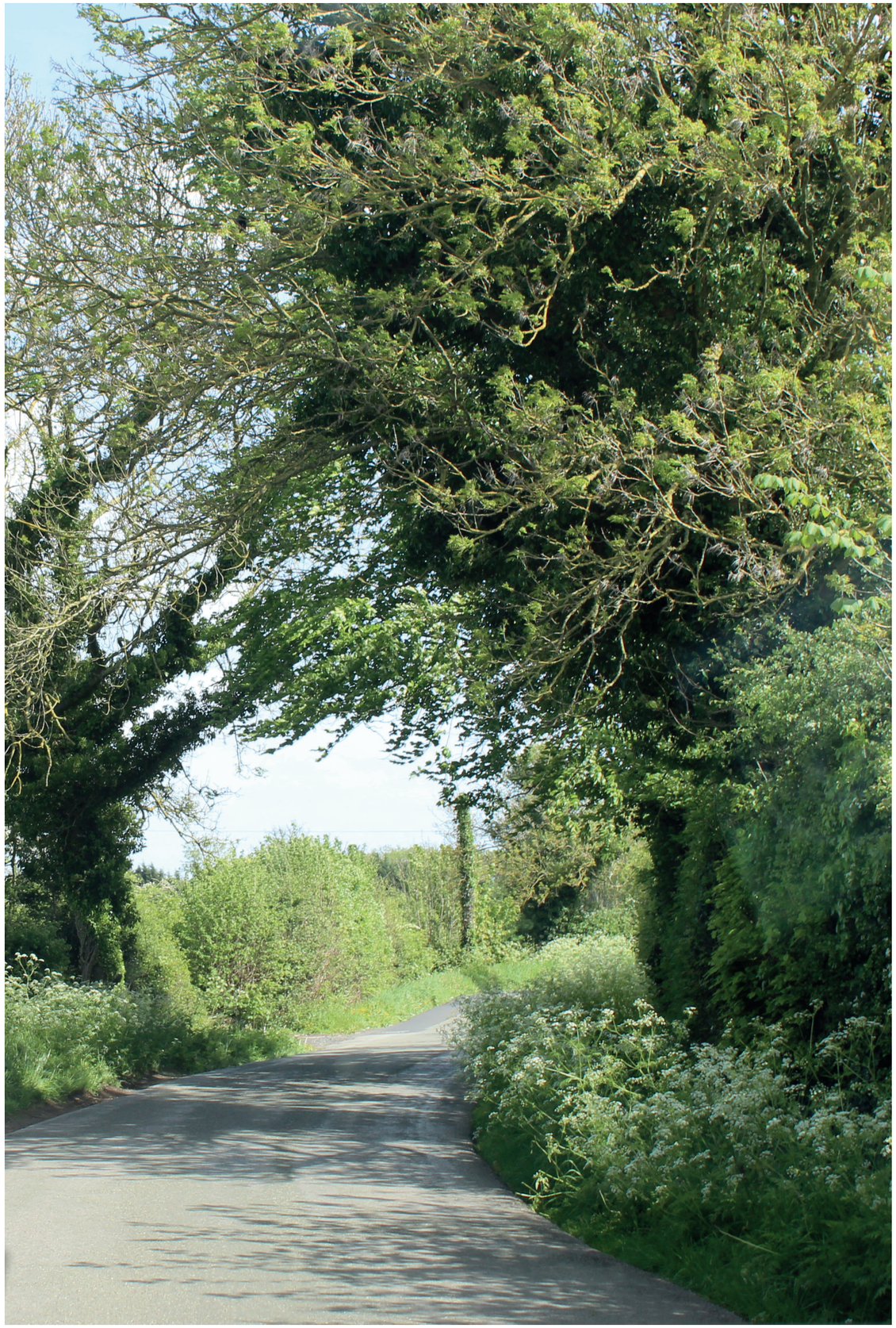
Landscape Design Statement

Proposed Residential Development at Barnhill

21154
Barnhill, Clonsilla, Co. Dublin
Dublin 19

Gannon + Associates
Landscape Architecture



1 / INTRODUCTION

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Development Description

The development will consist of:

The demolition of the existing vacant industrial buildings;

The construction of 1,243 residential units comprising:

322 dwelling houses comprising a mix of 3 and 4 bedroom units.

117 duplex units comprising a mix of 1, 2 and 3 bedroom units;

804 apartments comprising a mix of 1, 2, 3 and 4 bedroom units:

The construction of commercial and community facilities including one creche; one medical centre; one café; one convenience retail unit; five commercial units; a community centre; and an Office Hub.

Land set aside for a primary school to accommodate a minimum of 16 classrooms;

Provision of four new vehicular accesses with two from the Part 8 approved Barberstown Lane South Upgrade and two from the R149; the creation of a pedestrian and cycling priority route along Barberstown Lane North, with vehicle use restricted to local access, and provision of a pedestrian access plaza from the site to the Hansfield train station to the north;

The provision of landscaping and amenity areas to include neighbourhood playgrounds; pocket parks with play areas; and park comprising a multi-use games area (MUGA), large field, playing pitch; skateboard park; play areas; and amenity trails;

Proposed underground diversion of a section of 10/20kV ESB overhead power line traversing through the northern part of the site and the retirement of its ancillary poles;

All associated infrastructure and ancillary development works to include the construction of double and unit electrical substations; construction of pumping station; drainage and services connections; internal roads; pedestrian footpaths, pedestrian bridges and cycle lanes, public lighting, landscaping and boundary treatments, bicycle and car parking including basement and under-croft parking, bike storage and bin storage.

An Environmental Impact Assessment Report and a Natura Impact Statement have been prepared in respect of the proposed development.

Please refer to Chapter 2 of the EIAR for a more detailed description of development.
(Page 76 for Architecture Character Areas)

Planning Consultant	McCutcheon Halley
Clients	Alanna Homes & Alcove Ireland Four Limited
Architects	CDP Architects
	CWOP Architects
	Delphi Design
Engineers	Clifton Scannell Emerson & Associates

1/ Introduction

There is more to what meets the eye at the lands of the subject site at Barnhill, Clonsilla, Co. Dublin. At first glance the site is made up of several agricultural fields, field boundaries and some residential dwellings and agricultural structures.

However, when one interrogates the site with a careful lens, one uncovers a rich cultural and natural heritage which has formed the unique sense of place that can be attributed to the townland of Barnhill.

It is this rich landscape tapestry coupled with the sites composition, location and history that has helped to guide the landscape design approach for the site.

The position of the site between 3 historical transport routes of the Midland Great Western Railway (MGWR) and the MGWR Navan Branch and the Royal Canal, provides a unique glance into the past. There are also windows into the architectural heritage of the area with strong curvilinear shapes in the existing barns, curved walls and shapes associated with the gate posts, canal and gates themselves.

This document is to be read with the supporting drawings and describes in detail the landscape design strategy of the proposed development at the lands of Barnhill, Clonsilla, Dublin 15. The journey of description is an experiential one which aims to allow you to step into the proposed landscape design which is founded on the principle of good design that responds to the architectural and cultural heritage of the site and is aesthetic, considered and of high quality and fit for the combined use of the future residents and visitors to and through the development.

1.1/ Planning Review Fingal County Council

Response to Pre-App Consultation with An Bord Pleanála & Fingal County Council

Pursuant to the Pre-Application Consultation held with An Bord Pleanála and Fingal Co. Council on 23rd March 2022, An Bord Pleanála issued their Notice of Pre-Application Consultation Opinion. In this Opinion, several matters of relevance to Landscape Architecture were raised. In this section, the relevant items will be listed in italics and the landscape responses to same will be fully described and elucidated, with reference to relevant drawings, etc.

2. Further consideration and elaboration of the documents with regard to the creation of a strong urban edge and streetscape to the Ongar-Barnhill Road and to Barberstown Lane South, and on key routes within the development. Application documentation should demonstrate how proposed building design and streetscape assist in place making and way-finding as well as creating a contemporary urban development with a variety of character areas marked by changes in densities, housing typologies, and heights as well as changes to material finishes and designs. Regard should be had to the provisions of DMURS (section 2.2.1) with regard to the creation of a sense of place.

Response

The landscape proposals have been designed in such a way as to create a contemporary sense of place and identity through the expression of the landscape and connection with the landscape and cultural heritage of the site. The concept of connectivity and community is to the forefront of the landscape design. Each architectural character area is linked through in the landscape design through pedestrian permeability.

Wayfinding through the character areas is made easy through the expressed concept of the red ribbon which is a pedestrian, curving spine that links all character areas to the heart of the development that is the contemporary market square as the neighbourhood centre.

Along this ribbon are mapping elements which outline the locations of the various fitness and play amenities throughout the site which are a tangible, visual wayfinding tool. Public open space spurns off this route providing a mix of spaces from pocket parks to urban plazas to the primary neighbourhood park at the heart of landscape. These mix of spaces provide a variation of interest and appeal and they communicate with each other on account of their connectivity. These walking routes are comfortable, benefit from passive surveillance and consolidate the sense of place that is being created through the landscape.

5. Further clarification and elaboration of the documents as they relate to the proposed pedestrian connection to Hansfield train station. In this regard, specific and detailed design proposals should clearly demonstrate how the development will deliver a high-quality public realm and accessibility for the public both to the station and across the railway to lands in Hansfield to the north. Evidence of the consent of the railway authorities to proposals in this regard should accompany the application.

Response

The Hansfield train station is a key transport link for the proposed development and has been specifically incorporated into the proposed developments neighbourhood heart through a direct, tangible, visible pedestrian link. The primary urban plaza that is the market square has been designed to link directly with the arrival plaza of the railway quarter. A clever use of matching paving details and a direct, tree lined pedestrian avenue consolidate this connection and make it an aesthetic and deliberate link. The connection for pedestrians from the railway station links directly to the market square and bus stop there and then circulation distributes throughout the complete development.

Cycling has been encouraged throughout the landscape design of the proposed development and cycle links with the railway station, as part of the public realm has been considered. A significant amount of covered bicycle parking has been provided for at the railway station. Access to the railway station is Part M compliant and both stairs and ramps are provided for. A drop off and accessible parking area has been provided for in close proximity to the railway station on the shared surface street in front of the railway quarter apartments.

Furthermore the following specific information, as it relates to landscape, has been requested to be submitted with any application for permission:

1.Detailed proposals for the phased development of these lands. Such phasing proposals should clearly identify the road and public transport, open space, water, drainage, and social infrastructure to be delivered with each phase of residential development.

1.1/ Planning Review Fingal County Council

3. A detailed landscape and visual impact assessment, and is provided in the Environmental Impact Assessment Report which accompanies this application.

Response

A LVIA as been completed and is provided in the Environmental Impact Assessment Report which accompanies this application.

5. Detailed plan and section drawings should clearly identify existing and proposed ground levels across the site including existing and proposed road embankments.

Response

Detailed landscape sections and plans clearly identifying proposed levels, embankments etc. has been prepared by Gannon + Associates Landscape Architecture and accompanies this application.

7. A report that specifically addresses the proposed materials and finishes across the entire scheme including specific detail of finishes, landscaping and paving, pathways, entrances and boundary treatments. Particular regard should be had to the requirement to provide high quality, durable and sustainable finishes which have regard to the context of the site. A rationale for the extensive use of cement render finishes to buildings across parts of the development should be clearly set-out.

Response

This Landscape Design Rationale and in particular the hard landscaping specifications section clearly details the materials and finishes to be used within the scheme. Furthermore, landscape materials have been chosen to ensure quality and durability and to minimise maintenance requirements.
The Planning and Design Statement which accompanies this application details the materials and finishes proposed for the buildings..

8. Details of the proposed boundary treatment to the adjoining railway, including details of any noise attenuation measures to be incorporated therein. Regard should be had to the requirements of Irish Rail in this regard.

Response

The boundary treatments drawing prepared by Gannon + Associates Landscape Architecture outlines all boundaries and specifically the boundary to the adjoining railway is indicated here.

10. An analysis of wind micro-climate and pedestrian comfort at ground level with reference to pedestrian occupation and usability of new public spaces. The analysis should address the safety and comfort of residential amenity spaces, including communal spaces and private upper floor balconies. Any required mitigation or other design measures arising from such assessment should be clearly described and assessed in the study. This may necessitate a review of the design of proposed balconies, and whether projecting or integrated balconies are more appropriate in terms of achieving satisfactory levels of residential amenity.

Response

A detailed wind micro-climate assessment was completed as part of this application and a relatively small number of mitigation measures were recommended with regard to landscape. All of these mitigation measures were implemented which included the planting of some additional trees and hedges, location of additional fencing in places, design of pergolas in communal open space above podium level and the provision for slalom planters on a pedestrian path. All of these are expressed on our landscape plan.

18. A report addressing the matters raised in the report of the Fingal County Council Parks and Green Infrastructure Division dated 20/12/2021.

Response

The response to these matters are outlined within this report immediately following this text.

Report addressing the matters raised in the report of the Fingal County Council Parks and Green Infrastructure Division dated 20/12/2021. The matters raised are summarised in appropriate sections and responses follow.

1.1/ Planning Review Fingal County Council

Open Space Provision and Suds

Clarity is required on how the proposed development will address Objective DMS 73 of FCC Development Plan.

Response

As per Objective DMS72 a maximum of 10% of open space provision shall be taken up by SuDS and these areas do not form part of the public open space provision, except where they contribute in a significant way to the design and quality of open space.

A detailed map of the open space has been provided which clearly outlines the following as requested by FCC:

- Class 1 Public Open Space
- Class 2 Public Open Space
- Environmental Open Space
- Communal / Semi Private Open Space
- Play Provision

The SuDS features on the site take up **11.193 ha** accounting for **9.8%** of the public open space.

Type of space	Area, sq.m	Area, ha	% of site
Class 1 POS	56,259	5.62	19.10 %
Class 2 POS	25,382	2.53	8.59%
Environmental Open Space	24,661	2.46	8.36 %
Communal/ Semi-private Open Space	7,908	0.79	2.62 %
Total Open Space Provision	**114.210**	**11.42**	**38.67%**
Of Which Play Provision	**7,127**	**0.71**	**2.37%**

Play Provision

Clarity is required on how the proposed play provision in this development in accordance with Development Plan Standard. Under objectives DMs75 and DMS76 a playground should be provided at a rate of 4m3 per resident and 1 piece of play equipment for every 650m2 of playground.

Response

The play provision for the proposed development consist of a variety of structured areas for play and unstructured, naturally designed areas that promote inquisitive and free play opportunities and are non-prescriptive play opportunities. Within the overall side the following play quantum has been provided:

Natural Playground	3,051sq.m
Local Area for Play	407 sq.m
Local Equipped Area for Play	3,576 sq.m

Definitions:

Natural Playground – These are imaginatively design spaces using natural elements such as, contours, mounding boulders and logs to encourage free play and experience by learning.

Local Area for Play – A small attractive area of public open space that is found within a pocket park consisting of predominantly natural materials associated with planting to create a natural play setting.

Local Equipped Area for Play - A larger equipped play area designed as part of the natural landscape while also accommodating sports and activity including, games, MUGA pitches, hangout zones catering for children of up to 17 years of age. Adult equipment provided and other activities, such as fitness equipment, tennis tables and censorial garden.

In addition, adult Fitness and Exercise equipment zones have been provided with a total of 17no. pieces of fitness equipment as shown on our Fitness Plan Drawing.

Tress and Hedgerows

The applicant is proposing to retain many of the existing hedgerows and trees on site, however the Arboricultural Impact Statement; Arboricultural Method Statement and associated Tree Protection Plan submitted lacks detail and is not deemed comprehensive.

Response

A revised Tree Protection Plan has been worked through with the Arborist Michael Garry at Arbor Care and all trees and hedgerows identified for protection have been carefully considered and the Arboricultural Impact Statement and Method Statement are site specific, relevant and will contribute to the protection and longevity of all retained trees and hedgerows on site.

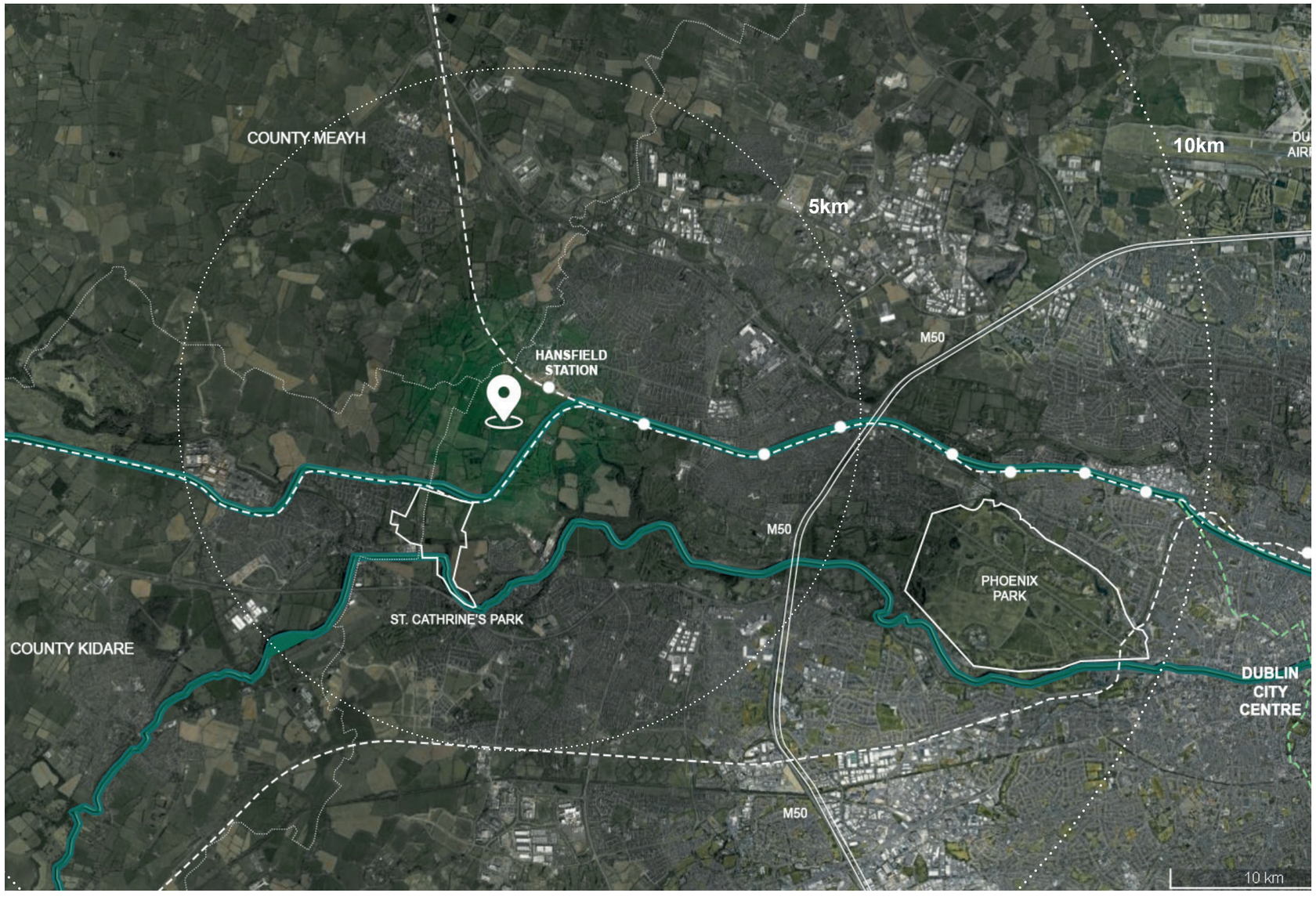
1.2/ Site Location

Covering an area of approx 29.42 ha. and located in the peri-urban area of greater Dublin, 5km away from Blanchardstown town centre. The site is afforded excellent transportation links with Hansfield train Station located to the north of the site adjacent to the Hansfield and Ongar conurbations.

