Landscape report and biodiversity management plan

Social Housing Bundle 4, Development at Wellmount Road - Finglas

Landscape Report

April / 2024

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DEVELOPMENT DESCRIPTION

The construction of 77 apartment dwelling units at a site c.1.3 ha bound by Cardiffsbridge Road, Wellmount Road and Wellmount Drive, Finglas, Dublin 11, which will consist of the following:

- One apartment block with primary frontage onto Cardiffsbridge Road, ranging in height from 4 to 6-storeys, comprising 77 residential units (38 no. 1 bed units, 25 no. 2 bed units and 14 no. 3 bed units);
- 28 no. car parking spaces, 2 no. motorcycle spaces and 1 no. loading bay;
- 175 no. bicycle parking spaces;
- 135 sqm of internal community, arts and cultural floor space;
- 0.56 ha of public open space and 0.11 ha communal open space;
- Two vehicular accesses are proposed, one from Cardiffsbridge Road and one from Wellmount Road;
- Boundary treatments, public lighting, site drainage works, internal roads and footpaths, ESB substation, stores, bin and bicycle storage, plant rooms, landscaping; and
- All ancillary site services and development works above and below ground.

Landscape Design Aims and Objectives

The landscape structure of the proposed residential development adopts the open space strategy of the Landscape Masterplan which provides for a varied, accessible and permeable open space network for community use that as it matures will become a significant resource.

As the Covid pandemic has brought into sharp relief for people's health and well-being there is a community requirement for open, natural spaces, which facilitate exercise, recreation, and free play.

The proposed open space network provides for these flexible activities in a natural environment with inclusive access.

The design incorporates wildlife considerations in the retention/ protection/ management and reinforcement of areas of grasslands. Existing trees on the site will be protected where possible in line with the objectives of the Landscape Masterplan and brought back into a managed state and reinforced with new planting.

Varied habitats are created for ecological connections and landscape visual amenity;

- a detention basin with profiled marginal planted shelves
- tree planting pits within the residential street network
- new tree planting,
- flexible amenity lawn areas
- ornemental planting areas along the COS and POS boundaries
- wildflower meadows

Management Structure

The landscape areas will be managed by the development management company for a period of 25 years. Hand over to local authorities following this period of 25 years.

Bird Season Restrictions

Vegetation clearance will take place outside the breeding bird season (i.e. the start of September to the end of February, inclusive) to avoid any potential impact on breading birds. Where this seasonal restriction cannot be observed, a check for active nests will be carried out immediately prior to any site clearance and repeated as required to ensure compliance with Irish wildlife law. This will be carried out under the supervision of a qualified Ecologist.

Ecology

The communal open space and public open space landscape network has been designed to provide for ecological value in the area and this function will be enhanced in accordance with further recommendations from the Ecologist Consultant.

The two main design principles of landscape and biodiversity for this site are as follows.

1. **Biodiversity enhancement in the landscaping scheme**.
2. **Biodiversity enhancement for fauna**

These are outlined further in the biodiversity chapter below.

All Ireland Pollinator Plan 2021-2025
Planting and management of the landscape areas shall be undertaken in accordance with pollinator friendly management objectives as outlined in the "All Ireland Pollinator Plan 2021-2025 (Councils: Actions to Help Pollinators)" National Biodiversity Data Centre and will include interpretative signage highlighting the areas Managed for Wildlife. Varied grass cutting regimes will provide for a species richness within the grassland areas, especially in the context of their location on the outskirts of an urban area.

SUDS integration for water management
A coordinated approach within the landscape design has been taken for water management, with the provision of permeable surfaces and build-ups throughout the scheme.

Standards of Care

High standards will be maintained in all areas of service delivery.

High standards of care will be achieved by:

• a landscape maintenance specification

• maintenance works to be undertaken by trained staff members, providing on-site supervision of trainees

• providing Health & Safety training for staff

• proactive maintenance of hard landscape areas, play elements and seating

• a programme of tree works

• monitoring of standards of care

• working with local interest groups to ensure community ownership of the site

• updating risk assessments for operations by the landscape staff

• periodic review of standards and procedures

• perceptions of safety will be increased, and vandalism and other anti-social behaviour discouraged with additional natural surveillance by increasing circulation, overlooking from the residential development and maintaining open views across the shrub planting areas

Landscape design description

1- The Communal Open Space

The communal open space is adjacent to the proposed building, and is divided into terraced areas. The amenity spaces provided are family oriented and will provide a safe and accessible play area and natural play area for a younger age group. Those play areas will be accessible and enclosed with planting to give off a sense of security. The formal play area will also be fenced for safety. Mounded play features in the natural play area will be enhanced with play equipment (slides, stepping stones, logs, climbing wall, etc.). Trees will be provided to increase the playfulness of the mounds.


Seating opportunities will be provided in the different areas of the communal open space. Benches and board game tables are proposed as well for all age groups.

Different flexible amenity lawn areas are proposed throughout the communal open space, and will be used as seating areas or relaxing areas for all age groups.

The tree planting will be oriented toward native species, and will participate in the construction of enclosed terraced areas.

The planting in and around the detention basin will be focused on native species. The basin embankment will offer a series of marginal planting and reeds planting to enhance biodiversity. Shrub planting will be implemented on the sides of the basin to prevent intrusion and cover the level changes in the basin but will still allow visual permeability and passive surveillance.

Detention basin can double up as a kick about space during dry periods.

