

PROPOSED PART 8 RESIDENTIAL DEVELOPMENT

Forbes Lane Depot, Dublin - Dublin City Council

Landscape Report

September/ 2024

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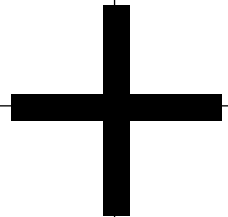


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Landscape Design Aims and Objectives

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 an urban context with inclusive access.

The design incorporates biodiversity considerations in the proposed planting and its management to recreate pocket of planting and life on an existing sterile site.

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

- Structural mixed hedgerow planting
- Mixed shrub and herbaceous planting in the amenity spaces and privacy strip
- Climbers planting on boundary walls
- New tree planting,
- Flexible amenity lawn

Management Structure

The landscape areas will be managed by the development management company for a period of 25 years.

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.

Standards of Care

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

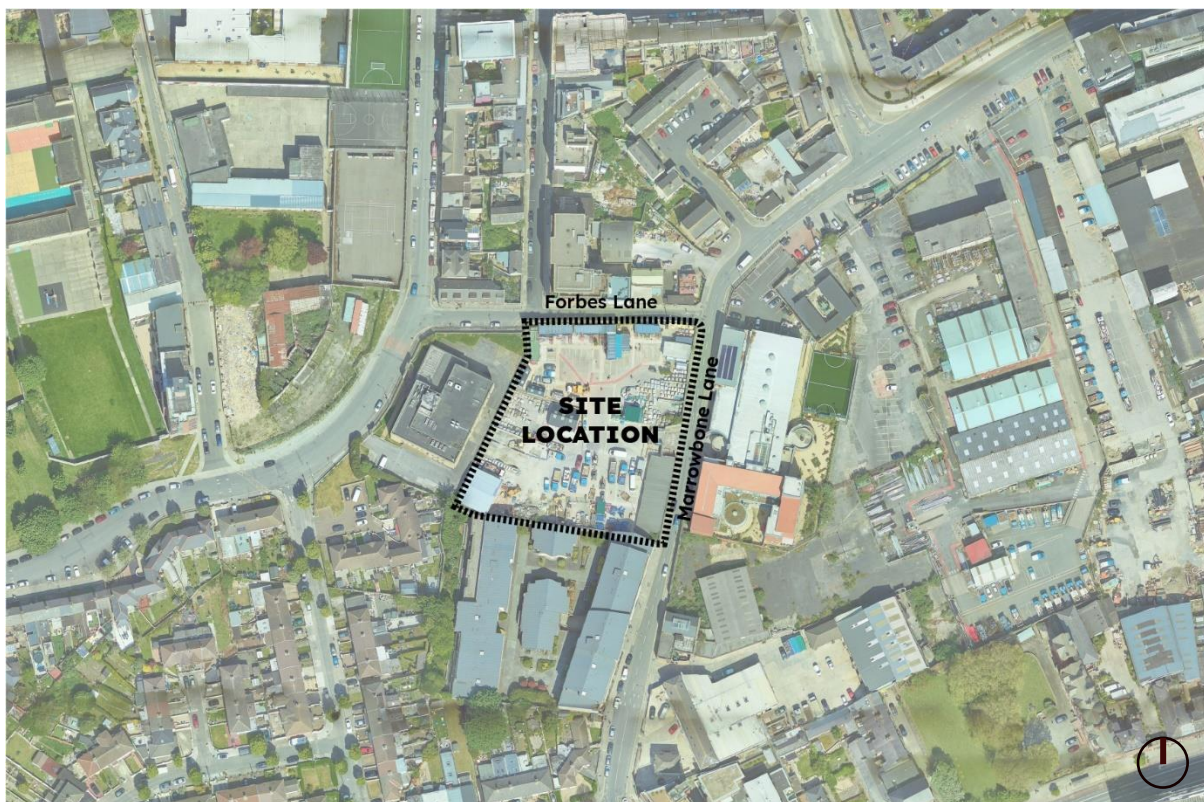
High standards of care will be achieved by:

- 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 woodland area

Landscape design description

The redevelopment of the Forbes Lane Depot will repurpose a sterile city-based depot as a residential and community-oriented site. The redevelopment will be focused on the usability of the space and the reintroduction of biodiversity.



