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Biodiversity Management Plan (BMP)

PRESENTED TO

Dwyer Nolan Developments Ltd.
Proposed Large-scale Residential Development at Junction of Santry Avenue and Swords Road, Santry, Dublin 9.

March 2024

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

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00	Draft for internal Review	EK *Graduate Ecologist*	LG *Senior Ecologist*	-	-
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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Dwyer Nolan Developments Ltd., to prepare a Biodiversity Management Plan (BMP) for a Proposed Large-scale Residential Development (LRD) in Santry, Co Dublin, hereafter referred to as the 'Site'. The purpose of this Report is to provide additional information regarding the management of biodiversity enhancement measures incorporated into the Proposed Development.

1.2 Quality Assurance and Competence

Enviroguide Consulting is multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All our consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors.

Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM). All surveying and reporting is carried out by qualified and experienced ecologists and environmental consultants. Enviroguide Ecologist EK prepared this Report for this Proposed Development. Enviroguide Ecologist LG reviewed this Report.

EK has a BSc in Psychology from the University of Maryland, USA and an MSc in Biodiversity and Conservation from Trinity College Dublin. His experience includes desktop research, literature-scoping review, and report writing as well as vegetation surveys, rare species surveys, and habitat mapping.

LG is a Senior Ecologist with Enviroguide and has a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management from University College Dublin and a wealth of experience in desktop research, literature scoping-review, and report writing; as well as practical field experience (Habitat surveys, winter bird surveys, large mammals, fresh water macro-invertebrates identification etc.) LG is experienced in compiling Biodiversity Chapters of EIARs, Ecological Impact Assessments (EcIA), Appropriate Assessment (AA) screening and Natura Impact Statements (NIS) reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. LG is also a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.3 Main Sources of Information

This Report was prepared using information and best practice guidance from the following:

- All-Ireland Pollinator Plan 2021 - 2025. Available at: https://pollinators.ie/wp-content/uploads/2021/03/All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf
- BCI (2010) *Bats & Lighting Guidance Notes for: Planners, engineers, architects, and developers.*

- Bat Conservation Trust (BCT) (2018) *Bats and artificial lighting in the UK*. Bats and the Built Environment series. Institution of Lighting Professionals.
- BCT (2023) *Bats and artificial lighting at night.* Guidance Note 09/23. Institution of Lighting Professionals.
- CIEEM (2023) *Biodiversity enhancement for new developments in Ireland.* Available at: https://cieem.net/wp-content/uploads/2023/12/CIEEM-Breifing-Paper-on-Biodiversity-Enhancement-in-Ireland.pdf [Accessed February 2024]
- Collins, J. (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* 4th edition. BCT.
- Dublin City Development Plan 2022 - 2028. Available at: https://www.dublincity.ie/residential/planning/strategic-planning/dublin-city-development-plan/development-plan-2022-2028
- Draft Dublin City Biodiversity Action Plan 2021 - 2025. Available at: https://consultation.dublincity.ie/parks/draft-dublin-city-biodiversity-action-plan/supporting_documents/DCCDraftBiodiversityActionPlan_20212025_issued19.05.21.pdf
- Emery, M. (2008) *Effect of Street Lighting on Bats.* Urbis Lighting Ltd. Available at: https://www.darksky.ie/wp-content/uploads/2010/05/Effect-of-Street-Lighting-on-Bats.pdf
- Kelleher, C. & Marnell, F. (2020) *Bat Mitigation Guidelines for Ireland*, Version 2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
- Landscaping and Biodiversity Guide for New Developments (2023). Available at: https://www.cluid.ie/wp-content/uploads/2023/05/Landscaping-and-Biodiversity-Guide-for-web.pdf
- Pollinator Friendly Planting Code. Available at: https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf

For a full list of the guidance documents consulted in the compilation of this Report, see Section 7 - References.

2 PROJECT DESCRIPTION

2.1 Site Location

The Proposed Development is located at the site of a current home improvement wholesaler (Chadwick's Builders Merchants) warehouse. The Site and surrounding lands are predominantly urban/suburban. As per Chapter 5 (Biodiversity) of the Environmental Impact Assessment Report (EIAR) accompanying this submission, the lands comprise mainly low value Buildings & Artificial Surfaces (BL3) with some small areas of mosaic Recolonising Bare Ground (ED3) and Dry Meadow (GS2); to be replaced. Treelines (WL2) and hedgerows (WL1) exist along the western and eastern boundaries, some of which will be retained and some removed.

2.2 Development Description

Dwyer Nolan Developments Ltd. wishes to apply for permission for a LRD on this site, c. 1.5 hectares, located at the junction of Santry Avenue and Swords Road, Santry, Dublin 9. The development site is bounded to the north by Santry Avenue, to the east by Swords Road, to the west by Santry Avenue Industrial Estate, and to the south by the permitted Santry Place development (granted under Dublin City Council Ref.s. 2713/17 (as extended under Ref. 2713/17/X1), 2737/19 & 4549/22).

The Proposed Development provides for 321 no. apartments, comprised of 104 no. 1 bed, 198 no. 2 bed, & 19 no. 3 bed dwellings, in 4 no. seven to thirteen storey buildings, over basement level, with 3 no. retail units, a medical suite / GP Practice unit and community/arts & culture space (total c.1,460sq.m), all located at ground floor level, as well as a one storey residential amenity unit, facing onto Santry Avenue, located between Blocks A & D.

The Proposed Development consists of the following:

1) Demolition of the existing building on Site i.e. the existing Chadwicks Builders Merchants (c. 4,196.8m2).
2) Construction of 321 no. 1, 2, & 3 bed apartments, retail units, medical suite / GP Practice, community/arts & culture space, and a one storey residential amenity unit in 4 no. buildings that are subdivided into Blocks A-G as follows:
3) Block A is a 7-13 storey block consisting of 51 no. apartments comprised of 22 no. 1 bed, 23 no. 2 beds & 6 no. 3 bed dwellings, with 2 no. retail units located on the ground floor (c. 132sq.m & c.172sq.m respectively). Adjoining same is Block B, which is a 7 storey block consisting of 38 no. apartments comprised of 6 no. 1 bed, 26 no. 2 bed, & 7 no. 6 bed dwellings, with 1 no. retail unit (c.164sq.m) and 1 no. medical suite / GP Practice unit located on the ground floor (c. 130sq.m). Refuse storage areas are also provided for at ground floor level.
4) Block C is a 7 storey block consisting of 53 no. apartments comprised of 14 no. 1 bed & 39 no. 2 bed dwellings. Adjoining same is Block D which is an 8 storey block consisting of 44 no. apartments comprised of 22 no. 1 bed, 15 no. 2 bed, & 7 no. 3 bed dwellings. Ground floor, community/arts & culture space (c. 583sq.m) is proposed in Blocks C & D, with refuse storage area also provided for at ground floor level.
5) Block E is an 8 storey block consisting of 49 no. apartments comprised of 7 no. 1 bed & 42 no. 2 bed dwellings. A refuse storage area, substation, & switchroom are also provided for at ground floor level. Adjoining same is Block F which is a 7 storey block consisting of 52 no. apartments comprised of 13 no. 1 bed & 39 no. 2 bed dwellings. Ground floor, community/arts & culture space (c.877sq.m) is proposed in Blocks E & F. A refuse storage area, bicycle storage area, substation, & switchroom are also provided for at ground floor level of Blocks E & F.
6) Block G is a 7 storey block consisting of 34 no. apartments comprised of 20 no. 1 bed & 14 no. 2 bed dwellings. A refuse storage area & bicycle storage area are also provided for at ground floor level.
7) Construction of a 1 storey residential amenity unit (c. 166.1sq.m) located between Blocks A & D.
8) Construction of basement level car park (c.5,470.8sq.m), accommodating 161 no. car parking spaces, 10 no. motorbike parking spaces & 672 no. bicycle parking spaces. Internal access to the basement level is provided from the cores of Blocks A, B, C, D, E, & F. External vehicular access to the basement level is from the south, between Blocks B & C. 33 no. car parking spaces & 58 no. bicycle parking spaces are also

provided for within the Site at surface level.

