

REPORT: LANDSCAPE DESIGN REPORT.

PROJECT: JACOBS ISLAND, CORK. SHD APPLICATION.

DATE: JUNE 2022.

Landscape Design Report,

Public Realm and Landscape Strategy.

1.0 LANDSCAPE DESIGN

Doyle + O'Troithigh Landscape Architecture Ltd, were appointed as part of the project team for the Jacobs Island Cork SHD Development, to prepare the landscape design proposal in association with the Project Architect, O'Mahony Pike, for a series of implementable landscape designs which are coordinated within the surrounding urban environment.

Doyle + O'Troithigh Landscape Architecture Ltd are a landscape architectural firm with a collective experience over 30 years. A principle of our design is the development of positive open spaces.

1.1 The design of positive open space

Public spaces between buildings influence both the built form and the civic quality of the development. A balanced approach to the design of the public space centred on the relationship between the buildings and their surrounding open space will allow for the design, development and management of a public realm which can be used for a variety of amenities throughout the year; in doing so, adding to the quality of life of the future end users. The design of public open space must be 'open minded', in that it does not try to define specific activities but can accommodate a range of them. Whether large or small, good open space is human in scale.

Research undertaken for the UK's Commissions for Architecture and the Built Environment has shown that good quality public open space makes a tangible difference to people's lives.

Landscape design objectives include:

- Manipulating the external environment to enhance the outdoor experience for all residents.
- Working with the site settings, considering the influence of the elements and positioning amenity areas with the sun in mind will allow us to add value to the landscape.
- Providing external areas which can be used all year-round, adding value to the development, and more importantly acting in a positive way toward the creation of a community spirit and sense of ownership.
- Enhancing the biodiversity and ecological value of the site.

Key considerations during the landscape design process include:

- Topography,
- Aspect,
- Wildlife and ecology (Urban Forestry)

- Open space networks, connectivity, and legibility (Making connections),
- The development of landmarks, focal points, vistas, and
- Management post construction.

1.2 Landscape Design Approach

Prior to commencing the design of the public realm and following a site visit Doyle + O'Troithigh established a set of core principles to give structure and guidance to the design intent. The principles are:

- Permeability, with connection to the surrounding built environment and to the wider Lee to Sea pathway and Joe McHugh Park,



Fig 1, Lee to Sea path / cycle way



Fig 2, Joe McHugh Park

- The development of a strong central open space which will develop as a focal point for residents
- A coherent design which physically and visually connects the open spaces,
- The provision of a strong visual landscape which provides year-round interest
- The development of communal amenity areas which can cater for passive and active recreation for all abilities and age groups.
- The creation of 'green streets' and strong landscape buffer areas between the public and private realm.



Fig 3 + 4, Existing site conditions + vegetation

1.3 Design Requirements.

The designed landscape must be comfortable, passively supervised, accessible, welcoming, sheltered, and safe. The passive and active recreation open space developed within the three pocket parks areas must provide a high level of visual amenity while allowing for a seamless connection to the external public realm and wider local amenity areas.

The provision of permeability and improved overall pedestrian and cyclist's movement is one of the core principles of the site layout design. This principle is coupled with the design objective to provide landscape amenity areas which offer comfort, passive supervision, ease of access and a safe amenity space for all end users.

Second to the core principle of design is the development of a palette of materials for both hard and soft landscaping to both the amenity lands and the streetscape. To aid us during the process to select materials we have developed a simple check list of both hard and soft landscape materials.

Hard works materials must:

- Allow for ease of movement for all users
- Enhance the space and not conflict with the building finishes
- Work and look attractive in both wet and dry conditions
- Have a long timeline appeal with a low maintenance requirement

Soft works plant materials must:

- Be suitable for the Irish climate
- Be non-invasive
- Collectively provide visual interest all year round
- Enhance biodiversity and habitat creation
- Be disease resistant

By approaching the overall landscape design of the scheme at both macro and micro levels, the scheme delivered will provide a high level of amenity. Consideration will be given to the provision of a workable, aesthetically appealing, and robust scheme upon completion.

1.4 Hard landscape elements

The surface finish throughout the development will work with the proposed building finish to provide a high-end public realm, with a visual consistency across the entire site area, in doing so knitting the external landscape areas together to develop an address for the developed lands.

1.5 Soft landscape elements

The plant material for the proposed development will be chosen based on their long-term suitability and aesthetic appeal. We have categorised the site planting into the following key areas and types:

- Feature Trees within public open space,
- Smaller trees more suited to limited space/constrained planting zones (including over podiums),

- Street trees (columnar/ fastigate in form),
- Hedging,
- Ornamental shrub planting,
- Ornamental herbaceous planting,
- Bulb planting.