2- The Public Open Space

The public open space takes into account informal play and biodiversity to provide different ecosystems for fauna.

Three main paths are covering the whole area while leaving the space to soft landscape features. Benches will regularly be implemented along the path.

Connections with the existing buildings to the north, Easth and South will be provided. To the West, a boundary wall with railings will be integrated to allow for a separation between the public open space and communal open space, but a connection at the southern parking and a connection going through the communal open space will still be provided.

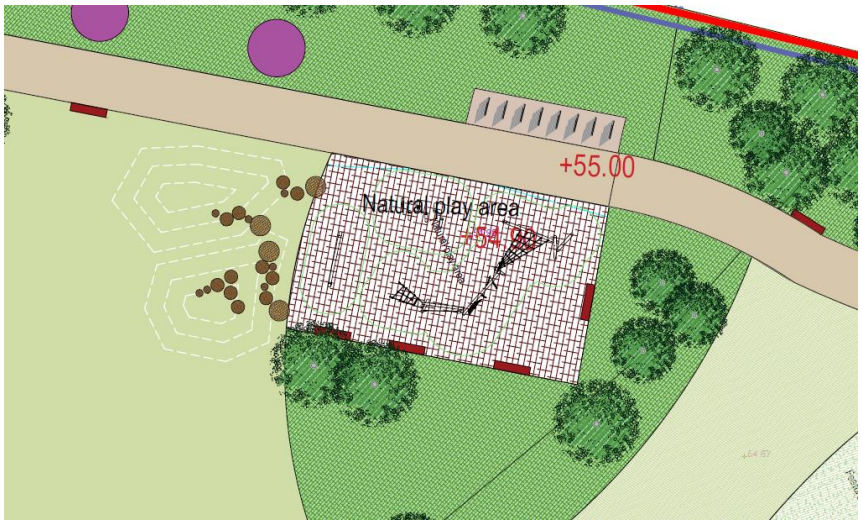
Different kinds of planting will be proposed. Shrub planting will be used to strengthen the site boundaries and provide a buffer around the site's limits. A series of shrub planted areas with trees will

be used across the area to provide biodiversity. Views will be kept clear from the adjacent paths to provide passive surveillance.

Large areas of meadow planting are proposed along the southern path to provide for a different ecosystem and a wide open space area is proposed in which one feature tree will be implemented.

Large areas of grass will be also provided to keep some areas opened for differing uses. They can be used as seating areas, large play areas or resting areas.

A defined but not closed natural play area on mulch with wooden based furniture is proposed along the northern path and will be accessible by the adjacent community by a connection to the north. Mounds will be provided as well to extend this natural play area into the grass. The proposed equipment in this natural open space are an agility trail, balancing beam and stilts. Wooden logs or equivalent natural pieces of furnitures will be spread on the mounds and natural play area.



Series of fitness equipment are dispatched along the northern path to propose another use to the public open space. These equipment will be located along the buffer strip separating the site from the adjacent buildings and road.

3. Existing vegetation and Arboriculture impact.

An Arboriculture assessment has been carried out by Charles McCorkell and is submitted as part of this application. This assessment has informed the landscape design.

Existing trees within the site have been retained in the Public Open Space. Two trees have been removed in the proposed southern parking location. Their removal has been compensated by the

addition of new trees of native and non-native species throughout the site in the planning proposal landscape design.

Planting Strategy

The general planting strategy throughout the scheme is for significant structure tree planting with 2 metre clear stems to provide a leafy canopy layer, complementing the proposed buildings and a base layer of shrub planting to create low level seasonal interest and colour complementing the hard surfaced areas, curtilage and car parking. Eye level between the two planting types is kept clear to maintain sight lines throughout the scheme.

The priority is given to locally sourced and native planting, when appropriate, to enhance biodiversity and support local biome.

Open space structure trees

Native and naturalised tree species are to be planted within the amenity space to increase opportunities for native wildlife.

Proposed tree list (indicative):

- Betula utilis ‘Jacquemontii’
- Amelanchier lamarckii
- Quercus ilex
- Acer platanoides
- Sorbus aucuparia ‘sheerwater seedling’
- Prunus padus
- Malus sylvestris
- Tilia x europaeus

Street trees

Street tree planting will consist of species with fastigiate or neat forms suitable to the scale of the streetscape and those which will thrive in a streetscape environment. Therefore, the species selected along the local road will be adapted to this constraint. Two kind of trees will be implemented along the access road and outside of the site’s fences and walls.

Proposed tree list:

- Betula utilis ‘Jaquemontii’
- Malus sylvestris

Street tree planting is located to avoid impacts with street lighting. Street trees will be planted into a minimum depth of 1.2m topsoil (or to the requirements of the local authority parks department, whichever is greater), with the use of urban tree soils and topsoil loaded root cells to increase rooting areas outside the main tree pit area as necessary.

Feature tree in Meadow area

A feature tree with distinctive flowering and/or colors such as a Magnolia will be proposed in the meadow area.

