BALLINACURRA MILL LRD

GREEN INFRASTRUCTURE & LANDSCAPE STRATEGY

2025

Former Ballinacurra Mill Buildings Site & Rose Hill House, Ballinacurra, Midleton, County Cork

Contents

1. Summary

1.1 Overview

This strategy informs the proposed development of a mixed use residential development on a significant brownfield site in Ballinacurra Village. The proposal address the zoning of the site as predominantly town centre where there was an historic Mill and some mixed residential zoning around Rosehill House a Protected Structure. The nett site area is 3.63 hectares. The village of Ballinacurra is located approximately 2.5km south of Midleton Town Centre.

The site is located on the edge of an urban - village landscape. It is adjoined by residential development and historic streetscape landscape as well as country road landscape. The local Landscape Character Type is City Harbour and Estuary, as set out in Cork County Development Plan 2022. The site is bounded by a secondary road R629 to the east – Cloyne Road which has a countryside character and Upper Road / Rose Lane to the north which is a peripheral streetscape in the village. To the west the site is bound by the Old Dairy housing estate which contains part of the historic grounds of Rosehill House and to the south by Rosehill Estate which sits on elevated ground.

The site includes protected structures and monuments. To the west of is Rose Hill House; an 18th C. house that is protected and classified as a national monument. To the north of the site at Rose Lane are large, historic stone built industrial mill storage buildings, formerly Bennett & Co. Maltings. The buildings facilitated the malting processes and the storage of barley, along with some processing and administrative functions.

The site rises from Rose Lane to the elevated Rosehill housing estate, historically following the line of the Cloyne Road. Levels across the site vary due to some 20th C. levelling which created some steep embankments to the southerly side. Boundaries vary across the site, consisting of stone walls and concrete block walls along the southern and western sides. There are some post and wire fences and hedge banks containing native plants and trees. The site has been overgrown and gradually greening since 2006 which has led to a proliferation of sycamores at Rosehill amongst the planted historic trees.

The character of the immediate locality is of a fringe village / urban landscape and is defined by housing development in the immediate vicinity to the south while the wider hinterland to the east is distinctly rural in character and is made up of hedge bound agricultural fields.

This document is to be read in conjunction with the recommendations of
Ecological Impact Assessment Report
Tree Survey
Arboricultural Report
Drawing 01.02 – Ballinacurra LRD Proposed Landscape Plan.

1.2 Development Proposal

The development consists of:

- 128 Residential Units
  - 103 no. dwelling houses
  - 25 no. apartments
- Commercial & Retail Floor Area: 539m²
- Cafe: 69m²
- Creche : 223m²
- Public Open Space: 5,090m²
- Useable Public Open Space: 4,690m² Green Space & Civic Square (13% of nett site area)
- Private Open Space - Gardens: 7,915m²
- Useable Private Open Space - Gardens: 6,465 m²
- Communal Open Space - Apartments: 260m²

The proposal combines a housing development, café, creche and commercial, retail & office units within the grounds of Ballinacurra Mill and Rose Hill House with unique green infrastructure of parkland, homezones, streetscapes, squares, play spaces and wildlife zones. The proposal creates a focus and neighbourhood identity using the historic existing mill buildings which address a central location and square or *Cearnóg* within the housing area. Historic houses are integrated into the fabric of the scheme placing Rose Hill in parkland of open green space and historic and new trees while restoring a line of trees to the north of the house and creating the possibility of a connection to the adjacent open space of the housing of the *Old Dairy* and additional connections to the Ballinacurra to Midleton Pedestrian and Cycle Route and Greenway.

The proposal facilitates safe pedestrian accessibility and priority. The design adheres to principles of inclusivity for all ages, universal accessibility, and sustainable development with highly considerate green space and infrastructure.

The proposed development provides generous, deliberately placed open space, a home zone concept which is combined with street identity and a street and footpath hierarchy which ensures ease of movement through the site and safety for pedestrians. Passive supervision of open spaces and home zones is given a primary consideration as would be the case in the village historically. It is proposed to provide an unstructured play-space within a shared surface / home zone area of this scheme to complement the additional open spaces and ensure multiple use of space.

The landscape proposal preserves and extends existing hedgerow boundaries, which contribute to the character of the site's perimeter. The plan carefully considers the placement of trees, adding indigenous species to strengthen the area's character and boost local biodiversity. A designated wildlife zone is included along the southern perimeter of the site, aiming to sustainably enhance the natural landscape and support habitat and biodiversity. This zone features interconnected garden areas to facilitate wildlife movement and maintain an existing soft perimeter treatment between the existing housing at high level at Rose Hill Estate helping to integrate the development with the surrounding rural landscape.

The proposal includes native trees and plants, along with select non-native species that align with a desire for pollinators, to boost local biodiversity.

2. Site Analysis

2.1 Initial Concept

The proposal provides green infrastructure within built material expression that is considerate of the local context including:

- Design of buildings and landscaping based on local character.
- Character areas of separate identity related to context.
- Green infrastructure that reflects character spaces.
- Safe spaces and routes which connect homes to wider area.
- Parkland character that is varied and reflects historic setting.
- Homezones, squares and streetscapes that are defined by contextual architecture and green infrastructure.
- Strengthened biodiversity and habitats.
- Green infrastructure and built landscape that is easily maintained.

2.2 Planning Context

The site is designated as *Town Centre / Neighbourhood Centre* except for the area around Rosehill which is designated as *Existing Residential / Mixed Residential and Other Uses in the Cork County Development Plan* which informs the design of the landscaping and green infrastructure strategy. The proposals refer to the Cork County Council's *Design Guide for Residential Estate Development 2011* and national guidance, including the Urban Design Manual and the Design for Manual for Urban Roads and Streets.

2.3 Existing Buildings

The nett site area is 3.63 hectares. Historically the site combined industrial and domestic functions. It includes protected structures and monuments. To the west of the site is Rose Hill House; an 18th Century house that is protected and also classified as a national monument. To the north of the site against the village street of Rose Lane are large industrial storage buildings which were formally Bennett & Co. Maltings. The buildings facilitated malting processes, the storage of barley and some

2.4 Site Constraints

The site is a brownfield site which has existing buildings, services and boundaries and topography. Rosehill House and its setting have historic significance and are protected as are the Mill Buildings. Rosehill has an historic landscape form a character that requires design consideration. All design considerations are informed by existing and historic character and a requirement to create enhancement. The site has topographical constraints as it was generally levelled and the historic rise in height to the south must be considered carefully in the context of accessibility constraints and landscape comfort. There are some drainage service routes/wayleaves that run from the Rosehill Estate to the south to Rose Lane on the northern side of the site. Many of the constraints in design terms may be reinterpreted as opportunity.

2.5 Local Amenities

Midleton has a range of community facilities and services including educational facilities of five primary schools and four secondary schools in the town. Ballinacurra, located less than 2km south of Middleton town centre and south of the N25, lies at the meeting of the Owenacurra River and the east channel of Cork Harbour. The Ballinacurra Mill LRD site is located a short drive and reasonable cycle or walk from Midleton town centre. Notable local services and amenities include:

- Ballinacurra to Midleton Greenway (500m)
- CBS Secondary School (1.7km)
- Bailick Park (1.2km)
- Ballyannan Woodlands Walk Bridge (1.3km)
- Circle K Filling Station (1km)
- Montessori School (500m)
- Bus Éireann Bus stops (450-500m)
- Bransfield Green (230m)
- Old church and Cemetery (800m)
- Ballinacurra GAA Club (600m)

2.6 Walking & Cycling

The site connects well to the village at Rose Lane and to the Cloyne Road. A connection to The Old Dairy is proposed also as a possible connection for consideration that is designed into the scheme and is considerate of historic landscape and the requirement for increased connectivity. In addition to a road-based route through the site from Rose Lane to the Cloyne Road there are many connecting shared surface routes through streets that are proposed to be for resident car access and as pedestrian and cycling routes and home zones of low speed only (20km).

2.7 Public Transport

Transport priorities for the Cork Metropolitan Area in the *Regional Spatial & Economic Strategies* include the development of the Cork Metropolitan Area Transport Strategy and enhancements to the commuter rail service, including additional stations and rail fleet; and support the feasibility of converting the heavy rail commuter services to light rail services. The Cork County Development plan 2022-28 recognises the planned role for Midleton Train Station in providing a commuter rail service for the town.

2.8 Existing Wildlife

The proposed site aims to support existing wildlife as well as encourage further diversification. The scheme manages impact of the development on existing wildlife and their habitats by means of remediation.

The site has several wildlife species living and commuting through the site including bats, house sparrows, barn swallow, house martins, swift, kestrel, badgers, hedgehogs and foxes.