The key planting elements for the site can be largely broken down into the above plant categories. With a select number of plant material referenced to support this categorisation below. Detailed planting plans illustrating the species, size, location, type, and quantity have been prepared as part of the planning application to An Bord Pleanála, See Doyle + O'Troithigh Planting Plan PP-01-PP for details and PPL-01-PP for reference images of species selected from the planting schedule.

2.0 PERFORMANCE

The landscape design post construction will provide year-round visual interest, accessibility and usability providing the residents with the opportunity to develop a heightened experience of nature within the development. The completed landscape will be functional, comfortable, and distinct to the development.

3.0 WHOLE LIFE DESIGN

The landscape design to each site area (public, communal, and private open space) will cater for the needs of all various age profiles. The open-minded nature of the design provided will not limit use of the open spaces because of age, gender, or ability, and has been designed to develop clear and defined boundaries between the private, communal, and public open space, boundaries which have been absorbed into the design to allow for a seamless visual landscape.

4.0 DURABILITY

A long-term focus on improving health benefits with the introduction of formal and informal play has been considered from the outset. The central open space when fully designed as part of the SHD application will include the provision of a series of amenity green areas, a boules court, chess board, outdoor gym equipment and informal play area. A series of pedestrian connections from the central open space to the surrounding residential blocks and to the wider site environs have informed the outline landscape design layout.



Fig 5. Active and passive recreation areas.

Working with the topography to enhance the landscape proposed is considered key, and about establishing focal points within the central public open space which can cater for active and passive recreation and developing meeting points to help social interactions and develop communities.

The open space has been designed to address envisaged desire lines both to and from the site ensuring a cohesive design is adopted which will cater for all ages and abilities of end users and those within the wider community. The central open space will feature a small informal playground and will include a series of terraced landscape areas for formal and informal play which can function for a range of amenity opportunities.

5.0 Attenuation through a Sustainable urban Drainage systems SuDs

As part of the design and development of the open space areas, the development of a sustainable urban drainage systems will be included, these measures will work collectively to reduce surface run off rates. The measures will include.

- Roadside Bioretention Swales,
- Roadside Bioretention tree pits

Working with the Project Engineers the listed SuDs measures will be developed to work within the site design and will be incorporated where appropriate into the landscape and streetscape design. These measures work collectively to treat the surface water as part of the wider treatment train.

6.0 Pedestrian and cycling infrastructure

A key aspect of the scheme design is the development and delivery of coherent and comfortable pedestrian and cycling network which can facilitate direct connection to the wider environment including the existing Passage West Greenway.

With the site lands the pedestrian and cycle pathway network radiate from the central open space providing direct access from each residential block through the site and to the central open space area.

7.0 Site lighting

The design of the landscape has been developed with the provision of site lighting to all public areas. The tree species and their locations has been considered during the design process to ensure that the species type and or their locations do not have a negative impact on lighting, resulting in a reduction of lux levels. Working with the project M+E Engineers we can confirm that the landscape design collaborates with the proposed site lighting to safeguard that the required lux levels are delivered in a manner which works with the proposed site wide tree planting to deliver a considered and safe landscape.

As part of the review of the lighting layout with the M+E Engineers we have also consulted with the project Ecologist and where possible located the lights in a manner that provides dark open space areas. These areas are more environmentally friendly to animals in particular foraging bats.

8.0 SITE DESIGN

As part of the preplanning process a series of sketch proposals for the primary open space within the overall masterplan lands were submitted to Cork City Council for review. During the preplanning meeting with Cork City Council these landscape design proposals were presented and have been reviewed with the comments from Cork City Council and the An Bord Pleanala Section 5 opinion, informing the landscape plan submitted as part of the SHD application to An Bord Pleanala.

With the entire site area receiving a high-end landscape finish creating an address for the users and residents of the development, there are key areas within the site which provide passive and active amenity as public and communal open space areas, these include the following.

1. Central open space,
2. Blocks 11,13,14 and 15 Communal courtyards,
3. Block 12 entrance plaza,
4. Block 15 Entrance area to the communal courtyard.

The key areas are linked via a series of landscape streets which are planted, and tree lined to enhance green infrastructure across the site lands and to the wider environment. The development of a green infrastructure network across the site has been considered as part of the overall site landscape design and prepared with the project Ecologist and Arborist to provide a street scape with a species rich environment



Fig 6. Site Masterplan aerial view.