Map extracted from Google Earth

The redevelopment of the Forbes Lane depot in Dublin will include two distinct areas.

The first area will be a public open space including a Civic Plaza. This public open space is located along the Forbes Lane and the Marrowbone Lane. The second area is an amenity courtyard for the use of the residents.

Both amenity spaces are designed to provide inclusive features.

1. Public space

A Civic Plaza is located at the new community and art centre. The public open space provides seating opportunities and routes along and across the Marrowbone Lane. The Civic Plaza is structured by 4 planted tree pits. Seating and gathering opportunities are provided around the tree pits through curved concrete benches and informal concrete box seats. Along the building edge, 300mm high raised planters will be used to provide dense shrubs and perennial plantings in front of the future apartment. The raised planter will be used to provide privacy to the residents. They will also enhance the planting along on the public path and soften the routes along Marrowbone and Forbes Lanes.

Provision for a future cycling lane is provided, as part of the active travel strategy. A temporary green verge is provided, and an extension in the paved footpath is delineated with a metal edge to ease the implementation of the cycling lane at later stage.

As part of the heritage strategy, part of the existing boundary stone wall is preserved and integrated into the 450mm high planter along Marrowbone and Forbes Lane.

The public footpath will be paved with a high-quality paver such as granite flags. The specification of the granite flag will match DCC standards to ensure the area can be taken-in-charge by DCC.



Reference pictures taken from Landzine and Gillespies.co.uk

2. Resident Amenity space and shared surface street

The resident amenity space is a courtyard surrounded and overlooked by the new building. The area will be gated, and access will be controlled. The resident amenity space focuses on providing gathering opportunities and play amenities. A formal play area is provided at the southern entrance of the courtyard. However, the central area will provide playful seating and hut, usable by all group age, and a south-facing mound. The features are flexible and aim to serve multiple purposes. The choice in materials focuses on robust and long-lasting elements.

A shared surface street wraps around the building and gives access to the courtyard entrances and own door/terrace access. The shared surface is opened for deliveries, emergency, and utility access, and accommodates 2 no disabled car parking spaces. The access is controlled by removable bollards.

The shared surface street is paved with PC concrete pavers laid in approved pattern with a single finish. The amenity courtyard will use the same pavers and pattern but will include a mix of pavers colour. This aims to create a sense of uniformity in between the two spaces while uplifting the amenity space and emphasize the distinction between the uses and accessibility of the two spaces.



*Example of single colour pavers type for shared surface street
Reference pictures taken from Tobermore catalogue*



*Example of mix colour pavers for amenity courtyard
Reference pictures taken from Tobermore catalogue*

A planting corridor will be implemented along the main path and privacy strip and mixed hedgerows will structure the courtyard while providing privacy to the ground level terraces. The site is deprived of existing planting. Therefore, the proposal will provide diversity. The selection of planting focuses on hardy and pollinator friendly species.

Accessibility is essential in the resident amenity space. The level difference between building is dealt with a series of planters that can be used as seating opportunities. Levelled and ramped access will provide access to the entire courtyard. The benches and seats will be adapted to all group age by including arm and back rest as appropriate. The flexible lawn is surrounded with hard surface that will ensure universal access to the building entrances and key space of the amenity space.



Reference pictures taken from Escofet catalogue, Landzine and Mitchell + Associates

Planting Strategy

The general planting strategy throughout the scheme is for adaptable trees to soften the proposed buildings in constraint areas, and a base layer of shrub planting to create low level seasonal interest and colour softening the hard surfaced areas, and road curtilage.