2.9 Context - Ecology

The existing ecology and habitats within the site are an essential consideration for the proposals. Green infrastructure maintains and protects habitat and proposes considerable addition of planting to expand that habitat.

The green infrastructure strategy acknowledges the importance of, protecting and enhancing wildlife habitat.

2.10 Site Constraints - Existing Trees

Nett site area: 3.63 ha

Existing Trees

1. Elder (Sambucus nigra)
2. Laburnum sp. (Laburnum sp.)
3. Birch sp. (Betula sp.)
4. Small leaved lime (Tilia cordata)
5. Aspen (Populus tremula)
6. Beech (Fagus sylvatica)
7. Holly sp. (Ilex sp.)
8. Poplar sp. (Populus sp.)
9. Sycamore (Acer pseudoplatanus)
10. Apple sp. (Malus sp.)
11. Common ash (Fraxinus excelsior)
12. English elm (Ulmus procera)
13. Wych elm (Ulmus glabra)
14. Contorted Willow (Salix matsudana)
15. Cordyline australis

Existing Tree Groups

A Cypress sp. (Cupressus sp.)

B Willow sp. (Salix sp.),
Sycamore (Acer pseudoplatanus),
Common ash (Fraxinus excelsior),
White poplar (Populus alba)

C Common ash (Fraxinus excelsior),
Sycamore (Acer pseudoplatanus)

D Common ash (Fraxinus excelsior),
Sycamore (Acer pseudoplatanus)

To be Removed

To be Retained (16 no.)

Figure 2.1 – Existing Trees to be Retained & Removed Diagram

3. Green Infrastructure Strategy

3.1 Proposed Strategy

The green infrastructure concept at Ballinacurra Mill supports the planning, management and engineering of green spaces to provide specific benefits from the natural environment in public spaces, homezones, streetscapes and parklands. Green infrastructure defines the network of green landscape spaces, habitats and ecosystems within a defined area and comprises of wild, semi natural and built environments to support nature within a built development in a sensitive and considerate manner.

Nature is supported in the development proposal with:

- Permeable boundaries, buffers and wildlife zones
- Sustainable drainage and urban water catchment
- Planting for wildlife resilience and support
- Protection of found plant species
- Adaptive use of structures for wildlife protection
- Varied green infrastructure in public spaces
- Widespread tree planting in public landscaping and private space

The proposal seeks to create a positive receiving environment and access in conveyance of water surface run off, which creates a better sense of place, a wellbeing benefit and a more aesthetically pleasing landscape. Designing green space and public realm with widespread seasonal green infrastructure provides valuable community recreational space as well as important environmental infrastructure. The design provides kickabout areas, squares, courtyards, playgrounds, green corridors and woodlands which are all popular types of open spaces. These will also contribute to development targets for open space as they are designed to be multifunctional in their use.

Landscaping is supported by Green Infrastructure providing amenities of:

- Squares supported by Public Functions and Services
- Planted Streetscapes
- Planted Courtyards and Homezones
- Planted Shared Surface Streets
- Parkland with Mature Trees and Play Areas
- Dedicated Playground Facilities

This particular strategy is designed to include a range of natural processes for managing and enhancing the habitat protection and biodiversity of the site. The inclusion of a range of vegetation within the multiple open spaces support local biodiversity and includes additionally a dedicated wildlife zone. To enhance the ecology of the area a variation of planting is used, ranging from woodland planting to pollinators. Consideration has been given to species and maintenance requirements of existing habitats and to the inclusion of native and some pollinator friendly non-native planting. The proposed landscape benefits aesthetically from the inclusion of highly considerate Green Infrastructure that supports existing wildlife and planting set in an historic landscape of some significant historic architecture. Character areas in varied landscape conditions maintained in resilient materials, highly developed contextual architecture and built landscape presents a highly considerate overall public realm character.

3.2 Proposed Amenity

The proposed residential development consists of 103 no. dwelling houses and 25 no. apartments and includes consideration of amenities as per the Cork County Council *Recreations and Amenity Policy Interim Approach 2019,* for schemes of 100 units and greater recognising the specific context of Ballinacurra Mill including:

- A Neighbourhood Play Area
- Circular paths and recreational walks
- Usable Open Space Provision of 13% of the developable site area.
- High quality accessible, and suitable proportioned areas of public open space.
- Varied topography natural play space. Suitably overlooked and passively surveyed.
- Connectivity to other, existing open spaces.
- Opportunities for informal play and passive amenity together with biodiversity.

The recreational needs of different age groups have been considered, with the provision of multiple types of green infrastructure supporting amenity spaces, such as home zones, streetscapes, looped walking routes, soft play areas, informal kickabout areas and parkland.

4. Landscape Plan

Diagram Key:

Nett site area: 3.63 ha

- Public Green Space
- Communal Green Space
- Ground Cover Shrubs & Pollinator Planting
- Native Hedgerow
- Wildflower Meadow
- Bee Orchid Meadow
- Woodland Bulbs
- Grasscrete – Planted Surface
- Concrete Footpath – Exposed aggregate
- Hot Rolled Asphalt
- Tarmac – Warm Sandstone Chip Finish
- Hot Rolled Asphalt – Sand Chip
- Heritage Granite Cobble
- Dark Flagstones – Urban Centre
- Paving slabs – Domestic – Town Centre
- Paving slabs – Domestic – Heritage Setting
- Play Area – Hoggin Base and Play Equipment
- Kerbstones – White
- Street Lighting
- Possible location for display of found Archaeology (External)

Figure 4.1 – Proposed Green Infrastructure & Landscape Plan

5. Green Infrastructure & Landscape Types

5.1 Home Zones

Homezones are shared residential space with pedestrian, cyclist, and community use priority. Vehicles are slowed by rising into the paved area defined by surrounding buildings and character which includes green infrastructure. Homezones create a shared environment where pedestrians and cyclists have priority, and the distinction between footpath and roadway is removed encouraging, social interaction, recreation and active use.

A key characteristic of the homezone is of slowed vehicles that are expected to travel at walking pace where the entire street is for all users, and there is no traditional separation between footpaths and the road. Homezones give pedestrians and cyclists priority where vehicles must give way to all. Homezone design encourages the use of the street for play and social interaction promoting social contact between neighbours. Homezone spaces encourage walking and cycling and improve natural surveillance opportunity and active uses.

Figure 5.1 – Home Zones

5.2 Civic Square

Civic squares are public, open spaces, acting as community gathering places for social, cultural, and civic life. The spaces are addressed by the centrally important Mill Buildings which are an historic and civic constant in the area and of a larger scale than local context generally. The civic space to the south named provisionally as An Cearnóg is intended to foster community and public interaction by being a central place to meet addressed by public functions including a coffee shop.

The civic square to the south, is a social and cultural hub acting as a large public room and place of gathering for cultural events. The square or Cearnóg is an important identifiable and symbolic location in the community for people to relax or meet others surrounded by well-placed green infrastructure of tree planting, pollinator planting and open green space.

Both squares are defined by the buildings that surround them. The Rose Lane square acts as an entrance location to commercial functions and an identifiable place associated with civic life and the Mill buildings as apartments. The main Square to the south of the mill complex is a gathering point and meeting location for recreation identifiable by its association with the mill buildings and open green space to the south. The café anchors the space and creates intimacy and enclosure. Both squares are defined by an increased level of paving in the Country Cork manner of dark slabs and white stone banding.

Figure 5.2 – Civic Square

5.3 Streetscape

Streetscapes define how buildings, footpaths, green infrastructure and vehicle routes work together to create the environment of a street. The streetscapes at Ballinacurra Mill define the interface between the private houses and the public space of the street carefully to protect the integrity of each entrance door. Planting, placement of doors and windows, railings and planting of trees all consider the eventual function of a safe harmonious and active street.

The main thoroughfare through the scheme links the Cloyne Road with Rose Lane and is an access to all parts of the scheme. It is presented as of traditional vehicle priority but with traffic calming including raised crossings, level changes, tree planting and ground planting. Tree planting is placed rhythmically where lighting poles are interspersed.

Secondary streets are home access streets and are denoted by changes in level and kerbstones but with similar road and footpath surfaces. Carriageways are defined only by level changes encouraging slower movement of vehicles.

Streetscapes are defined by the careful placement of various trees within the varied architecture; sometimes in line with buildings in rows and other times placed to accentuate views and create local picturesque distinctiveness. Planting is native to encourage biodiversity with some few longstanding specimens appropriate to an historic landscape.