The Royal Canal and associated green-way is located to the east of the site and onwards east is Beechpark, Shakelton Gardens and Allotments. Agricultural fields comprise the remaining boundary lands to the south and the west.

The boundaries of the site proper are the Railway line to the North, the R149 to the west, and Barberstown Lane South on the south and eastern boundary of the site.

The site is, in its surroundings, well provided with schools, supermarkets, various shops, pharmacy and restaurants.
On a larger scale, we are less than 10 km from Phoenix park and approximately 13 km from Dublin city centre, with direct links from Hansfield Train Station to the city centre.

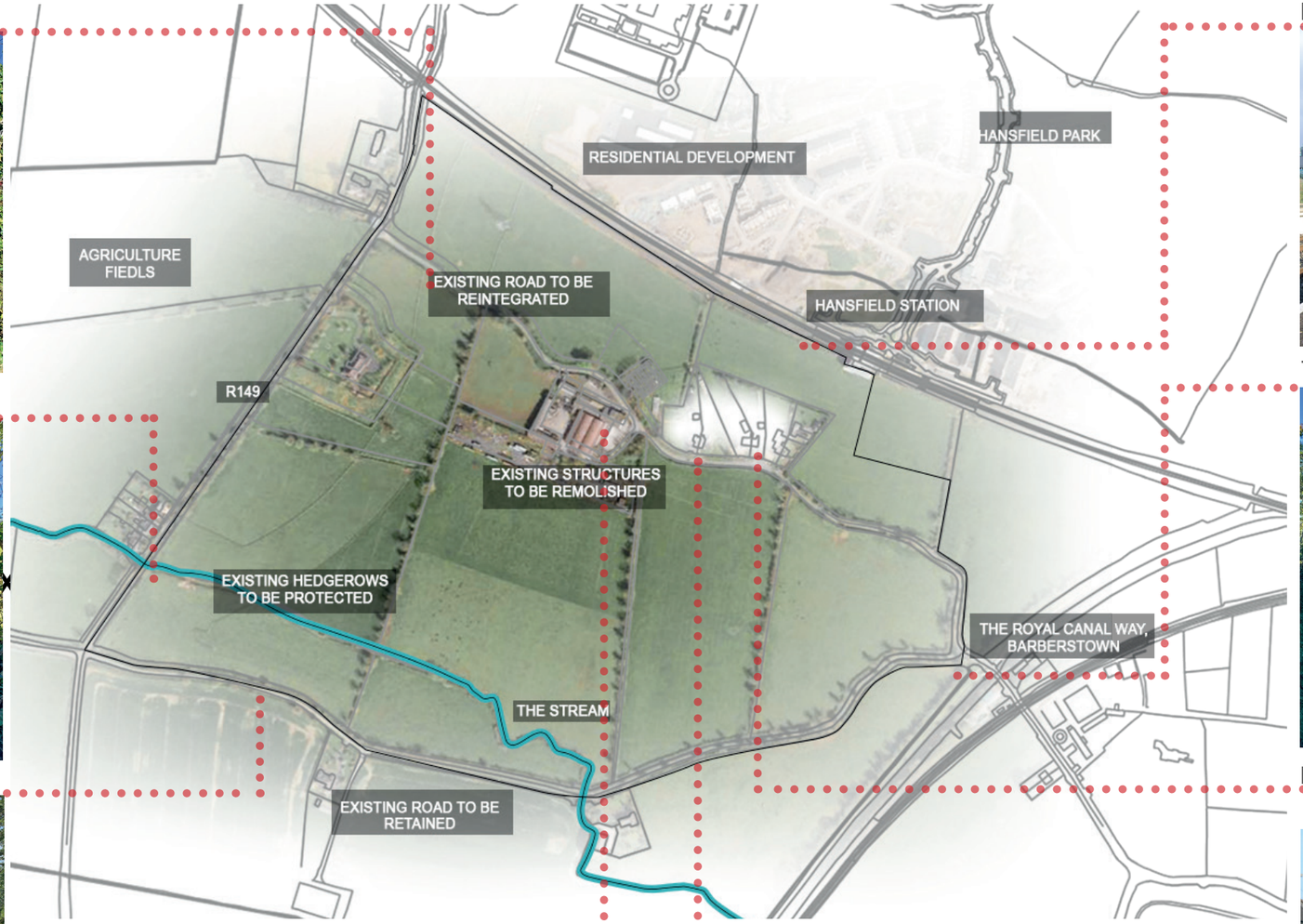


1.3/ Site Context

Barberstown Lane

The Stream Crossing R149

Southern Boundary



Exisiting barns

Barberstown Lane

Hansfield Station

The Royal Canal Way

Barberstown lane North

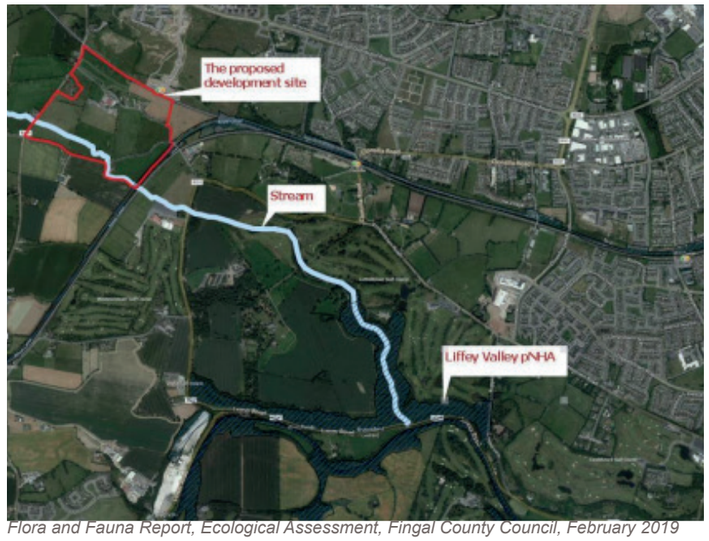
1.4/ Levels and Micro-Climate

Topography

The site can be characterised as predominantly flat with a gently slope towards the stream which borders to the site and drains into the canal to the east. The lowest point on the site is at +57.0m and the highest point is +63m representing a topographical change of 6.0m.

Ecologically, the site is largely homogeneous and covered with improved agricultural grassland perforated by hedgerows and associated drainage ditches north to south and along the Barberstown Lane. Most of the existing trees are located in these hedgerows which are important ecological corridors and shall be retained where possible.

In terms of micro topography, topographic variations are noted along the hedges and the associated ditches.



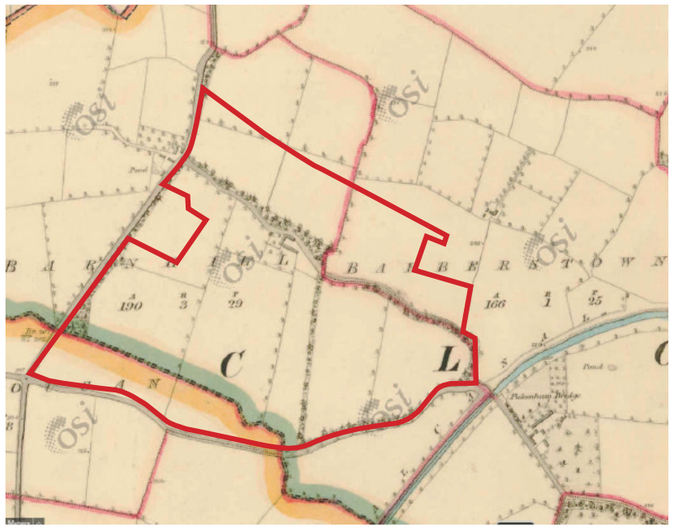
Flora and Fauna Report, Ecological Assessment, Fingal County Council, February 2019

A stream crosses the site from west to east and feeds into the River Liffey. The stream is identified as the Barnhill Stream within the Barnhill Local Area Plan, but is also know as the Rusk Stream.

1.5/ Historical Evolution

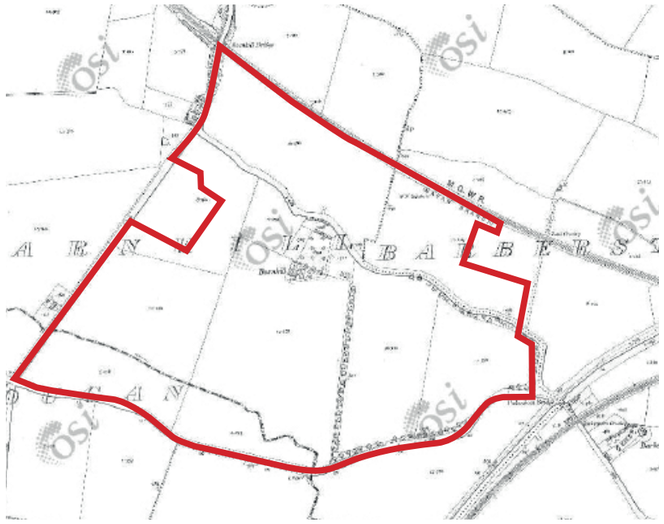
Landscape Palimpsests

Historic 6 inch First Edition 1829 - 1841

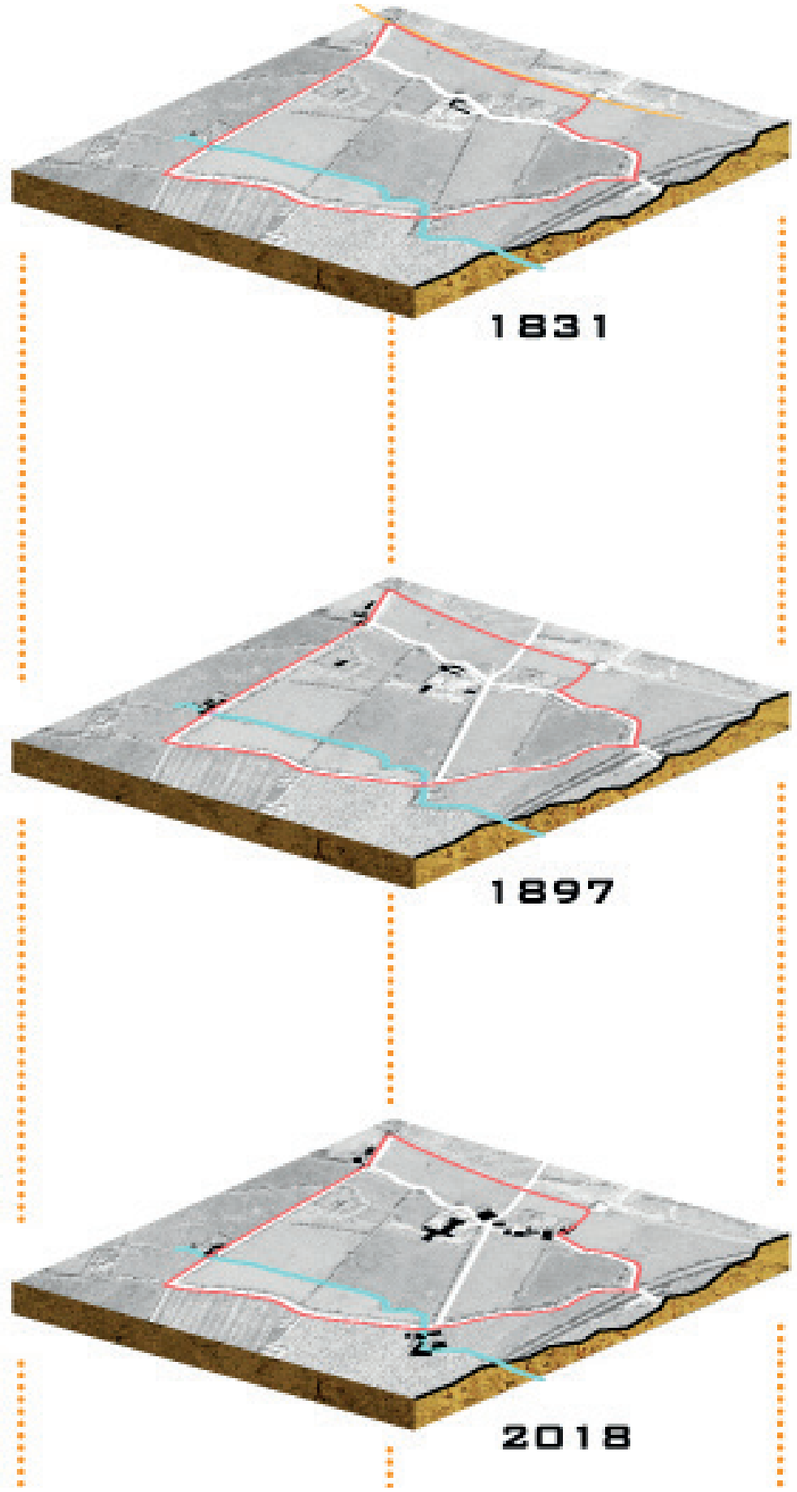


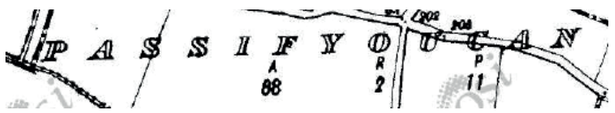
The landscape has not changed significantly over the years despite the arrival of the canal and then the development of the two Midland Great Western Railway branches at the sites door. With the exception of the rationalisation of field boundaries and the addition of some residential dwellings.

Historic 25 inch 1897 - 1913



Given this lack of change over time, developing a living landscape connection with the past in the landscape design of the proposed development is important in bringing the site into the future. Anchoring the site to this cultural heritage will contribute to a legible transition in land use and will help to create a strong, inclusive and distinctive community identity.





PASS IF YOU CAN

An interesting place name that overlaps our site and warrants a closer look... Named after the activities of a notorious highwayman who operated in the area. Michael Collier was finally arrested in 1807 and subsequently sentenced to transportation to the West Indies where he became a publican.

1.6/ Site Photos

Site Character

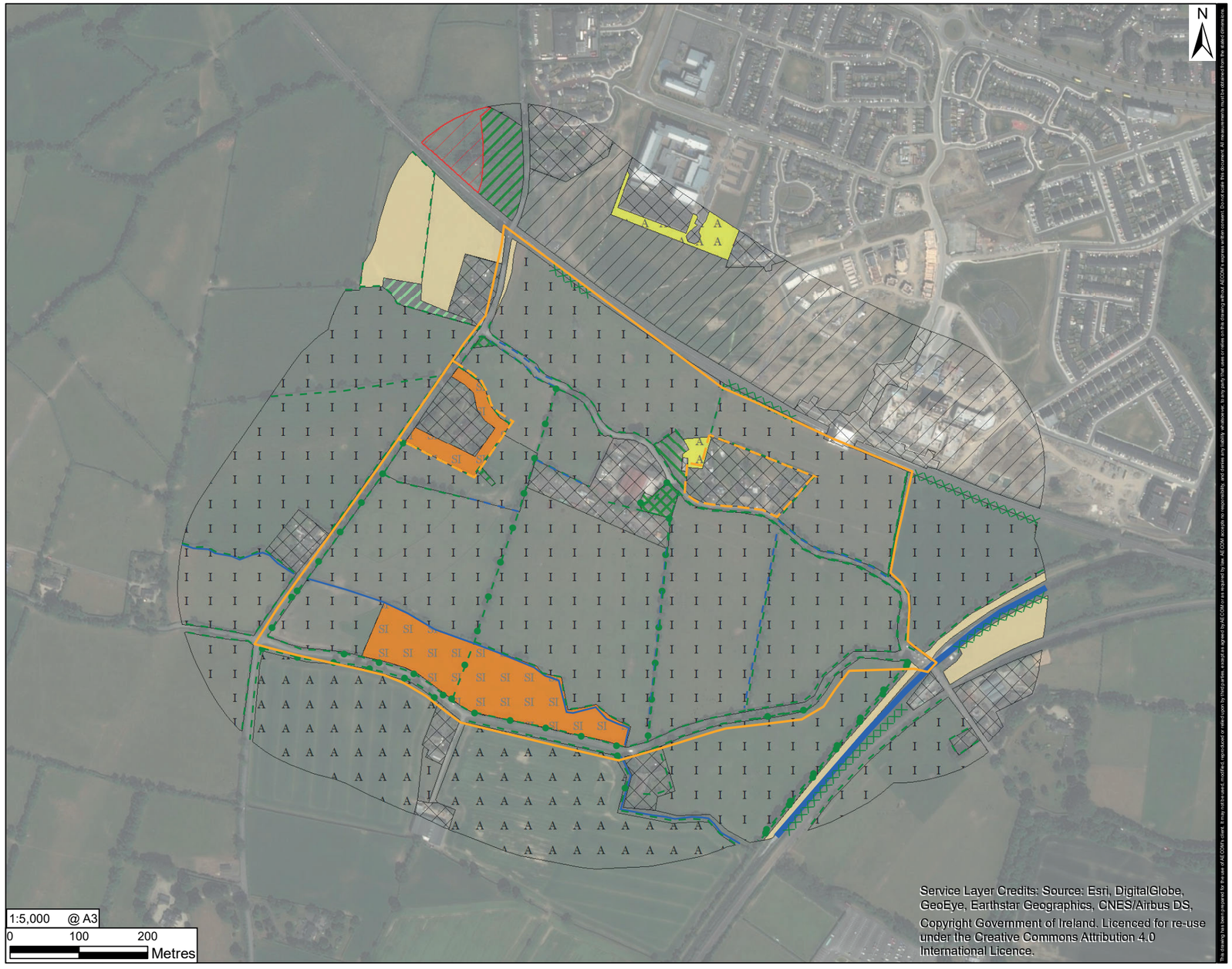
The site photos demonstrate the qualities of the existing site that have informed the landscape design approach for the proposed site which is clearly grounded in the existing genus loci the emanates from the site.