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):

- *Sorbus aucuparia*
- *Betula utilis* 'Jaquemontii'
- *Prunus padus*
- *Prunus avium*
- *Malus sylvestris*
- *Pinus sylvestris*
- *Amelanchier lamarkii*
- *Pyrus calleryana* 'Chanticleer'
- *Salix sp.*

Street trees

Street tree planting will consist of compact and low-levels trees that will be adapted to the proposed planters. The trees will be planted at a minimum of 1.5m from the kerb edge to ensure visibility between the path and the road and will be 1.8 clear stem.

Proposed tree list (non-exhaustive):

- *Betula utilis* 'Jaquemontii'
- *Pinus sylvestris*
- *Amelanchier x grandiflora* 'Robin Hill'
- *Sorbus aucuparia*
- *Pyrus calleryana* 'Chanticleer'
- *Malus sylvestris*

Street tree planting is located to avoid impacts with street lighting and follow the DCC guideline of a 5m radius gap in between lighting column and tree when appropriate.

At the corner of Marrowbone and Forbes Lane, the guideline regarding tree and lighting interaction will be adapted (refer to the Masterplan, drawing SHB5-FLD-DR-MAL-L-P3-100). To prevent any clash and maintenance issue with the lighting column, the tree species selected need to have a mature canopy of no more than 3m radius. The trees

will be planted in a constrained volume of topsoil and therefore the tree development will not reach the full development normally observed in an open-field or park. As the selection of street trees is oriented toward medium size trees, we can expect that the canopy will not exceed the required 3m radius and therefore will not interact with the lighting column. Furthermore, we note that the column is oriented toward Forbes Lane, and that the trees are planted at the back of the column so the canopy will not interfere with the lighting spillage on the road.

Street trees will be planted into a minimum of 1.2m³ topsoil (or to the requirements of the local authority parks department, as appropriate), with the use of urban tree soils and topsoil loaded root cells to increase rooting areas outside the main tree pit area as necessary.

Privacy strip and terrace screening

Ground level apartments and terraces will be screened with perennials planting and hedges to ensure privacy. The focus is on perennial and hardy shrubs with biodiversity interest (included in the All-Ireland Pollinators Plan)

Proposed shrubs list (non-exhaustive):

- *Hebe sp.*
- *Ilex sp.*
- *Lavandula x intermedia*
- *Rosmarinus officialis*
- *Ligustrum ovalifolium*
- *Pyracantha sp.*
- *Berberis darwinii*
- *Viburnus tinus*
- *Eleagnus x ebbingei* 'Compacta'

Proposed formal hedge list (non-exhaustive):

- *Ilex sp.*
- *Laurus lusitanica*

Perennial and herbaceous + Bulbs planting mix

The development open spaces will provide pockets of planting along the lanes and in the courtyard. The focus is given to implementing biodiverse mixes and providing yearlong interest.

Proposed bulbs list (non-exhaustive):

- *Crocus sp.*
- *Galanthus nivalis*
- *Colchicum sp.*
- *Tulipa sylvestris*
- *Anemone nemorosa*

Proposed understorey plant list (non-exhaustive):

- *Helleborus sp.*
- *Hedera algeriensis*
- *Ajuga reptans*
- *Anemone* ‘Honorine Jobert’
- *Aster frikarkii Frikarts*
- *Camassia leitchlinii*
- *Calamagrostis* ‘Karl Foerster’
- *Erigeron karvinskianus*
- *Geranium* ‘Rozanne’
- *Libertia formosa*
- *Luzula nivea*
- *Tiarella Spring*
- *Verbena bonariensis*
- *Vinca sp.*

Proposed understorey plant list for SuDS tree pits (non-exhaustive):

- *Carex pendula*
- *Astrancia major*
- *Astilbe chinensis*
- *Corcosmia* ‘Georges Davison’
- *Eupatorium cannabinum*
- *Hemerocallis* ‘Whichford’
- *Ligularia dentata* ‘Othello’
- *Vinca major*

Site boundary

The southern site boundary interacts with an existing residential site boundary. A high wall marks the site limit. The proposed boundary treatment will allow for a cladding of the wall. The stones used for the cladding will come from the existing boundary wall that will be dismantled and repurposed for the boundary integration. In addition, climbers will be implemented on trellis.