8.1 The central open space

The provision of a central open space / focal point is key to the success of the development. This green lung in the heart of the site with an area of 3,262 Sq/mtr will develop as a garden for residents and members of the public providing areas for passive and active recreation in a safe environment which is directly supervised by the surround building blocks.

The topography of the site has helped in the design of a landscape with an undulating and terraced finish. Creating pockets of interest within the overall envelop of the central open space. A key consideration in the design of this public open space area is the creation of **play and stay** areas.

The play areas will allow for informal play and ball games in a parkland setting with the stay areas being located to the periphery of the open space creating social spaces which allow for passive supervision of the play areas. This creates an open space which provides areas of interest and use for all age groups and can develop as a family orientated open space.



Fig 7. Open space site areas.



Fig 8. Central Open Space initial sketch design.

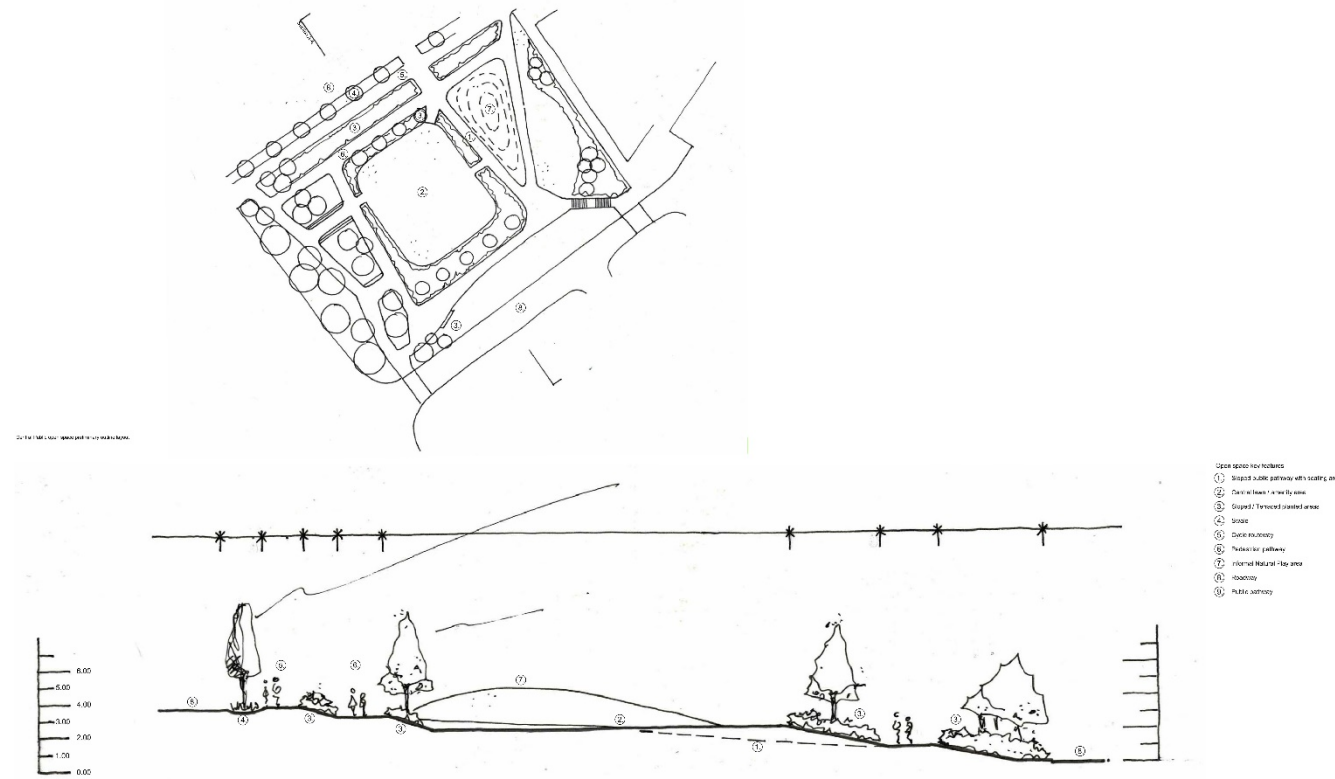


Fig 9. Sketch section to central open space.



Fig 10. Central Open Space illustrated within the context of the development lands.



Fig 11 + 12. Central Open Space, View toward the central lawn active amenity (ball playing) area.

The central open space has been developed with five access points. To the southern boundary these are located at the south western and south eastern corners with the south eastern access point being a stepped access arrangement. To the northern boundary the access points are located at the north western and north eastern corners with a third access included at the centre of the northern boundary.