The ever repeating curvilinear shapes presented by the canal bridge, existing walls, barns, railway line and seed drills provide a strong basis for exploration within the concept.

The prevalent colours of green and red are seen in the barns, fields and trains and navigational aids on the canal.

The materials provide great texture and represent durability and strength, providing texture to the existing landscape. Limestone, granite, concrete, corrugated steel, wrought iron and pebble dash form the palette.

1.7/ Ecological Context



Revision: 0 Drawn: LC Checked: NM Approved: TM Date: 06/04/2022

AECOM

PROJECT
Barnhill Strategic Housing Development

CLIENT
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LEGEND
- Study Area

Habitat (Fossitt)
- FW Watercourses
- FW3 Canals
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines
- WS1 Scrub
- WD1 (Mixed) broadleaved woodland
- WD4 Conifer plantation
- WS2 Immature woodland
- WS1 Scrub
- GS1 Dry calcareous and neutral grassland (smaller area around retained property outside Red Line and not accessible, assessed from aerial)
- GS2 Dry meadows and grassy verges (outside Red Line, NW area not accessible and assessed from distance/aerial)
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- BC1 Arable Crops
- BL3 Buildings and artifical surfaces (outside Red Line apart from central area, includes private houses/gardens)
- Construction area (outside Red Line, no access)
- Unknown (outside Red Line, no access and uncertain from aerial)

PROJECT NUMBER
60627785

FIGURE NUMBER
Figure 9.3

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Existing habitats

Ecological Considerations For The Development Of The Barnhill Lands

- Protection of the Royal Canal
- Protection of the hedgerow along the Royal Canal boundary
- Protection of the stream passing through the lands
- Provision of protection for otters along the stream
- Protection of bat fauna by appropriate surveys and mitigation

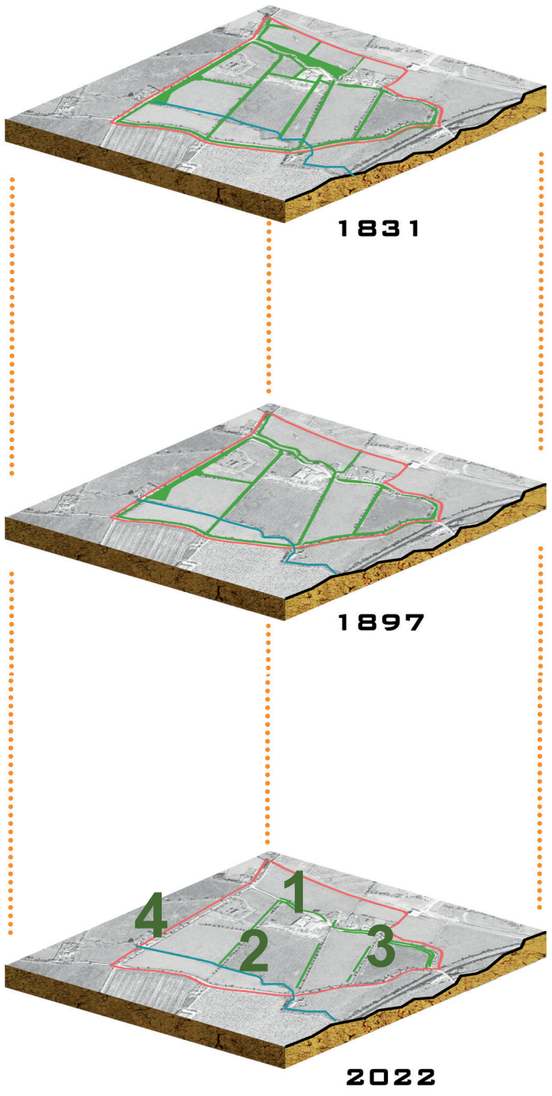
The aforementioned considerations are aimed at the protection and perpetuation of ecological life in the habitats identified on the site and their connection outside the site, like the River Liffey. Safety buffers between these habitats and future constructions are considered, as well as protection and recovery measures.

“Overall, the most important habitats within the site are hedgerows (including mature trees) and the stream. These habitats should be protected to support biodiversity within the local area. See Figure above for the map of the recorded habitats.

No habitats within the Barnhill lands are protected under Annex I of the EU Habitats Directive (92/43/EEC) were recorded within the site. None of the recorded plant species within the Barnhill lands are listed in the Flora Protection Order (1999) and The Irish Red Data Book.”

1.7.1/ Ecological Context

Existing Ecological Corridors: Hedges



Hedges Evolution 1831-2022

1 - Hedge

2 - Hedge

3 - Hedge

As demonstrated in the diagrams, the hedgerows of the site are a part of the landscape a heritage of the site, with some dating back to 1831. They are also of significant ecological and aesthetic value considering most of the trees located on site are located in the existing hedgerows. As such, and as dictated by the Barnhill LAP the 3 prominent north/south hedgerows are to be retained and form part of the proposed landscape design.

These hedgerow will be protected and continue to be a mature feature of the landscape and continue to support the wider ecology and act as an ecological corridor. The hedgerows are defined as WL1 in Fossitt Guide to Habitats Ireland.

1.7.2/ Analysis - Ecological Context

Existing Ecological Corridors: The Stream, Ditches and Road buffers

4 - The Stream

In general, the Stream is the most important ecological corridor, due to its ecological and environmental role, as well as scenic and recreational value.

The stream, along with existing ditches, hedgerows and trees will be incorporated, where possible into the proposed landscape design. Some features will be augmented sand a wetland area and riparian corridor will be incorporated and work as a significant green infrastructure element of the site. Contributing to the net ecological gain of the landscape proposal.

The Stream Within The Site

The stream crosses the southern part of the site and is classified by the Flora and Fauna Report, Ecological Assessment as Depositing Lowland River (FW2). This stream flows into the Royal Canal which diverges from the River Liffey, part of Liffey Valley pNHA.

Along the stream, hedgerows formed by shrubs and trees were formed. Some existing aquatic species are:

- Water-cress (Nasturtium sp.)
- Water-crowfoot (Ranunculus aquatilis)
- Water-plantin (Alisma plantago-aquatica).

Barberstown Lane North Ditches

In general all the ditches are reported as well maintained and with water running, drying on summertime or low rainfall times.

All ditches come with hedges, which provide shade which makes them more populated with shade-loving plants such as Hart's-tongue fern (Asplenium scolopendrium) and Male-fern (Dryopteris filix-mas).

These ditches are of medium importance and serve as habitat and spawning grounds for amphibians.

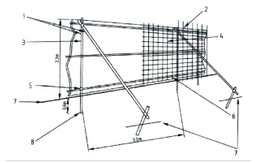
Barberstown Lane South Road Edge

The roads that were bordered with grassy verges classified as Dry Meadows ad Grassy Verges (GS2).

This borders present some mature trees, also important features for bat fauna and birds.

The image below shows a phase of great growth, presenting a denser cover which are an important food source for some insects and birds and for this reason they are considered in the Flora and Fauna Report, Ecological Assessment, to be of local medium importance.

1.8/ Tree Survey



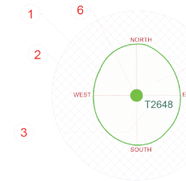
The above displays an example of a suitable protective barrier as recommended by *BS. 5837 2012 Trees in Relation to Construction*

1. Standard scaffold poles
2. Uprights to be driven into the ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold poles
4. Weld mesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on the inside of fencing to avoid easy dismantling
7. Ground level
8. Approx. 0.6m driven into the ground

(See Tree Protection Plan prepared by Arbor Care as part of this application)

Legend:

- Category (A, A1, A2, A3) — Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years)
- Category (C, C1, C2, C3) — Those of low quality and value currently in adequate condition to remain until new planting could be established (a minimum of 10 years) or young trees with a stem diameter below 150mm
- Category (B, B1, B2, B3) — Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years)
- Category (U) — Those in such condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reason of sound abroicultural management



AGE GROUPINGS
Y = YOUNG
MA = MIDDLE AGE
M = MATURE
OM = OVER MATURE
V = VETERAN

1 EXISTING TREE CANOPY BASED ON DIMENSIONS GATHERED ON SITE IN 4 DIRECTIONS, NORTH, SOUTH, EAST AND WEST
2 ROOT PROTECTION ZONE BASED ON 12 TIMES THE (DBH) AT CHEST HEIGHT
3 TREE TAG NUMBER
4 TREE TO BE RETAINED
5 TREE TO BE REMOVED
6 TREE CATEGORY BASED ON BS 5837 2012 CRITERIA
7 DECIDUOUS TREE CANOPY
8 EVERGREEN TREE CANOPY

01 TABLES BS 5837-2012

Key

- SITE BOUNDARY
- HEDGEROW TO BE RETAINED AND PROTECTED
- HEDGEROW TO BE REMOVED
- LOCATIONS OF TREE PROTECTION FENCING

Client:
Alanna Homes & Alcove Ireland Four

Project:
Barnhill Garden Village

Drawing Title:
Tree Protection Plan - Barnhill

Drawn By:	Checked By:	Date:	Scale:
TC	MG	27/06/22	1:1500@A1
Drg. No. BRHL-ARBTS-001	CAD File: BRHL_ARBTS_001.DWG	Issued For: Planning	Rev. C

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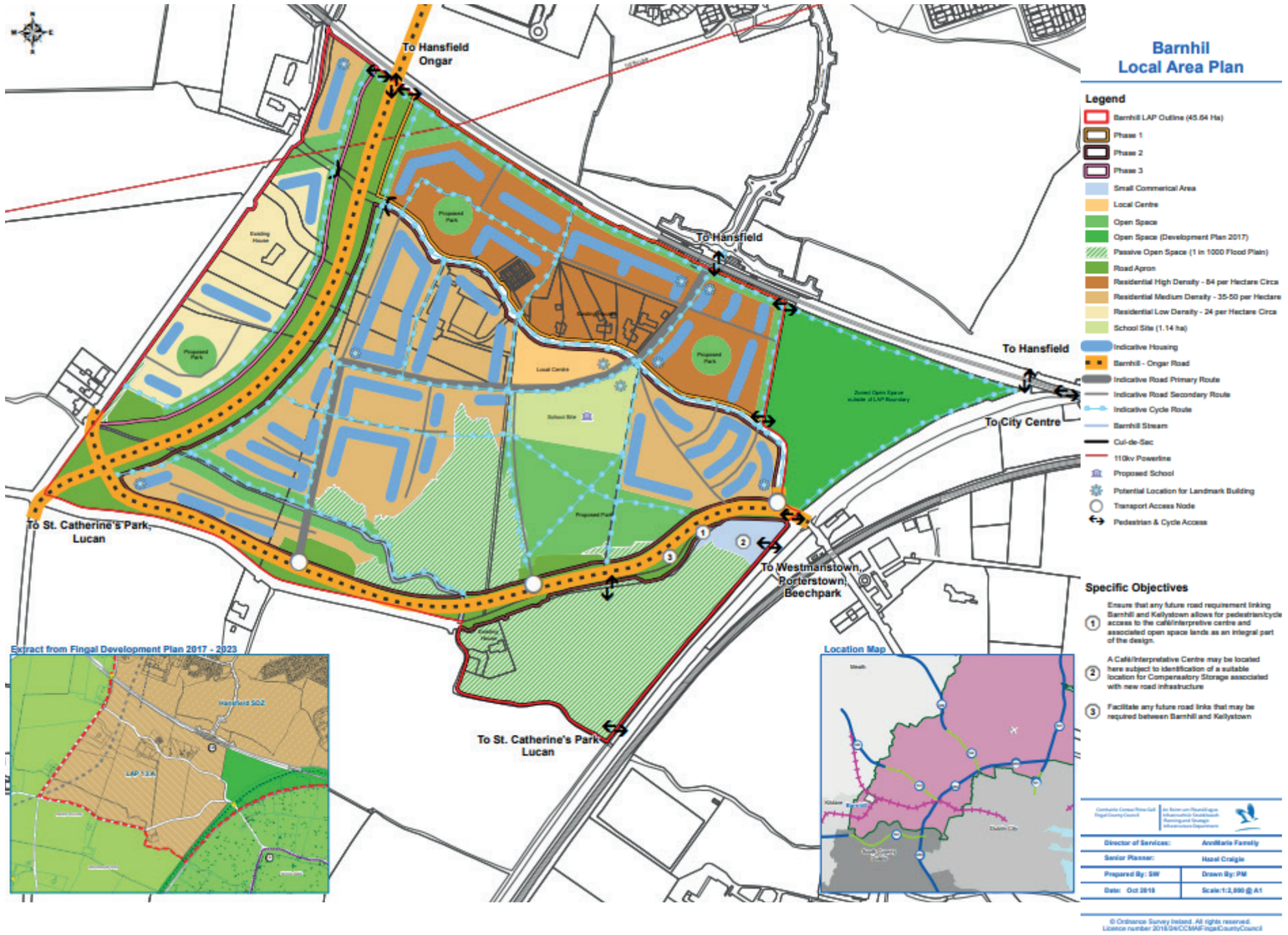
1.9/ Planning Context

Barnhill Local Area Plan, February 2019

(refer to appendix 2)



The relevant local policy zoning and objectives are informed by the following policy documents:

Fingal Development Plan 2017-2023

Barnhill Local Area Plan (LAP) February 2019

Space for Play - A Policy for Fingal 2022

All Ireland Pollinator Plan 2021 - 2025

Design Standards for New Apartments 2018

Design Manual for Urban Streets 2019

A brief summary of the key points as they relate to Green Infrastructure and as were implementation in the proposed landscape design are:

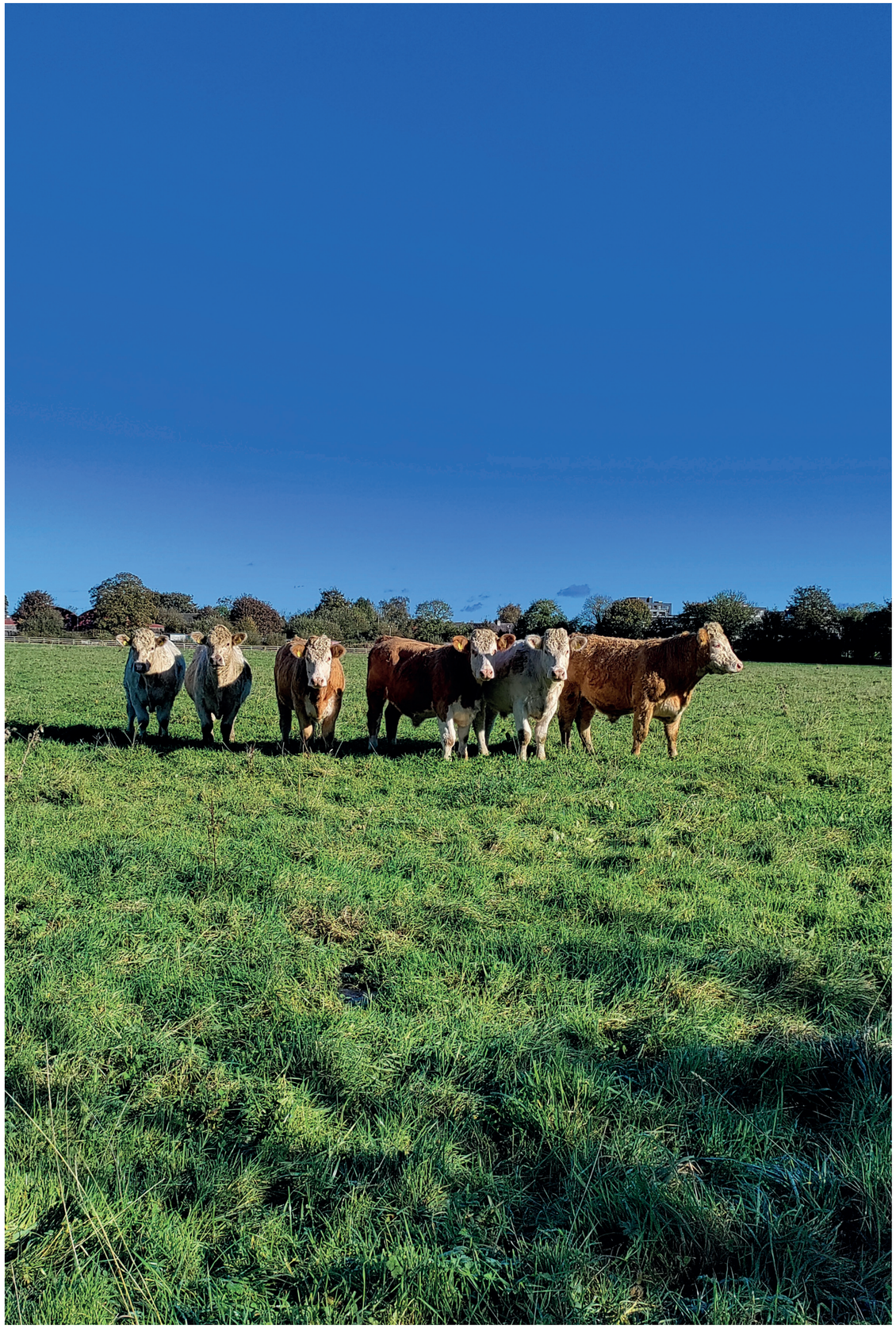
1. Biodiversity
- Protect and develop variety in habitats, plants and animals through within diverse ecosystems.
- Habitat creation, meadows, riparian woodland, wetlands, green corridors
- Integrate biodiversity into public open space, educate and increase public awareness.

2. Parks Open Space & Recreation
- Create distinctive, appealing and vibrant public spaces that provide a strong urban identity and a distinct local community character.
- Provide a range of accessible park, open spaces and recreation facilities that are inclusive and carter to varying intensities and interests.
- Provide attractive, safe and inviting spaces and routes that develop a sense of place that is unique to a given community.
- Integrate cycling and walking into the healthy living and well being approach to public open space.