The eastern site boundary interacts with an existing dwarf wall and railing use as current separation. The wall will be rendered and integrated with a natural hedgerow and soften with tree planting.

Proposed climbers list (non-exhaustive):

- *Hedera colchica*
- *Rosa* ‘Constance Spry’
- *Lonicera periclymenum*
- *Clematis x durandii*

Proposed natural hedgerow list (non-exhaustive):

- *Crataegus monogyna*
- *Corylus avellana*

- *Sambucus nigra*
- *Prunus spinosa*
- *Rosa canina*

Proposed tree planting list (non-exhaustive):

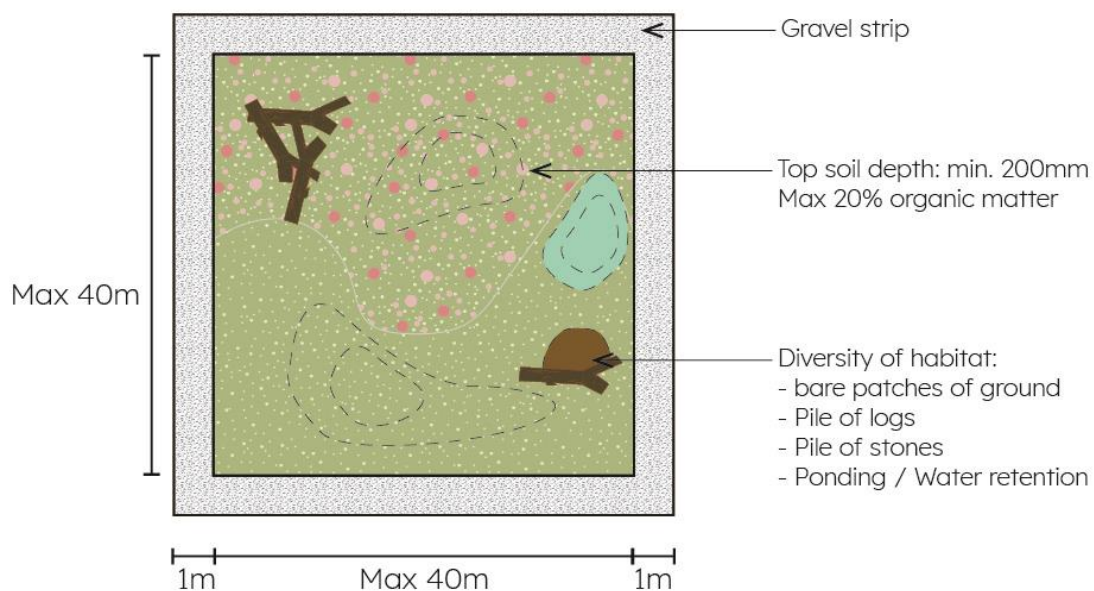
- *Sorbus aucuparia*
- *Alnus x spahetii*
- *Malus sylvestris*
- *Pyrus calleryana* 'Chanticleer'

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 (topsoil depth over 200mm) planted with a mix of sedum and Irish native wildflowers. As appropriate, a diversity of habitat will be created by:

- Modulating the depth of topsoil, while maintaining appropriate depth to maintain the water storage capacity
- Installing piles of logs and stones
- Providing bare patches of soil
- Creating localised ponding/water retention.



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.
- Other, as appropriate.

Proposed sedum species (installed as plugs or blanket):

- *Sedum album*
- *Sedum ellacombianum*
- *Sedum floriferum*
- *Sedum hybr. Czar's Gold*
- *Sedum montanum*
- *Sedum kamtchaticum*
- *Sedum oreganum*
- *Sedum pulchellum*
- *Sedum reflexum*
- *Sedum rupestre Angelina*
- *Sedum sexangulare*
- *Sedum spurium 'coccineum'* (Purple Carpet)
- *Sedum spurium*
- *Sedum spurium 'Summer Glory'*
- *Sedum stenopetalum*
- *Sedum stoloniferum*
- *Sedum saxifraga granulate*

Proposed Irish native wildflower species (installed as seeds, plugs or blanket):