Detention basin verge planting - Marginal Planting Zone (indicative) :

water mint (Mentha aquatica), water plantain (Alisma plantago-aquatica), lesser spearwort (Ranunculus flammula), meadowsweet (Filipendula ulmaria), marsh woundwort (Stachys palustris), purple-loosestrife (Lythrum salicaria), horsetail species (Equisetum spp), marsh pennywort (hydrocotyl vulgaris), sneezewort (Achillea ptarmica), wild angelica (Angelica sylvestris), marshmarigold (Caltha palustris), cuckooflower (Cardamine pratensis), wavy bitter-cress (C. flexuosa), hairy bitter-cress (C. hirsuta), common mouse-ear (Cerastium fontanum), sedge species (Carex spp), creeping bent (Agrostis stolonifera), red fescue (Festuca rubra), smooth meadow grass (Poa pratensis), rough meadow grass (Poa trivialis)

Green and blue roof

Green and blue roofs are included as part of the strategy to enhance the biodiversity in the city. The below recommendations follow the DCC green and blue roof guide (issued in 2021), and the document should remain the technical baseline of each rooftop development.

The proposed development will provide intensive green roof planted with a mix of sedum and Irish native wildflowers plugs. As appropriate, a diversity of habitat will be created by a combination of:

- Modulating the depth of topsoil from 80mm to 150mm.
- Installing piles of logs and stones
- Providing bare patches of soil
- Creating localised ponding/water retention.

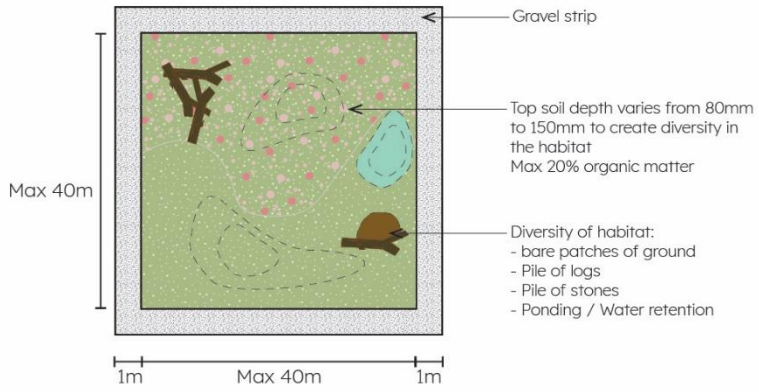


Diagram by Mitchell+Associates based on the DCC Green and Blue roof Guide (2021)

The maintenance of the roof is essential to the development of the planting and the regulation of fire hazard. The maintenance regime must be approved with the stakeholders prior to implementation as it will dictate the appropriate planting on the rooftop. The regime maintenance should allow for:

- Removal/Regulation of invasive species that can self-seed and damage waterproofing, such as buddleia.
- Annual cutting (in autumn) of wildflower mix.
- Removal of dead and dry plants and cutting.

Furniture and Finishes

Proposed Furniture and finishes are outlined on the landscape drawings and associated legends, and on the detail sheets.

SHB5-WRF-DR-MAL-L-P3-0200
SHB5-WRF-DR-MAL-L-P3-0300
SHB5-WRF-DR-MAL-L-P3-0400

LANDSCAPE MANAGEMENT STRATEGY

Maintenance should maximize the biodiversity potential of the site, providing new opportunities for expansion of (and cross-interaction between) habitats whilst also providing an attractive area of green open space with high amenity value. The open space network can be broken down into the following softworks planting types for maintenance:

Amenity Active Use Grassland

Objective: To produce a firm hard wearing sward with the appropriate cover of acceptable species, and adequate control of weeds, pests and diseases. The lawn is to be maintained to 40mm height to create a close mown turf for active and passive recreational use.

Operations: Grass maintenance strips to be cut at 2-week intervals to a height of 40mm during the growing season of April to October. Grass cuttings to be broken down and spread evenly across the area and remain on site. Lightly roll Amenity Grass areas in spring and autumn annually to consolidate the soil. Carry out when ground conditions are appropriate when soil is moist but not waterlogged. Any settlements or local depressions should be made good.

Maintenance Grass Strip to All Pathways

Objective: To produce a firm hard wearing sward with the appropriate cover of acceptable species, and adequate control of weeds, pests and diseases to a width of 2m to both sides of all pathways. This maintenance strip is required to all tarmac, concrete, compacted gravel and grass footpaths. Mown grass edges to present a maintained appearance to the open space and prevent overhanging of tall grasses or planting encroaching upon the circulation network.

Operations: Grass maintenance strips to be cut at 4-week intervals to a height of 40mm during the growing season of April to October. Grass cuttings to be broken down and spread evenly across the area and remain on site.

Pollinator Friendly Grassland Area

Objective: These are areas for amenity use that are maintained to a higher level of 75mm and cut less frequently than general amenity grass areas. This is to create a different character to the shrub planted area and to promote biodiversity following the recommendations of the All Ireland Pollinator Plan 2021-2025.

Operations: Grass shall not be mown until the 15th of April. Thereafter grass shall be cut on a six-weekly rotation (5 cut and lifts per year). 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. Remove cutting arisings to off-site compost facility. Carry out when ground conditions are appropriate when soil is moist but not waterlogged. Any settlements or local depressions should be made good.

Meadow Grassland Areas

Objective: Meadow areas are to produce and promote a species rich meadow providing for increased biodiversity and different character areas to the wildlife park.

Operations: Meadow areas shall be cut once a year in late September to a height of 75mm. Meadow areas that are cut should be left for 3-5 days so that insects can move to refuges as moisture content is lost from the cut areas. Meadow cuttings are then to be removed from site. As a general rule always remove 'cut' materials as most wildflowers will die if grass cuttings are not removed. If winters are mild meadow can be mown or toped between October and April if growth exceeds 250mm.

Grassland Slopes

Objective: Grassland slopes are general areas of grassland and areas where gorse or brambles should not be allowed to colonise on banks of the site.