3. Sustainable Water Management
- Integrate Sustainable Urban Drainage Systems with public open space and biodiversity.
- Create wetlands, green roofs and SuDS measures which provide both a water management measure and a biodiversity net gain.

4. Archaeological & Architectural Heritage
- Ensure GI responds to landscape & historical character.
- Conserve, enhance and augment archaeological and architectural heritage.
- Respond to colour, texture, materials of existing character through to proposed schemes.

5. Landscape
- Ensure GI provision responds to and reflects the landscape character and historic character to contribute to the sense of place of any new proposal.
- Conserve existing trees and hedgerows and augment existing woodland
- Unite new communities through landscape proposals.



2 / LANDSCAPE CONCEPT

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2/ Landscape Concept

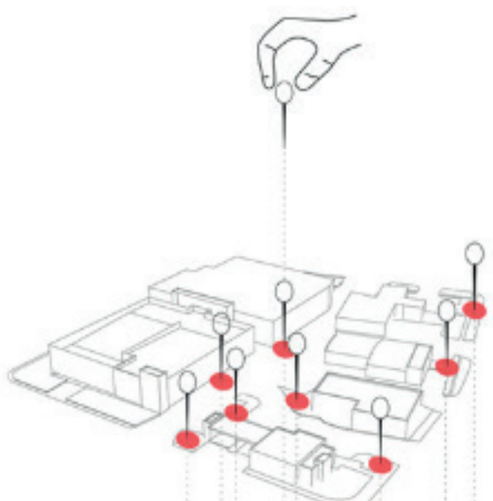
Our analysis of the existing site, the proposed architectural form and urban design completed to date has contributed to the development of a concept that links the expressed Heart of Town and Heart of Green. This network of links throughout the site will contribute to community building, fostering and encouraging interactions, a developing a sense of place sense of place.

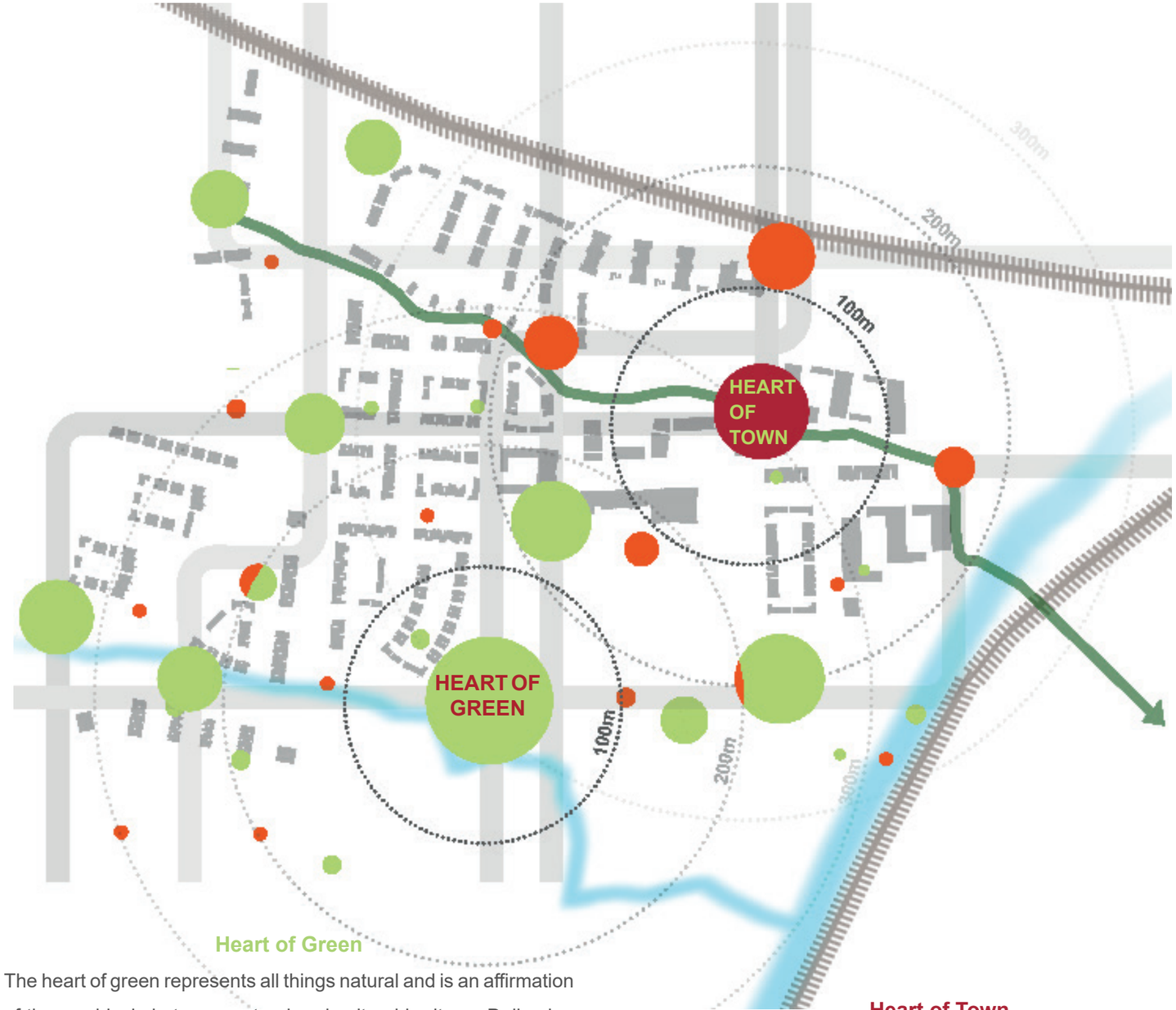
This concept drawing demonstrates the underlying network that connects the complete site with and the targeted locations of the landscape interactions governed by the principle of urban acupuncture.

Urban Acupuncture

The principle of urban acupuncture using small-scale, target interventions to transform the larger urban context and unite the complete development forms part of the landscape approach. In the same way traditional acupuncture relieves stress in the human body, the urban acupuncture approach aims to relieve stress in the urban environment.

The proposed network of targeted urban and landscape interventions aims to create attractive and distinct character across the site that embody spirit, life and community vibrancy.





Heart of Green

The heart of green represents all things natural and is an affirmation of the symbiosis between natural and cultural heritage. Delivering ecological corridors, tree planting play and recreation amenities whilst also being the lungs of the development breathing fresh air to the Heart of Town. Pocket parks, permeability, community orchards, ecological reserves, recreation, fitness to name but a few elements that will be embellished to form the green infrastructure network of the site.

Heart of Town

The Heart of town is attributed to the urban character of the development to encompass urban features such as plazas, civic spaces,market places and home of the commercial element of the development. These are important spaces that become meeting places, rest areas, cafe seating paces and become hubs of incidental urban activity.

2.1/ Landscape Strategy

The Network Concept

The functional concept for the landscape of Barnhill Garden Village is inspired by the site as a nexus between two rail lines by creating this proposed thematic network of interconnected landscape amenities. Each themed line shares a grounding concept be it Place Making, Wayfinding and Identity and aims to express this to connect each member of the community to the significant nodes within the development.

The intention is to incorporate elements of the 15 minute city, coupled with this concept to create a live-able, sustainable community that provides proximate facilitates for all and vibrant public open space, streetscapes, ecology through a distinctive and easy to read concept that is tangible on the ground and deliverable.

When we couple this network concept with the unique urban acupuncture approach and a sympathetic retention of to the existing landscape characters we start to see a very coherent landscape develop. One that physical expresses the connectivity demonstrated in the concept diagram.

URBAN ACUPUNCTURE THEMES

1 PLACE MAKING

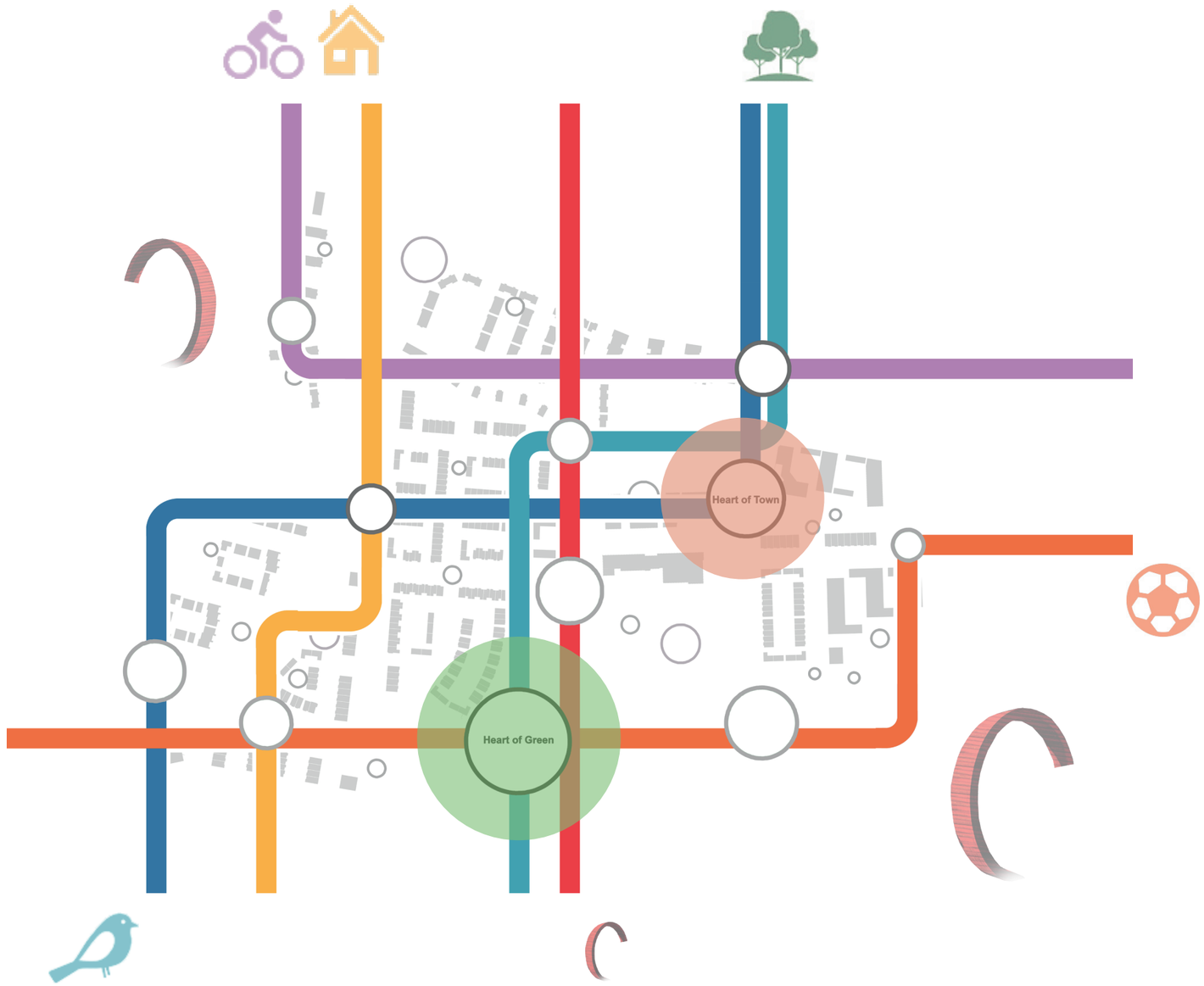
2 COMMUNITY

3 IDENTITY

4 BIODIVERSITY

5 SUSTAINABILITY

6 VIBRANCY



2.2/ Landscape Strategy - Place making

Urban Acupuncture Themes

Local Pocket Parks

The pocket gardens will be dispersed throughout the green infrastructure network. Residents will be less than 5 minutes from a pocket park which will host a variety of amenities as part of the connected network of amenities.

Urban Plazas

a landmark destination

embody sustainable living

sense of community & belonging

Community Gardens

The community gardens will bring urban permaculture to Barnhill and work to educate and promote sustainable living, edible infrastructure and connect the residents with the historical landscape as a place of food production.

Playgrounds and Nature Play

Playgrounds are vital for developing children as places to learn, to meet other children, as places to inspire and cultivate curiosity. As part of the network of spaces, play amenities will feature strongly from large playgrounds to target urban acupuncture play elements.

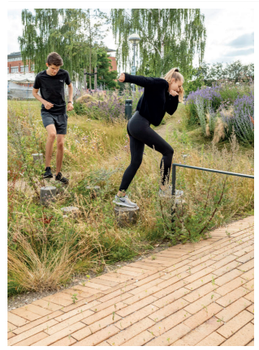
Diversity in Activities

lifetime residents

healthy living & wellbeing

enduring design

Fitness and Permeability



Creating a diversity of activities for lifetime living will be expressed in the form of Parkour, skate and calisthenics parks for the teenage generation, including fitness and leisure walking routes for the older community members.

2.2/ Landscape Strategy

Hydrology

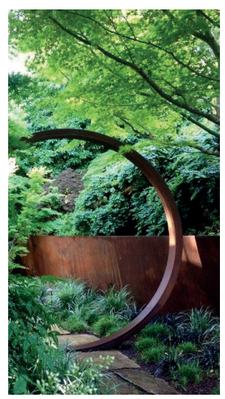
Water and Sustainable Urban Drainage Solutions are proposed as a visual, aesthetic, tangible feature of the landscape design of the development. With bio-rention areas, wetlands, rain gardens, green roofs permeable paving and ponds as combined measures of water interception.

Landscape

cohesive
green
infrastructure
durable and adaptable
place making

Structures

Structures, when used correctly are a powerful feature of any landscape design. In Barnhill, the bespoke moon-gate structure will preform a number of tasks; From public art sculpture, way-finding tool, brand cultivating and identity stimulating to view framing device and public seating, the structures in Barnhill will contribute vastly to the public realm in many ways.



2.3/ Landscape Strategy - Charrette

The Community Brand

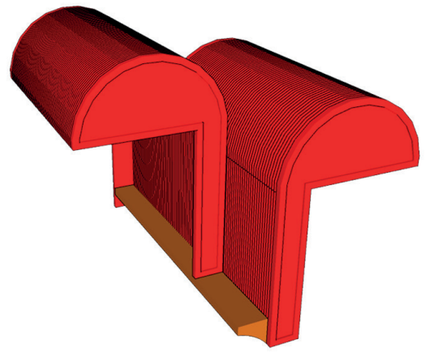
Based on our initial site analysis, the expressed above landscape concept and findings we initiated a design *charrette* to tackle the prime issue of creating the unique brand / sense of pace / identity that is so necessary in a development of this size. Focusing on the discrete element of street furniture. We believe that this level of detail, using a key piece of furniture in the urban environment can be a powerful device in the new urban language to contribute to place making, wayfaring and identity.

Of the many elements we explored, this photo and how it captures and frames the wider landscape, coupled with the shapes, textures and colours of the existing site culminated in the design of the Barnhill Moon Gate.

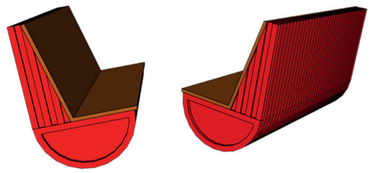
The Barnhill Moongate is an element that mirrors the shape,colour and material elements of architectural character on the existing site and express them in a contemporary mechanism in the form of the moon gate which acts as a bespoke wayfinding tool that frames views, marks landmark locations and develops the community brand of Barnhill.

Inspiration

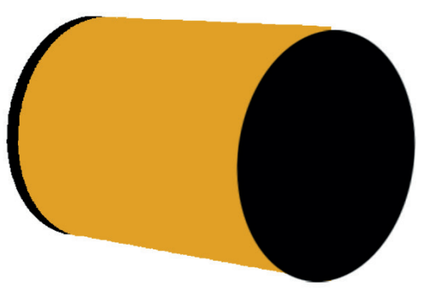
Conceptual expression

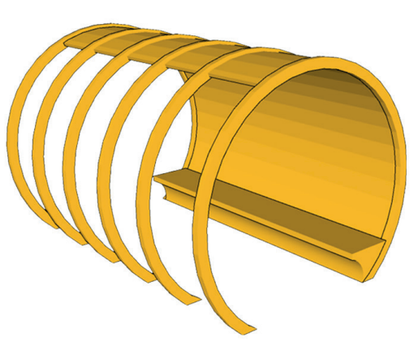


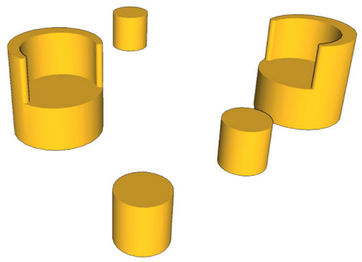
Site specific structure

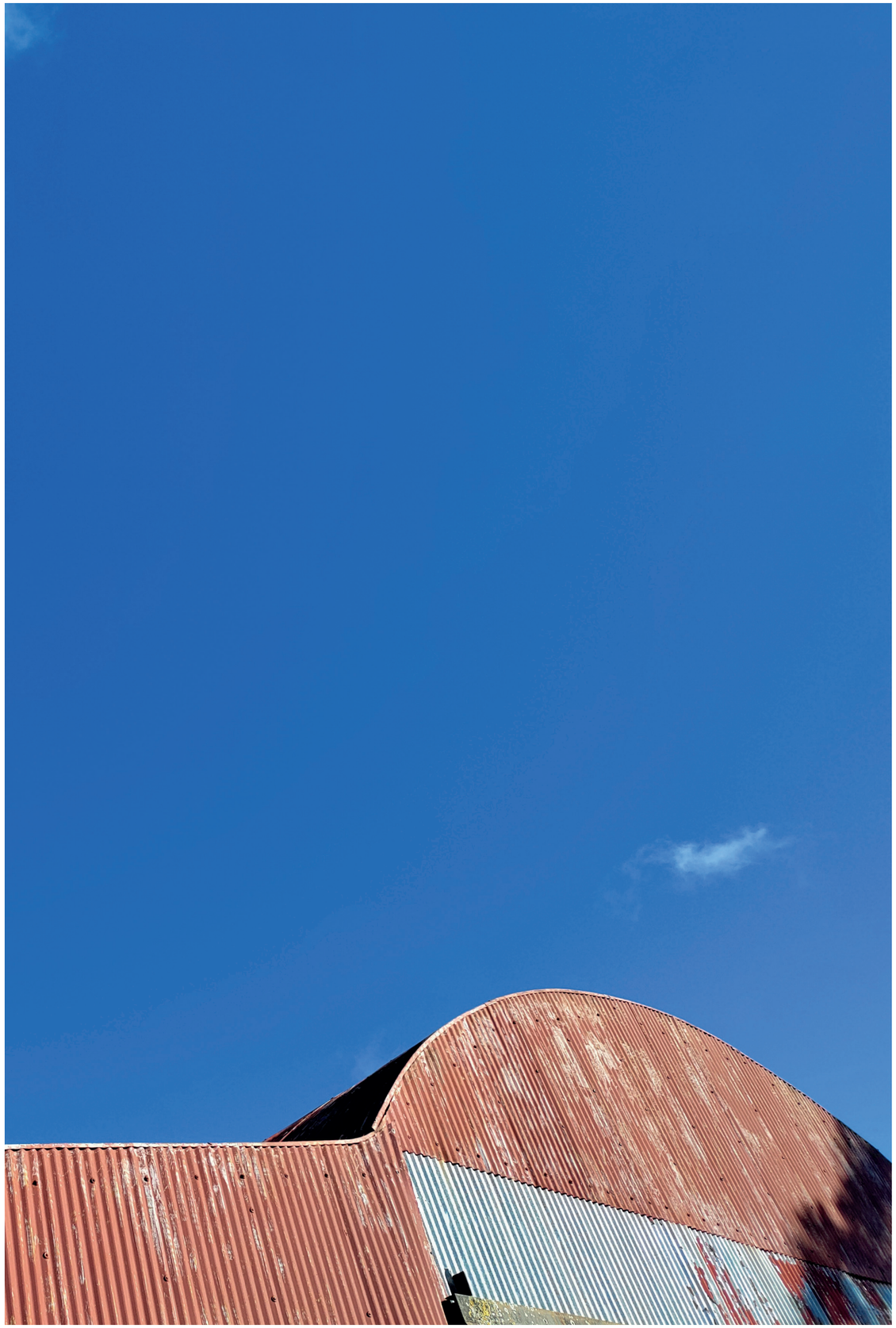


Site specific furniture









3 / LANDSCAPE PROPOSAL

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3/ Landscape Masterplan

Masterplan Objectives

Red line site boundary

SOFT LANDSCAPINE

Trees
@standard semi-mature, 4x yr, 20-25cm girth, 500-550cm high, min.200cm clear stem, RB