An early design intent which has remained as part of the current layout is to split the east-west pedestrian / cycle route along the northern boundary to the open space. The objective of this split is to bring pedestrians into the open space as part of the east-west route allowing them to walk and enjoy the park as part of the walking route.



Fig 13. Illustrating the split in the cycle / pedestrian pathway through the central open space.

The central open space will provide an overall area of 3,262 Sq/mtr with a considerable volume of amenity for the residents including the delivery of 350 Sq/mtr of grassed area for ball games, and two informal play area of 145 Sq/mtr Area 2 along with seating areas for the provision of social spaces. See Doyle + O'Troithigh drawings LP-02-PP for details of the central open space.

8.2 Communal courtyards to Blocks 11,13,14 and 15

Residential Blocks 11,13,14 and 15 have each been developed with a communal garden space for the residents of the block. These garden spaces have been designed and developed to provide amenities for all in a garden style environment. The garden courtyards include areas for passive and active recreation, included are toddler play areas and low impact small scale ball games areas. The layout of the garden courtyards radiate in use and amenity from the centre with the provision of strong planting providing a buffer to the building line at the edge.

While the design intent for each is constant with the objective to deliver a back garden for the residents as safe area for recreation which will provide visual interest all year round. The design of each courtyard varies greatly.

The residential communal courtyard to Block 11 has a total area of 705 Sq/mtr, the irregular shape of the area helps to develop a series of small-scale garden areas and central social space which deliver both active and passive recreation. The provision of a strong buffer of planting to the boundary with Block 12 helps frame the courtyard and provide a green backdrop of the residents



Fig 14 + 15. Block 11 Courtyard layout and central social space.

The communal open space courtyard to Block 13 has a total area of 281 Sq/mtr on which is provided a central lawn area which is surround by a boundary of buffer planting to the creche and a planted terrace to western residential units. The lawn can accommodate small scale ball games and passive reaction, with the inclusion of seating to the north western and south western areas these allow for the development of social spaces increasing passive supervision to the courtyard.



Fig 16, 17 + 18. Block 13 communal open space with central lawn area for small scale ball games.

The courtyard to Block 14 with an area of 973 Sq/mtr includes a tiger mulch play area of 60 Sq/mtrs, an informal ball playing area of 140 Sq/mtr. The play areas include Spring rockers, and alligator sculpture, a bubble play climbing frame.

The courtyard to Block 15 with an overall area of 1,511 Sq/mtr in which will be delivered a series of tiger mulched play areas with a total area of 160 Sq/mtrs and informal kick about lawn of 120 Sq/mtr and a boules court of 20 Sq/mtr. The play areas will include rocker springs, a basket swing, a 'revo' hoop and a rope climbing tower.



Fig 19. Block 15 communal courtyard.

8.3 Block 12 Entrance Plaza

The entrance area to Block 12 has been designed to create a contemporary plaza, the columnar trees have been arranged in an irregular grid pattern into which several carparking spaces can be facilitated with minimum visual impact. The surface finish is consistent across the entire area helping to deliver an open plaza which can accommodate an ease of movement for pedestrians cyclists and motorists.



Fig 20 + 21. View toward the Block 12 shared surface entrance plaza (left) and an illustration of the plaza (right).

8.3 Block 15 Entrance area to the communal courtyard.

This triangular area has been designed with a formal arrangement of paving and tree planting. The area includes a significant number of bike stands and a service vehicle access. The canopy of the formal tree planting forms a series of archways under which residents move to gain access to the communal courtyard of Block 15. To the north of Block 15 a wider tree lined pathway provides a separation between the east – west pedestrian and cycle route and the building block.



Fig 22 + 23. Widened pathway (left) and entrance plaza to Block 15 (right).

8.4 Retained Sycamore tree and cellar to former Lakelands house.

To the site boundary with the N40 a large sycamore tree (Tree No. 0497. See Arboricultural Assessment) is being retained as part of the development. This tree stands above the former cellar of Lakelands House. As part of the retention of the tree and cellar a plaque will be erected on site providing historical information on cellar and Michael Crawford who came to Cork in 1792 founding a brewing company with William Beamish and building Lakelands house on the Jacobs Island lands.

See the Landscape Plan and Tree Protection Plans for details of the retained tree and public garden proposed as part of the retention of the tree and cellar. The tree, cellar and associated plaque will be contained within the public garden space of 667 Sq/mtr. See Landscape Plan LP-01-PP for details.



Fig 24 + 25. CGI of proposed public garden area above the retained cellar and Sycamore tree and an example of plaque providing historical information.