Operations: Gorse, brambles, herbaceous and scrub growth to be cleared to ground levels of 75mm height. Grass cuttings to be broken down and spread evenly across the cut area to remain on site. Grassland slopes to be cut at the end of July and the end of September annually.

Woodland Planting Areas

Objective: Areas planted with trees and shrubs to promote and develop native deciduous and mixed woodland in the development. The woodland area provides habitat and seasonal interest in the wildlife park and provides an amenity space for community use.

Operations: Woodland planting areas to remain clear of weeds to a diameter of 1m circle around each plant planted. Achieved by a circle of mulch 75mm deep being maintained to the base of each tree planted. At all times, weed cover to be less than 5% and no weed to exceed 100 mm high. Check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Gently firm loosened soil around trees. Straighten leaning trees/ shrubs.

Frequency of checks: Every month or after periods of strong winds. Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools. A two-meter strip of unmown grass will surround all areas of woodland planting to form a buffer zone and to increase species biodiversity.

Detention Basin

Objective: A detention basin is an area of land that will stay mainly dry during the year, but whose soil can be saturated with moisture seasonally. Detention basin to be protected to offer natural flood

water storage and improved water quality, lock away huge amounts of carbon, and provide havens for wildlife.

. **Operations:** Maintain a dense canopy of plants that support dense amounts of water periodically across the basin to resist weed growth. Replant any bare ground or dead areas with a plant species that seems to be growing well in the basin. This should be monitored annually with new planting as per plant species list as necessary. Weeds and any pests should be controlled as the plants establish. Hand weeding should be normally be sufficient, but needs to be done before weeds become well established and deeply rooted. Remove weeds by hand when they are young. If you leave them to grow large, they can develop extensive root systems that can be hard to pull out. Invasive plant species such as algal growth and plant dieback to be physically removed as necessary. Avoid shading of basin vegetation by overhanging trees, or accumulation of leaves from around the site. Trim surrounding vegetation to maintain open air space above the basin. Other maintenance works such as monitoring of inlets/outlet, flow regulating devices, siltation of storage areas are not detailed as part of these works.

Hard Surfaces including: Insitu Concrete and Tarmac Pathways, Compacted Gravel and Paved Areas

Note: Paved areas that drain into grass areas/rain gardens, tree pits and planted areas avoid use of high concentrations of salt, detergent or soil-acting herbicides. Materials used in repairs should match the existing surface material specification, and be laid to the same depth as originally specified and, where applicable, to a similar degree of compaction.

Objective: Tarmac pathways and steps throughout the area are to provide a solid surface for users of the open space to circulate. Maintain clean, even, consistent surfaces, safe for use by normal traffic in all weather conditions.
Hard surfaces to be kept free from the following:
• litter including autumn leaf fall,
• dust and accumulated grit,
• stains, e.g. oil or paint spillage,
• graffiti,
• weeds, moss and algae
• standing water

Operations: Arisings or cuttings to be removed from pathways after maintenance of planting. Surface of tarmac pathways to be clean, not slippery, build up of algae etc to be removed.

Insitu concrete –
Refer to Engineers documentation for repairs compliance
If litter accumulates, increase the frequency of sweeping.
Where weeds colonise cracks and joints, remove and repair.
If moss and algae grow, treat by scraping or sweep.

Tarmac –

If litter accumulates, increase the frequency of sweeping.

Where weeds colonise cracks and joints, remove and repair.

If moss and algae grow, treat by scraping or sweep.

Where the surface becomes uneven or there is a drainage problem, patch or replace to falls. Repair cracking and frost damage by raking out and repairing or replacing the surface. Potholes to be reinstated should be cut back to sound material, the sides cut vertically to a square/rectangular shape, painted with bitumen emulsion, and filled with new bitumen.

Resin Bound Gravel –

If litter accumulates, remove by picking or sweeping.

If the surface is stained, replace it.

Where weeds colonise, remove.

Surfaces should be repaired by loosening, raking and making up with matching material to maintain profiles, levels and gradients, followed by rolling.

Paved areas –

Remove litter, leaves and other debris.

Surface gutters and channels: Remove mud, silt and debris.

Drainage gullies: Empty traps and flush clean.

Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.

Stain removal: In accordance with BS 7370-2, table 4.

The construction of hardworks shall be carried out in tandem with the main construction programme whereby care is taken to avoid any unnecessary machinery traffic on completed areas.

Furniture

Play Equipment

Objective: To provide opportunities to play and exercise within the open space network for individuals of all ages and abilities. Including opportunities for social interaction, physical activity, imaginative or intellectual stimulation, creative achievement, emotional and educational development.

Operations: A visual inspection is to be carried out when on site carrying out other maintenance works or at 2 week intervals whichever is more frequent, or immediately in response to reports or complaints from the public. This inspection must bring any defects to the immediate attention of the management company. As a general policy, equipment is repaired as soon as possible. Every twelve months a full ROSPA inspection shall take place using independent inspectors. This results in a full written report with a safety assessment and recommendations for action. The recommendations are acted upon immediately, or should they require large capital investment, they will be used as justification to support the application for funding.

Play equipment is repaired by the manufacturer/supplier other than routine replacements.

Stone mulch banding

Objective: Provide an area on site for the collection of stones cleared from the site as part of soil preparation/excavations. Stone mulch bands provide refuge locations for eco-system invertebrates.