Grass area 1
150mm topsoil depth

Grass area 2 - Rear gardens
150mm topsoil depth

Traditional Irish Wildflower Meadow Mixture (WF01/ WF04/ DW01/ DW02)
refer to planting specifications at *Wildflowers.ie*

Ornamental Planting Mixture 1
@c/g 2L

Ornamental Planting Mixture 2
@c/g 2L

Ornamental Planting Mixture 3
@c/g 2L

Wetland - Traditional Irish Wildflower Meadow Mixture (MM01 to MM12)
refer to planting specifications at *Wildflowers.ie*

Hedging 1
Hedging to garden boundaries

Hedging 2
Mature native screening hedge

HARD LANDSCAPING

Main Roadway
Tarmacadam

Residential Roadway - Shared Surface
Asphalt road with granite chip

Concrete Footpath In-situ concrete

Own Curtilage Parking - Permeable Surface
Hydropave Pedestel Pavers or similar, as approved.

Asphalt Red
Running track design with painted strips

Asphalt Buff
Buff coloured Asphalt

Plaza paving 1
Feature Market Square Paving

Plaza paving 2
Large form permeable paving

Concrete kerb (to Engineer's Specification)
In-situ concrete

Saftey Grass Matting
22mm safegrass rubber mats

Decking
composite plastic

LANDSCAPE FURNITURE / FEATURES

Play equipment /Fitness equipment

Bike parking

Benches
On public square with ventilation feature

Feature benches

Glass Canopy
Steel structure

Raised Planters
Steel planters with feature ventilation

Bins Store

Moon Gate
Large red, steel moon gate 3m tall 3m dia

Wildlife Hide
Feature @Barn Steel wildlife Hide

Basement Ventilation
Heel-safe grates

From a landscape and public realm perspective, the proposed development offers an exciting opportunity to develop a new quality neighborhood realm that balance people and nature in a way that is sustainable and aesthetic. The primary focus on sustainable transportation from cycling, walking, buses and trains combined with a fitness friendly public open space design makes this proposed development the avante-garde in a healthy living future. This, coupled with a bio diverse and sustainable landscape treatment and planting scheme aims to contribute to an overall improvement in quality of live for people and the wider ecological community.

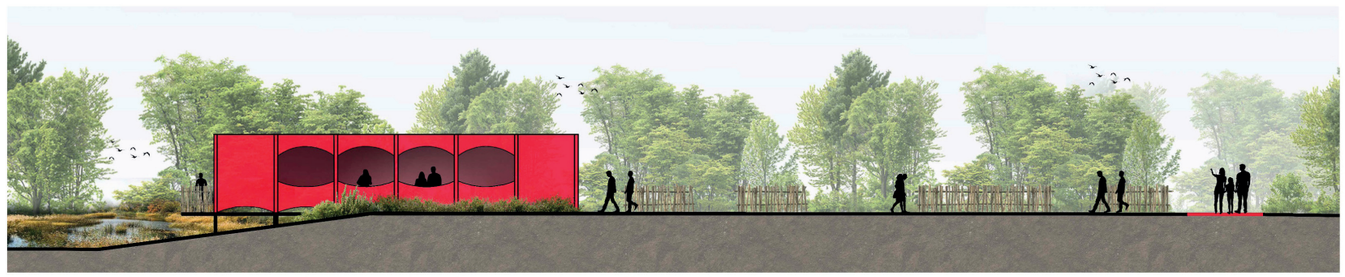
The landscape design has a combination of objectives:

- To create a combination of exciting public open spaces that engage the senses and encourage interaction with nature and the outside.
- To provide a livable community for all ages inviting play from toddlers to teens, fitness opportunities for parents and elderly friendly public spaces which outdoor amenities.
- To be a leader in developing a scheme that promotes a sustainable lifestyle and encourages community togetherness through fitness, play and connectivity.
- To integrate the proposed development into the existing landscape character and architectural heritage
- To enhance biodiversity and provide education opportunities for native flora and fauna learning.
- To design a beating heart to the development with a multi-functional plaza space catering for markets and public performances alike.

The landscape design proposals are compliant with the objectives set out in the relevant policy documents including the Barnhill Local Area Plan and Fingal Development Plan. A total provision of 38.67% POS has been provided out of a total gross site area oc 29.42ha.

A firm connection with the architectural and cultural heritage of the proposed development have been central to the landscape design proposals and have been cultivated to create and promote a sense of identity and a sense of place expressed through landscape. A number of bespoke design elements are located throughout the development which assist in that connection including the distinct moongate that can be found throughout the site. These elements coupled with the red ribbon route, act as a wayfinding tool which connects the entire community.

The pedestrian and cycle movement of people through and around the site has been given close attention in the design process. Footpaths and cycleways have been designed to mirror expected desire lines and have been given the width required to make for comfortable movement with most landscape paths to be 4.0m wide. The provision of street furniture and bicycle parking has been provided so as not to obstruct this movement. This promotes natural and fluid movement throughout the scheme to all public and communal open space.



3.1/ Station Plaza / Village Centre / Railway Quarter

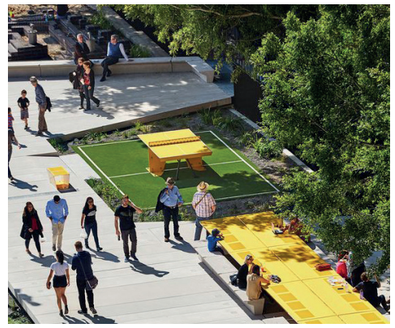
1. Railway Quarter Avenue
2. Arrival Plaza
3. Avenue to Market Square
4. Barberstown Lane Park Area
5. Market Square
6. Garden Plaza
7. Shared Surface Neighbourhood Centre
8. Communal Open Space
9. Barnhill Moongate

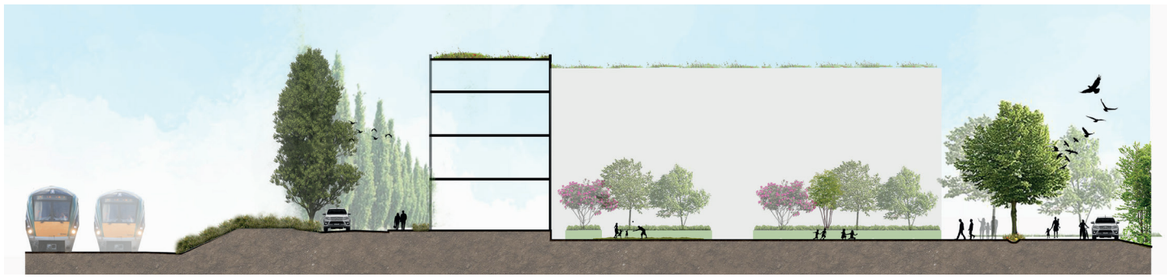
The area covered by the character areas: Village centre, Station Plaza and Railway Quarter were designed as a whole, with greater flow between them and a primacy of pedestrian connection between the railway station and the Market Square.

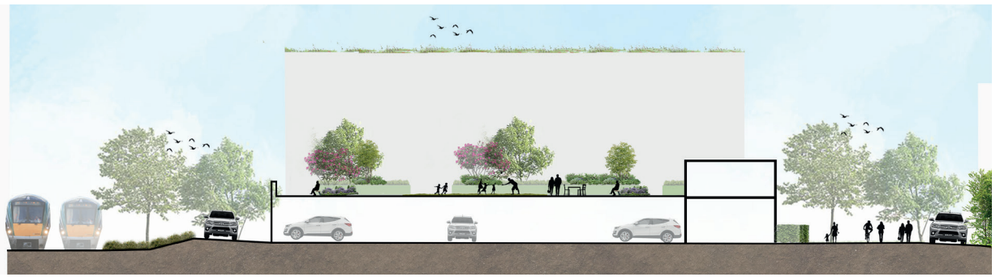
Along avenue of trees, rain gardens and criss cross paths following desire lines, leads the pedestrian or cyclist directly towards the heard of Barnhill and through a feature Sculptural Moongate to be designed as part of the public art allocation of the scheme.

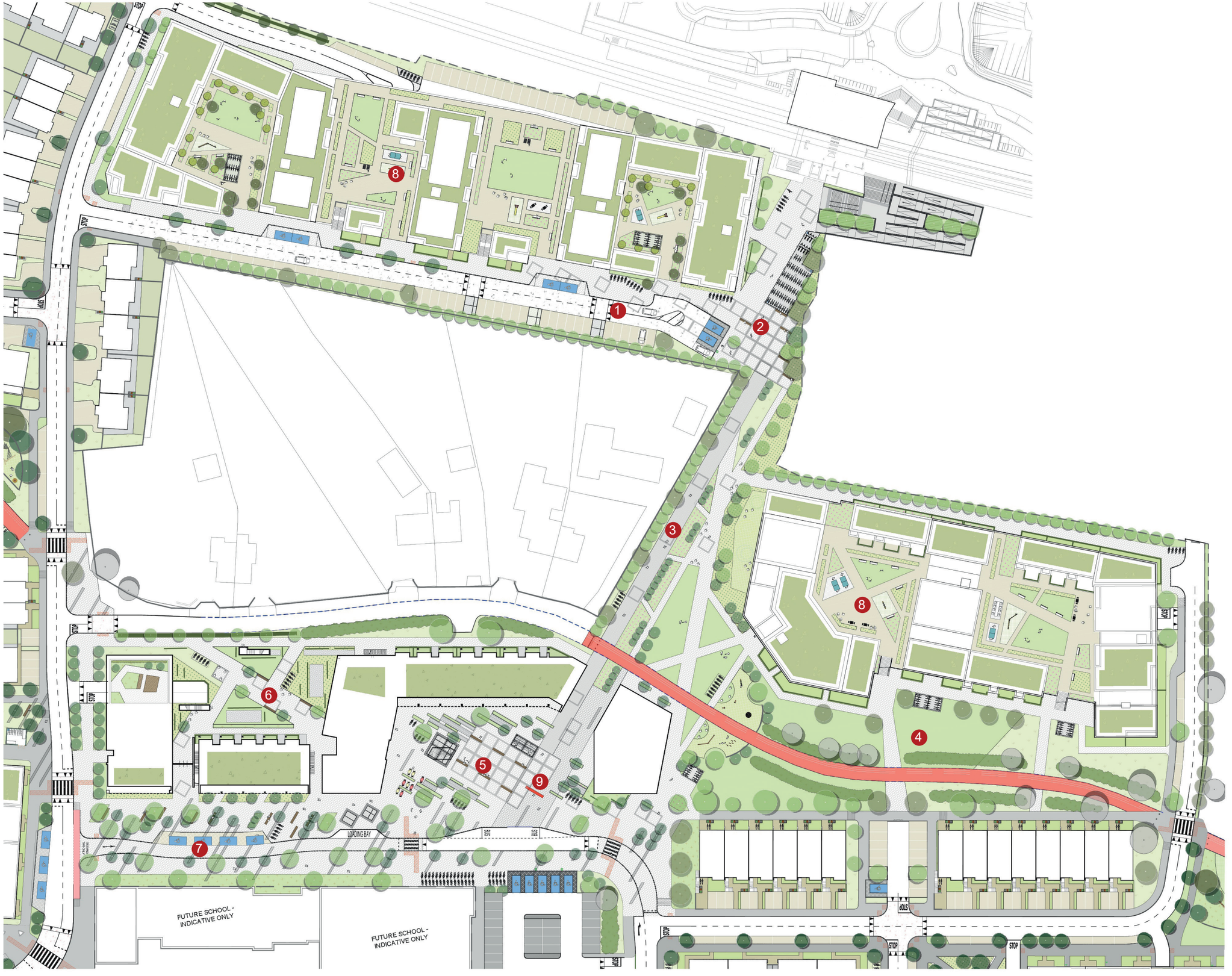
This generous arrival space is solely a pedestrian experience and at a scale that is grand, generous and inviting framing.

The arrival experience pases across the Barberstown Lane North providing a direct walking link to the Royal Canal Greenway. This lane is retained in full and the tree and hedgerows attached to it are also retained where feasible.



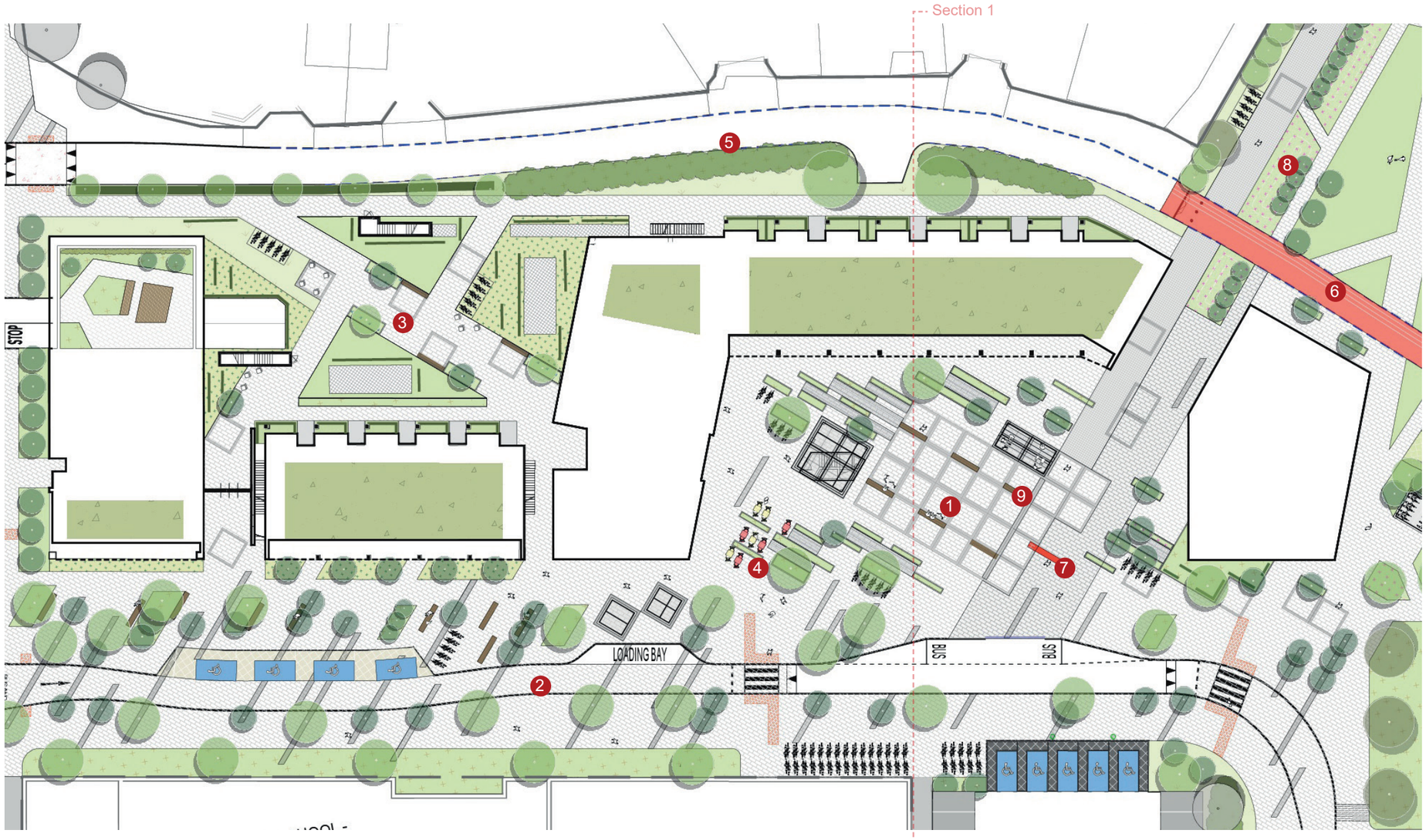





1
2
3
4
5
6
7
8
9
STOP
LOADING BAY
FUTURE SCHOOL - INDICATIVE ONLY
FUTURE SCHOOL - INDICATIVE ONLY

3.1.1/ Village Centre

1. Market Square
2. Village Centre Shared Surface
3. Garden Plaza with ornamental hedges
4. Outdoor Seating Area with Raised Planters
5. Existing road & hedging to be retained
6. Barberstown Lane Pedestrian & Cycle Route
7. Moongate - facing green avenue to Hansfield
8. Rain Gardens
9. Bespoke Benches with Outdoor Power Supply



The Market Square is the beating heart of the development and is ones arrival to Barnhill Garden Village, once alighting from the railway station. The Market Square is uniquely designed to host markets. The unique paving pattern is designed to be one market stall and the arrangement of benches with in the square defines each stall. These benches have both a ventilation function and will provide external power sources to the market stalls.