9) Public open space of c. 1,791sq.m is provided for between Blocks C-D & E-F. Communal open space is also proposed, located between (i) Blocks E-F & G, (ii) Blocks A-B & C-D, and (iii) in the form of roof gardens located on Blocks A, C, & F and the proposed residential amenity use unit, totalling c.2,986sq.m. The development includes for hard and soft landscaping & boundary treatments. Private open spaces are provided as terraces at ground floor level of each block and balconies at all upper levels.
10) Vehicular access to the development will be via 2 no. existing / permitted access points: (i) on Santry Avenue in the north-west of the Site (ii) off Swords Road in the south-east of the Site, as permitted under the adjoining Santry Place development (Ref. 2713/17).
11) The Proposed Development includes for all associated Site development works above and below ground, bin & bicycle storage, plant (M&E), sub-stations, public lighting, servicing, signage, surface water attenuation facilities etc.

An overview of the Site location is presented in Figure 1, while the permitted Site Layout is presented in Figure 2 (Source: DSA, DRG NO. D1809.P03).

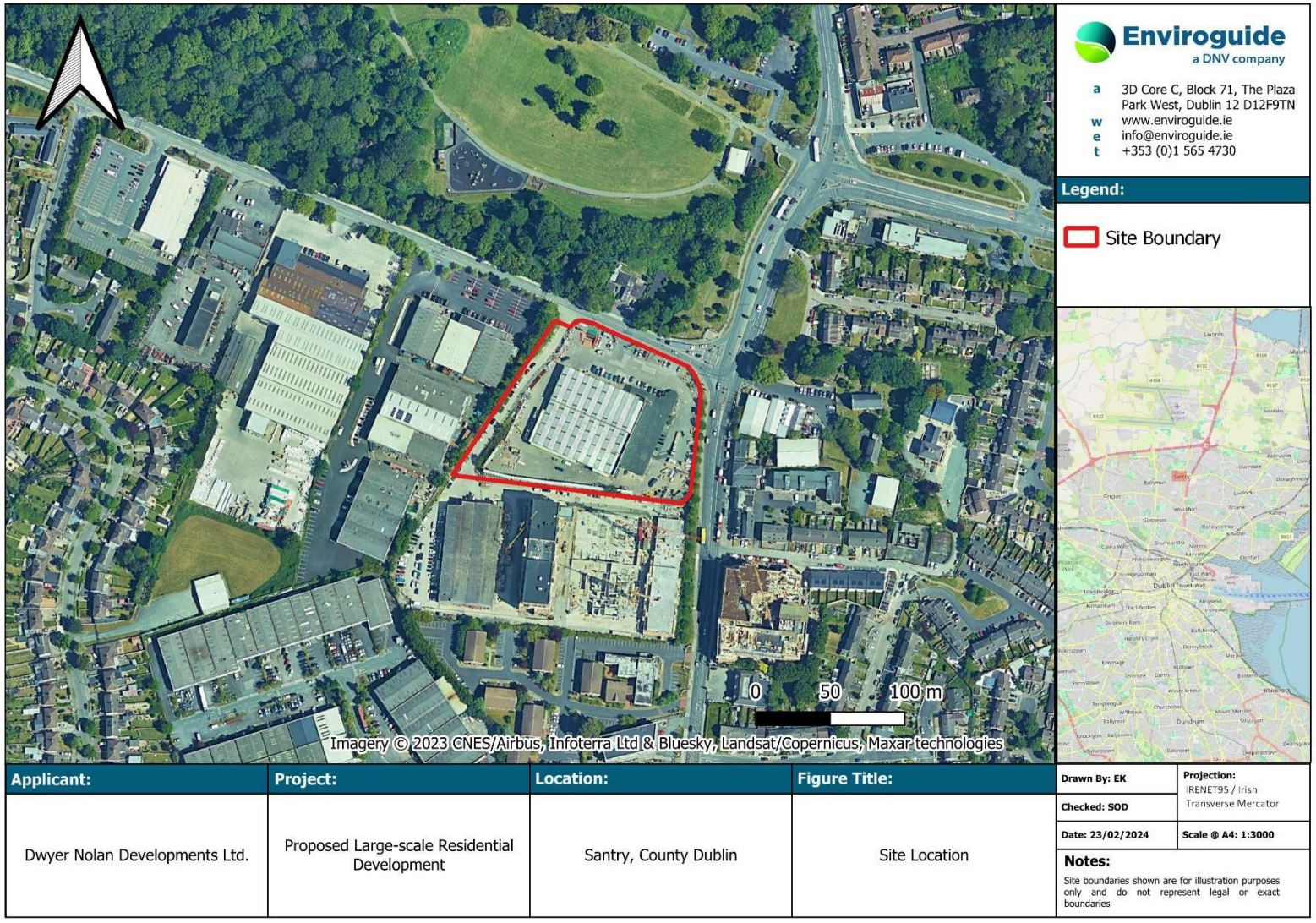

FIGURE 1: SITE LOCATION

FIGURE 2: PROPOSED DEVELOPMENT (DSA, DRG NO. D1809.P03)

3 MANAGEMENT,PROTECTION AND ENHANCEMENT MEASURES

The Dublin City County Council Development Plan 2022-2028 sets out key policies and objectives pertaining to biodiversity. Of particular note in respect to this BMP is Chapter 10 – Green Infrastructure and Recreation, which has the aim of making Dublin a climate resilient, green city to conserve natural ecosystems and widen the green infrastructure network.

Policy GI16 states: "*That new developments (as appropriate) will be required to support local biodiversity and incorporate biodiversity improvements through urban greening and the use of nature-based infrastructural solutions that are of particular relevance and benefit in an urban context. Opportunities should be taken as part of new development to provide a net gain in biodiversity and provide links to the wider Green Infrastructure network*".

As such, this BMP has been designed having regard for the objectives contained within this policy to ensure connectivity of the ecological features, as well as the enhancement and protection of biodiversity on Site. Details of the proposed measures for management and enhancement of the Site for biodiversity are outlined in the following sections. Proposed enhancements, timing of works, maintenance and the responsible parties for each task are summarised in Table 3.

3.1 Species

Chapter 5 (Biodiversity) of the EIAR accompanying this submission inform enhancement measures for the Site. Based on these assessments, and considering the existing low ecological value of the Site in its pre-development condition, there are a number of enhancement measures that can be applied to this Site with relative ease to increase species biodiversity in an otherwise relatively urban residential area. A particular focus is placed on facilitating pollinator, bird and bat usage of the Site, thus providing an improvement from the existing situation where little to no suitable habitat for these species groups currently exists. A summary of the management and monitoring of enhancement measures outlined in this Report is provided in Table 3 of Section 5.