Operations: Any stones unveiled during maintenance practices to be positioned in these areas. Keep free of weeks, do not allow soil to enter areas. In advance of grass or meadow cutting replace dislodged stones back onto the areas.

Planting Seasons

- Bare Root Deciduous Stock: November to Mid March
- Rootballed Deciduous Stock: November to Mid March
- Rootballed Evergreens and Conifers: late September or October or between March and early May
- Container Grown Stock: Any time of the year
- Grass Seeding: Spring or Autumn – when the soil is still warm and there is the promise of rain.

No planting should take place during periods of frost, drought, cold drying winds or when soil in water logged, or when the moisture of the soil exceeds field capacity (the maximum amount of water that soil can hold).

Grass Seeding

Grass seeding should only be carried out at the correct season from late summer to mid autumn and in suitably calm but moist weather conditions. If the opportunity to sow grass in autumn is not possible sow seed in mid Spring, but only if there is the promise of rain as it is critical to provide the seed with sufficient water to prevent it from shriveling up and dying. Ideal growing conditions for grass seed to germinate is warm soil damp from rain. Seed should be cross sown in two directions at right angles to each other (half the seed to be used in each direction) to prevent striping.

Replacements

In September or each year, the Landscape Maintenance Team shall provide a list of all trees and plants that are dead, dying, vandalised or not growing in a vigorous condition. These are to be replaced during the November – December of the same year or for evergreens April/May of the following year.
All plants shall be planted at the size as shown in the Planting Schedule.
All replacement planting shall be in accordance with the Specification/Planting Schedule.

Dead Plant Removal

Remove dead plants and dead parts of plants as soon as possible and replace plants within the appropriate planting seasons.

Topsoil

Topsoil should be clean, free from stones, perennial weeds, roots and other plant matter, sticks, sub soil or any waste, toxic, rotting or foreign matter. The soil should be fertile with a humus and fibre content and be of a medium texture having a pH value of between 6.0 and 7.5 (unless imported for

specific wildflower meadow seeding areas. Imported topsoil should not contain stones greater than 40mm in size, nor have a total stone content exceeding 10 per cent by mass.

Topsoil should be spread evenly on formation levels. Grass areas and shrub/groundcover areas should have a minimum of 150mm and 450mm respectively, after firming. Stones should be removed up to 40mm in diameter.

Plant Material

All plants should be well grown, sturdy and bushy, according to type, and free from all disease and defects. All plants should be adequately hardened off prior to planting, where frost or cold winds may be a problem.

• Shrubs should be bushy, well established nursery stock with a good fibrous root system.
• All trees should be full and well shaped, bark unmarked and have healthy root systems. Rootballed trees should be rootballed immediately when lifted at the nursery.
• The rootball should be suitable for the size of crown and the rootball should be flat bottomed.
• The rootball should be formed through regular transplanting; every 2-3 years minimum. The rootball should be wrapped in hessian and steel wire netting or other suitable and approved decomposable material. Trees should have a well defi ned, straight and upright central leader, with branches growing out of the stem with reasonable symmetry. The crown should be well shaped, balanced, of a form and habit natural for the species.
• All coniferous trees should be supplied rootballed or container grown, with a good fibrous root system. Trees should conform to specified height with well developed, uniform branching systems.

Planting Preparation

The proper preparation of the ground, the quality of plants and materials, and good planting techniques are essential for proper plant growth and establishment, ensuring minimal loss of plants and ease of maintenance. Where the project requires earthworks such as the formation of subsoil levels and topsoiling works it is important that it is done in the right way to avoid compaction, so that the best conditions are available for planting.

If topsoil is stockpiled on site it should be stored in mounds of maximum height 1.5m constructed so that they shall shed water and not puddle. Care should be taken that no trafficking of placed topsoil and no mixing of topsoil and subsoil take place. Any Topsoil stockpiles should be kept weed free.

The areas for planting should be prepared prior to planting by ensuring that the subsoil is free draining and well cultivated and suitable for topsoiling. The aim of cultivation is to produce a well-drained and textured soil suitable for plant growth.

All areas to be planted or seeded should be cultivated to a minimum depth of 450mm or deeper if needed. Areas where obvious compaction has occurred should be ripped to allow adequate drainage. Subsoil should be placed in layers not exceeding 150mm in depth.

To create the best growing environment for the planting in subsoil a combination of actions were applied to each planting pit. Any future planting works into subsoil should follow the following these principles:

• The pits should be dug prior to delivery of plants so that the tees are out of the ground for as short a time as possible.
• Planting to be into pits which are excavated 200mm deeper and 300mm greater in diameter or 1/3 greater depth and diameter than the root size (whichever is greater)
• The plant must be planted to the same level relative to top of soil as that grown in the nursery.
• The sides and bottom of the planting pits are to be thoroughly broken up by forking to alleviate compaction and to facilitate drainage.
• When planting on slopes ensure that an area made by a 0.3m diameter circle from the centre of each plant is level (horizontal) at the ground surface upon completion of backfilling.
• The backfill or soil placed back in around the plant roots will comprise of broken up (to a loose friable state) soil removed to form the planting pit. Large solid soil / clay clods larger than 50mm will be rejected and deficiencies made up with topsoil.
• Bare root stock to be dipped in root dip gel containing sufficient species of mycorrhizae for the tree or shrub being planted, water holding gel and bio-stimulant.
• 100mm bark mulch to be applied to surface for weed suppression and water retention

Planting Seasons
• Bare Root Deciduous Stock: November to Mid March
• Rootballed Deciduous Stock: November to Mid March
• Rootballed Evergreens and Conifers: late September or October or between March and early May • Container Grown Stock: Any time of the year
• Grass Seeding: Spring or Autumn – when the soil is still warm and there is the promise of rain.