The bespoke pacing pattern, unique to Barnhill Garden Village emanates out of the square acting as a magnetic pull to the commercial hub of the development. The strong orthogonal route to the railway station carries through the square and onto the shared surface roadway and onto the school.

Bespoke lighting stands illuminate the market square at night and a lush planting scheme, in raised planters and ground level arrangements delineate space and define cafe seating areas while promoting access to the retail entities ground level.

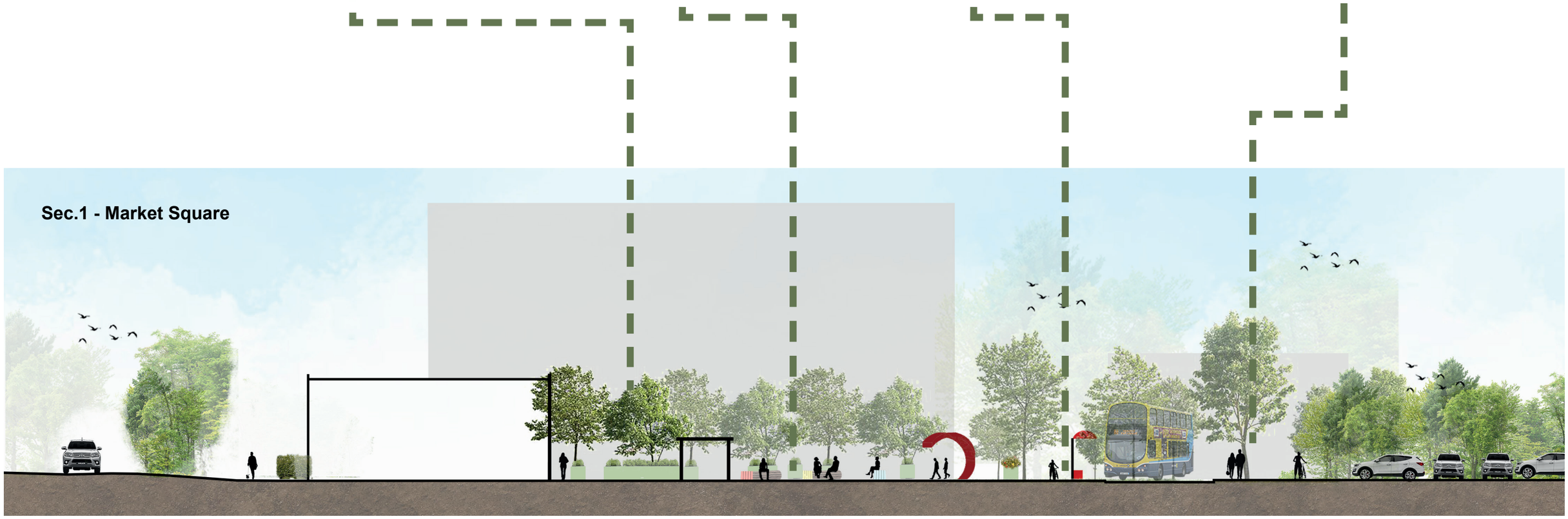
A detailed look at the Market Square demonstrates the multi-functionality of the space. With comfortable and powered spaces for over 20 stalls the space is still pedestrian permeability and does not interfere with the amenity and retail offerings around the square. Comfortable public benches, covered seating and ample bike storage contribute to the usability of this space.

Raised planters at Market Square

Benches and paving strips with vegetation

Moongate sculpture

Rain gardens



3.1.2/ Station Plaza

1. Amenity grass lawn
2. Avenue to Market Square
3. Creche area
4. Communal Open Space
5. Barberstown Lane Pedestrian & Cycle Way
6. Existing Hedge, Ditch & Trees Retained
7. Natural Playground
8. Rain Gardens

Station plaza features a combination of communal and public open space. The communal open space is found within the podium courtyards and is host to a combination of landscape elements that service the local residents. Small toddler play areas, table tennis tables, seating and pergolas coupled with large lawn areas and seasonal planting beds aim to create a beautiful courtyard setting.

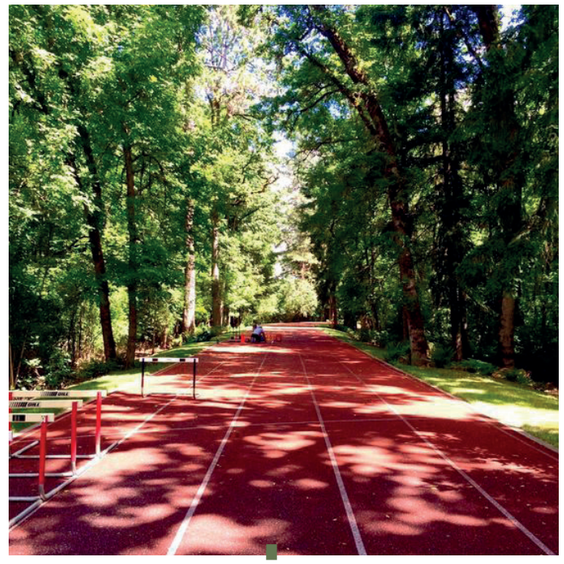
Opening out onto the public open space one interacts with the Barberstown Lane North where the existing trees, hedgerows and ditches have been retained and incorporated into a fully landscaped proposal. The Barberstown lane becomes a pedestrian and cycle only path subject to all relevant approvals from Fingal County Council. The retention of this element grounds the design in cultural and landscape legacy of the site and is a direct link to the Royal Canal Greenway. This space then opens out onto the Market Square and towards the railway station to the north.

Podium regular geometry and planting

Tennis tables at the communal gardens

Station Plaza Park along Barberstown Lane South

Barberstown Lane South - Pedestrian and cycle lane



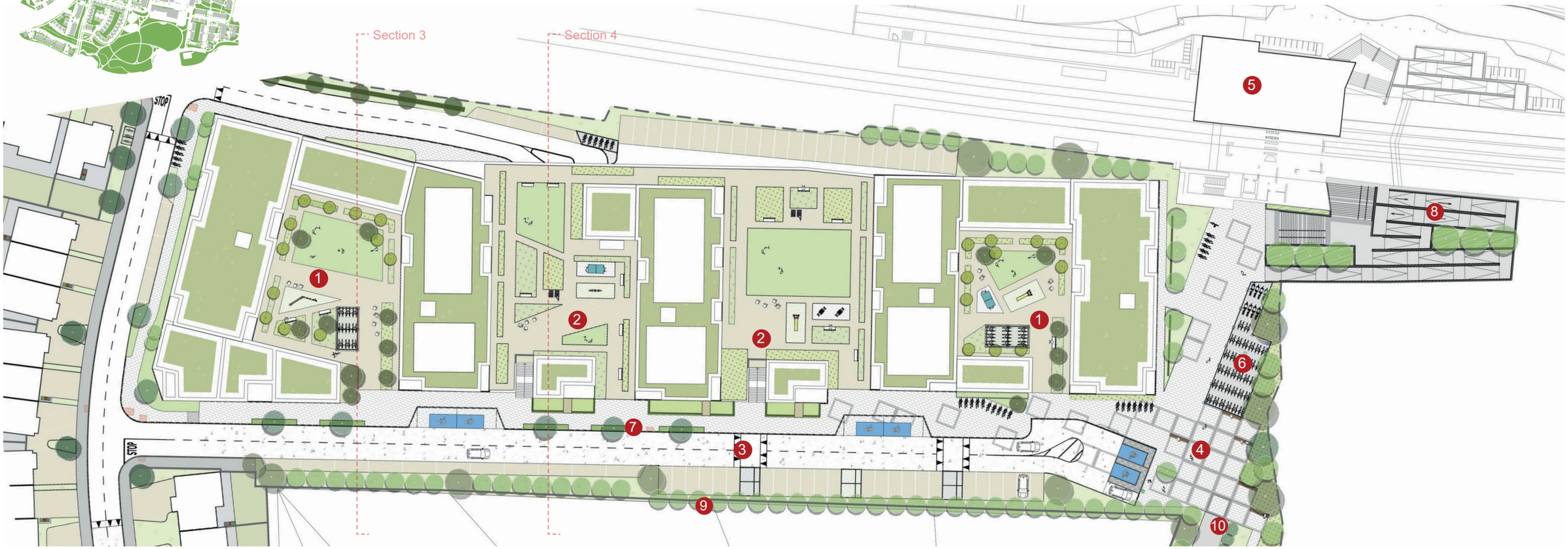
3.1.3/ Railway Quarter

1. Apartment’s Ground floor podiums
2. Apartment’s First floor podiums
3. Shared surface / Railway Quarter Avenue
4. Arrival Plaza & Drop Off
5. Hansfield Station
6. Secure bike storage structure x 72no. bikes
7. Rain Gardens
8. Ramps and Steps from Railway Station
9. Screening plants to Neighbouring Properties
10. Avenue Route to Market Square

The railway quarter is defined first and foremost by the railway station and tracks. The Railway Quarter buildings themselves benefit from 2 on street courtyards and 2 podium level courtyards providing an abundance of communal open space that feature a variety of landscaped areas including benches, play areas, expansive lawns and seasonal planting beds for local pollinators.

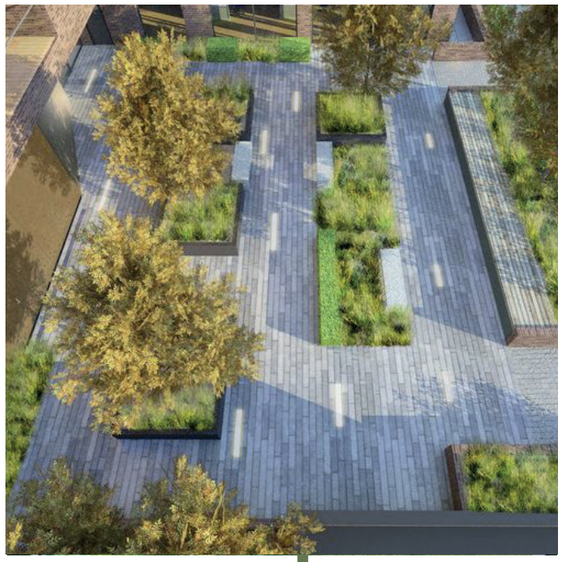
It consists of a shared drop-off road, which culminates in a waiting area.
Pocket parks are located in the apartment blocks, two on the ground floor and one on the first floor, closed to residents.

In the design of the podiums, we have unified the layout with the areas of the village center and station plaza squares, a geometric layout that provides different recreational areas and allows for different walking routes. Along the façades, we propose elevated planters in order to give privacy to the balconies and patios.



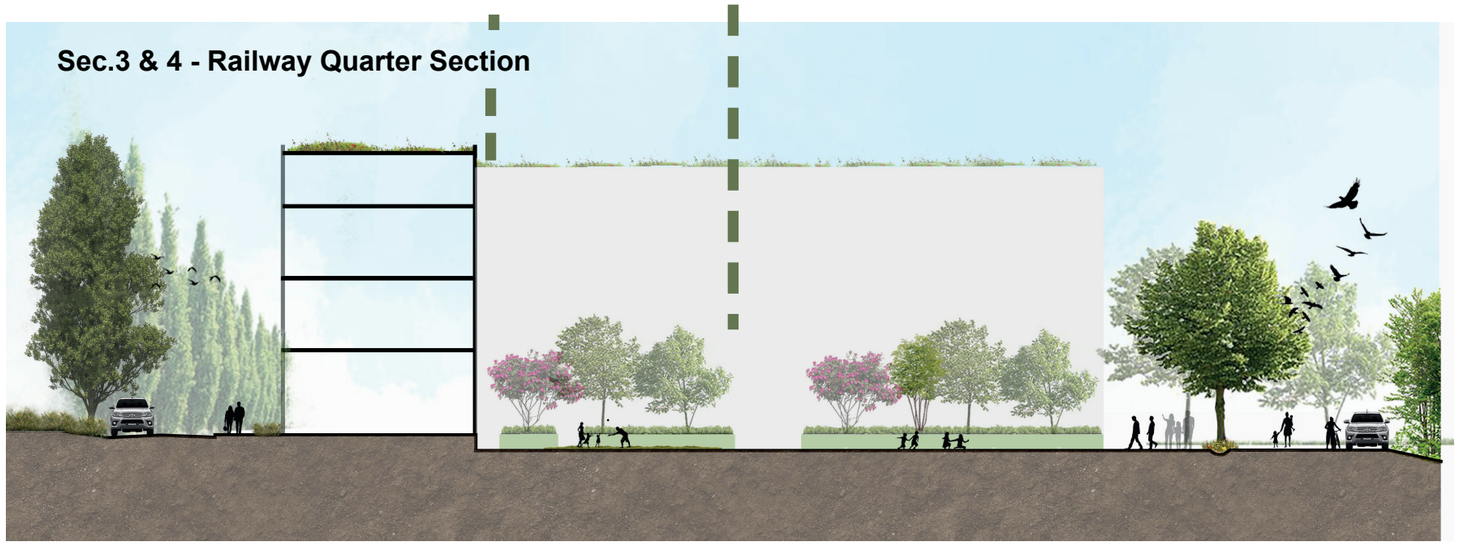
Sedum roofs

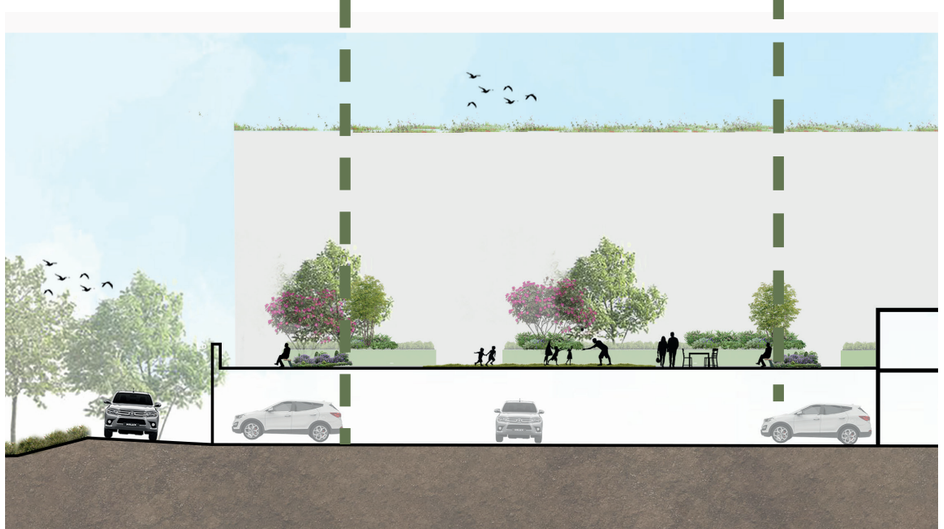
Communal gardens geometry



Sun lounges at communal gardens

Design reference for communal gardens





3.2/ The Park and The Crescent

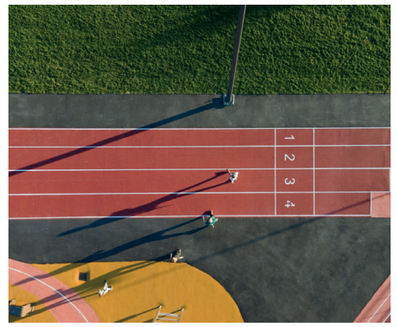
1. Entrance Plaza
2. Multi-use amenity trail
3. Playground / Nature play areas
4. MUGA Pitch
5. Parkour Area
6. Pitch
7. Contemplation Swing
8. Wetland area
9. Skate park
10. Eco hide

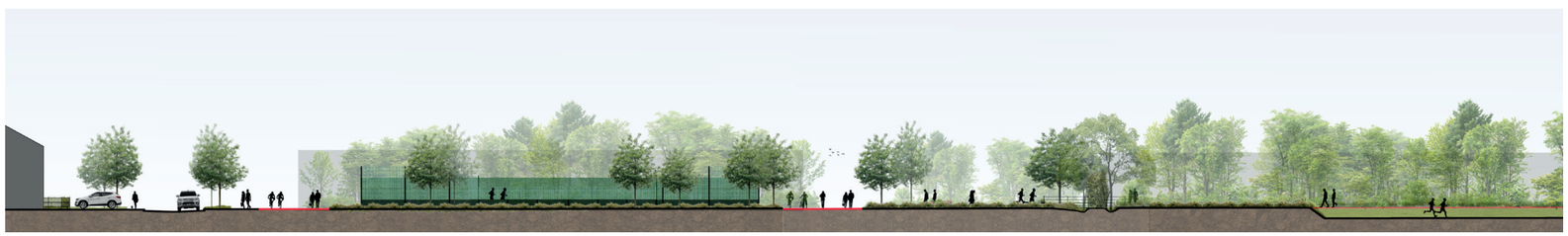
The public park of Barnhill Garden Village is the neighborhoods green heart, hosting a variety of amenities for all ages, abilities and interests. The red ribbon route is the swooping activity and wellness trail that links all elements of the park and acts as a shared running, cycling and walking route.

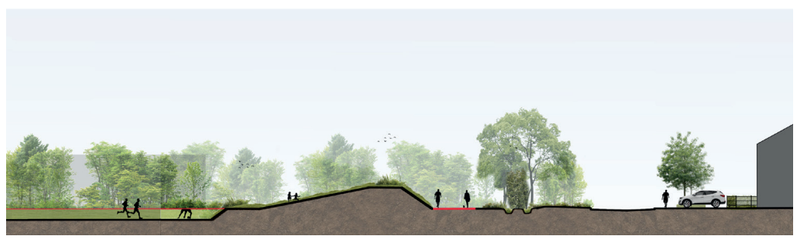
The park, unities recreation, ecology and activity. Together, these elements when designed in symbiosis produce an attractive landscape in a form of a green oasis within the stream riparian and wetland setting. In addition, the idea of the park is based on the dynamic movement of the water and sculpting of the ground. The park has 3 formal entrances, which are the main ones all with a direct link onto the red ribbon forming reception squares with areas to sit and relax. The public Park Statistics:

1 x Sports Pitch (97 x 77m) with Spectators Mound
1 x MUGA Pitch (35x18m)
17 x Fitness Equipment Pieces
1 x Parkour Area (145sq.m)
1 x Skate Park (350sq.m)
3 x Playgrounds total of 7,043sq. m 48 pieces
1 x Community Garden 220sq.m
1 x Red Ribbon Running Track 850m out and back
1,021 Bike parking
1 Ecological Hide
1 x Moongate Sculpture

2.1km of Protected Hedgerow
1,350 sq.m Wetland Habitat
1,270 sq.m Wildflower Meadows
400m of Riparian stream character protected
1,700 Mature Tree Planting







START
100m
150m
200m
300m
400m
500m
600m
700m
800m
FINISH
7.5m
7.5m

3.3/ Link Road East and West

1. Public Open Space
2. Play Area
3. Multi-use amenity trail
4. Existing Hedgerow to be retained
5. Fitness Pieces
6. Proposed Native Hedgerow

Link Road East and West are areas of similar character and the proposal for these areas is based on a landscape typology based on street scape and boundary screening when facing the railway line.