8.5 Streetscape and materials.

The design and layout of each street is important to the overall success of the scheme. As part of the design development of the site there is a design intent to establish 'green streets' which deliver slower traffic speeds, a more pedestrian / cyclist subservient environment and increases biodiversity and green infrastructure through a comprehensive planting regime which will establish a sylvian character to the site lands upon establishment and maturity.

These tree lined streets have both a positive visual impact and an ecological impact as they develop a green infrastructure network linking the open space areas within the development to the wider environment including Lakelands Lane and the Joe McHugh Park.



Fig 26 + 27. Examples of street tree planting to homezone and within a road side grass verge in Adamstown County Dublin.

To reduce the extent of hard surfacing and to help deliver a SUDS program the EV charge point parking spaces have been finished in grass-crete as have the turning areas at the ends of the Cul-de-sac streets. Coupled with the delivery of street trees and buffer planting between the public pathways and the building line the streetscape design aims to create a public realm with a soft edge, an urban fabric where nature is present and visible across the year with the provision of a living environment.



Fig 28. The provision of a deep planted area between the public pathway and the private patio provides a visual and physical separation which his to a human scale.

In response to item 3 of the ABP-311818-21 pre application consultation opinion, the landscape plan drawings and landscape detail drawings prepared as part of the SHD application provide details of all hard and soft landscape surface areas. The site landscape plan LP-01-PP provides details of the surface finishes to the overall site areas with landscape drawings LP-02-PP to LP-07-PP illustrating in plan and section the proposed fixtures, fitting and finishes proposed to all communal and public amenity site areas. The landscape drawings LD-01-PP and LD-02-PP provide details on the planting and topsoil depths proposed as part of the landscape softworks, with landscape drawings LD-03-PP to LD-09-PP providing details on all site fittings and site surface finishes including SUDS measures, basement ventilation, communal courtyard boundaries and step details. A considered planting plan has been prepared (See drawing PP-01-PP) detailing the size, species and type of all trees, hedge, shrub, ground cover, bulb and grass planting proposed across the site with a selection of the proposed planting palette being illustrated on drawing PPL-01-PP to give a clear indication of the softworks finishes proposed across the site.

In addition to the drawings prepared a softworks specification report and landscape maintenance and performance standards report have been prepared in response to item 3 of the ABP-311818-21 pre application consultation opinion. These reports accompany the landscape plans, landscape details and planting plan to delivery the proposed landscape design.



Fig 29. Landscape planting treatment to internal streets



Fig 30. Tree and hedge planting between proposed development and existing spine road.



Fig 31. Proposed landscape treatment to provide 'greener' environment to the parking court between block 14 on the left and block 10 on the right.

In response to Item 4 of the ABP-311818-21 pre application consultation opinion, we have included in the landscape plans the areas of public and communal open space. Landscape Plan LP-01-PP details the full site area and the landscape treatment to each area while landscape plans LP-02-PP to LP-07-PP provide details on the amenity areas being provided and the core function of each proposed area. The plans LP-02-PP to LP-07-PP contain details on the items of play being provided. While the overall area of the public and communal open space areas is detailed in section 8 of this report the drawings LP-02-PP to LP-07-PP provide a detailed breakdown of the core amenity areas being provided within each of the communal courtyard and central public open space.

The issue of separation between public and private areas was raised by Cork City Council as part of the preplanning meeting. The provision of heavily planted areas of hedge, shrub, and tree planting between the edge of the public pathway and the patio / build line help to deliver a 'green' buffer separating the public and private areas with a strong visual amenity. The development of these linear landscape areas helps to connect the open spaces with the delivery of a green infrastructure network.



Fig 34 + 35. Examples of the proposed landscape treatment (shrub, hedge, and tree planting) to provide a buffer between the public pathway and the private dwellings on the internal streets.



Fig. 32. Boules court to central open space



Fig. 33. Informal play to central open space

8.6 Remaining site areas

Outside of the noted areas the remainder of the site is provided with a high level of landscape treatment in terms of hard surface finishes and planting. Where possible street trees have been introduced in public areas for taking in charge with communal and private areas being provided with grasses, ornamental shrub, hedge, and tree planting which are site specific and have been selected to provide year-round interest and a strong visual amenity.

8.7 Landscape works outside of the SHD development lands.

Under the proposed site plan for the SHD lands an east – west pedestrian and cycle route is proposed. The proposed east – west pedestrian and cycle route follows an existing desire line through the development lands. As part of the preplanning process the connection of this route way to the wider environment in particular the existing greenway to Blackrock and Rochestown was raised by Cork City Council.