No planting should take place during periods of frost, drought, cold drying winds or when soil is water logged, or when the moisture of the soil exceeds field capacity (the maximum amount of water that soil can hold). Grass Seeding Grass seeding should only be carried out at the correct season from late summer to mid autumn and in suitably calm but moist weather conditions. If the opportunity to sow grass in autumn is not possible sow seed in mid Spring, but only if there is the promise of rain as it is critical to provide the seed with sufficient water to prevent it from shrivelling up and dying. Ideal growing conditions for grass seed to germinate is warm soil damp from rain. Seed should be cross sown in two directions at right angles to each other (half the seed to be used in each direction) to prevent striping. Replacements In September or each year, the Landscape Maintenance Team shall provide a list of all trees and plants that are dead, dying, vandalised or not growing in a vigorous condition. These are to be replaced during the November – December of the same year or for evergreens April/May of the following year. All plants shall be planted at the size as shown in the Planting Schedule. All replacement planting shall be in accordance with the Specification/Planting Schedule.

Works near Existing Trees and Softworks

When developing near existing trees, ground levels, especially under their canopies should remain unchanged. Most roots are found in the top 600mm of soil. They often grow out further than the trees height. The majority of these roots can be thin in diameter. Some species of trees can tolerate a small increase in level – generally up to 75mm but since most of the roots occur in the top 600mm of soil, raising the ground level can reduce the air available to the root zone and change the feeding of the tree by these roots and lead to the demise of the tree.

Paths of underground service runs should avoid the tree root spread of existing trees and if this is unavoidable then any excavations should be carefully done by hand and services ducting placed through the roots by hand.

Ideally no roots should be severed, so where construction is of necessity within the root spread, damage must be minimized by careful routing of services, with any excavation carried out by hand to allow larger roots to remain undamaged. No root over 25mm in diameter should be cut; they can be left bridging a trench while pipes or cables are laid. Smaller roots should be cut cleanly by hand. Pipes and cables can be passed through or under root systems that have been given minimum disturbance by hand digging. If services cannot be routed clear of trees, they can be laid below the root run level, at about 1.2m or greater depth.

When back-filling trenches, the correct sequence of topsoil above subsoil should be observed.

Services

No digging below 300mm depth using powered machinery will be permitted near to known sub-surface pipe and infrastructure locations. In all other areas the depth restriction will be 600mm deep.

Tree Surgery and Emergency Tree Works

A tree survey condition report on the condition of the existing trees on site has been undertaken. Any recommendations should be implemented by qualified personnel in compliance with British Standard B.S. 3998: 1989 'Recommendations for tree work."

Following this initial tree condition survey, trees in the public open space are proposed to maintained, whereas 2 trees in the proposed south parking area are to be removed. Existing trees along the street are to be retained as well. Trees seen to be in good condition should undergo regular visual safety inspections. A visual inspection should be carried out as part of the routine maintenance works on site coupled with specific visits following storm events or periods of very heavy rain.

Trees should be reviewed for dead wood in the canopy, storm damage, decline in vigor in the crown or damage caused following other maintenance practices.

In addition to regular visual surveys of the existing trees a professional tree condition survey should be undertaken by a suitably qualified arboricultural consultant every 3 years producing a report on condition of trees.

Any recommendations should be implemented by qualified personnel in compliance with British Standard B.S. 3998: 1989 'Recommendations for tree work." Any wind damaged trees or tees requiring emergency works should be made as safe as possible and contact made with the management company.

An annual inspection of the trees will establish and programme restorative/remedial pruning, and in order to prevent an aging tree stock, some new trees will be planted to reinforce the existing tree planted structure.

Scheduling of works

Pre-construction tree works will follow that outlined below

• Remedial works to trees being retained throughout the site (trees in the public open space, and trees along the main road) as per the Tree Survey document issued by the ecologist.

• The erection of tree protection fencing

Protected Tree Zone.

The 'Protected Tree Zone' should under no circumstances be used for storage of materials, equipment, or site debris. No fires should be lit within the Protected Tree Zone, or equipment washed or cleaned. Code of Practice for the preservation of trees.

The Code of Practice will be brought to the attention of all site personnel

including Contractors, Sub-Contractors and Engineering Specialists associated with works on site. All operations to be in accordance with BS 5837 Trees in Relation to Construction (2005). The management company should purchase and make available on site a copy of the above.

The Arboricultural Contractor will:

• Submit a full method statement containing machinery to be used, removal of wood etc to the CA.

• Carry out works to the most up to date arboricultural practices available e.g. BS 3998.

Recommendations for tree work (as amended).

• Undertake work only with suitably qualified operatives in constant consultation with the Site Arborist.

Control of dogs

It is recommended that dogs should be kept on a lead when walking the path network within the open spaces. Signage should be erected to encourage public cooperation. This may help to reduce disturbance impacts to bird species.