3.1.1 Bats

3.1.1.1 Bat-friendly Lighting

Although the Site currently holds negligible suitability for bats, post-development the Site will provide more suitable vegetated habitats and insect prey resources. However, it must be noted that the Site is located adjacent to the busy Santry Avenue (along Site's norther boundary) and Swords Road (along Site's eastern boundary) and is subject to high light-spill (lux levels of up to 5 lux) from existing streetlights along these roads. The lighting columns along Santry Avenue to the north effectively separate the Site from Santry Demesne woodland, the main area of suitable bat habitat in proximity to the Site, and limit the potential for bats to commute to and from the Site from this parkland.

With this inherent constraint in mind, an effort has been made to enhance the Site's suitability for bats, and where possible the public lighting has been designed to minimise light spill onto habitat features such as treelines and planting , through means outlined in a range of guidance documents as outlined in Section 1.3. An existing treeline lies along the Site's western boundary running roughly north-south and separated from Santry Demesne by the well-lit

Santry Avenue. This treeline is outside the redline boundary of the Site and is to be retained and may provide some suitable foraging habitat to bats commuting from the residential lands to the south and south-east. The light spill from the Proposed Development on to this feature will be limited to 1 lux for the most part.

More general bat-friendly lighting measures that should be adhered to at this Site are summarised in the subsequent sections below.

3.1.1.1.1 Positioning and Height

Light emitted from lighting columns will be directed away from linear features that may be utilised by foraging and commuting bats e.g. the western treeline. Ideally, lighting columns should be shorter than 8m in height, although a greater column height should be considered against the potential for increased number of columns (ILP, 2023).

3.1.1.1.2 Light Accessories

Luminaires should never have light spill above 90° and/or no upward tilt (ILP, 2023). Only if all other options have been explored, should shields, masks, louvres or caps be added to outdoor lamps to prevent light from spilling in an upwards direction and illuminating areas where bats may be flying overhead. Light spillage can be reduced up to 97% through the use of internal and external louvres (Emery, 2008). The features of modern LED luminaires may prevent accessories from working effectively so these should not be relied upon alone (ILP, 2023).

3.1.1.1.3 Lux Levels

Typically, a full moon emits an illuminance level of 0.1 lux. The average light level on hedgerows most regularly utilised by common pipistrelle (*Pipistrellus pipistrellus*) is 0.45lux (ILP, 2023), though for pipistrelles and Leisler's bat (*Nyctalus leisleri*), where light sources are between 1 and 5 lux, this may actually aid in foraging by attracting insects. *Myotis* species tend to avoid luminaires greater than 1 lux (ILP, 2023).

Thus, it is proposed that all lighting adjacent to linear features that may be utilised by commuting and foraging bats, where possible, remains less than 1 lux or as low as possible considering the constrained nature and location of the Site (BCT, 2010; ILP, 2023).

3.1.1.1.4 Type of Light

The type of light source utilised should contain no UV elements and metal halide compact fluorescent sources should not be used. LED luminaires contain no UV and are a good option, where possible, due to their sharp cut-off, lower intensity, good colour rendition and dimming capabilities (ILP, 2023). Warm white light sources (<2700K) should be utilised, and peak wavelengths of light sources should be greater than 550nm to, "*avoid the component of light most disturbing to bats*" (Stone, 2012 (as referenced in ILP, 2023)).

3.1.1.1.5 Timing

The use of sensor lighting will reduce energy waste while also providing dark areas for bats for periods throughout the night. Employing timers set for mornings and evenings will also ensure that lights are not illuminated while bats are emerging from or returning to roosts. Although not always possible, external security lighting should be placed on timers. ILP (2023) recommend a one or two minute timer as likely to be appropriate.

3.1.2 Birds

3.1.2.1 Bird Box Scheme

A minimum of 3 no. bird boxes are proposed to be installed within suitable areas at the Site as outlined in further detail below. Bird boxes should be installed prior to the breeding bird season to ensure their presence at the Site from February onwards, when birds begin seeking out new nest locations. Installation will be overseen by an Ecologist; monitoring of bird boxes post-installation is discussed in Section 4.2.

A range of different bird boxes are available that meet the specific need of the species of birds. The variety of options suitable for installation at the Site and information on the positioning of each type of box are outlined briefly below. A minimum of three boxes should be installed, with preference given to boxes suitable for amber- and red-listed species such as House Sparrow and Starling. Such boxes are described as follows:

- **Sparrow Nest Box:** For example, the Sparrow Nest Box System, which can be found at the following link: https://www.nhbs.com/sparrow-nest-box-system or the Sparrow Terrace, which can be found at the following link: https://www.nhbs.com/sparrow-terrace-nest-box.
- **Starling Nest Box:** This box type can be found at the following link: https://www.nhbs.com/woodpeckerstarling-nest-box

Sparrow nest boxes should be placed 2-4m off the ground with a clear flight path to the entrance. Starling nest boxes 3-4 metres above ground level where there is easy flight access and where it cannot be reached by cats or other potential predators.

Other appropriate bird box types are as follows:

- **'Hole type' bird boxes (28 mm hole):** For example, the Eco Small Bird Box, which can be found at the following link: https://www.nhbs.com/eco-small-bird-box.
- **Open fronted bird boxes for blackbirds:** For example, the Blackbird FSC Nest Box, which can be found at the following link: https://www.nhbs.com/blackbird-fsc-nest-box.
- **Open fronted bird boxes for wrens and robins:** For example, the Eco Robin (Open-Fronted) Nest Box, which can be found at the following link: https://www.nhbs.com/eco-robin-open-fronted-nest-box.

Hole type bird boxes should be positioned 2-4m off the ground, with good-visibility, a clear flight line, and away from the prevailing wind direction. The open-fronted boxes for robins, wrens and blackbirds should be installed lower than 2m but amongst dense vegetation, or newly planted vegetation that will grow to become dense upon establishment, and somewhere cats and other predators won't easily see or access them. Boxes will not be drilled or nailed to trees to avoid damage, but instead be attached via a wire strap wrapped around the tree. Boxes will be located in areas away from direct exposure to public lighting to increase chances of uptake.

3.1.2.2 Swift Boxes

As agreed with Davey Smith Architects and the Client, it is proposed to include 40 No. Swift bricks as part of the Proposed Development. The Swift bricks will be installed side by side, in four sets of 10 on the western elevation of Blocks A & B and the eastern elevation of blocks C & D; as Swifts are a social nesting species (See Figure 3).

These nest bricks will be installed at least 5m above the ground, in safe areas where they will not be disturbed. As the bricks tend not to overheat, they can be placed facing any direction. Care will be taken to ensure no obstacles or plate glass windows are located below the bricks.

Guidelines for the bird box scheme should also follow guidelines published by Swift Conservation Ireland, and those published by Birdwatch Ireland entitle “Saving Swifts” (2009/2010). The incorporation of swift bricks will help recover the declining swift population, which are now Red Listed in Ireland (Gilbert et al., 2021).

Swifts are a “clean” bird species which remove their own wastes from their nests periodically. As such, swift bricks do not require any cleaning by the Management Company.

It is advised that in addition to the swift bricks, a **swift calling system** is installed, to attract swifts and encourage them to take up residence at a new site. A swift calling system is a small speaker set-up that plays swift calls during the summer. It should be located close to the brick entrances and has been seen to greatly increase the chances of swifts using the swift boxes/bricks. Solar powered options are also possible.

An Ecologist will be instructed to set up the swift calling system once the construction of the Proposed Development is complete. This can be with the help of active local swift groups as required (e.g., Dublin Swift Conservation Group), who can advise on set-up etc.