Figure 5.3 – Streetscape

5.4 Public Green Open Space

Public green space is open space of strongly identifiable green infrastructure, planted with trees and groundcover that supports recreation and play. Green space is located around the Mill civic areas and Rosehill House to deliberately anchor the space in civic terms by association with the more significant architecture. Green space in Ballinacurra at Rosehill responds to the lesser density of the designation of the area and the setting of an historic building, the need for safe designated play area associated with the creche use and reflecting the historic open space to the north of the house that connects visually with the Old Dairy and significant historic trees to the west.

Green space supports kick around areas, children's play areas, dedicated habitat of wildflower lawns, bulb planting and pollinator planting as well as supporting historic trees and new tree planting in a picturesque way and in the formal manner of rows of trees which contribute to and enhance a varied and distinctive place.

Figure 5.4 – Public Green Space

6. Landscape - Materials

6.1 Material Finishes

Existing Material Character

Ballinacurra Mill has a number of existing historic buildings, proposed to be converted and used as commercial and residential function. The proposed material nature of the buildings in the development is directly influenced by existing buildings on site, many of which would have restored external finishes.

Proposed Material Character

The development proposes new buildings that are sympathetic to the existing character of the site and the village as well as mindful of historic precedent in the locality.

6.2 Landscaping Material Finishes

Materials & Finishes - Landscape

Kerbstones Granite - White.
Kerbstones Concrete Granite Replica - White.
Asphalt Hot Rolled
Tarmac - Warm Stone Matrix Finish - Wexford Sand
Footpath - Concrete – Exposed Aggregate.
Paving - Flagstone - Dark Granite Flag
Heritage Access - Traditional Granite Sett
Heritage Detail - Traditional Cobble
Paving Domestic - Concrete Dark Slabs
Permeable Parking - Grasscrete
Play Area - Hoggin / Sand

Road - Asphalt - Hot Rolled

Footpath - Concrete - Exposed Aggregate

Urban Boundaries & Railings - Estate Fencing

Shared Surfaces - Tarmac - Wexford Sand Chip

Heritage Access - Heritage Granite Setts

Perimeter Fencing - Acoustic Timber Fencing

6.3 Materials & Finishes - Landscape

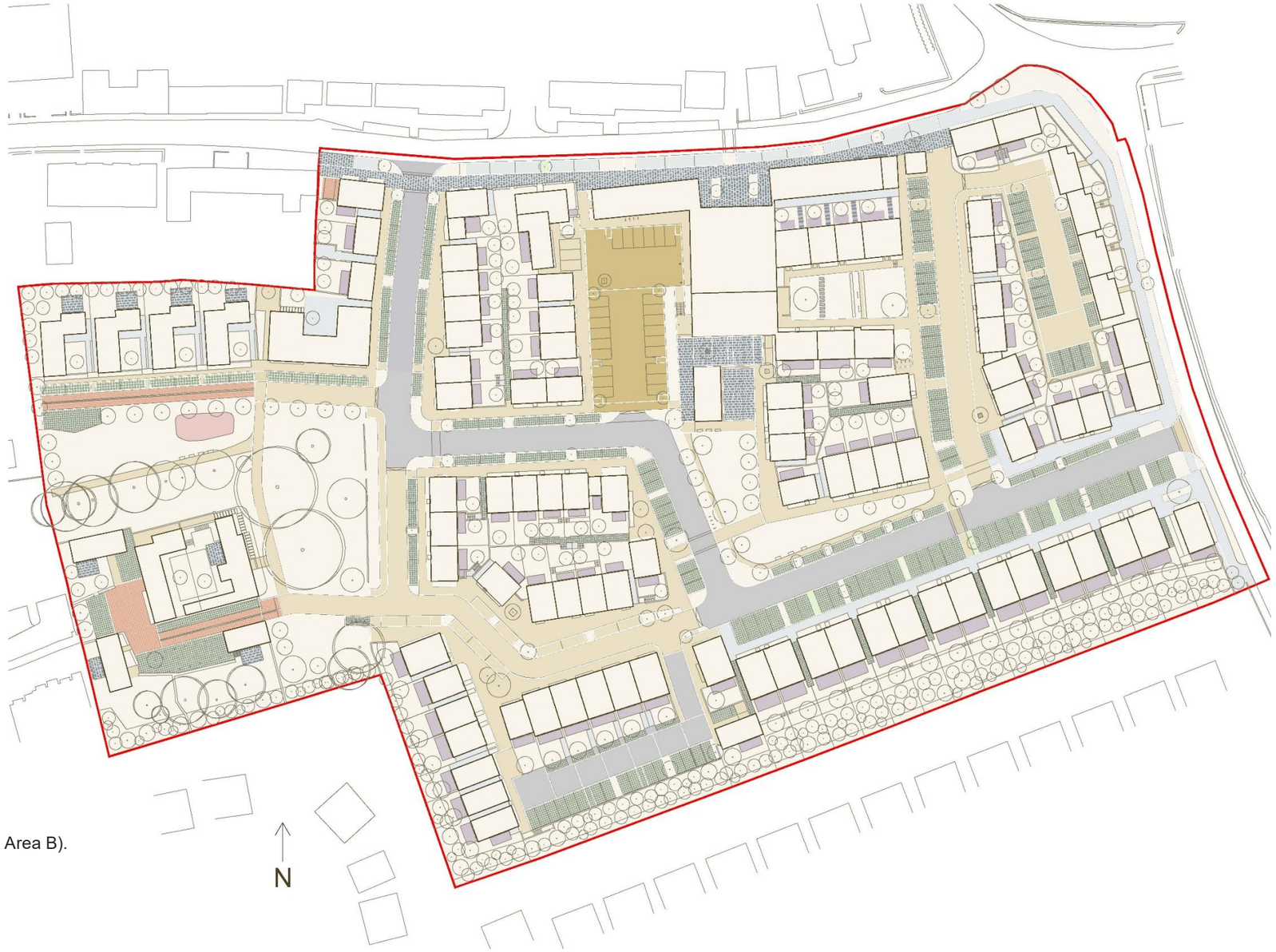

Diagram Key:

Nett site area: 3.63 ha

- Kerbstones - White.
- Hot Rolled Asphalt.
- Hot Rolled Asphalt – Sand Chip.
- Tarmac – Warm Sandstone Chip Finish.
- Concrete Footpath – Exposed Aggregate.
- Heritage Granite Cobble.
- Paving Slabs – Heritage Setting. (Back gardens of all houses in Area B).
- Dark Flagstones – Urban Centre.
- Paving Slabs – Domestic – Town Centre.
- Grasscrete – Planted Surface.
- Play Area - Hoggin Base and Play Equipment

Figure 6.1 – Materials & Finishes - Landscape Diagram

6.4 Boundaries & Fencing Diagram

Diagram Key:

Nett site area: 3.63 ha

- Historic Stone Walls – Rebuilding and Repair.
- Existing Block Wall.
- Existing Block Wall – New Stone Faced.
- Stone Faced Walls New - Historic Form.
- Flush Pointed Stone Wall – low 600mm.
- Harled Plaster Finish Walls.
- Harled Plaster Finish Walls – low to max 600mm.
- Estate Fencing – Galvanised & Painted.
- Timber Fencing.
- Timber Gate – Sheeted Douglas Fir.
- Acoustic Fencing.
- Post & Wire Fencing.
- Wrought Iron Gate – Heritage New.
- Pointed Brick Wall - Dark Varied.

Figure 6.2 – Boundaries & Fencing Diagram

7. Planting Proposals - Green Infrastructure

7.1 Proposed Planting Species

Trees Proposed - Numbers

- Street / Public Space Trees 114 (103 new trees 11 retained)
- Garden Trees 124 (119 new trees 5 retained)
- Boundary Trees 180 c.
- New Trees Total 402

- Trees New and Retained 418

Trees - Species

- Alder (alnus glutinosa) – Open Space
- Arbutus/ Strawberry Tree (arbutus unedo) – Garden Tree
- Ash (fraxinus excelsior) – Open Space / Street Tree
- Aspen (populus tremula) – Open Space
- Beech (fagus sylvatica) – Open Space
- Birch – Silver (betula pendula) - Open Space / Garden / Street
- Cherry – Bird (prunus padus) – Open Space / Garden / Street
- Elm – Wynch (ulmus glabra) – Open Space
- Hawthorn (crataegus monogyna) - Standardised – Open Space
- Hazel (corylus avellana) – Open Space / Garden
- Oak – Sessile (quercus petraea) – Open Space
- Rowan/ Mountain Ash (sorbus aucuparia) – Open Space / Garden / Street
- Scots Pine (pinus syvestris) – Open Space
- Whitebeam (sorbus hibernica) – Open Space / Garden/ Street
- Yew (Taxus Baccata) – Open Space / Hedging also
- Crab Apple (malus sylvestris) – Open Space

Native Hedgerow – (Wildlife Zone)

Small Trees:

- Blackthorn/ Sloe (prunus spinosa)
- Buckthorn - Alder (frangula alnus)
- Crab Apple (malus sylvestris)
- Elder (sambucus nigra)
- Evergreen Holly (ilex aquifalium)
- Hawthorn / Whitethorn (crataegus monogyna)
- Hazel (corylus avellana)
- Holly (ilex aquifolium)

Shrubs:

- Broom (cytisus scoparius)
- Buckthorn – Purging (rhamnus cathartic)
- Dog-Rose (rosa canina)
- Ferns Various including: Broad Buckler, Filmy, Hartes Tongue, Hay Scented, Lady, Scaley Male, Shield
- Guelder Rose (viburnum opulus)
- Honeysuckle (lonicera periclymenum)
- Spindleberry (euonymus europaeus)

Ornamental Hedging

- Bay (Laurus Nobilis)
- Miniature Leaf Spindle (Euonymus Japonicus Microphyllus)
- Spindle (Euonymus Japonicus Robusta)

7.2 Ground Cover & Ground Planting

Historic Shrubs

- Hydrangea (Serrata – Bluebird)
- Forsythia Iintermedia (Lynwood Variety)
- Crabapple (Malus sylvestris)
- Spotted Laurel (Aucuba Japonica)

Shrubs & Pollinator Planting - Not limited to:

- Barberry (Berberis Darwinii)
- Bergenia ‘Eroica’
- Hebe
- Lavender (Lavandula ‘Hidcote’)
- Potentilla Fruticosa (Shrubby Cinquefoil)
- Prunus Tenella (Fire Hill)
- Rosemary (Rosmarius Officialis)
- Skimmia Japonica
- Sage

Bulbs & Perennials (Native Woodland & Hedgerow)

– Not limited to:

- Anenome (Nemorosa)
- Bluebell (Irish Native -Hyacinthoides Non Scripta)
- Herb Robert (Geranium Robertianum)
- Meadowsweet (Filipendula Ulmaria)
- Violet (Viola Species)
- Wild Garlic (Allium Ursinum)
- Wood Avens (Geum Urbanum)
- Wood Rush (Luzula Sylvatica)
- Wood Sorrel (Oxalis Acetosella)
- Wood Speedwell (Veronica Montana)

Wildflower Meadow – Suggestion & not limited to:

Birdsfoot Trefoil, Bush Vetch. Corn Marigold, Corn Poppy, Corncockle, Cowslip, Meadow Buttercup, Field Scabious, Kidney Vetch, Lady's Bedstraw, Lesser Knapweed, Marjoram, Eyebright, Mullein, Ox-eye Daisy, Hawksbit, Red Bartsia, Red Campion, Red Clover, St Johnswort, Wild Carrot, Yarrow, Yellow Rattle, Species in small quantities: White Campion, Feverfew, Cornflower, Scentless Mayweed, Birdsfoot Trefoil, Purple Loosestrife, White Bedstraw, Ragged Robin, Selfheal, Yellow Agrimony.

Flowering Lawn – Native Only -Suggestion and not limited to:

Birdsfoot Trefoil, Red Clover, Self Heal, Ladys Bedstraw, Forget me Not, Black Medick, Yarrow, Kidney Vetch, Ragged Robin, Rough Hawkbit, Oxeye Daisy, Bent, Sheeps Fescue, Smooth Stalked Meadowgrass, Slender Red Fescue, Chewings Fescue, Crested Dogstail.

Bee Orchid Note – A rare Bee Orchid found in the eastern portion of the site to be stored and then planted in a defined wildflower meadow.

7.3 Tree & Hedge Identification Diagram

Diagram Key:

Nett site area: 3.63 ha

Total no. trees proposed for site: 418c.
16 no. retained trees & 402c. no. proposed trees

01 Existing Trees to Be Retained
01 Proposed Trees
01 Proposed Hedging

Tree Species
1. Alder (alnus glutinosa)
2. Arbutus/ Strawberry Tree (arbust unedo)
3. Ash (fraxinus excelsior)
4. Aspen (populus tremula)
5. Birch - Silver (betula padus)
6. Beech (fagus sylvatica)
7. Cherry - Bird (prunus padus)
8. Elm - Wynch (ulmus glabra)
9. Hazel (corylus avellana)
10. Hawthorn - Standardised (crataegus monogyna)
11. Oak - Sessile (quercus petraea)
12. Rowan/ Mountain Ash (sorbus aucuparia)
13. Scots Pine (pinus syvestris)
14. Sycamore (acer pseudoplatanus) *
15. Whitebeam (sorbus hibernica)
16. Crab Apple (malus sylvestris)

Hedging
A. Bay (laurus nobilis)
B. Miniature Leaf Spindle (euonymus japonicus microphyllus)

	Existing Trees Retained	16 no.
	Street Trees New	103 no.
	Garden Trees New	119 no.
	Boundary Trees	180 c.
	Hedge Planting – Traditional Landscape	
	Native Hedgerow – Wildlife Zone	

* Retained Existing Trees - (no new Sycamore proposed)

Figure 7.1 – Tree & Hedge Identification Diagram

7.4 Ground Cover Planting Diagram

Diagram Key:

Nett site area: 3.63 ha

Proposed Historic Shrubs

1. Hydrangea (Serrata – Bluebird).
2. Forsythia Iintermedia (Lynwood Variety).
3. Crabapple (Malus sylvestris).
4. Spotted Laurel (Aucuba Japonica).

- Ground Cover Shrubs & Pollinator Planting.
- Shrubs - Historic.
- Flowering Lawn.
- Wildflower Meadow.
- Native Hedgerow - Wildlife Zone.
- Bee Orchid Meadow.
- Wood Land Bulbs.
- Hedge Planting – Traditional Landscape

Figure 7.2 – Ground Cover Planting Diagram

8. Green Infrastructure Biodiversity & Wildlife

8.1 Sustainability

Existing Built Environment

Ballinacurra has archaeological and architectural heritage sites in particular at the Mill Buildings (Malt Houses) and at Rose Hill (House).

The design approach to the site incorporates the context of the notable existing buildings integrating new buildings and creating new urban space referencing the existing development pattern of the town.

New Planting Structure

Planting aims to encourage biodiversity by concentrating on native trees, and natural planting forms. The scheme includes:

- The creation and enhancement of hedgerows / a wildlife zone to the southern site boundary.
- The planting of mainly native trees and shrubs suitable for the long term site objectives of biodiversity. definition of space, screening, seasonality and restoration of character.
- Careful consideration of maintenance and management requirements for the future.
- Environmental benefit with access and circulation routes for pedestrians and cyclists through various planted spaces.
- The provision of nature based, safe and healthy recreational spaces which promote activity and social interaction.
- Provision of quality residential environments supported by planting to encouraging sustainable communities.

8.2 Biodiversity Enhancement

Biodiversity potential on the site may be enhanced by measures including:

- Significant native tree planting
- Native woodland / hedge planting
- Native Woodland ground planting
- Native Bulb planting
- Pollinator Planting
- Native Species Meadow Planting
- Native Species Flowering Lawn

The proposed native tree planting and landscaping enhances the amenity and character of the site. Biodiversity is encouraged with the introduction of native hedgerows, native trees and flowering lawns and meadows. The scheme proposes the creation of natural environments by the introduction of native only planting in the majority except for pollinator species and ornamental hedging.

Existing Wildlife

The proposals aim to support new and existing wildlife habitat and its further diversification. The scheme aims to manage impacts of the development by means of remediation and proposes to increase habitat

Bats – Habitat Creation - Bat Boxes

It is proposed to install bat boxes on built structures. Bat boxes are south and north facing to provide winter and summer roosting opportunities. They are a minimum of 3m above ground level with the roost entrance not illuminated and placed in areas connected to surrounding vegetation. See Figure 5.1 – Bat & Bird Box Location.

Birds – Habitat Creation

Multiple bird species inhabit the site at present; this includes House Sparrows, Barn Swallows, House Martins & Swifts. Nesting boxes are placed a minimum of 4.5m above ground level. The entrances of the nesting boxes are not illuminated. Multiple nesting boxes are provided at all locations and no nest boxes are placed above one another. Hedgerows and trees may support additional habitat.

See Figure 5.1 – Bat & Bird Box Location.

Swifts

It is proposed to install artificial nesting boxes below eaves level along the western elevation of the Malt House and Kiln building. A minimum of 20 swift nesting boxes are proposed.

Barn Swallows

Artificial swallow nest cups are proposed to the underside of balconies on the West and East Elevation of the Malt House and Kiln Building. 10 nesting cups are proposed to be installed.