Outline landscape maintenance schedule

Annual Maintenance Schedule - From: September To August

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
Visits per Month	**4**	**3**	**1**	**1**	**1**	**2**	**2**	**4**	**4**	**4**	**4**	**4**	**34**
LAWN MAINTENANCE													
Mowing (Amenity lawn)	4	3					2	4	4	4	4	4	**29**
Fertilising								1					**1**
SHRUB MAINTENANCE													
Shrub Pruning							1						**1**
Weed Control	4	2	1	1	1	2	2	4	4	4	4	4	**33**
Bark Mulch top up								1					**1**
Watering trees and shrubs	1								2	2	2	2	**9**
Swales & bioretention ares	2	2	1	1	1	2	2	1	2	2	2	2	**20**
HARD SURFACES - arising from landscape maintenance works													
Mechanical Sweeping	1		2	1			2	1	1				**8**
Cleaning debris	4	2	1	1	1	2	2	4	4	4	4	4	**33**
Cleaning work arisings	4	2	1	1	1	2	2	4	4	4	4	4	**33**
Weed Control						1		1		1		1	**4**
Moss Control								1					**1**
MISCELLANEOUS													
Tree Tie Adjustments												1	**1**
Leaf Clearing			1	1	1								**3**
Litter Collection	4	3	1	1	1	2	2	4	4	4	4	4	**34**
Play equipment (visual inspection)	2	2	2	2	2	2	2	2	2	2	2	2	**24**

Introduction

The aim of this chapter is to describe aspects of the landscaping scheme that are intended specifically for biodiversity. It includes the biodiversity enhancements included in the landscaping scheme (e.g. the detention basin), and biodiversity enhancements for fauna.

Some features have been discussed in detail elsewhere in this report, in which case we will refer readers to relevant locations rather than repeating information.

This document should be read in combination with the Ecological Impact Assessment for the development (NM Ecology Ltd, 2024), which provides information on the baseline condition of the site.

Green Infrastructure

The proposed landscape design aims to strengthen the value of the site as a place for delivering green infrastructure whilst protecting and enhancing the natural/built and cultural assets of the site.

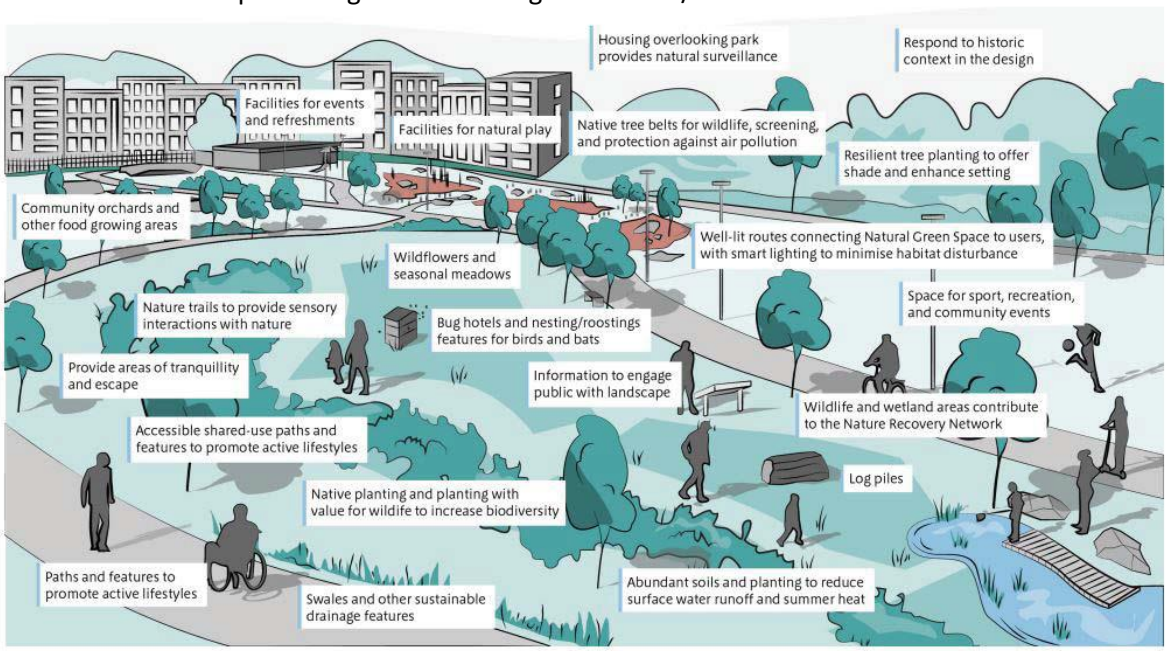


Figure 21: Parks and Green Space

Figure Extract from “Green Infrastructure Planning and Design Guide” published by Natural England

Green Infrastructure is designed and managed to provide and facilitate the following:

• High quality open spaces which provide health and social benefits for people through the provision of formal and informal nature-based play areas, safe and attractive areas and routes for meeting with a variety of seating areas for socialising and relaxing, accessible walking and cycling routes facilitated.

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• Opportunities and space for contact with nature, which is considered essential for good health and wellbeing and to promote community cohesion.

• Adaptation to the impacts of climate change and flooding.

• Space for biodiversity (nature and wildlife) to flourish

• A sense of place and local distinctiveness.

• The design facilitates connections for people and wildlife; active travel routes are maintained through the site for neighbours and residents through green spaces, the network of open space is designed to connect with the existing surrounding movement/open space networks to access a number of adjacent neighbourhood amenities and facilities.

• Features are multifunctional, they are designed to benefit people and wildlife.

Biodiversity National Guidance

National Biodiversity Action Plan 2017-2021

Ireland's Vision for Biodiversity:

"That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to eff orts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally."

The Biodiversity Climate Change Sectoral Adaptation Plan. 2019. Department of Culture, Heritage and the Gaeltacht.