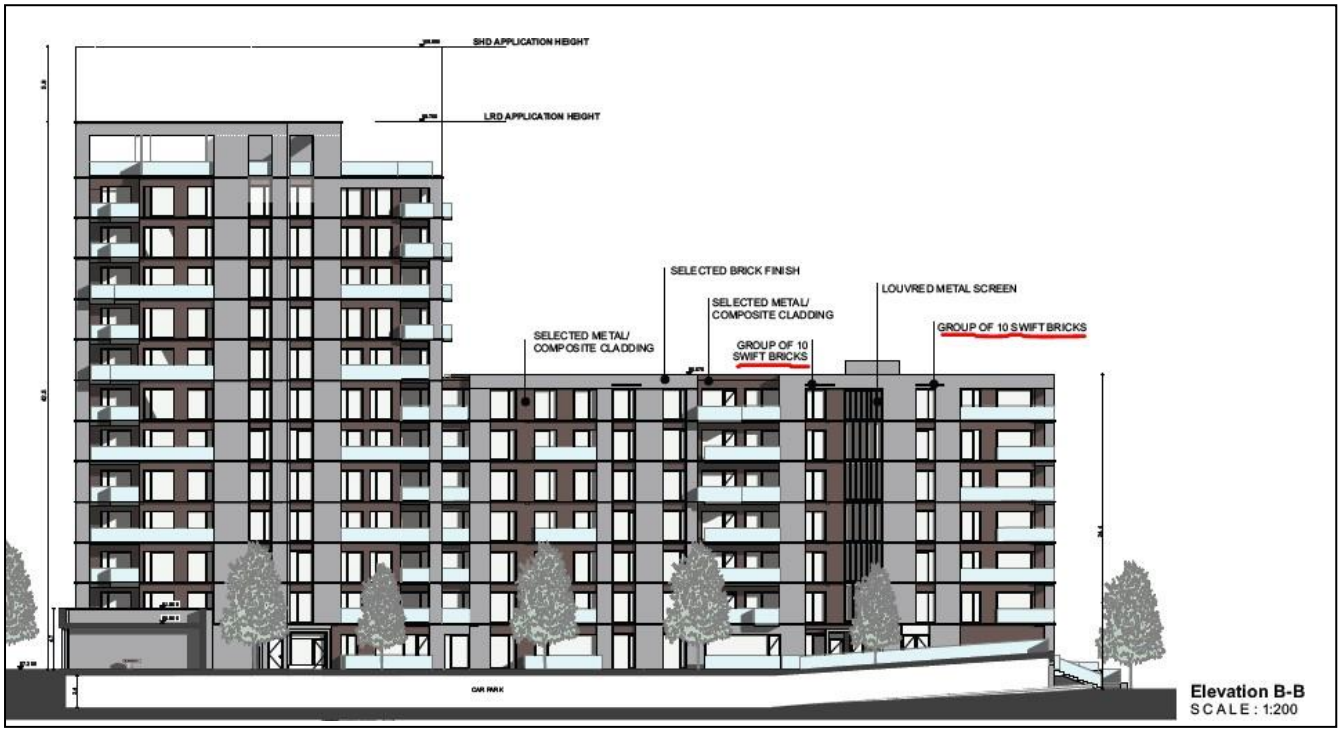

FIGURE 3: EXAMPLE LOCATIONS OF SWIFT BRICKS ON WESTERN ELEVATION OF BLOCKS A & B (SOURCE: DAVEY SMITH ARCHITECTS, LAYOUT ID: D1809.P20)

3.1.3 Supplementary Planting for Notable Species

3.1.3.1 Trees and Hedging

Creation of linear habitats and retention of existing linear habitats in the form of hedgerows and treelines are particularly important in urban areas, providing connectivity to the wider area for species that use these habitats to commute, forage and rest, including invertebrate pollinators, terrestrial mammals birds and bats. Thus, any planting should aim to incorporate tree, shrub, and hedge planting, comprising a mix of native and non-native, pollinator-friendly species as per the All-Ireland Pollinator Plan 2021-2025 (NBDC). Given the Site's highly urban location, non-native ornamental plants can be a vital additional food source for pollinators.

Planting at the Site should be done in such a way so as to facilitate passage of species likely to be present in the locality through the Site and form a wildlife corridor with the surrounding landscape. As per the Landscape Plan (Figure 4; DFLA, 2024), protection and retention of the existing trees along the western and eastern boundaries of the Site is proposed, as well as additional planting along the northern, southern, and western boundaries and within the different open spaces at the Site, incorporating both native and non-native species from a reputable nursery. A list of species proposed for supplementary planting is given below in Table 1, extracted from the Landscape Plan, while the proposed planting schedule is provided in the Landscape Plan in full. All trees should be planted between November and March, all

hedging should be planted between November and February, to reduce the need for watering. A non-exhaustive list of suitable non-native ornamentals suitable for urban planting are provided in *Appendix I*, extracted from the All Ireland Pollinator Plan Pollinator Friendly Planting Code (NBDC).

TABLE 1. PROPOSED SUPPLEMENTARY PLANTING AT THE SITE (EXTRACTED FROM DFLA, 2024)

Common Name	Latin Name	Quantity
Trees		
Japanese maple	*Acer palmatum 'Osakazuki'*	24
Snowy mesplius	*Amelanchier lamarckii*	40
White birch	*Betula pubenscens*	74
Common hazel	*Corylus avellana*	48
Crabapple	*Malus sylvestris*	16
Northern Japanese Magnolia	*Magnolia Kobus*	20
Lime	*Tilia cordata*	18
Scot's pine	*Pinus sylvestris*	7 (4 semi-mature, 3 saplings)
Callery pear	*Pyrus calleryana 'Chanticleer'*	13
English oak	*Quercus robur*	11 (5 semi-mature, 6 saplings)
Hedging		
European beech	*Fagus sylvatica*	1200-1600mm height
Common hawthorn	*Crataegus monogyna*	900-1200mm height
Sweet box	*Sarcoccoca confusa*	900-1200mm height
Groundcover Planting		
Hart's-tongue fern	*Asplenium scolopendrium*	2 litre container
Round-headed garlic	*Allium sphaerocephalon*	2 litre container
Northern maidenhari fern	*Adiantum pedatum*	2 litre container
Japanese anenome	*Anemone hupehensis*	2 litre container
Common columbine	*Aquillegia vulgaris*	2 litre container
Large-leaved aster	*Aster macrophyllus 'Twilight'*	2 litre container
Bergenia	*Bergenia 'Biedermeier'*	2 litre container
Clustered bellflower	*Campanula glomerata*	2 litre container
Candle larkspur	*Delphinium elatum*	2 litre container
Male fern	*Dryopteris filix-mas*	2 litre container
Pale-purple coneflower	*Echinacea pallida 'Hula Dancer'*	2 litre container
Huechera	*Heuchera 'Fireworks'*	2 litre container
Lavendar	*Lavandula angustifolia*	2 litre container

New Zealand satin flower	*Libertia grandiflora*	2 litre container
Great wood-rush	*Luzula sylvatica*	2 litre container
Tibetan cowslip	*Primula florindae*	2 litre container
Sweet box	*Sarcococca humilis*	2 litre container
Purpletop vervain	*Verbena bonariensis*	2 litre container

The addition of the above species will assist in creating a wildlife corridor along the western boundary with meadow and tree planting running along this side of the Site. Areas of planted open space comprising tree, shrub and groundcover planting within the various courtyards of the Proposed Development will provide islands of vegetation for local wildlife, acting as stepping stones through the Site and connecting it with Santry Demesne woodland and park to the north. The tree species proposed for planting were selected for their ability to support local wildlife, including bats and passerine birds, in addition to providing a screening effect around the boundary of the Site. Furthermore, the selected native and non-native plants are species chosen from the All-Ireland Pollinator Plan (NBDC) to support local pollinators including butterflies and bees, greatly enhancing the overall biodiversity of the Site. For further information please refer to the accompanying Landscape Planting Plan, drawing no. Dw.03-DR-2001 and the Landscape Rationale Report (DFLA, 2024). See Table 3 for a summary of the schedule of enhancements and monitoring.

