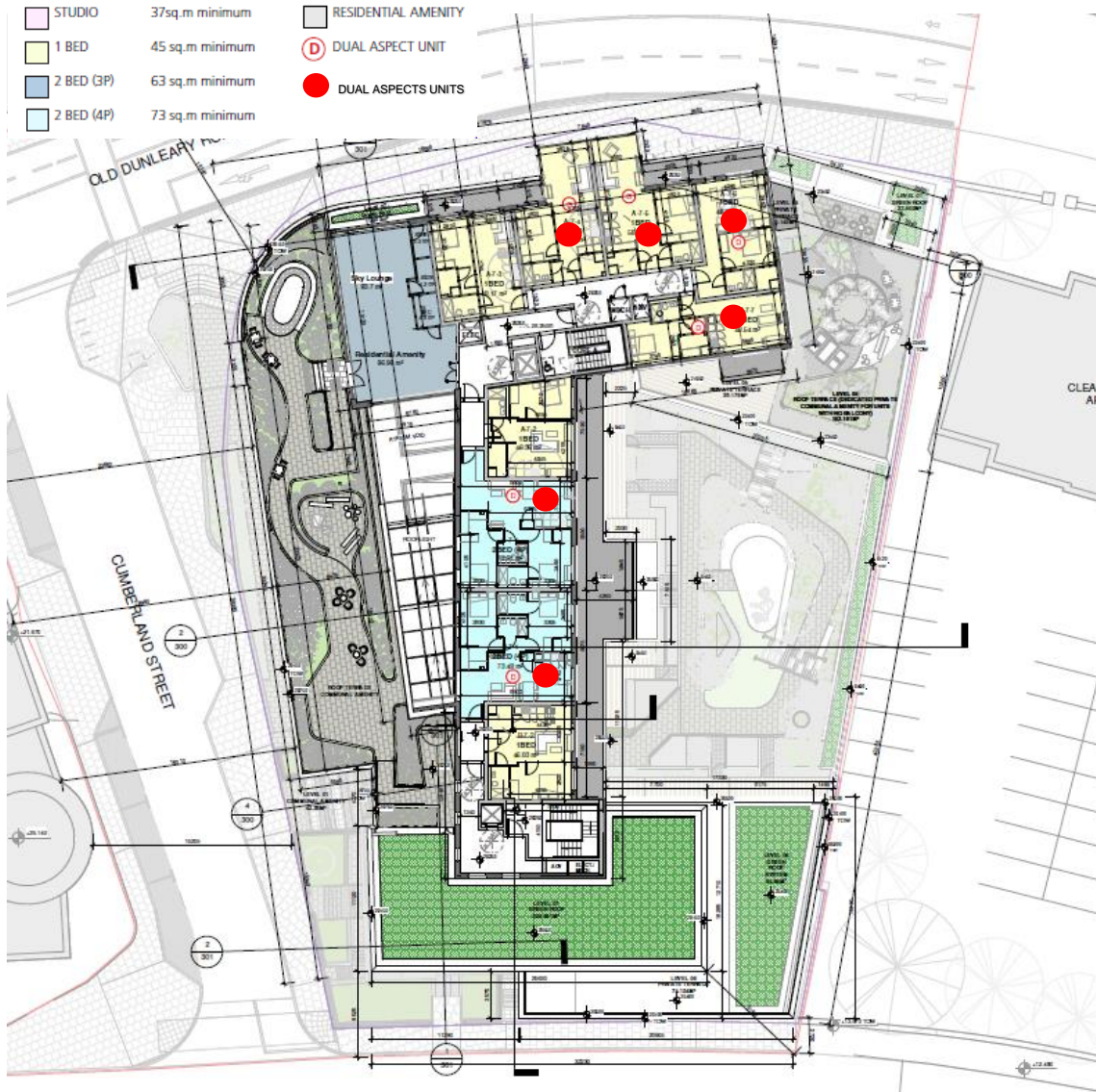
Fifth Floor Plan-L05



Sixth Floor Plan-L06



Seventh Floor Plan-L07



APPENDIX 2 - Description of Development

The proposed development at the former Ted Castles site and DunLeary House (a proposed Protected Structure), Old Dun Leary Road, Cumberland Street and Dun Leary Hill, Dun Laoghaire will consist of:

- The provision of 146 no. apartment units (Build to Rent) and all associated ancillary facilities (including residential amenities) in a building with an overall height ranging from 6 storeys (with set backs from 4th & 5th storey) addressing Dun Leary Hill, to 5 and 8 storeys (with set back from 7th storey) addressing Old Dun Leary Road and 6-7 storeys (with set backs at 8th storey) addressing Cumberland Street. The proposal provides for private and communal open spaces in the form of balconies and terraces throughout.
- A retail unit (c.290m²) at ground floor level addressing Old Dun Leary Road and Cumberland Street
- The refurbishment, partial removal and adaptation of a 4 storey building on site known as “DunLeary House” (a proposed Protected Structure) to provide co-working office suites (c.247m²) at Levels 01,02 and 03. The works will include partial removal of original walls and floors, removal of non original extensions to DunLeary House, repointing and repair of brickwork and granite fabric, reinstatement of timber sash windows, removal of existing roof, removal; alteration and reinstatement of internal floor layouts, reinstatement of entrance point on DunLeary Hill, removal of non original level 00 and linking the existing building to the new development from level 00 to level 03 with the construction of 3 new floors of development (with set back at roof level) above the existing building. It is proposed to repair, reinstate and improve the existing boundary treatment to DunLeary House.
- Provision of 52 no. car parking spaces in total - 44 no. car parking spaces provided at level 00. At Cumberland Street 11 no. existing on street car parking spaces will be removed and 8 no. on street car parking spaces provided. Provision of 277 bicycle parking spaces (94 no. cycle parking spaces accommodated in bicycle stands and 183 no. long term bicycle parking spaces within a secure storage area) and 4 no. motorbike parking spaces, all at Level 00. A new vehicular entrance/cycle path (off the Old Dun Leary Road), ancillary plant areas, ESB substation and storage areas.
- Extensive hard and soft landscaping throughout, green roof, public lighting, signage, boundary treatments and public realm improvements.
- The demolition of the existing open fronted shed on site and all associated ancillary site services and site development works.



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