House Martins

The outbuildings of Rosehill House are proposed to be constructed in a manner to facilitate nesting by House Martin. Outbuildings to incorporate 150mm cast gutters on traditional brads with 150mm masonry roof overhang. One no. nesting box is also proposed underneath the gutters of the outbuildings at Rosehill House. Two nesting boxes are also proposed on the northern elevation of the Maltings building, with a roof overhang of 150mm.

Kestrels

Kestrels were identified on the site. It is proposed to install an artificial nesting box to one of the blank windows at the 3rd floor level of The Malt House on the east facing elevation away from opening windows reducing disturbance or human activity. See Figure 5.1 – Bat & Bird Box Location.

Non-Volant Mammals

The proposed site is currently suitable for Hedgehogs, Badgers and Foxes. To support these species a wildlife zone is proposed. Post and wire fencing is proposed at the rear part of all gardens to facilitate access for hedgehogs throughout the site. Post and wire fences allows for mammal movement. The fencing is a box based design to contain domestic dogs.

Ornamental hedges are proposed in double rows to create quiet shaded areas for mammals.

Hedgehog domes are proposed within the wildlife zone.

Planting for Wildlife & Climate Resilience

Substantial tree planning is proposed to replace trees removed to facilitate the construction works.

Adaptive Use - Existing Structures

It is proposed to allow bat habitat in the roof structures of the outbuildings to Rose Hill (House) and the Mill Buildings at The Kiln Building roof structure. Refer to section 5.5.1.4 of Ecological Impact Assessment Report for detail on minimum requirements for adapting roof structures for bats.

8.3 Bat and Bird Box Locations

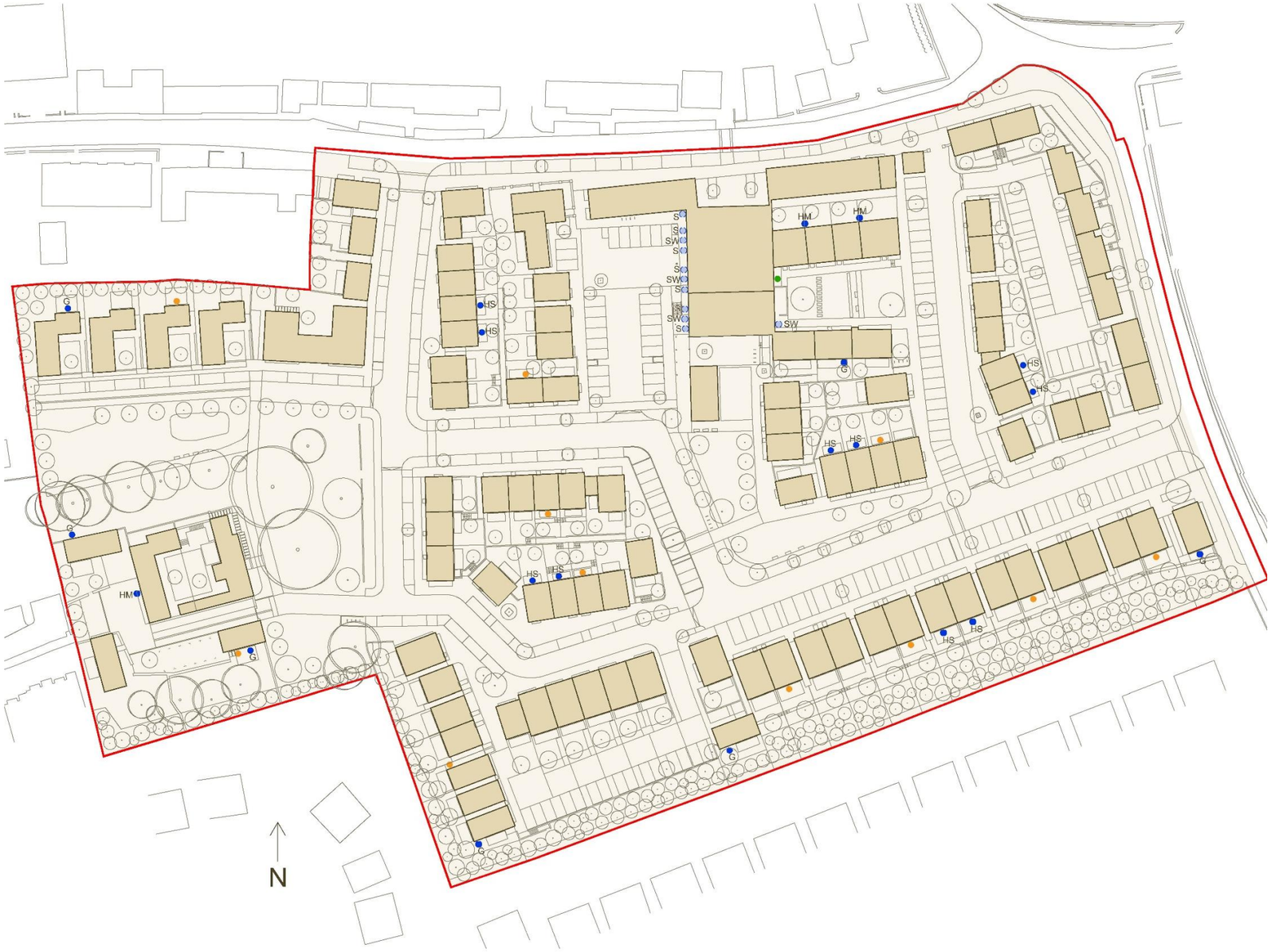

Diagram Key:

Nett site area: 3.63 ha

- Bat Box - Schwegler 1WI and 1WI
- G – General Bird Box - 07 no. sites – Schwegler 1MR and 2MR
- HS – House Sparrow - 10 no. sites – Schwegler 1SP
- HM – House Martin - 03 no. sites – Schwegler no. 11
- S – Swift - 20 no. sites – Schwegler no. 17
- SW – Barn Swallow - 10 no. sites – Schwegler no. 10B
- Kestrel - Min. of no.1 box at 4th floor level

*Box specification to standards noted in Schwegler product specification. Equivalent products may be used as approved by ecologist.

Figure 8.1 – Bat & Bird Box Location Diagram

9. Maintenance & Landscape Works

9.1 Green Landscape & Planting

This section outlines proposed maintenance and management plans for the establishment and ongoing green infrastructure maintenance of the proposed development. A defects period applies to all soft green infrastructure landscape works carried out. Landscape works require continuous maintenance and repair. The proposals here aim to reduce the maintenance liability by design.

A. Site Clearance - General

Remove rubbish, concrete, metal, glass, decayed vegetation, weed growth, large roots and contaminated topsoil and stones over 25mm.

Contamination

Remove material contained toxins, pathogens or other extraneous substances harmful to plant, animal or human life. In accordance with current Health and Safety legislation.

B. Weed Control

Remove all undesirable weeds from the site including Ragwort, Himalayan Balsam, Giant hogweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. Japanese Knotweed has not been identified on site.

Planting Conditions

Soil for cultivating and planting

Healthy, composted, crumbling and wet but not waterlogged.

Weather

Avoid planting in high winds or drought conditions and avoid planting in frosty conditions. If planting with frost protect roots and lower trunks. Adhere to planting season as follows:

Deciduous Trees and Shrubs

October / November to March / April.

Evergreens/ Conifers

October/ November or February / March.

Watering

Wet full depth of topsoil, applying evenly and without damaging or displacing plants or soil as often as necessary to support wellbeing of planting.

Planting & Mulching

Mulch should be free from toxins, pathogens or other material that may be harmful to plant or animal life.

Plants/Trees – General

Condition - Materially undamaged, sturdy, healthy and vigorous.

Appearance - With good shape and without weak or delicate shoots.

Hardiness - Grown in suitable environment and hardened off outside.

Health - Plants free from pests, diseases, discoloration, weeds and physical disorders.

Budded or Grafted Plants - Bottom worked (ground level).

Root System and Condition - Healthy, undamaged, in balance with branch system.

Species - True to name and description.

Labelling & Information

Provide each plant / tree or plant group / trees of a single species or grown cultivar with supplier's labelling indicating@

- Full botanical name, total number, number of bundles, part bundles.
- Supplier's name
- Employer's name and project reference.
- Plant specification, in accordance with scheduled National Plant Specification Categories and BS 3936.

Labelling may require one or more labels of a durable nature.

Plant / Tree Substitution

Plants / trees unobtainable at time of ordering having searched extensively for such and with no option and in exceptional circumstances only. Submit alternatives, stating the price and difference from specified plants/ trees. Obtained employers approval for change.

Plant Handling, Storage Transport and Planting

Standard - To Horticultural Trades Association Handling and Establishing Landscape Plants.

Frost - Protect plants from frost using shelter indoors or cover.

Handling - Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.