3.2 Habitats

A Landscape Masterplan (LMP) has been prepared for the Site (DFLA (2024) drawing no. Dw.03-DR-2001). This document should be consulted along with this BMP when managing the vegetation and habitats within the Site. A coordinated approach will provide the most positive results in terms of biodiversity enhancement and support within the Site of the Proposed Development over the course of its operational lifetime.

All Landscape works shall be undertaken by an Association of Landscape Contractors Ireland (ALCI) approved Landscape Contractor, in accordance with the specifications outlined in the Landscape Plan (DFLA, 2024). Following this, maintenance will be the responsibility of the Contractor. Proposed enhancements, timing of works, maintenance and the responsible parties for each task are summarised in Table 3.

Maintenance visits should be undertaken at minimum monthly intervals (i.e., 12 visits per year for 18 months). Visits may need to be increased at certain times of the year to enable the operations set out within the report to be properly executed. A summary of the schedule for management and monitoring of enhancement measures is provided in Table 3 in Section 5 of this Report.

The following sections detail the management approach for the various areas of planting on Site that will be undertaken post-Construction.

3.2.1 Wildflower Planting

The Landscape Plan includes areas of grassland and lawn which are to be planted with a wildflower ground cover mix in combination with the ornamental and tree planting summarised in Table 1. Bulbs will be planted by hand as no mechanical excavation can occur within tree root protection zones. As per the Landscape Plan, "*Low planting is utilized to create and*

reinforce sub-spaces within the larger landscape; for visual screening, defensible space, visual interest, ecological purposes and to guide or direct pedestrian's movement. The low planting is conceived as subtle layering of greens within the open spaces. The planting is layered as follows; lowest - bulb planting, groundcover planting, highest - clipped hedge planting." Ideal sward height will range from 10cm-25cm; planting will be undertaken at a rate of 350 bulbs per m^2.

All wildflower seeds to be used in the installation of the wildflower meadow areas will be Irish Provenance Certified Seed, from a reputable source such as Design by Nature (Wildflowers.ie). To maximise the biodiversity value of the landscaping at the Site, consideration has been made to the All-Ireland Pollinator Plan planting code (NBDC, 2022).

FIGURE 4: LANDSCAPE PLAN EXTRACTED FROM DRAWING NO. DW.03-DR-2001 (DFLA, 2024)

3.2.1.1 Grassland & Wildflower Management

Areas of lawn are proposed within the courtyard areas of the Proposed Development alongside areas of managed meadows. The meadow areas will be managed using a low-intervention approach with a reduced mowing regime (1-2 cuts per year from May onwards, see below). The lawn areas will be cut more regularly for their amenity value, however, areas around the margins can be left where possible to grow more wilder and provide additional strips of habitat for pollinators.

A pollinator-friendly mowing regime will be implemented as per the All-Ireland Pollinator Plan 2021-2025 guidance leaflet '*Gardens: actions to help pollinators*' (NBDC, 2022):

- Where possible, areas of **amenity grass lawns** shall be mown on a reduced mowing regime and shall not be mown until the 15th of April. This will allow important

pollinator plants such as Dandelion (*Taraxacum officinale agg*.) to flower. Thereafter, grass can be cut on a six-weekly rotation (**5 cuts and lifts per year**). Second cut at the end of May, third cut in mid-late July to maximise growth of Clovers (*Trifolium spp*.) and other wildflowers, fourth cut at the end of August and the fifth cut after mid-October.

- Cutting arisings will be removed to an off-site compost facility. Mowing is to be carried out when ground conditions are appropriate i.e., when soil is moist but not waterlogged. Where there is limited potential for areas of reduced mowing of amenity grassland, reduced mowing will be adopted where possible. It is advised to create areas of varying sward lengths, where possible, to promote increased floral diversity and subsequently increased food for pollinators, per Actions 3 & 4 of the All-Ireland Pollinator Plan Leaflet: *Garden Pollinator Guidelines* (2023a).
- Areas of **wildflower meadow** will be cut **1-2 times annually**; once in early spring and once in September as per the All-Ireland Pollinator Plan 2015-2020 guidance leaflet '*Pollinator-friendly grass cutting'* (2023b).
- Cuttings will ideally be left lie for a few days to allow any seed to drop and then removed. Meadows managed in this way will allow wildflowers to bloom throughout the pollinator season and also provide undisturbed areas for nesting.
- Mowing will be undertaken during dry conditions to avoid compacting and potentially damaging the soil structure.

3.2.2 Green Roof Planting

A total of 3,873m^2 of green and blue roof are proposed for the Site (DSA, 2024. drawing ref: D1089.P19). The green/blue roofs will comprise ~78% of the total roof area and will also act to manage surface water at the Site through the use of permeable paving and bioretention areas connected to attenuation tanks below.. The All-Ireland Pollinator Plan's '*Top Ten pollinator-friendly plants for different situations'* (NBDC, 2009) recommends a variety of perennials that can be planted in order to enhance green roofs for biodiversity, with differing flowering times throughout the year. Extracted from the aforementioned document, these species are listed below in Table 2.

TABLE 2. PERENNIAL SPECIES RECOMMENDED FOR PLANTING IN GREEN ROOFS (NBDC)

Common Name	Latin Name	Flowering time
Low-growing spurge	*Euphorbia epithymoides*	Spring & summer
Perennial candytuft	*Iberis sempervirens*	Spring & summer
Marjoram	*Origanum* sp.	Spring & summer
Thyme	*Thymus* sp.	Summer
Rock rose	*Helianthemum* sp.	Summer
Aubretia	*Aubrieta* sp.	Summer
Sea thrift	*Armeria maritima varieties*	Summer
Hyssop	*Hyssopus officinalis*	Summer & autumn
Stonecrop	*Sedum* sp.	Autumn
Houseleeks	*Sempervivum* sp.	Winter

3.2.2.1 Green Roof Management

As previously mentioned, the extensive *Sedum* green roof sections will require little to no maintenance after the establishment of the roof given the drought tolerant nature of *Sedum* species. The intensive green roofs will require more regular maintenance and will be managed alongside the planted hedging, trees and wildflowers as outlined in Section 3.1.3.1 and Section 3.2.1.1 above. As also mentioned above, all Landscape works shall be undertaken by an Association of Landscape Contractors Ireland (ALCI) approved Landscape Contractor, in accordance with the specifications outlined in the Landscape Plan (DFLA, 2024). Following this, establishment of planted areas will be the responsibility of the Contractor for the following 18 months; after this 18-month mark, the Management Company will then take over maintenance of the planted areas indefinitely (see Table 3).

3.2.3 Low Intervention Hedgerow Management

The existing treeline proposed to be retained within the Site along with any hedges, shrubs and trees that are to be planted, will be managed in a way that maximises the ecological value they provide at the Site. By managing hedgerow areas more naturally, they will provide more in terms of biodiversity; through increased provision of food resources and higher quality shelter to wildlife inhabiting and commuting through the area.

Where trimming needs to occur, delay trimming until January and February as the surviving berry crop will provide valuable food for wildlife. The earlier this is cut; the less food will be available to help birds and other wildlife survive through the winter. Any hedgerow cutting will be done **outside of the nesting season (March 1st-August 31st)** with due consideration given to the Wildlife Act 1976 (as amended).