Fig 36. Proposed site landscape plan See drawing LP-01-PP for details.

Following the preplanning meeting with Cork City Council and the section 5 meeting with An Bord Pleanála we started to look at how the proposed pedestrian and cycle way can connect to the wider existing route ways. As part of a review a meeting with Cork City Council Parks Department was

undertaken in which we proposed a series of design interventions with the potential to enhance the existing Lakelands Lane providing a safer walking environment with a new connection to the Joe McHugh Park and a safer connection to the existing Blackrock and Rochestown greenways.



Fig 37. Connection to wider site area including the Joe McHugh Park and existing greenways to Blackrock and Rochestown.

The renovation of Lakelands Lane to the west of the site lands would further enhance the permitted links from Jacobs Island to the Lee to Sea greenway under grant of Planning Reference ABP -301991-18, (as amended by ABP – 310378-21)

Together the delivery of these direct connections from the site lands to the Joe McHugh Park, the Lee to Sea greenway and beyond have the potential to delivery a connected pedestrian and cyclist network for Jacobs Island.



Fig 38 + 49, Lakelands Lane existing (left) and proposed routeway (right).



Fig 50 + 51, Junction of Lakelands Lane and N40 slip road existing (left) and proposed clear sight line providing passive supervision to the upgrade laneway (right).

In tandem with the enhancement of Lakelands Lane we discussed with Cork City Council Parks Department the provision of planting to the slip road off the N40. This planting will be liner in nature running along the boundary of the site with the slip road and include hedge planting with columnar trees and a wildflower / herb layer to the road side verge. This planting will increase bio diversity and add a great ecological value to the link road while creating a planting mix of visual interest. As part of the rejuvenation of the Lakelands Lane the overgrown planting on the redundant area of ground to the west south of the west traveling slip road to the N40 will be controlled to create a visual connection from the N40 road junction to the renovated Lakelands Lane increasing the passive surveillance to the lane way.

As these works relate to the wider Jacobs Island area and represent a planning gain for the wider Mahon area these works would be undertaken outside of the SHD application in direct agreement with Cork City Council as part of the ongoing Greenway development works. As discussed in the accompanying planning statement the applicant is willing to accept a special contribution on this aspect.



Fig 52. Illustrating future connections from the east – west pedestrian and cycle route to the existing Blackrock and Rochestown greenways.

Further works to the N40 link road were presented as part of the review meeting with Cork City Council Parks Department. The design intent being to develop a landscape treatment like that being proposed within the Jacobs Island lands to create a uniting visual connection between the landscape treatment at the approach to the development and the landscape treatment within the development. See Fig.... for details of the potential landscape works to the N40 link road. Like the renovation works to Lakelands Lane the potential landscape works to the N40 link road do not form part of the application land proposed development.

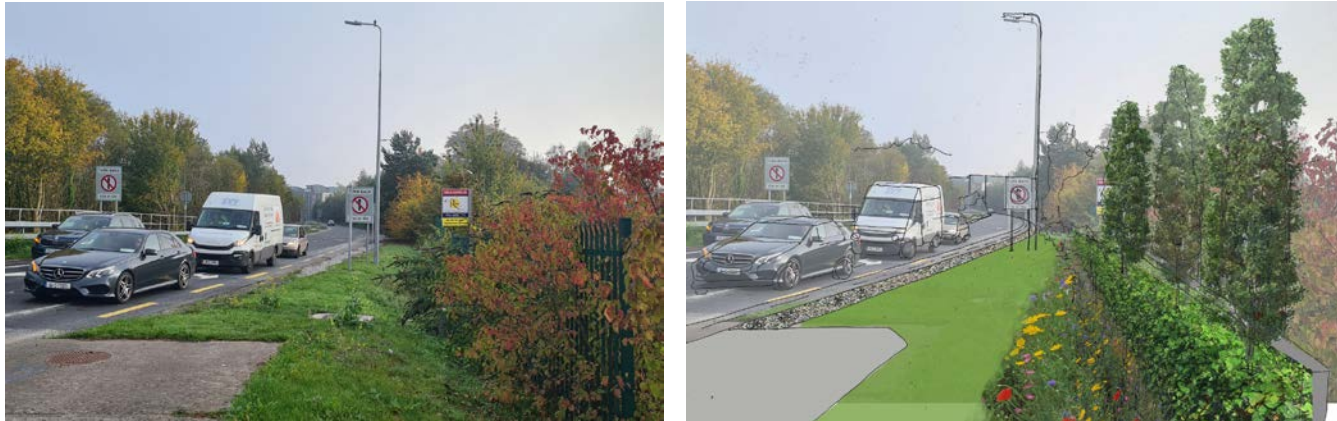


Fig 53 + 54, Existing landscape treatment to N40 link road (left) and proposed renovated landscape treatment to the N40 link road (right).