Planting - Upright or well-balanced presented with best side forward.

Treatment of Tree Wounds - Cutting

Keep wounds as small as possible. Cut cleanly back to sound wood using sharp, clean tools. Leave branch collars intact. Do not cut flush to stem or trunk. Ensure that water will not collect within a cut part.

Container Grown Plants/ Trees

Growing Medium / Soil - With adequate nutrients for plants to thrive until permanently planted.

Plants - Centred in containers, firmed in and well watered.

Root growth - Substantially filling containers, not root bound, and in good condition conducive to successful transplanting.

Hardiness - Hardened out in the open air for reasonable time of months.

Containers - With adequate drainage when placed on any substrate commonly used for irrigation.

Protection of Lawn - Flowering

General - Protect areas affected by planting operations using boards/ tarpaulins for a minimal period.

Excavated or Imported Material - Do not place directly on grass.

Surplus Material

Remove subsoil, stones, debris, wrapping material, pots, canes, ties, temporary labels, pruning's and all other surplus material arising from the works.

General Planting/Seeding

Planting to be carried out within the contract period but not during periods of frost, drought, cold drying winds or when the soil is waterlogged, or when the moisture of the soil is excessive.

All containers and protective coverings including biodegradable coverings to root systems to be removed before planting. Roots, except for emergent vegetation, to be teased gently from the outer root-ball. Plants to be planted upright or placed with care. Extreme care is to be taken to avoid damage above and below ground. The original soil mark on the stem must be at finished ground level after planting. After planting, lawn seeding, the soil over the planted, seeded or turfed area to be watered to achieve capacity. On completion of planting, watering and mulching, all areas to be left tidy and weed-free and to be maintained in a tidy and weed-free state until completion of the works a date established before commencement with the employer. For shrub and transplant pit planting, notch planting and ordinary planting, the plant positions to be set at equal centres to obtain a natural dense cover when mature. For notch and pit planting plants to be planted in parallel lines. Planting positions in each row to be staggered with previous rows. Finely separated backfill material to be carefully spread around roots and root trainers of plants. Ensure that all gaps are filled with soil and then be consolidated by heeling. Careful filling and heeling to continue as necessary at 150mm approximate layers.

Mulching

Newly planted shrub areas to be mulched immediately after planting to a depth of 50mm. Mulch to be coarse chipped tree bark, composted for 2-4 months. Particle size circa. 50mm diameter.

After Planting & Mulching

Watering - Immediately after planting, thoroughly and without damaging or displacing plants or soil.

Firming - Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.

All areas to be left tidy and weed-free and to be maintained in a tidy and weed-free state until completion of the works.

Tree Planting

Tree Pits

Sizes: At least 300mm greater than rootball in all directions.

Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.

Pit bottoms: With slightly raised centre. Break up to a depth of 100mm.

Pit sides: Scarify / Break.

Semi-Mature Trees

Standard - Prepare roots and transplant to BS 8545. Planting to be carried out by positioning the tree in the centre of the pit closely against the tree stake and spreading the tree roots with care.

Backfilling Material - Prepared mixture of topsoil excavated from pit and additional compost as required.

Ties - Immediately following planting, trees with stakes to be secured with tree ties. Tree ties to be fixed so that movement of the tree to not cause damage or abrasion to the bark, top tie to be 100mm below top stake.

Staking

Use softwood, peeled chestnut, larch or pine, straight, free from projections and large or edge knots and with pointed lower end. Adjustable rubber ties designed to prevent injury and approved by the employer to be fixed to all trees and at the correct size for the tree.

Mulch Circles

All existing trees/newly planted trees within open grass areas or grass verges to have 50mm depth mulch circle of a maximum 1m diameter or as allowed by verge width.

Shrub Planting

All shrubs are to be pit planted. General pit dimensions are to be wide enough to accommodate roots when spread and 100mm deeper than root system. Break up base of pit to a depth of 100 mm, incorporating soil conditioner at approximately 50 g/m². Pits to be backfilled with previously excavated material enriched as appropriate. Backfilling to be done in layers of 150mm depth; at each stage the filling to be firmly consolidated. Soil additives can be premixed with the soil applied or mixed in during planting. Soil additives to consist of an approved compost at 10L per m2 average; and 150g/m2 slow release fertilizer, or as approved and appropriate to each circumstance. All shrub areas to be finished, with 75mm average of medium grade approved mulch.

Hedgerow Planting

Preparation - Tench to 500mm width for a staggered row, ensuring pit base is broken up 100mm deeper than plant root ball.

Additives - Compost at 10lt/m2 with slow release fertiliser at 150g/m2 approximately.

Planting - Mix in soil additives with excavated topsoil, or if there is poor topsoil then mix in with imported new topsoil. Firm down topsoil lightly in layers of 150mm by treading.

Additional Requirements - If there is no existing fencing or barrier, install a protective fence / wind breaker until hedge is established. Check that planting is protected from pests and livestock. With employers' permission and approval install a stockproof fence or electrical fence 1m from hedge line to livestock until hedge is established. Prior to new growth cut the hedge back by 300mm to encourage new growth outside of growing season.

Removing Trees & Shrubs

Identification - Clearly mark trees and hedges to be removed.

Work near Retained Trees - Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.

Failures of Planting & Replacements

Defects due to materials or workmanship not in accordance with the specification's guidance or common understanding for plants/ trees/ shrubs that have failed to thrive.

- Exclusions: Theft or malicious damage after completion.
- Rectification: Replace with equivalent plants/ trees/ shrubs.

Replacements - To match size of adjacent or nearby plants of same species or match original specification, whichever is greater.

Grass Seeding

Herbicide Application - No glyphosate or other controlled chemical pesticides.

Cultivation - Compacted Topsoil to be broken up to full depth.

Soil additives / enrichers / conditioner/ fertilizer. - To be used to boost late seeding only. Type to be used is to be agreed with the employer depending on the time of year and the condition of the soil.

Tilth / Soil Condition - Reduce topsoil to a tilth suitable for blade grading of approximate depth of 75 mm and particle size 20 mm down.

Material brought to the surface. - Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

Topsoiling & Subsoil - Lawns

Areas to be reinstated to be top soiled to a min. depth of 200mm, provided as necessary to make up any deficiency of topsoil existing on site and to complete the work.

Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive or flammable; hazardous to human or animal life; detrimental to healthy plant growth. Defer strictly to Council rules on topsoil movement and licencing. Refer to BS3883.

Do not leave waste or large objects in subsoil and ensure subsoil id appropriate to growth and in good condition.

Grading

A fine graded finish to bring the ground to a uniform and even grade at the correct finished levels with smooth, flowing contours is required. Topsoil should be reasonably dry and workable. Contours to be smooth and flowing, with falls for adequate drainage. Hollows and ridges are not approved. Finished levels after settlement to be 25 mm above adjoining paving, kerbs, manholes etc.

Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150mm on completion.

Fertilizer for Seeded Areas

Apply for lawns superphosphate with a minimum of 18% water-soluble phosphoric acid and a sulphate of ammonia with a minimum of 20% nitrogen. Apply before final cultivation and three to five days before seeding/turfing if advised for flowering lawns or as advised. Spread evenly, each type at 70 g/m², in transverse directions.

Final Cultivation

Timing: After grading and fertilizing.

Seed bed: Reduce to fine, firm tilth with good crumb structure.

Depth: 50-100mm.

Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.

Remove surface stones/earth clods exceeding: Pastoral areas: 50mm. Fine lawn areas: 10mm.

Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

Grass Seed / Grass / Flowering Seed Mix

All seeds to carry appropriate certificates. Seed to be purchased as fresh. Seed to be stored under non-transparent wrapping, off the ground, in a dry, shaded place, in well-ventilated conditions under cover and to be protected from vermin and contamination until required for use.

Sowing

General: Establish good seed contact with the root zone to suit soil type, proposed usage, location and weather conditions during and after sowing. Carry out two equal sowings at right angles to each other. Fence off areas with suitable fencing to stop people or animals from trampling new growth.

Lawn / Flowering Lawn Sowing Season

April to June or August to November.

Cleanliness of the Works

After completion of all works remove all debris and waste material from site. Remove soil from hard surfaces and grassed areas. Leave the works in a clean, tidy condition at completion and after maintenance works.

Standards for the Works

Planting Standards and Specifications - Not exhaustive

BS 3882	Specification for topsoil and requirements for use.
BS 3883	Topsoil
BS 3936-1 to 10	Specification for the supply of nursery stock.
BS 3998	Tree Works: Recommendations.
BS 4428	Code of Practice for general Landscape Operations.
BS 5837	Tree in relation to Construction.
BS 7370-1 to 10	Grounds Maintenance.
BS 8545	Trees: from nursery to independence in the landscape- recommendations.
BS 8601	Specification for subsoil and required use.