The following hedgerow management practises will provide pollinator nesting habitat, along, and provide foraging, commuting, and nesting habitat for local biodiversity.

- Where possible hedgerows will be cut every 3 years outside of nesting season (March 1st to August 31st, inclusive) to encourage flowering and fruiting. If practical and feasible, hedgerows will be cut in an A-shape on rotation, with one third cut annually to ensure two thirds can provide foraging resources for local wildlife.
- The base of the hedgerows **will not be sprayed with any pesticides/herbicides** to encourage native ground flora to flower and provide forage for local pollinators.
- A buffer of 1-2m will be retained around the hedgerow margin to grow with longer grass to provide nesting habitat for bumblebees.

3.2.4 General Vegetation Removal

To ensure compliance with the Wildlife Act 2000 as amended, any removal of areas of vegetation (e.g., hedge cutting) will not take place within the nesting bird season (March 1st to August 31st inclusive) to ensure that no significant impacts (i.e., nest/egg destruction, harm to juvenile birds) occur at the Site.

Where any removal of vegetation within the nesting season is deemed unavoidable, a qualified Ecologist will be instructed to survey the vegetation prior to any removal taking place. Should nesting birds be found, then the area of habitat in question will be noted and suitably protected until the Ecologist confirms the young have fledged.

To avoid any issues, the preferred period for vegetation clearance is within the months of **September and October.** Any large areas of vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog).

3.2.5 Herbicides & Pesticides

No herbicides[1] or pesticides will be used within or within proximity to areas of biodiversity enhancement e.g., wildflower meadows, hedgerows without first consulting the Local Planning Authority or an Ecologist. This will protect local pollinators and wildlife and maximise the biodiversity value of these enhancement features.

3.2.6 General Management

The following best practice maintenance measures, which are the responsibility of the Management Company, will be followed as part of the regular management of the habitats on Site:

- Periodic inspection for and if necessary, clean-up of litter.
- Physical removal of undesirable non-native or invasive shrub or herb species should these be recorded within the Site during the Operational Phase. Chemical control will be used only **as a last resort** and mechanical weeding is preferred.
- Signage will be erected to help management follow the pollinator and wildlife-friendly management regime, while also informing residents and visitors of these biodiversity enhancement measures (See Figure 5 below).
- Signage and waste bins will be provided at the Site to minimise dog fouling, which can have a negative effect on biodiversity planting by adding excessive amounts of nutrients and “over-fertilising” areas thus reducing the number and types of wildflowers that will grow.

[1] Ideally, herbicide use within the Site should be avoided entirely, and alternative weed control options (e.g. thermal control with hot water or foam) should be explored as per Pesticide Action Network UK: https://pollinators.ie/wp-content/uploads/2021/05/Alternatives-to-herbicides-a-guide-for-the-amenity-sector.pdf

FIGURE 5. EXAMPLE POLLINATOR AND WILDLIFE FRIENDLY MANAGEMENT SIGNAGE AVAILABLE FROM POLLINATORS.IE

4 MONITORING

4.1 Supplementary Planting

The management of the areas of grassland, wildflower meadow and hedgerow/tree planting at the Site will be assessed across a period of 18 months by the Contractor, to ensure that plants are successfully establishing. The Management Company will ensure these areas are being managed in a way that maximises their biodiversity value, as laid out in this BMP. If required, the Ecologist will be able to provide further guidance to the Management Company, as to the management of these areas.

4.2 Bird Boxes

Bird box and swift box placement and installation should be undertaken prior to occupation of the Site and overseen by an Ecologist. Bird boxes should be monitored by the Management Company and any defects or faults reported to an Ecologist who can inform the Local Planning Authority and supervise the installation of new boxes during the appropriate season (before February).

Bird boxes should be cleaned out at the end of the bird breeding season by the Management Company from September onwards, to encourage birds to return to the nest boxes in the next breeding season. Swift boxes require no cleaning maintenance as outlined in Section 3.1.2.2 above.

5 SCHEDULE OF ENHANCEMENT MEASURES AND OPERATIONAL MONITORING

TABLE 3. SCHEDULE OF OPERATIONAL MANAGEMENT AND MONITORING MEASURES TO BE IMPLEMENTED AT THE SITE

Habitat/Species	Operational Phase Management/Enhancement			Operational Phase Monitoring		
	Task	**Frequency**	**Responsibility**	**Task**	**Frequency**	**Responsibility**
Green roof, wildflower, treeline, and hedgerow planting.	Where possible and deemed appropriate, five cuts and lifts per year of amenity grass areas, under dry conditions to avoid soil compaction. Collect cuttings and compost off Site. Where possible, grass will not be mown until the 15th of April to allow dandelions to flower. Areas along margins forming a less managed verge may be appropriate.	Where possible, cut on a six-weekly rotation. Second cut at the end of May, third cut in mid-late July to maximise growth of Clovers and other wildflowers, fourth cut at the end of August and the fifth cut after mid-October.	Management Company	These habitats will be monitored to: • Monitor the establishment of the newly planted vegetation. • Ensure the implementation of appropriate management regimes. • Advise on the management regime and/or any changes to the management needed based on the condition of the habitats. • Monitor and record the success of the enhancement measures.	Monthly, for 18 months	Landscape Contractor to oversee installation, with the Contractor being responsible for establishment and maintenance.
	Areas of wildflower meadow will be cut 1-2 times annually. Collect cuttings and compost off Site. Meadow verges at the base of linear habitats such as hedgerows and treelines will also be maintained.	Cut once in early spring and once in September.	Management Company			
	Green roofs will be cut / pruned as appropriately based on the species included in the planting schedule.	As per relevant planting management for wildflower, shrub, hedgerow and trees.	Management Company			
	A low-intervention hedgerow management regime will be adhered to at the Site.	Where possible hedgerows are to be cut in a three-year rotation rather than all at once - this will ensure some areas	Management Company			

Habitat/Species	Operational Phase Management/Enhancement			Operational Phase Monitoring		
	Task	**Frequency**	**Responsibility**	**Task**	**Frequency**	**Responsibility**
		of dense vegetation will always flower. Minimise cutting as much as possible, which should take place outside of the bird nesting season.				
	Periodic inspection for and if necessary, clean-up of litter.	To be undertaken as part of routine litter management.	Management Company			
	Mechanical removal (weeding) of undesirable non-native or invasive shrub or herb species should these be recorded.	Annually or as required	Management Company			
	Signage to be erected to ensure management adhere to the pollinator and wildlife-friendly management regime.	Once	Developer			
	Herbicides will not be used within these habitats, except in exceptional circumstances where spot control of invasive flora is required.	n/a	Management Company			
Bats	The bat-friendly, low-intensity Site lighting allows for the bats to commute along the western boundary of the site following the existing linear habitat, which will be thickened, increasing its value to local bat species.	n/a	Developer & Bat Specialist			

Habitat/Species	Operational Phase Management/Enhancement			Operational Phase Monitoring		
	Task	**Frequency**	**Responsibility**	**Task**	**Frequency**	**Responsibility**
Birds	A minimum of 3 no. bird boxes are proposed to be installed as outlined in section 3.1.2.1, guided by an Ecologist. Boxes should be installed well before breeding bird season to ensure their presence at the Site from February onwards, when birds begin seeking out new nest locations.	Once, once development is complete.	Developer & Ecologist	Bird boxes will be checked for damage. Bird boxes will be cleaned out after breeding season.	Annually before February. Annually in September	Management Company (any faults reported to an Ecologist). Management Company
	A minimum of 40 no. swift bricks and swift calling system are to be installed as outlined in section 3.1.2.2, guided by an Ecologist.	Once, once development is complete.	Developer & Ecologist	Swift bricks require no maintenance or cleaning.		