- *Achillea millefolium*, Yarrow
- *Agrimonia eupatoria*, Agrimony
- *Aquilegia vulgaris*, Columbine
- *Bellis perennis*, Daisy
- *Briza media*, Quaking-grass
- *Campanula rotundifolia*, Harebell
- *Centaurea nigra*, Knapweed (common)
- *Chicorium intybus*, Chicory
- *Daucus carota*, Carrot (Wild)
- *Dipsacus fullonum*, Teasel
- *Echium vulgare*, Viper's-bugloss
- *Foeniculum vulgare*, Fennel

- *Linaria vulgaris*, Toadflax (common)
- *Lotus corniculatus*, Bird's-foot-trefoil (common);
- *Lythrum salicaria*, Purple Loosestrife
- *Malva moscata*, Mallow Musk
- *Origanum vulgare*, Marjoram (wild)
- *Papaver rhoeas*, Poppy (field or common)
- *Pilosella aurantiaca*, Fox-and-cubs
- *Primula veris*, Cowslip
- *Primula vulgaris*, Primrose
- *Ranunculus acris*, Buttercup (meadow)
- *Rumex acetosa* Sorrel (common)
- *Salvia verbenaca*, Clary (wild)
- *Silene dioica*, Campion red
- *Silene flos-cuculi*, Ragged-Robin
- *Silene uniflora*, Campion; White
- *Tanacetum vulgare*, Tansy
- *Trifolium pratense*, Clover; Red
- *Viola riviniana*, Common dog violet
- *Viola tricolor*, Pansy (wild) or Heartsease

Furniture and Finishes

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

- SHB5-FLD-DR-MAL-L-P3-100
- SHB5-FLD-DR-MAL-L-P3-300
- SHB5-FLD-DR-MAL-L-P3-301

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.

Grass Footpaths

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 3m to clearly indicate the circulation network.

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.

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 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.

The Natural Hedgerows will be maintained so that a diversity of hedgerow structure is provided. Tall and short ($\leq 3\text{m}$) sections will be provided. Thick and dense cover at the base of the hedgerow will be maintained and gaps along hedgerows will be minimised. Gaps to facilitate pedestrian access or visual permeability will be provided at selected locations along hedgerows. The outer edges of the Natural Hedgerows will be maintained so that they undulate, or have a wavy plan profile.

Natural Hedgerows will be managed as follows:

- o Hedgerow trimming will be undertaken on two to five year rotations to create diversity in hedge structure and allow some species to produce fruit (an important food source for birds) in different years.
- o Hedgerow trimming will be alternated between sections of hedgerows so that at least one-third of the hedgerow length remains uncut.
- o Hedgerow trimming will be undertaken between the months of January and February.

Box-Cut Hedgerows will be a minimum width of 1m and a minimum height of 1.5m. They will be comprised of typical native hedgerow species.

Box-Cut Hedgerows will be cut on an annual basis during the months of January and February. Hedges should not be cut between March and August as this is the main breeding season for nesting birds. Encourage a bushier and denser hedge by cutting at least 2cm above the previous year's growth. This keeps the hedge full of vigor and growth. It is easy to prune a hedge too heavily and lose the fruit. Remove all hedge cuttings from the site.

Hedgerows Management

Box Cut Hedgerow

Treatment 1 will comprise an Urban type “Box-Cut Hedgerow”.

Box-Cut Hedgerows will be a minimum width of 1m and a minimum height of 1.5m. They will be comprised of typical native hedgerow species.

Box-Cut Hedgerows will be cut on an annual basis during the months of January and February. Hedges should not be cut between March and August as this is the main breeding season for nesting birds. Encourage a bushier and denser hedge by cutting at least 2cm above the previous year’s growth. This keeps the hedge full of vigor and growth. It is easy to prune a hedge too heavily and lose the fruit. Remove all hedge cuttings from the site.

Hard Surfaces including: Insitu Concrete and Tarmac Pathways, Resin Bound 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.

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, dry stone walls

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 weeds, 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 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 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. This is particularly relevant to planting at the Dublin foothills.