9.0 ECOLOGY, BIODIVERSITY AND EDUCATION.

The central design principle for the public realm has been the design of positive open space and the development of amenity both passive and active for all residents and the wider community. Coupled with this is the development of landscapes which promote ecology and biodiversity through a series of measures including:

- Appropriate plant selections, including a focus on native and flowering species
- The inclusion of bat and bird boxes. Working with the project Ecologist bat boxes have been provided as part of the retention of Tree No. 0497 (See Arboricultural Report) in the public garden to the northern site boundary with the N40 link road.
- The development of tree and understorey planting with a native 'element' to develop habitats for wildlife
- Outward connections to promote and enhance wildlife corridors.

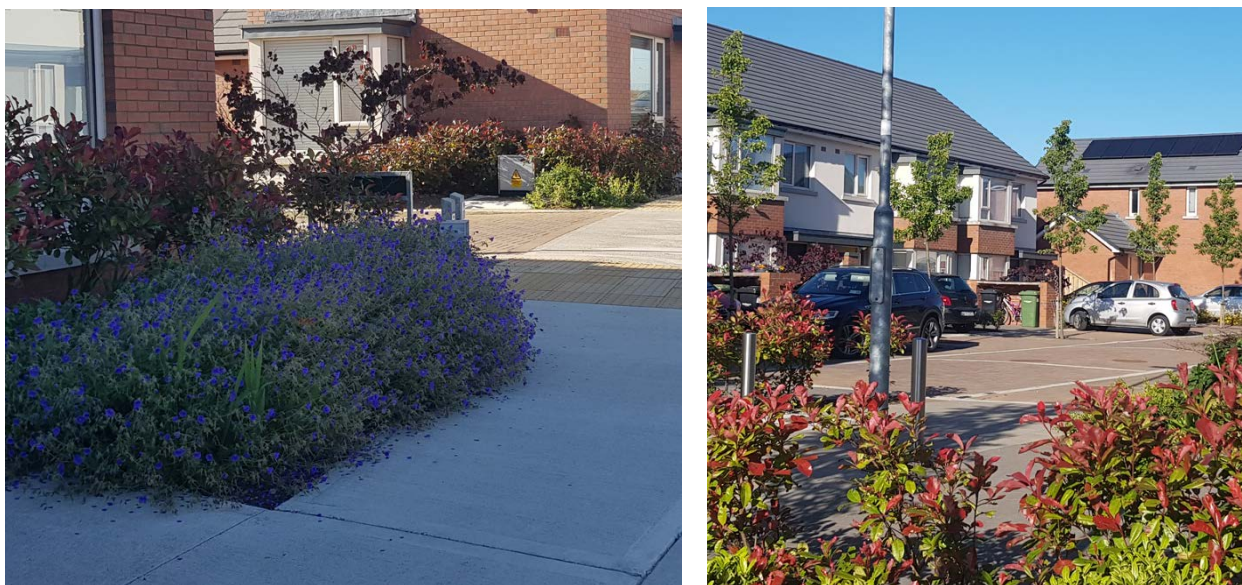


Fig 55 + 56. Examples of front boundary planting to public pathway and homezone areas.



Fig 57. Seasonal colour with a 'backbone' of an evergreen hedge.

In tandem with the promotion of ecology and biodiversity, we are also proposing the promotion of nature through education. This will be done by adding name tags to selected shrub, hedge, and tree species, including information signs and notice boards to highlight the benefit of the ecology and biodiversity and how correct plant selection can promote wildlife.

These small but informative measures will be located throughout the pocket parks at relevant points on pathways, allowing residents to walk these pathways and learn to identify the surrounding planting.



Fig 58 + 59. Ecology rich wild flower meadows.

10.0 PLANTING

10.1 Feature trees within public open space

The trees in the formal open spaces have been selected to create a visually appealing mix of specimens. The trees here are largely a mix of deciduous and evergreen and are positioned as informal grouping, either in mix species groupings or as single species.

Some of the species proposed include *Betula utilis* 'Jacquemontii', *Pinus sylvestris*, *Betula pubescens*, *Fagus sylvatica*, *Liquidambar styraciflua* and *Castanea sativa* as referenced below.