6 CONCLUSION

This BMP describes the various ways in which biodiversity has been considered in the design of the Development at the Site. The enhancement measures and management approach detailed within this Report will contribute to the support of biodiversity at the Site during its operational lifetime.

The management approaches detailed in this Report will be adhered to as will the various recommendations and commitments relating to post-construction monitoring of vegetation management regime, bats, birds and pollinator habitat. Should any of the proposed mitigation and/or monitoring measures recommended in this report fail to be adhered to, the Local Authority shall be informed, and appropriate remedial actions will be agreed upon.

Furthermore, it is recommended that the appointed management company keep a log of all actions undertaken in the event of an audit being undertaken to ensure works are undertaken as described within the Report.

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APPENDIX I – ORNAMENTAL POLLINATOR-FRIENDLY PLANTS (NBDC)

Autumn

BULBS

- **Colchicum species** (Autumn crocus)
- **Crocus species** (Crocus, autumn-flowering)

PERENNIALS

- *Aconitum carmichaelii* (Carmichael's monk's hood)
- *Actaea simplex* (Simple-stemmed bugbane)
- *Anemone × hybrida* (Japanese anemone)
- *Anemone hupehensis* (Chinese anemone)
- **Aster species and hybrids** (Michaelmas daisy)
- ***Campanula poscharskyana*** (Trailing bellflower)
- *Ceratostigma plumbaginoides* (Hardy blue-flowered leadwort)
- Chrysanthemum species & hybrids (Chrysanthemum)
- **Dahlia species & hybrids** (Dahlia)
- *Helianthus × laetiflorus* (Perennial sunflower)
- *Leucanthemella serotina* (Autumn ox-eye)
- **Salvia species** (Sage, autumn flowering)

CLIMBERS

- *Clematis heracleifolia* (Tube clematis)
- *Hedera colchica* (Persian ivy)

SHRUBS

- *Arbutus unedo* (Strawberry tree)
- *Elaeagnus × ebbingei* (Ebbinge's silverberry)
- *Elaeagnus pungens* (Silverthorn)
- *Fatsia japonica* (Japanese aralia)

Winter

BULBS

- **Crocus species** (Crocus, winter-flowering)
- *Eranthis hyemalis* (Winter aconite)
- ***Galanthus nivalis*** (Common snowdrop)

PERENNIALS

- **Helleborus species and hybrids** (Hellebore, winter flowering)

CLIMBERS

- *Clematis cirrhosa* (Spanish traveller's joy)

SHRUBS

- *× Fatshedera lizei* (Tree ivy)
- *Lonicera × purpusii* (Purpus honeysuckle)
- **Mahonia species** (Oregon grape)
- ***Salix aegyptiaca*** (Musk willow)
- *Sarcococca confusa* (Sweet box)
- *Sarcococca hookeriana* (Sweet box)
- ***Viburnum tinus*** (Laurustinus)

Spring

BULBS

- **Crocus species** (Crocus, spring-flowering)
- ***Muscari armeniacum*** (Armenian grape hyacinth)
- *Ornithogalum umbellatum* (Common star of Bethlehem)

BIENNIALS

- **Erysimum species** (Wallflower)
- *Lunaria annua* (Honesty)

PERENNIALS

Arabis alpina subsp. *caucasica* (Alpine rock cress)
Armeria juniperifolia (Juniper-leaved thrift)
Aubrieta species (Aubretia)
Aurinia saxatilis (Gold dust)
Bergenia species (Elephant ear)
Doronicum × *excelsum* (Leopard's bane)
Erysimum 'Bredon' (Wallflower 'Bredon')
Euphorbia amygdaloides (Wood spurge)
Euphorbia characias (Mediterranean spurge)
Euphorbia cyparissias (Cypress spurge)
Euphorbia epithymoides (Cushion spurge)
Euphorbia nicaeensis (Nice spurge)
Helleborus species & hybrids (Hellebore, spring flowering)
Iberis saxatilis (Alpine candytuft)
Iberis sempervirens (Perennial candytuft)
Lamium maculatum (Spotted dead nettle)
Pulmonaria species (Lungwort)

SHRUBS

Berberis darwinii (Darwin's barberry)
Chaenomeles species (Japanese quince)
Cornus mas (Cornelian cherry)
Cotoneaster conspicuus (Tibetan cotoneaster)
Enkianthus campanulatus (Redvein enkianthus)
Erica* × *darleyensis (Darley dale heath)
Erica carnea (Alpine heath)
Hebe species (Hebe)
Mahonia species (Oregon grape, spring flowering)
Pieris formosa (Lily-of-the-valley bush)
Pieris japonica (Lily-of-the-valley bush)
Prunus incisa 'Kojo-no-mai' (Cherry 'Kojo-no-mai')
Prunus tenella (Dwarf Russian almond)
Ribes nigrum (Blackcurrant)
Ribes rubrum (Redcurrant)
***Salix hastata* 'Wehrhahnii'** (Halberd willow 'Wehrhahnii')
Salix lanata (Woolly willow, male form only)
Skimmia japonica (Skimmia)
Stachyurus chinensis (Stachyurus)
Stachyurus praecox (Stachyurus)
Vaccinium corymbosum (Blueberry)

Summer

BULBS

Allium species ornamental and edibles (when allowed to flower) (Allium)

ANNUALS

Ageratum houstonianum (Flossflower)
Amberboa moschata (Sweet sultan)
Anchusa azurea (Large blue alkanet)
Anchusa capensis (Cape alkanet)
Antirrhinum majus (Snapdragon)
Argemone platyceras (Crested poppy)
Borago officinalis (Borage)
Calendula officinalis (Common marigold)
Callistephus chinensis (China aster)
Centaurea cyanus (Cornflower)
Centratherum punctatum (Manaos beauty)
***Cerinthe major* 'Purpurascens'** (Honeywort 'Purpurascens')
Clarkia unguiculata (Butterfly flower)
Cleome hassleriana (Spider flower)
Consolida ajacis (Giant larkspur)
Cosmos bipinnatus (Cosmea)
Cosmos sulphureus (Yellow cosmos)
Cucurbita pepo (Courgette)
Cuphea ignea (Cigar flower)
Echium vulgare (Viper's bugloss)
Eschscholzia californica (California poppy)
Gilia capitata (Blue thimble flower)
Glebionis segetum (Corn marigold)
Gypsophila elegans (Annual baby's breath)
Helianthus annuus (Common sunflower, avoid pollen free cultivars)
Helianthus debilis (Cucumberleaf sunflower)
Heliotropium arborescens (Common heliotrope)
Iberis amara (Wild candytuft)
Lavatera trimestris (Annual lavatera)
Limnanthes douglasii (Poached egg flower)
Linaria maroccana (Annual toadflax)
Lobularia maritima (Sweet alyssum)
Malope trifida (Large-flowered mallow wort)
Nemophila menziesii (Baby blue eyes)
Nicotiana alata (Flowering tobacco)
Nicotiana langsdorffii (Langsdorff's tobacco)