The two areas are linked across the proposed Link Road by a pedestrian and cycle underpass linking Link Road West with the wider Barnhill Garden Village and the amenities therein.

Link Road West provides a small local amenity area with public seating, natural and unstructured play area, fitness equipment and is directly connected via a pedestrian underpass to Link Road East. A local landscape character of streetscapes and native boundary tree and hedgerow planting.

Link Road East is positioned between the railway track (which is screened with timber fencing and planting for noise abatement) and the Barberstown Lane North (BLN). The BLN offers a mature and existing hedgerow backdrop to the development while providing a pedestrian link on to the Royal Canal Greenway and to the wider Barnhill neighborhood centre and public park.

Wildflower meadow

Local area for play

Feature stone wall

Amenity running and cycle trail

Sec. 5 & 6 - Link Road East and West Section

3.4/ The Cross

1. Seating area / meeting point
2. Multi-use amenity trail
3. Existing hedgerow to be retained
4. Nature Play area
5. Playground Area
6. Shared surface
7. Orchard Park
8. Apartment Podium Communal Open Space

The Cross Character area is defined by the Barberstown Lane North to the north, the Existing hedgerow to be retained and protected to the west and onto the public park to the south and the Village Centre to the east.

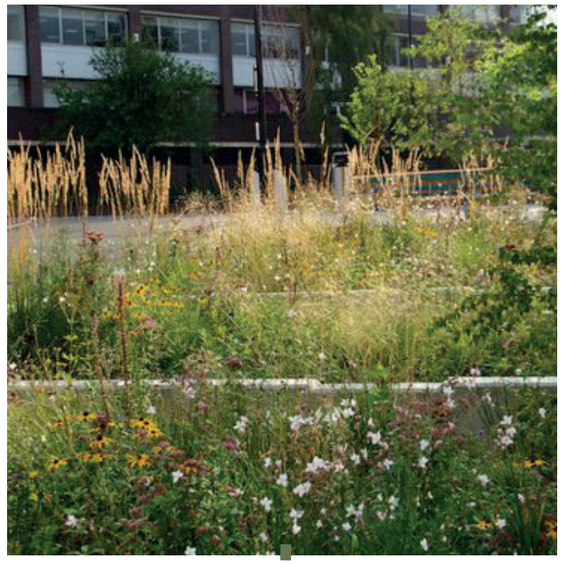
This area benefits from it central location close to a wide range of amenities such as the main playground in the public park and running track and fitness loops. The streets capes are well proportioned and a shared surface street, links the Cross to the Village Centre via rain gardens and local green spaces.

With direct access to 2 local areas for play, public seating and ample bike parking and the protection of approx 500m of existing and mature hedgerow with respective trees. This character area offers a mature landscape setting coupled with the proposed street trees and ornamental planting areas.

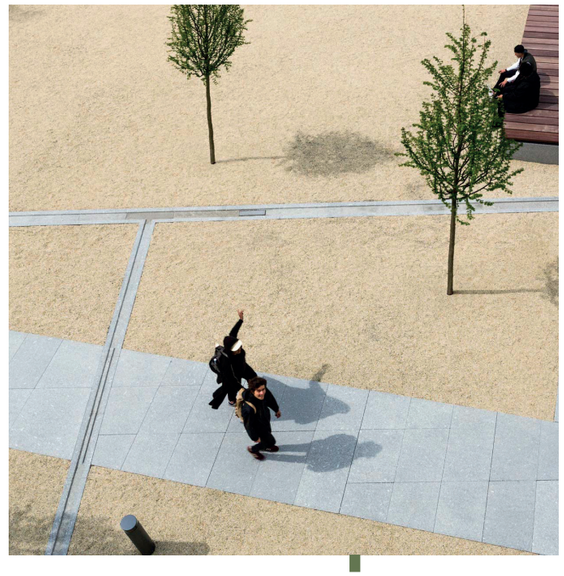
Footpath

Shared surface reference

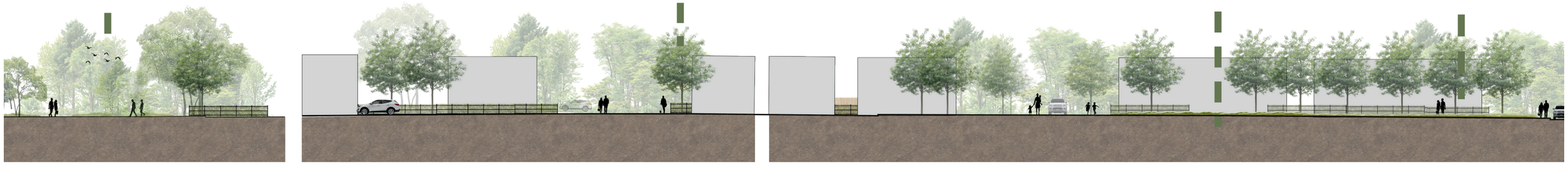
Park with benches / strips



Shared surface transition to plaza / park



Sec.7 - Shared surface and park

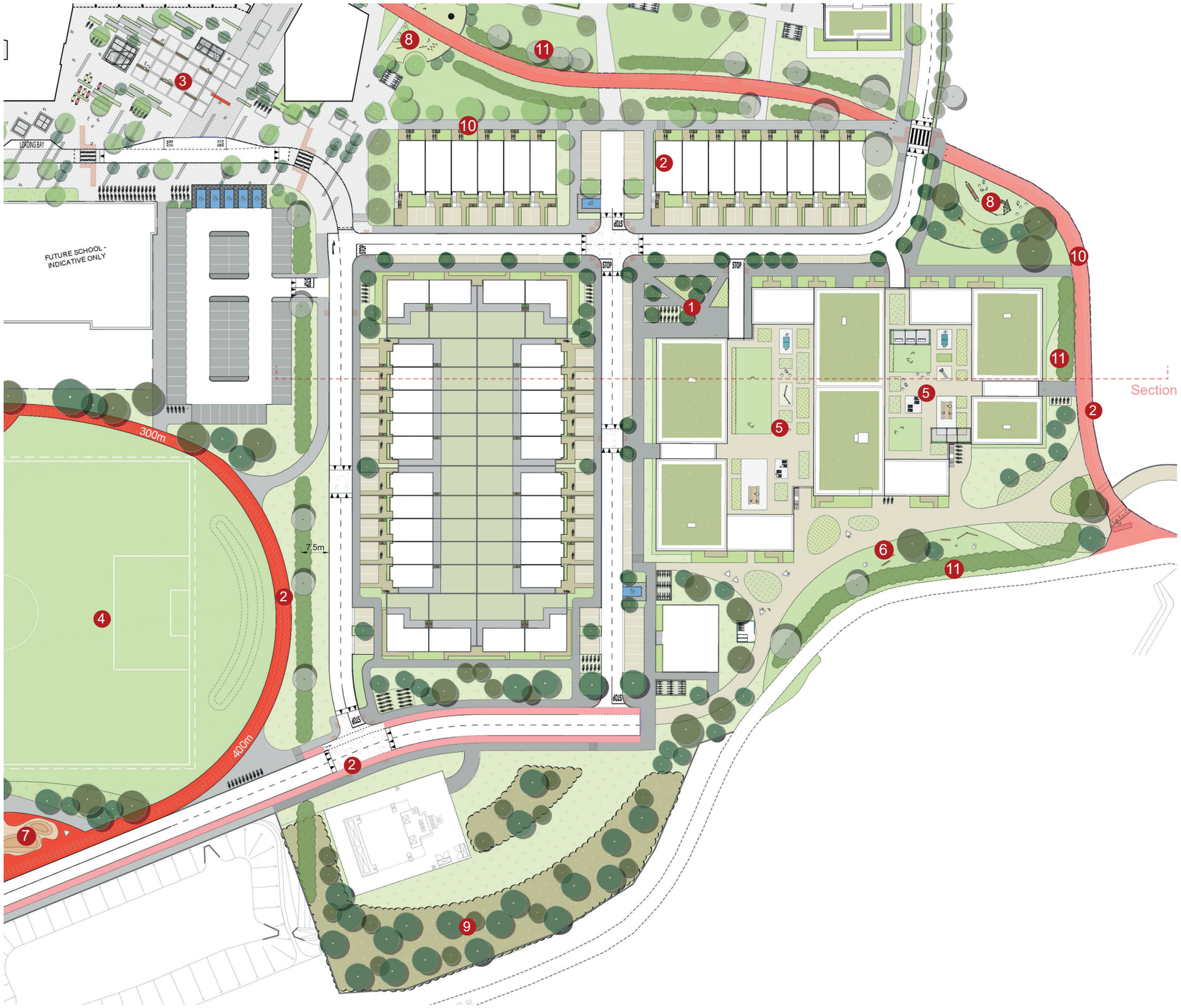


3.5/ South Station Quarter

1. Plaza
2. Multi-use amenity trail
3. Market Square
4. The Park
5. Apartment's Podiums
6. Nature Play area
7. Skate park
8. Playground area
9. Native woodland Screening
10. Barberstown Lane North
11. Existing Hedgerow

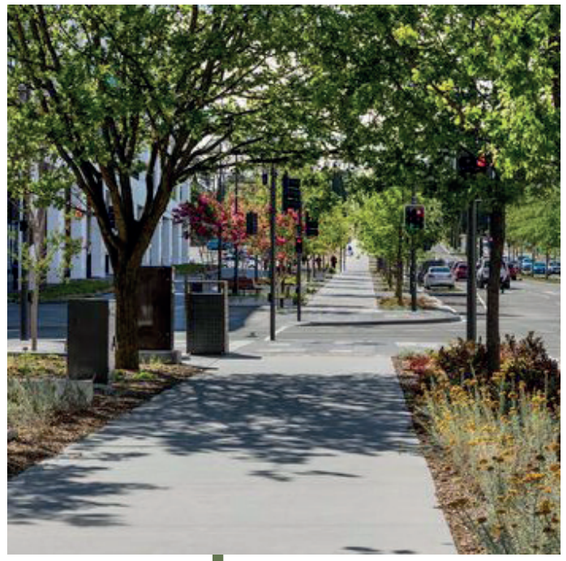
South Station Quarter is a significant character area which is the developments face to the Royal Canal Greenway. This interface has been approached with great care and the retention of the existing hedgerows and the addition of woodland area to the sites Southern boundary. This area contains a combination of landscape typologies including communal open space podium courtyards, natural play areas, neighborhood park, existing landscape features and private garden spaces.

The Barberstown Lane North has been retained in its existing form and restricted to pedestrian and cycle use alone and opens out in various places to South Station Quarter.



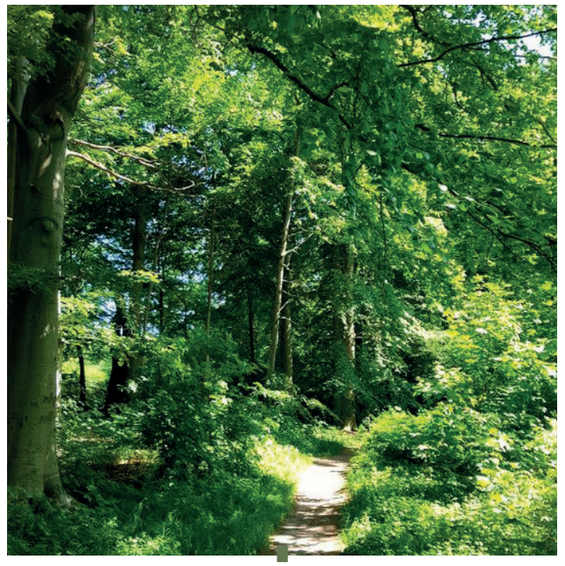
Existing ditch to be maintained

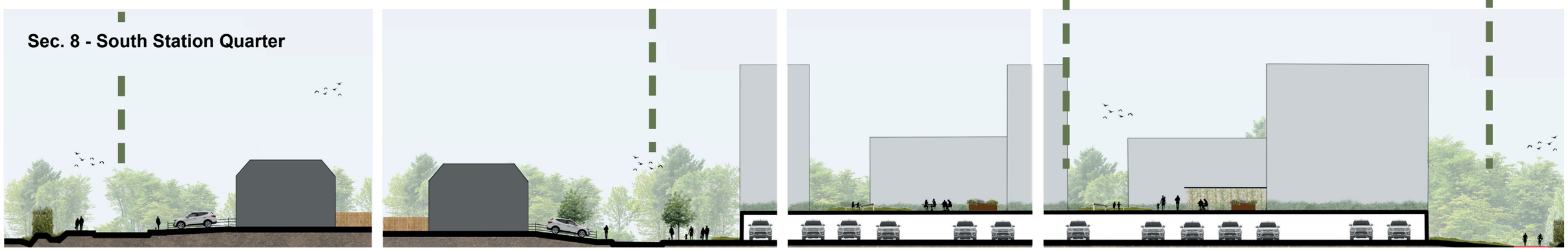
Footpath



Communal gardens amenity areas

Amenity trail





3.6/ The Stream and Parkside

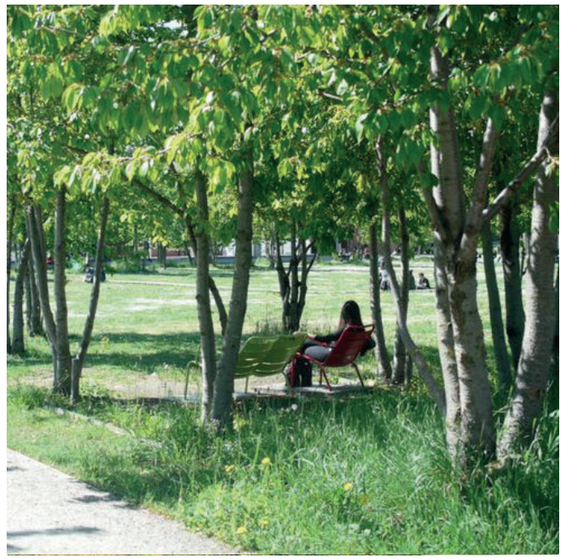
1. Public Open Space
2. Play area & fitness zone
3. Seating area / meeting point
4. Environmental Open Space
5. Riparian woodland buffer protection
6. Screening woodland boundary
7. Existing Hedgerow

The stream is a most important element within the scheme and both the architectural and landscape design has worked to protect and where possible,improve it as an ecological corridor. 10m buffer zones have been provided and a specific meadow planting mix has been selected by the design team ecologists.

Within The Stream character area, both the steam and the existing hedges and trees to be retained and protected are significant ecological corridors which form an integral part of the local and wider Green Infrastructure network.

Parkside as a character area is linked via pedestrian and cycle links to Barnhill Village Centre and the neighborhood park. Parkside is afforded a variety of amenity spaces providing small pocket play areas and fitness zones including native tree and shrub planting. The Stream character area provides walkways on both sides of the stream with a pocket seating area and strong links to the neighborhood park across the bridge.

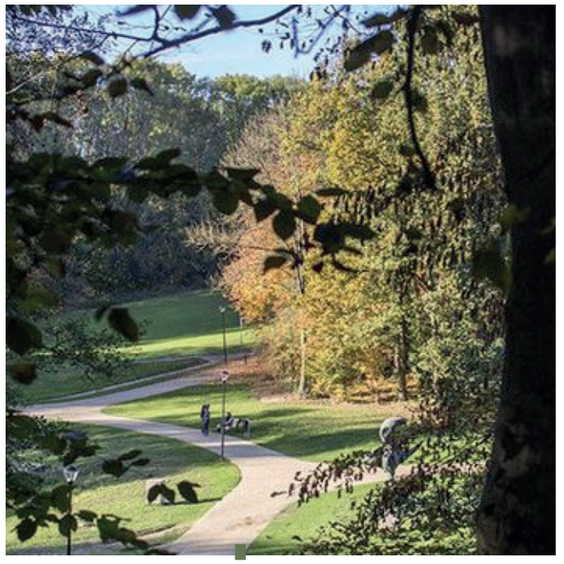
Woodland screening footpath



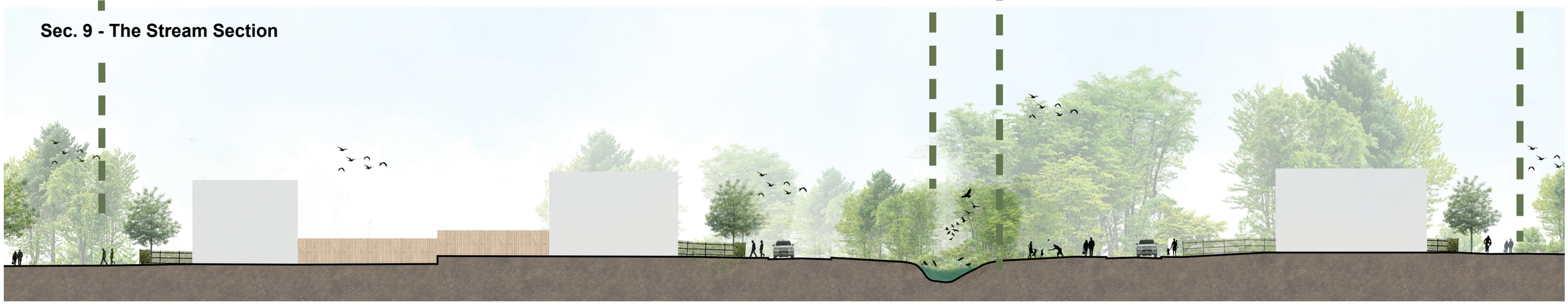
The stream reference image

Stream borders meadow

Screening woodland with amenity footpath



Sec. 9 - The Stream Section



3.7/ The Red Path

The concept for Barnhill is directly linked to the Modernism concept of memory of place, that is, keeping the memory present and the link to the past and history of a place. Through the analysis explained above, through some elements it was possible to create a narrative associated with agriculture, livestock, and rural life that characterizes the site.