These specimen trees are suitably placed within the scheme where they are grown in accordance with their shape and form and overall structure. The species are largely deciduous however some feature evergreen trees will offer greater 'depth' to the scheme particularly during the winter months. It would be envisaged that over the course of a 10-year period post planting, the tree stand would vary in height between 10-14m tall and would develop further in accordance with their species and site conditions thereafter.

10.2 Smaller trees more suited to limited space/constrained planting zones (including over podiums)

Where space and weight are more limited, smaller trees have been proposed which will offer visual appeal, year-round interest and 'companion' relationship with nearby tree and shrub planting. These trees are considered more 'delicate' in nature and offer wonderful flowering; however, they are sufficiently robust to ensure they are suited to site conditions and aspect. Some of the species proposed include *Syringa vulgaris*, *Amelanchier lamarkii*, *Hamamelis mollis* and *Cercis siliquastrum*.

The above tree species all noted above are deciduous and offer 'flower' from the period of late winter through to mid-summer. These species would grow to some 2.5-4.0m in height over the course of some 10 years; and would not grow much taller thereafter.

10.3 Street trees (columnar/ fastigate in form)

Specific trees have been selected for the formal streetscapes within the scheme. These are all fastigate or upright in form with a narrow canopy to avoid interference with landscape elements such as lighting, vehicular infrastructure, and the built environment. The species selected are considered 'tried and tested' in terms of streetscape design; however, they have also been selected for their seasonal interest.

Some of the species proposed include *Carpinus betulus* 'Frans Fontaine', *Quercus robur fastigiata* 'Koster', *Pyrus calleryana* 'Chanticleer' and *Fagus sylvatica* 'Dawyck's Gold'.

All the above species noted are deciduous in nature; and after a period of some 10 years post planting, these would grow to a height of 6-7.5m tall. The period would be considered the most active growth period; and whilst they would grow taller after this period it would however be at a slower rate.

10.4 Hedging

Hedging throughout the scheme will aim to define spaces which offer capacity for varying functions, create a backdrop to seating zones, edge pedestrian walkways and help define the boundary / buffer zone between the public and private realm. Every effort has been made to include hedgerows with a

native element to improve the sites biodiversity. The delivery of visual appeal is also important to achieve this we are also utilising ornamental 'garden' species.

Some of the species proposed include *Carpinus betulus*, *Escallonia* 'Apple Blossom' and *Prunus rotundifolia*. The latter two species listed are evergreen in nature and offer a strong and formal hedge and would be maintained a height of 1.0-1.2m in height. The Hornbeam hedge (*Carpinus betulus*) is a deciduous hedge, however as the hedge creates continual juvenile foliage it tends to hold onto a large element of its leaves during winter which are brown in colour and offer good texture and seasonal interest.

The native hedgerow mixes proposed for the scheme include *Corylus avellana*, *Carpinus betulus*, *Crataegus monogyna*, *Euonymus europaeus*, *Ilex aquifolium* and *Prunus spinosa*.

This native hedgerow is largely deciduous in nature, apart from the Holly, and offers excellent seasonal interest in the form of changing bark colour, autumn leaf colour, berries of varying hues and flower. The hedgerow would be maintained at a height of some 1.2-1.75m depending on location. At boundary edges, the hedgerow could grow slightly taller and have a looser form; however, where they define more formal spaces they can be retained at a lower height and retained more compact in form.

10.5 Ornamental shrub planting

Ornamental shrub planting is proposed throughout the scheme both within public, private and semi-private spaces. The shrubs have been selected for their ability to create form to spaces as well as providing seasonal variation, movement, scent, and colour throughout the scheme. It is envisaged that the shrubs will be a mix of evergreen and deciduous which will be complementary as part of companion planting arrangements. It is envisaged that shrub planting would not be taller than 900mm. An evergreen 'structure' will be present in all planting zones to allow the scheme to carry through the winter months.

10.6 Ornamental herbaceous planting

The herbaceous planting proposed for the scheme has been chosen for its robustness, ease of maintenance, movement' and visual appeal. These species shall be largely block planted in a single species and shall be edged with evergreen shrubs to ensure the planted structure is maintained throughout the winter period. Ornamental grasses have been included to create movement and appeal to a variety of the senses. Largely ornamental shrub planting is cut back each spring to allow for new growth; underplanting of ornamental bulb planting has been proposed in connection with herbaceous planting to offer added interest during the season.

10.7 Bulb planting

Bulb planting shall be proposed for across the scheme where the planting of bulbs will be in the form of naturalised bulb planting within grass zones or as companion planting to mixed herbaceous species. Some of the species selected include *Tulipa* 'Triumphator' and *Allium hollandium* 'Purple Sensation'