- 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 defined, 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 trees 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

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- 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.

Control of dogs

It is recommended that dogs should be kept on a lead when walking the path network within the open spaces, except for in the designated dog park to prevent disturbance to wildlife. Signage should be erected to encourage public cooperation. This may help to reduce disturbance impacts to bird species.

BIODIVERSITY

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 planting scheme 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 and Blue Infrastructure

The proposed landscape design aims to strengthen the value of the site as a place for delivering green/blue infrastructure.

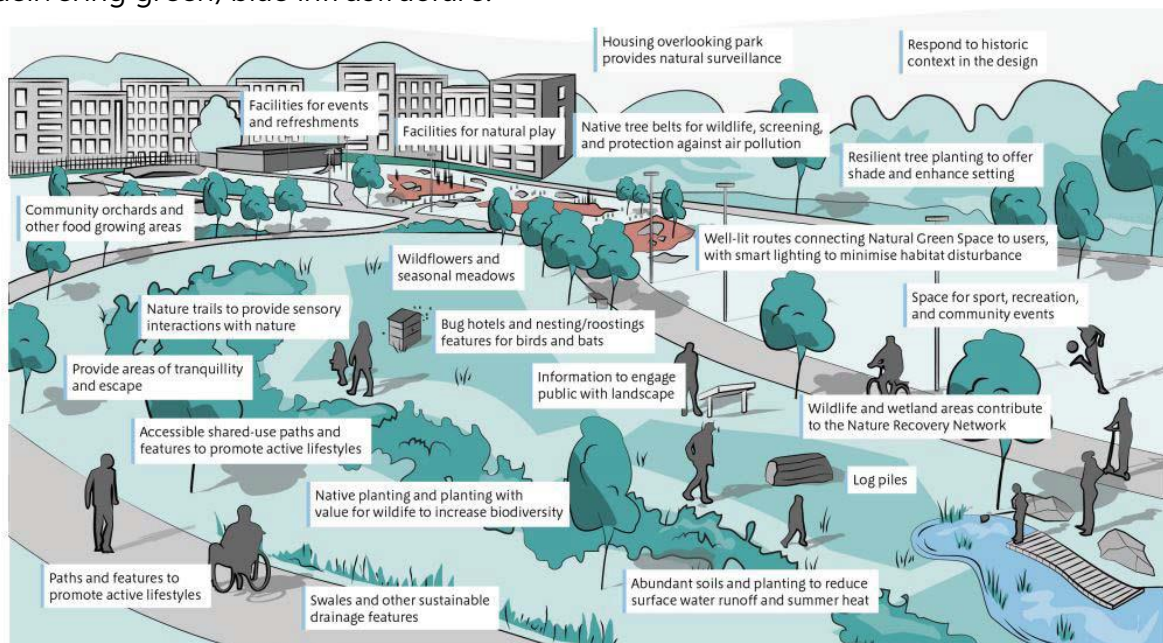


Figure 21: Parks and Green Space

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.
- 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.

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

Ecology Design Elements

1. Retention of existing ecological features.

The Site consists entirely of buildings and artificial surfaces and has no natural habitats that could be retained.

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, notably in the west of the Site, including some native species (*Sorbus aucuparia*, *Malus sylvestris*)
- Creation of ornamental pollinator-friendly mixes in the courtyard
- Shrub planting around site boundaries

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

As the site has negligible baseline ecological value, the landscaping plan for the proposed development will result in a net gain in biodiversity.

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 and hedgerows will provide nesting habitat for birds
- Meadows will provide nectar for pollinators. Flowering shrubs in hedgerows (notably hawthorn) are also an important resource for pollinators in early summer
- New trees and shrubs (notably hawthorn) will provide berries for over-wintering birds.

Some additional measures for fauna are outlined below.

Bird boxes

Swift nest boxes will be integrated into the walls of the apartment buildings at roof height. They will be located at least 5 m above ground level, and will face in either an eastern or western aspect.



Example of swift nest boxes that can be integrated into masonry walls