"The Goal of this Plan is to protect biodiversity from the impacts of climate change and to conserve and manage ecosystems so that they deliver services that increase the adaptive capacity of people and biodiversity while also contributing to climate change mitigation".

Action 4.4 "Co-design green spaces and wildlife refuges in cities and peri-urban areas with local communities to provide habitats for species under threat from climate change and to connect people to biodiversity"

All Ireland Pollinator Plan 2015-2020 (Councils: Actions to Help Pollinators) NBDC

There are 7 key actions in the guidance document – all of which inform the planting design within the site:

A: Identify and protect existing areas that are good for pollinators

B: Alter frequency of mowing of grassy areas to allow more native plants to flower

C: Pollinator friendly planting

D: Provide wild pollinator nesting habitat: hedgerows, earth banks and hotels

E: Reduce the use of pesticides

F: Raise public awareness of pollinators

G: Tracking progress and recognition for eff orts

Protecting pollinators by planting and appropriately maintaining:

1. Flowering Native Hedgerows

2. Flowering margin of 0.5 to 2 metres around fi eld edges

3. Low to zero pesticide inputs

4. Pollinator friendly trees

5. Wildflower meadow, flower rich pasture, cover crop, herbal ley

Planting and management of the planted areas shall be undertaken in accordance with pollinator friendly management objectives as outlined in the "All Ireland Pollinator Plan 2021-2025 (Councils: Actions to Help Pollinators)" National Biodiversity Data Centre and will include interpretative signage highlighting the areas Managed for Wildlife.

Ecology Design Elements

1. **Retention of existing ecological features.**

Habitats

Habitats within the proposed development site were mapped and described by NM Ecology Ltd as part of the Preliminary Ecological Appraisal.

Some existing trees within the POS and on the south-west part of the site will be retained and incorporated into the landscaping scheme for the proposed development. Measures for the protection of retained trees are provided in the previous chapter.

All other existing habitats will be cleared prior to the construction of the proposed development.

Birds

As stated in the ecological's statement, the site doesn't contain any trees of sufficient size for nesting birds. Thus no specific consideration should be made for the protection of potential bird's habitats in the existing trees, as the site was determined to be of negligence importance for the bird species.

2. **Biodiversity enhancement in the landscaping scheme.**

New habitats of biodiversity value will be created as part of the landscape masterplan submitted with this application. This includes:

- Planting of native semi-mature trees in the POS and COS, including some native species (*Crataegus monogyna, Prunus padus*).
- A large meadow area will provide new habitats for fauna and will bring a new range of plants species to the site, further enhancing its biodiversity.
- A detention basin and its specifics plants will be implemented as well

Detailed planting and maintenance proposals are included in the Landscape chapter of this document.

The project ecologist considers that the creation of these habitats will result in a net gain in biodiversity when compared to the baseline habitats.

Additional planting is recommended to strengthen areas within the site for wildlife and biodiversity and to reinstate green infrastructure across the site where feasible.

3. Biodiversity enhancement for fauna.

New habitats for fauna

New habitats will provide habitat for a range of fauna, as follows:

- New semi-mature trees will provide nesting habitat for birds, and shelter for ground-dwelling mammals (e.g. hedgehogs)
- Meadows will support a range of native flowers that will provide nectar for pollinators. Flowering shrubs in hedgerows (notably hawthorn) will also provide a significant resource for pollinators in early summer
- New trees and shrubs (notably hawthorn) will provide berries for over-wintering birds.
- The meadows will also provide a significant feeding resource for fauna, including invertebrates for birds and small mammals, and grass / flower seeds for birds

Some additional measures for fauna are outlined below.

Birds

Breeding Bird Season Restrictions

Any removal of vegetation, including trees within the site will take place outside the breeding bird season (i.e. the start of September to the end of February, inclusive) to avoid any potential impact on breeding birds. Where this seasonal restriction cannot be observed, a check for active nests will be carried out immediately prior to any site clearance and repeated as required to ensure compliance with Irish wildlife law. This will be carried out under the supervision of a qualified

Ecologist. 10 bird boxes will be integrated to the scheme, and will be boxes suitable for finches, tits and similar garden birds.

4. Biodiversity enhancement in the landscaping scheme.

Outlined above in the landscape proposals and the landscape masterplan submitted with this application.
These measures will partially compensate for the grassland habitats removed during site clearance and create some features that are not currently present at the site (detention basin, meadows…)

Trees and pollinator friendly grasslands
Additional planting is recommended to strengthen areas within the site for wildlife and biodiversity and to reinstate green infrastructure across the site where feasible. In keeping with the recommendations of the All-Ireland Pollinator plan it is proposed to plant low level planting providing connectivity between habitats, shelter and a food resource for small invertebrates. These also provide connectivity between habitats for many species.

- Grassland meadow habitat maintained
- Management regime for pollinators

5. Biodiversity enhancement for fauna.

This would include swift / swallow nest boxes on the buildings (they need to be at least 5 m above ground level), other bird nesting boxes for finches, tits, etc.

- Existing grassland retained to support invertebrate's habitat as a food source for birds

- Bird nest boxes of a variety of sizes/typologies will be installed as per Ecologist recommendations

- Swallow and Swift bricks to Apartment structure

- Ground nesting bird habitat to Living Roof to Apartment structure

Trees and pollinator friendly grasslands

Additional planting is recommended to strengthen areas within the site for wildlife and biodiversity and to reinstate green infrastructure across the site where feasible.