Use latest publications for each document.

9.2 Maintenance Plan

Maintenance programme organised on the basis of specific performance standards. These are to be met by the contractor and be the basis on which this contract will be assessed. Along with these performance standards a monthly report sheet to be filled out and returned each month. Details of the performance standards are outlined below.

Remove all noxious and undesirable weeds from the site. Weeds include but are not limited to: Ragwort, Himalayan Balsam, Giant Hogweed & Japanese Knotweed, Clematis Vitalba (Old Mans Beard) Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by guidance. Notify identification of Japanese Knotweed & Giant Hogweed and others as directed by guidance and manage as directed only and with great care and consideration of method application. Refer to Waste Management Plan, NIS and legislation.

Lawns / Flowering Lawns

Lawn Areas

Cut grass areas to achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass and appropriate flowering species. No more than 5% of the grass areas to contain dicotyledonous (dicots) weeds, except for intended flowering species. Lawn cutting to not be carried out during excessively wet or waterlogged conditions.

Mowing

Where practical use a cylinder mower, otherwise a rotary mower may be used. All clippings to be collected and sent to the composting area. Lawn grass cutting to be carried out every 15 days during the growing season at recommended heights, (throughout the period of March to October), but need to be adjusted according to season's weather conditions. Flowering lawn is mown as you would a conventional lawn; but not too short; 30 - 50

mm in height. The mowing regime can be suspended at the end of June for up to eight weeks, allow for flowering.

Weed Control

Weeds to be removed by hand or dug out according to guidance (except for Invasive Species which may require specific approach.)

Fertilizer

Approved natural fertilizer may be used if growth / establishment is limited or yellowing occurs as approved by seed supplier and as agreed with the employer / management body.

Amenity Grass Areas

Amenity areas may have the addition of sturdier grass to flowering lawns for durability and may be cut locally in areas to support play areas if desired.

Edging and Strimming

Grass edges along pathways, planting borders, roadways, trees, lampposts, signs and any other obstacle to be kept neat and tidy at all times using hand tools making sure to work in hours as agreed with management and reducing disturbance and noise pollution.

Between the months of March and October inclusive edging to be carried out to all areas of grass abutting isolated/ specimen trees or shrub borders or mulch circles. These areas to be maintained using a half moon tool or similar to maintain straight or curved defined line and to be carried out a minimum of 2 - 3 times per year.

Mowing strips against permanent obstacles to be a max. width of 150mm and to be maintained using a hand strimmer. Large areas of desiccated/ burnt off grass are not permitted. Strimming to be carried out a min. of 12 times per year.

Grass clipping and all arisings to be swept up and removed off site.

Spring Bulbs in Grassed Areas

For strong regrowth cut lawns populated by spring bulbs once the leaves of the bulbs have died down and/or yellowed completely. Initially reduce height by one third, followed by a 2-3 stage further reduction over two weeks to achieve desired height.

Failed areas

Areas of lawn which fail or are damaged or worn to be reinstated by re-turfing or re-seeding in accordance with the original or preferred specification.

Shrub Planting

Shrub areas to be kept litter and weed free, particularly of perennial weeds. Healthy growth to be maintained to cover as much as possible of the planting area and allowing the individual plants to achieve a natural form. With the exception of hedges, boxing or pruning is not encouraged but to avoid obstructing pathways or sightlines.

Pruning / Cutting Back

In general pruning to be done to support natural growth. Dead, damaged and diseased portions of the plant may be removed but may also remain as decorative in winter. Cuts to be flush and clean, leaving no stubs or tearing of bark. All major pruning to be done following flowering or during plant's dormant season. Emergency or minor pruning to be done when needed. Remedial attention and repair to shrubs to be provided as appropriate by season or in response to incidental damage. Areas of natural planting / wildlife zone as indicated to be contained by trimming once per year.

Wildlife Protection

All clearance operations or cutting within woodland, hedging and scrub areas to be carried out outside of the Birdnesting season to preserve the bird life in the area. This season extends from the 1st March to 31st August.

Mulching

Shrub beds to contain a min. depth of 50mm bark mulch throughout the year. Mulch is not generally required in areas where plant foliage covers the soil surface, such that the soil is not visible. While carrying out spot treatment to remove weeds do not cultivate or incorporate mulch into the soil. Any mulch outside of designated planting areas to be returned to the planted area on a weekly basis.

Mulch to be uniform in colour and appearance, and free of leaves, sticks, or trash. When replacing existing mulch, use a mulch product that is similar in appearance to that already at the site.

Weed Control

Planting beds to be maintained relatively weed free (no more than 5% of weed cover at maximum) by hand weeding. Saplings to be removed from all planting areas on emergence. Areas of natural planting / wildlife zone as indicated to be weeded as appropriate once per year or more if required for management of a healthy environments for wildlife and native hedgerow.

Tree Planting Care

Trees to be maintained in a healthy, vigorous growing condition with a well-shaped framework for future growth.

Tree Planting Maintenance

In Spring and Autumn of each year during the maintenance period check trees, stakes, rabbit guards and ties and adjust, the soil firmed, any dead wood removed back to healthy tissue and mulch adjusted to original levels. Any broken stakes or ties evident throughout the maintenance period to be replaced.

A 1m-diameter mulch circle to be maintained at the base of each tree located in open grass areas or grass verges. Top up bark mulch to 75mm where required and make good any mulch mats.

All clearance operations within woodland, hedging and scrub areas to be carried out outside of the Birdnesting Season to preserve the bird life and wildlife generally in the area. This season extends from the 1st March to 31st August.

Litter Clearance / Pick-up

The maintenance contractor to maintain all areas free from litter. This means the removal of all litter, rubbish and any other unwanted debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.

In addition to removal of litter from footpaths, planted areas, etc., the contractor to make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has deliberately been deposited on site by persons known or unknown (fly-tipping).

Watering

During the first growing season all standard trees / semi-mature trees to be watered at least five times during the growing season - in April, May,

June, July and August unless otherwise directed by the Landscape Architect / Employer. During the second growing season trees to be well watered, particularly during June, July and August.

The edge of the mulch circle to be maintained in a neat and tidy condition as appropriate to the location. The surface of all planting pits is to be kept free of weeds during the maintenance period by mechanical weeding of annual weeds and perennial weeds - to be carried out with fortnightly regularity during the growing season.

Tree Stakes and Ties

Check tree stakes and ties on each maintenance visit. Repair, strengthen and adjust (loosen / tighten) to ensure optimum functioning and trees not being damaged by poor fixings. If trees no longer require stake / ties may be removed. Check all tree stakes and ties regularly.

Woodland / Scrub / Wildlife Area Management

Woodland / hedgerow areas specified to be maintained in a healthy, vigorous condition and free from litter and invasive weeds. Some thinning of woodland may be required over the 5-year period.

Replacements

Any tree, hedge or shrub that is removed, uprooted, destroyed or becomes seriously damaged, defective, diseased, or dead to be replaced in the same location with another plant of the same species and size as that originally planted within the defect period after planting. All such replacements to be carried out in the first available planting season after the requirement to do so is recognised.

10. Reference

CCC- Cork County Council Tree Plan

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Alder	*Alnus glutinosa*	20m+	Found in a wide variety of conditions. Prefers wet ground & watercourse banks. Good for stabilising riverbanks. Does not like dry sandy ground. Observed to have some tolerance to salt & air pollution.	Neutral to Alkaline	✓		✓			✓			✓	Birds, Insects, Squirrels, Mosses, Lichens, Fungi
Arbutus / Strawberry Tree	*Arbutus unedo*	5-10m	Nutrient rich, well-drained soil in sun or semi-shade. Needs a warm microclimate to perform well. Observed to have some tolerance to salt. Does not like cold, drying winds.	Acidic to Neutral				✓			✓	✓	✓	Birds, Insects
Ash	*Fraxinus excelsior*	20m+	Thrives best in fertile, deep & well-drained soil in cool atmospheres. Does not like waterlogged sites.	Neutral to Alkaline	✓		✓		✓	✓	✓			Birds, Bats, Small Mammals, Insects, Mosses, Lichens
Aspen	*Populus tremula*	20m+	Thrives in open sunlight & moist soil. Fast growing. Tolerant of exposed, windy sites with some tolerance to salt. Does not like very dry sites. Low tolerance to herbivory.	Neutral to Alkaline			✓			✓	✓			Birds, Insects, Lichens
Birch - Downy	*Betula pubescens*	10-20m	Tends to grow on damper soils than Silver Birch & can even tolerate peat bogs & clay. Low tolerance to shade. Require good crown space in order to	Acidic to Neutral			✓	✓		✓		✓		Birds, Bats, Insects, Lichens, Fungi, Deadwood