Nigella damascena (Love-in-a-mist)
Nigella hispanica (Spanish fennel flower)
Papaver rhoeas (Poppy)
Phacelia campanularia (Californian bluebell)
Phacelia tanacetifolia (Fiddleneck)
Phaseolus coccineus (Scarlet runner bean)
Reseda odorata (Garden mignonette)
Ridolfia segetum (False fennel)
Sanvitalia procumbens (Creeping zinnia)
Scabiosa atropurpurea (Sweet scabious)
Tagetes patula (French marigold)
Tithonia rotundifolia (Mexican sunflower)
Trachymene coerulea (Blue lace flower)
Tropaeolum majus (Garden nasturtium)
Verbena × hybrida (Garden verbena)
Verbena rigida (Slender vervain)
Vicia faba (Broad bean)
Zinnia elegans (Youth and old age)

BIENNIALS

Alcea rosea (Hollyhock)
Angelica archangelica (Angelica)
Angelica gigas (Purple angelica)
Campanula medium (Canterbury bells)
Dianthus barbatus (Sweet william)
Digitalis species (Foxglove)
Eryngium giganteum (Miss Willmott's ghost)
Lychnis coronaria (Rose campion)
Matthiola incana (Hoary stock)
Myosotis species (Forget-me-not)
Oenothera species (Evening primrose)
Onopordum acanthium (Cotton thistle)
Verbascum species (Mullein)

PERENNIALS

Achillea species (Yarrow)
Actaea japonica (Baneberry)
Agastache species (Giant hyssop)
Amsonia tabernaemontana (Eastern bluestar)
Anthemis tinctoria (Dyer's chamomile)
Aquilegia species (Columbine)
Aruncus dioicus (Goat's beard, male form only)
Asparagus officinalis (Common asparagus)
Astrantia major (Greater masterwort)
Buphthalmum salicifolium (Yellow ox-eye)
Calamintha nepeta (Lesser calamint)
Campanula *carpatica* (Tussock bellflower)
Campanula glomerata (Clustered bellflower)
Campanula lactiflora (Milky bellflower)
Campanula latifolia (Giant bellflower)
Campanula persicifolia (Peach-leaved bellflower)
Catananche caerulea (Blue cupidone)
Centaurea *atropurpurea* (Purple knapweed)
Centaurea dealbata (Mealy centaury)
Centaurea macrocephala (Giant knapweed)
Centaurea montana (Perennial cornflower)
***Cirsium rivulare* 'Atropurpureum'** (Purple plume thistle)
Coreopsis species (Tickseed)
Crambe cordifolia (Greater sea kale)
Cynara cardunculus including Scolymus Group (Globe artichoke and cardoon)
Cynoglossum amabile (Chinese forget-me-knot)
Dahlia species (Dahlia)
Delosperma floribundum (Ice plant)
Delphinium elatum (Candle larkspur)
Dictamnus albus (Dittany)
Echinacea purpurea (Purple coneflower)
Echinops species (Globe thistle)
Erigeron species (Fleabane)
Eriophyllum lanatum (Golden yarrow)
Eryngium × tripartitum (Eryngo)
Eryngium alpinum (Alpine eryngo)
Eryngium planum (Blue eryngo)
Erysimum × allionii (Siberian wallflower)
Eupatorium maculatum (Eupatorium 'Purple Bush')
Euphorbia cornigera (Horned spurge)
Euphorbia sarawschanica (Zeravshan spurge)
Ferula communis (Giant fennel)
Foeniculum vulgare (Fennel)
Fragaria × ananassa (Garden strawberry)
Gaillardia × grandiflora (Blanket flower)
Gaura lindheimeri (White gaura)
Geranium species (Cranesbill, summer-flowering)
Geum species (Avens, summer-flowering)
Helenium species (Helen's flower)
Heliopsis helianthoides (Smooth ox-eye)
Hesperis matronalis (Dame's violet)
Inula species (Harvest daisy)
Knautia macedonica (Macedonian scabious)
Lathyrus latifolius (Broad-leaved everlasting pea)
Leucanthemum × superbum (Shasta daisy)

Liatris spicata (Button snakewort)
Limonium platyphyllum (Broad-leaved statice)
Linaria purpurea (Purple toadflax)
Lythrum virgatum (Wand loosestrife)
Malva moschata (Musk mallow)
Mentha spicata (Spearmint)
Monarda didyma (Bergamot)
Nepeta × faassenii (Garden catmint)
***Origanum* 'Rosenkuppel'** (Marjoram 'Rosenkuppel')
Paeonia species (Peony)
Papaver orientale (Oriental poppy)
Persicaria amplexicaulis (Red bistort)
Persicaria bistorta (Bistort)
Phlox paniculata (Perennial phlox)
Phuopsis stylosa (Caucasian crosswort)
Polemonium caeruleum (Jacob's ladder)
Potentilla species (Cinquefoil)
Rudbeckia species (Coneflower)
Salvia species (Sage)
Scabiosa caucasica (Garden scabious)
Scabiosa columbaria (Small scabious)
***Sedum spectabile* & hybrids** (Ice plant)
Sedum telephium (Orpine)
Sidalcea malviflora (Checkerbloom)
Solidago species (Goldenrod)
Stachys byzantina (Lamb's ear)
Stachys macrantha (Big sage)
Stokesia laevis (Stokes' aster)
Tanacetum coccineum (Pyrethrum)
Tanacetum vulgare (Tansy)
Telekia speciosa (Yellow ox-eye)
Teucrium chamaedrys (Wall germander)
Verbena bonariensis (Purple top)
Veronica longifolia (Garden speedwell)
Veronicastrum virginicum (Culver's root)

CLIMBERS

Campsis radicans (Trumpet honeysuckle)
Convolvulus tricolor (Dwarf morning glory)
Hydrangea anomala subsp. *petiolaris* (Climbing hydrangea)
Jasminum officinale (Common jasmine)
Parthenocissus tricuspidata (Boston ivy)
Pileostegia viburnoides (Climbing hydrangea)

SHRUBS

Aesculus parviflora (Bottlebrush buckeye)
Brachyglottis (Dunedin Group) 'Sunshine' (Brachyglottis 'Sunshine')
Brachyglottis monroi (Monro's ragwort)
Buddleja globosa (Orange ball tree)
Bupleurum fruticosum (Shrubby hare's ear)
Callicarpa bodinieri var. *giraldii* (Beautyberry)
Caryopteris × clandonensis (Caryopteris)
Cornus alba (Red-barked dogwood)
Elaeagnus angustifolia (Oleaster)
Erica vagans (Cornish heath)
***Erysimum* 'Bowles's Mauve'** (Wallflower 'Bowles's Mauve')
Escallonia species (Escallonia)
Hebe species (Hebe)
Hydrangea paniculata (Paniculate hydrangea, cultivars with many fertile flowers e.g. 'Kyushu', 'Big Ben', 'Floribunda', 'Brussels Lace')
Hyssopus officinalis (Hyssop)
Kalmia latifolia (Mountain laurel)
Laurus nobilis (Bay tree)
Lavandula × intermedia (Lavandin)
Lavandula angustifolia (English lavender)
Lavandula stoechas (French lavender)
Lavatera olbia (Tree lavatera)
Ligustrum ovalifolium (Garden privet)
Ligustrum sinense (Chinese privet)
Olearia species (Daisy bush)
Perovskia atriplicifolia (Russian sage)
Phlomis species (Sage)
Photinia davidiana (Stranvaesia)
Prostanthera cuneata (Alpine mint bush)
Ptelea trifoliata (Hop tree)
Pyracantha species (Firethorn)
Rosmarinus officinalis (Rosemary)
Spiraea japonica (Japanese spiraea)
Tamarix ramosissima (Tamarisk)
Thymus species (Thyme)
Viburnum lantana (Common wayfaring tree)
Weigela florida (Weigelia)
Zauschneria californica (Californian fuchsia)

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