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			develop into mature tree. Sensitive to weed competition during establishment.											
Birch - Silver	*Betula pendula*	10-20m	Thrives best in a sunny position & well-drained soils. Require good crown space in order to develop into mature tree. Sensitive to weed competition during establishment.	Acidic to Neutral			✓	✓	✓	✓		✓		Birds, Bats, Insects, Lichens, Fungi, Deadwood
Blackthorn / Sloe	*Prunus spinosa*	0-5m	Grows best in moist, well-drained soil & thrives in full sunlight. Grows naturally in scrub, copses & woodland. Can grow in exposed & windswept coastal conditions. Does not like very wet conditions.	Acidic to Alkaline		✓					✓	✓	✓	Birds, Insects, Small Mammals
Broom	*Cytisus scoparius*	0-5m	Grows best on light, dry, acid soils. Does not like wet conditions.	Acidic to Neutral		✓						✓		Insects
Buckthorn - Alder	*Frangula alnus*	5-10m	Wide variety of conditions. Prefers wet ground & open woods, thriving in scrub, hedgerows, wet heathland, riverbanks & bogs.	Acidic		✓						✓	✓	Birds, Insects
Buckthorn - Purging	*Rhamnus cathartic*	0-5m	Grows well in most soils & sunny conditions. Not	Alkaline		✓							✓	Birds, Insects

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						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			tolerant of heavy shade or very dry sites.											
Cherry - Bird	*Prunus padus*	10-20m	Commonly found in wet woodland, hedgerows & stream & riverbanks. Does not like exposed sites.	Acidic to Neutral			✓	✓	✓	✓		✓	✓	Birds, Insects, Mammals
Cherry - Wild	*Prunus avium*	10-20m	Grows best in full sunlight & fertile soil. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. Observed to have some tolerance to air pollution.	Neutral to Alkaline	✓		✓	✓				✓	✓	Birds, Insects, Mammals
Crap Apple	*Malus sylvestris*	5-10m	Thrives best in heavy, moist, well-drained soil & areas of scrub. Low tolerance to waterlogged sites. Trees production of nectar, pollen and fruit optimised in more open environments.	Neutral to Alkaline		✓	✓	✓		✓		✓	✓	Birds, Insects, Mammals
Dog Rose	*Rosa canina*	0-5m	Found in a wide variety of conditions. Does not like wet soils or exposed sites.	Neutral to Alkaline		✓						✓	✓	Birds, Insects, Small Mammals
Elder	*Sambucus nigra*	5-10m	Grows in woodland, scrub, wasteland & along hedgerows. Suitable as an understorey tree in new woodland. Low tolerance to waterlogged sites.	Neutral to Alkaline		✓	✓	✓				✓	✓	Birds, Insects, Mammals, Fungi

Cork County Council recommended list of native tree and shrub species. Prepared by CCC Ecology Office, Ver 2, June 2022.

Cork County Council Recommended List of Native Tree and Shrub Species for Residential & Industrial Developments														
Native Tree & Shrub Species	Scientific Name	Height (m)	Site Preferences	Soil PH	Tolerates shade	Suitable for					Tolerates Coastal Sites	Conspicuous Flowers / Catkins	Fruit / Berries / Nuts	Biodiversity Value
						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Elm - Wych	*Ulmus glabra*	20m+	Found in a wide variety of conditions. Prefers fertile free draining soils. Fast growing. Good tolerance to salt and air pollution. Does not like very dry sites.	Neutral to Alkaline	✓		✓				✓			Insects, Squirrels, Lichens, Deadwood
Gorse	*Ulex Europeaus & Ulex gallii*	0-5m	Prefers well drained sandy/acid soil. Does not like poorly drained heavy clay soils.	Acidic to Alkaline		✓					✓	✓		Birds, Insects
Guelder Rose	*Viburnum opulus*	0-5m	Found in damp places along riversides & in fens, scrub & old hedgerows. Does not like acid soils.	Neutral to Alkaline	✓	✓						✓	✓	Birds, Insects, Small Mammals
Hawthorn / Whitethorn	*Crataegus monogyna*	5-10m	Found in a wide variety of conditions but commonly found growing in hedgerows, woodland & scrub. It will grow in most soils, but flowers & fruits best in full sun. Tolerant of urban pollution. Does not thrive in wet sites or very acid soils. Suitable as an understorey tree in new woodland. Can grow to 15m+	Neutral to Alkaline	✓	✓	✓	✓		✓	✓	✓	✓	Birds, Insects, Small Mammals

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Hazel	*Corylus avellana*	5-10m	Prefers heavier fertile soils. Found in the understorey of woodland, & in scrub & hedgerows. Does not like acid soils. Suitable as an understorey tree in new woodland. Low tolerance to waterlogging.	Neutral to Alkaline	✓	✓	✓	✓				✓	✓	Birds, Insects, Squirrels, Small Mammals, Mosses, Lichens
Holly	*Ilex aquifolium*	10-20m	Hardy species. Found commonly in woodland, scrub & hedgerows. Tolerant of urban pollution. Does not like wet, poorly drained sites. Suitable as an understorey tree in new woodland.	Acidic to Neutral	✓	✓	✓	✓			✓	✓	✓	Birds, Insects, Small Mammals, Lichens
Honeysuckle	*Lonicera periclymenum*	5-10m	Climber. Occurs naturally in woodland, scrub or hedgerows.	Acidic to Neutral	✓	✓		✓		✓		✓	✓	Birds, Insects
Juniper	*Juniperus communis*	5-10m	Thrives in moorland & in rocky areas. Very tolerant of exposure. Low tolerance to shade.	Neutral to Alkaline			✓	✓					✓	Birds, Insects
Oak - Pedunculate	*Quercus robur*	20m+	Prefers clay soils & damp lowlands. Must have plenty of space. Does not like badly drained infertile soils. Observed to have some tolerance to salt and air pollution.	Neutral			✓				✓		✓	Birds, Bats, Insects, Squirrels, Small Mammals, Lichens, Deadwood, Fungi

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						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
Oak - Sessile	*Quercus petraea*	20m+	Very frequent on acidic soils in mountainous areas. Must have plenty of space. More shade tolerant than Pedunculate Oak. Does not like badly drained infertile soils. Observed to have some tolerance to salt and air pollution. Sessile Oak is the National tree of Ireland.	Acidic to Neutral			✓				✓		✓	Birds, Bats, Insects, Squirrels, Small Mammals, Lichens, Deadwood, Fungi
Rowan / Mountain Ash	*Sorbus aucuparia*	10-20m	Very hardy. Grows in poor thin acid soils. Tolerant of exposed sites & urban pollution. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. Very sensitive to herbivore browsing in establishment.	Acidic to Neutral		✓	✓	✓	✓	✓	✓	✓	✓	Birds, Insects, Lichens
Scots Pine	*Pinus syvestris*	20m+	Prefers light sandy soils/also peaty acid soils. Thrives in heathland. Does well on dry sites. Does not like limestone soils or exposure to sea winds. Low tolerance to shade and herbivore impacts.	Acidic to Neutral			✓						✓	Birds, Bats, Insects, Mammals, Lichens
Spindle	*Euonymous eoropaeus*	5-10m	Found in a wide variety of conditions. It thrives in limestone and shale soils. Found commonly on the edges of forests & in	Neutral to Alkaline	✓	✓	✓	✓	✓		✓		✓	Birds, Insects

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						Natural Hedgerow	Open Space	Garden	Street Trees	Industrial Sites				
			hedges, scrub & hedgerows. Suitable as an understorey tree in new woodland.											
Whitebeam	*Sorbus hibernica*	10-20m	Found in a wide variety of conditions. Tolerates coastal exposure, rocky ground & fairly damp sites. Can be very sensitive to poor soil aeration so should not be planted in heavy, frequently waterlogged or compacted soil. This tree only occurs in Ireland and is one of our few endemic tree species.	Neutral to Alkaline	✓		✓	✓	✓		✓	✓	✓	Insects
Willow	*Salix spp.*	5-10m	Found in a wide variety of conditions (depending on species). Prefers wet ground & watercourse banks. Good for stabilising riverbanks. Fast growing. Do not like dry sites. Some species can grow to 15m+. Some species can hybridise freely.	Alkaline			✓			✓	✓	✓		Birds, Insects, Lichens, Fungi, Deadwood
Yew	*Taxus baccata*	10-20m	Prefers to grow in well-drained soil. Tolerant of exposure & urban pollution. Slow growing. Does not like very wet sites. Also used as a hedging plant. Can grow to 20m+.	Neutral to Alkaline	✓		✓	✓		✓			✓	Birds, Insects, Small Mammals.