These elements, the farms, the barns, and the hay bails, influenced our concept, through their shape, color and use, giving rise to sculptures and simple furniture that represent them, such as moongates, benches, viewpoints, canopies, etc.

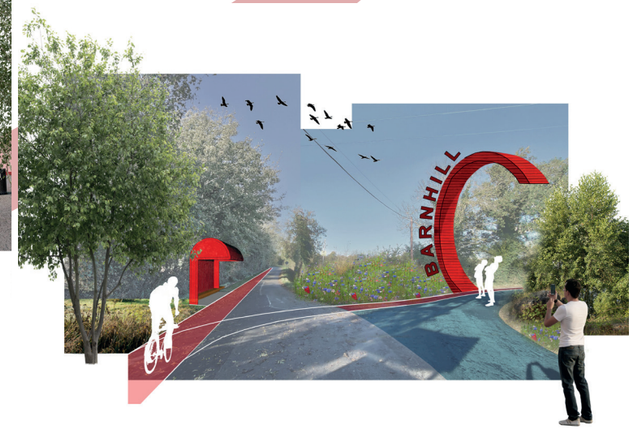
That said, and based on the connectivity concept, we developed a red route, a color that we associate with the barns, and through this route and the mentioned e elements, we create a union in space and various activities along with it.

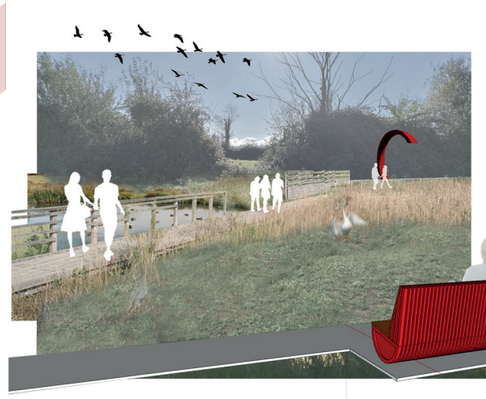
This route begins at Barberstown Lane North to create pocket public spaces along the future pedestrian route and weaves across the site through to the village centre. It continues in the public park and is a unifying element in the park that links areas of diverse activity and amenity.

The route cannot always be continuous, and where it is not possible, the continuation of the trails is symbolized by selected vegetation, in a reddish color to make it appear as if it continued, also with the created elements, as moon gates.

This route is diverse in activities, such as playgrounds, fitness spots, pleasant lawns and meadows, woodlands, wetlands and also small informal squares and seating areas. On its way, it crosses several landscape typologies, from more urban areas, such as the village centre; residential, in the different residential blocks; and the park, with all the activities, nature and pleasures it contains.

This route is also accompanied by an existing water line (existing ditch) that will be maintained and rejuvenated along with the existing hedges. These edges have a high ecological value since they are a mature support of wildlife and, simultaneously, for guaranteeing ecological continuity, being ecological corridors.





4 / LANDSCAPE DIAGRAMS

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4.1/ Access and Circulation

The mobility strategy designed for Barnhill is based on a principle of connection and equality of accessibility.

Car circulation is restricted to the essential and designed to minimize the use of the car, promoting sustainable mobility based on public transport, bicycles and walking.

Vehicle access through the village centre is restricted to public transport, with a dominate pedestrian / cycle focus.

Connectivity is evident through our cycling/pedestrian route in which there was an attempt to connect all the character areas and also the connection outside the limits of the intervention area.

The routes identified as “main pedestrian/cycling routes”, are the quick connections between the main points of the site.

The remaining secondary routes are varied, for contemplation and enjoyment.

BIKE PARKING PROVISION PER AREA

Character Area	Visitor bike spaces, no	Secure bike storage, no
Link Road West	10	21+4c
Link Road East	24	47
Railway Quarter	42	48
Train station	10	64+8c
Village Center	60	-
Station Plaza	34	42
School	80	-
Station Quarter South	162	10+2c
Park	120	-
The Stream	10	30+6c
The Cressent	20	10+2c
The Cross	70	30+6c
Parkside	32	16+1c
Total surface bicycle parking	674	347

Primary pedestrian and cycling routes

Car access and Circulation

Nature pedestrian walks / trails / links

Vehicular circulation restricted to public transport / Shared surfaces

Bicycle Parking / Bicycle Repair and Pump Station

4.2/ Public Lighting

The public lighting strategy has been prepared with a balance between public need and ecological considerations.

Light deflectors are proposed to deflect light away from the existing hedgerows to not compromise their role as ecological corridors for nocturnal mammals.

Furthermore the lighting scheme is designed so that there is negligible light spill on the wetland park area along the Barnhill Stream and the retained north-south hedgerow.

Please refer to:

Sabre Public Lighting Plan

Environmental Impact Assessment Report (Biodiversity Chapter)

Areas with no Public Lighting

Areas where public lighting is deflected

4.3/ Open Space Calculation

The Open Space for Barnhill has been planned without boundaries as an open permeable and welcoming piece of public realm. The semi-private space bleeds into the public open space with a series of smaller pocket spaces designed for seating, exercise or play.

Communal open space - whilst visually permeable - will have defined boundaries to secure it - a 1.1m railing with hedge either side to ensure residents safety and privacy.

The provision of Public open space for Barnhill meets the requirements being divided in Class 1, Class 2 and The Communal / semi-private Open Space. These categories are summarized in sub-categories such as play areas, plazas, green corridors and ecological areas.

	TYPE OF PUBLIC OPEN SPACE	AREA, sq.m	AREA, ha	% OF SITE	ACCESSIBILITY FROM HOMES
	Class 1 Public Open Space including:	**56,259**	**5.62**	**19.10**	**400m**
	- play provision* *of them:*	4,964	0.49		
	- natural playgrounds	2,006	0.20		beside a pedestrian route
	- local area for play (LAP)	-	-		within 1 minutes walking time of the child's home
	- local equipped area for play (LEAP)	2,958	0.29		within 5 minutes walking time of the child's home
	Class 2 Public Open Space including:	**25,382**	**2.53**	**8.59**	**within 400m walking distance of homes**
	- play provision* *of them:*	1,756	0.17		
	- natural playgrounds	1,107	0.11		beside a pedestrian route
	- local area for play (LAP)	-	-		within 1 minutes walking time of the child's home
	- local equipped area for play (LEAP)	649	0.06		within 5 minutes walking time of the child's home
	- plaza	9,229	0.92		
	Environmental Open Space of them:	**24,661**	**2.46**	**8.36**	
	- green corridor	9,719	0.97		5m on each side from the existing hedgerow
	- ecological fringe	14,942	1.49		grass seeding within 5-10m from the road
	Communal/Semi-private Open Space including:	**7,908**	**0.79**	**2.62**	**every home within 150m walking distance**
	- play provision* *of them:*	407	0.04		
	- local area for play (LAP)	407	0.04		within 1 minutes walking time of the child's home
**Sum up of all play provisions clarified above*					
	Play provision*	7,127	0.71	2.37	

4.4/ Play and Fitness

There is a combined total of 7,043 sq.m of play opportunities throughout the site, this is divided into both natural and formal play spaces. There are a total of 2 neighbourhood structured playgrounds that are designed to provide a combination of exciting elements of play that is colourful, tactile, inclusive and safe. These playgrounds feature in the primary public open space to the south of the site and all units of the development are within 400ms of these playgrounds.

As well as the primary playgrounds there are a number of less formal pocket play areas that contain more natural play including level changes, mounding, informal logs and balance beams as well as some stand alone pieces of play equipment on a safe grass matting such as swings. These pocket play areas add amenity value to some of the smaller landscaped areas and encourage the use of these areas by smaller children, closer to their homes at 100-200ms from most homes.

Playground / Nature Play / Adult Play

Fitness / Workout activity

1 Main Playground - Thematic

2 Sensory Garden

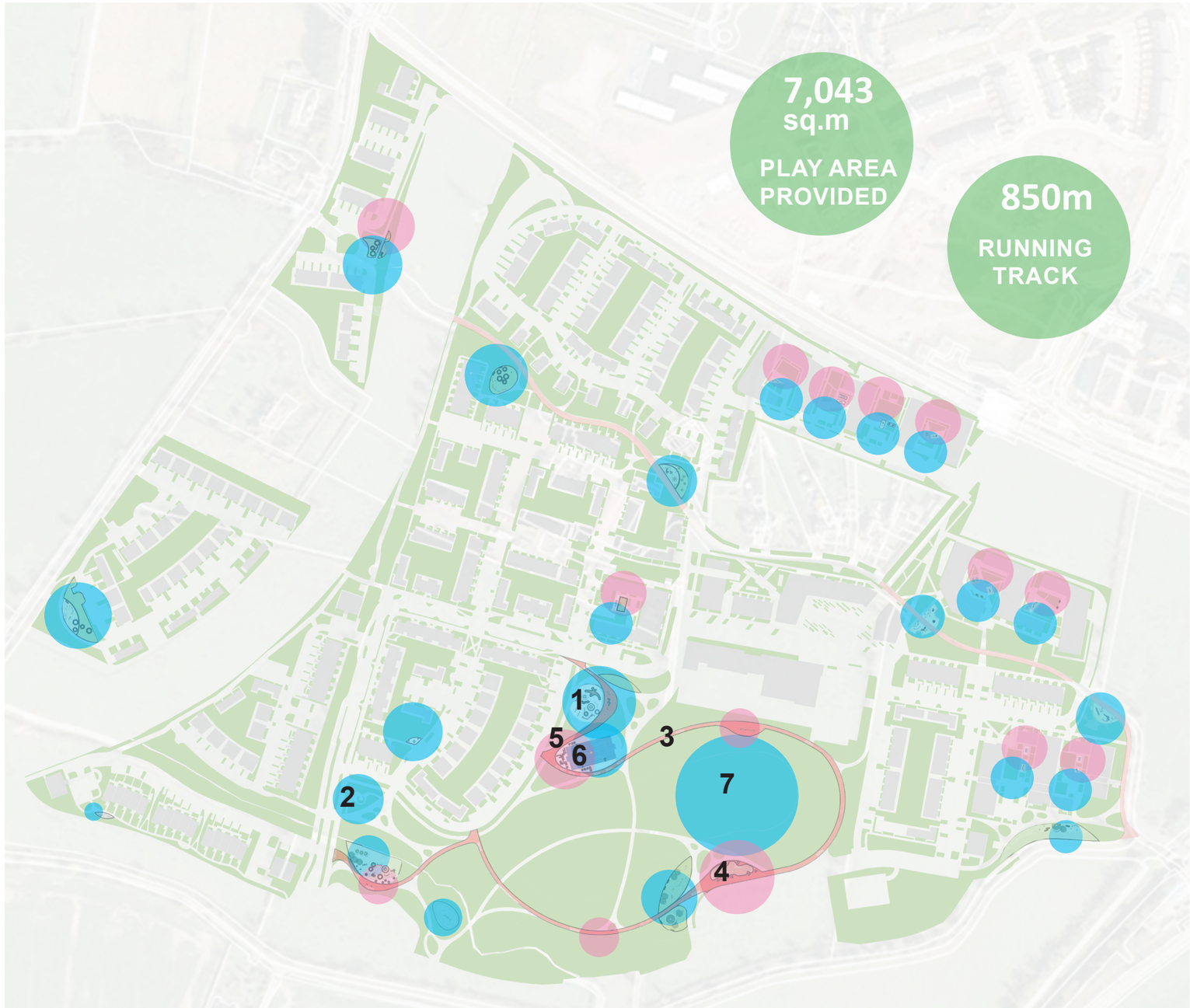
3 Fitness Running Track

4 Skate Park

5 Parkour

6 Muga Pitch

7 Multi - use grass play pitch



4.5/ Landscape Typologies

The landscape architecture proposal for Barnhill Garden Village is tied to the concept of continuity. Barnhill is a rural area, with a strong presence of loose stone walls, existing mature hedges accompanied by water lines, and it is important to maintain this character through the variation in landscape typologies proposed with that living connection to the cultural and landscape heritage of the site.

One of the elements that guarantee the continuity of our proposal is our “red route” that was built on the basis of urban acupuncture, in order to cover the entire space and connect it, when this route is interrupted, we place red vegetation, in order to illusion its continuation. The site presents different types of landscape, from tree-lined streets to more important and denser green areas such as wetlands, grasslands, riparian galleries, shrub edges.

Street trees are chosen to define character areas, a way of differentiating each neighborhood. In all character areas care was taken to, whenever it is possible, allow the proximity of an area of denser vegetation, contributing to an important category, “Living with nature”. However, it is in the park that the green structure is intensified, with the creation of habitats appropriate to the place, such as wetlands, riparian galleries along the river, woodlands, grasslands mixed with recreation areas.

Grasslands / meadows / bulbs

Amenity Grass lawns

Ornamental planting mixtures / herbaceous / small shrubs

Wetland area

Private gardens

4.6/ Trees

Trees in urban areas bring benefits to the quality of urban life, contributing to air quality, minimizing the impact of noise pollution, favoring biodiversity, serving as a shelter for wildlife, reducing the risk of flooding and promoting water infiltration of rainwater.

Trees also play important ornamental roles, as a sense of space and help us to flow in space when incorporated with the design. An example is placing a dominant species in each area character symbolizing and marking each area.

Adapted species were selected in order to obtain plant cover throughout the year, using perennial and deciduous trees, species adapted to water-logging, species that withstand pollution and more rigorous pruning, etc.

The proposed tree planting strategy visually informs the type of street-scape to the user. The tree strategy is key in defining the types of tree forms, scale and user interaction, which in turn defines the usability and comfort of the streets.

This coupled with the tree retention and protection strategy reveals a landscape palimpsest of where the existing meets the proposed creating a mature and developed landscape on implementation.

5 / GREEN INFRASTRUCTURE

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5/ Green Infrastructure Masterplan

Within the site, the green infrastructure will play a key role in creating a diverse and active environment for the local community. This will be achieved through providing a wide variety of functions within the green space and enhancing the existing landscape.

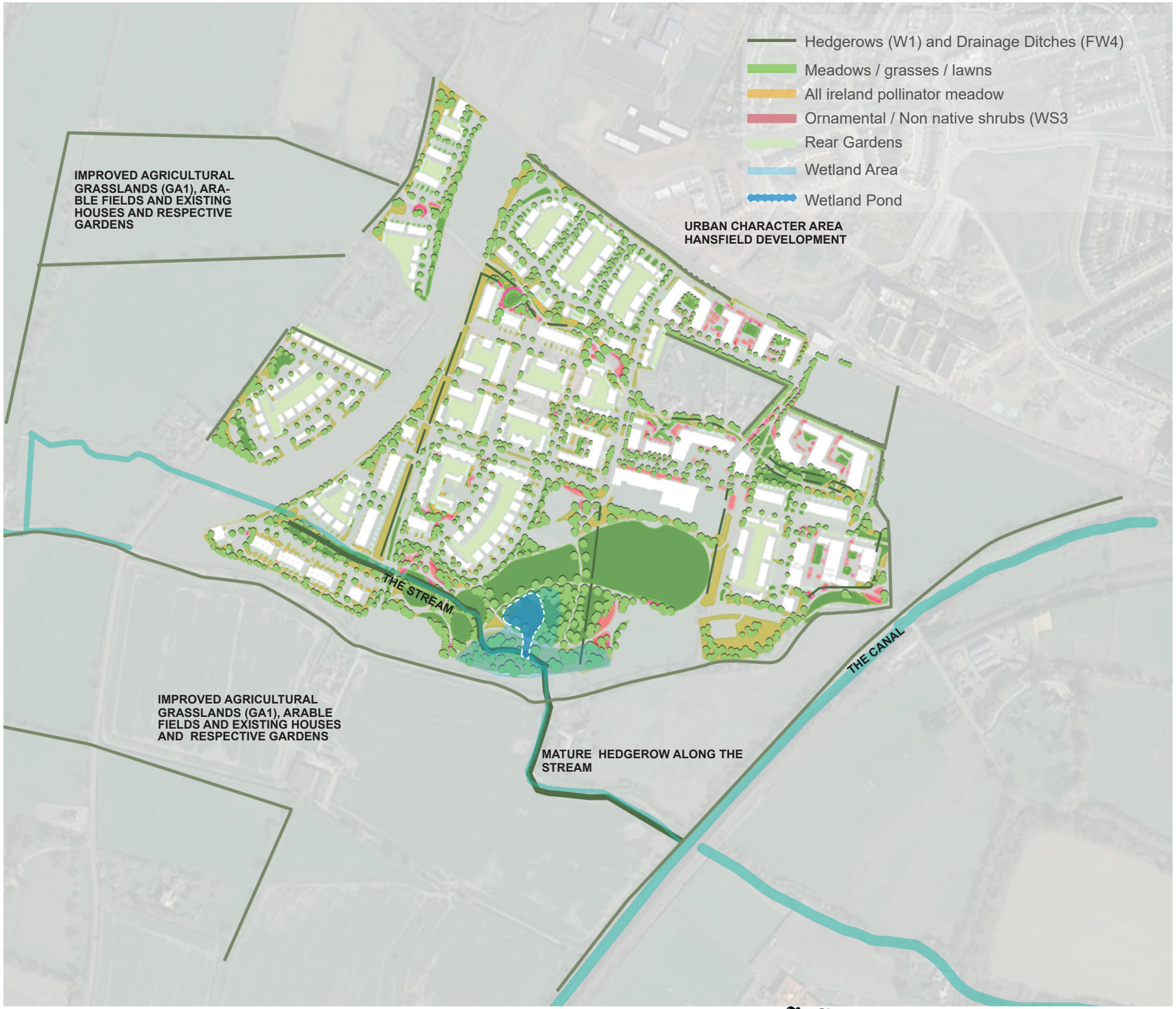
The plan opposite illustrates the different forms of Green Infrastructure that run throughout the Site and locations of play spaces that can be integrated within it. Different typologies create a layered and multifaceted landscape composition.

The green infrastructure will be the setting of the development and looks to create connectivity through the Site, expressed as a series of permeable and legible links, nodes and spaces.

These are further defined according to a hierarchy of primary, secondary and tertiary nodes and primary and secondary links connecting green spaces. Landmarks and features serve as orientating points within the landscape to encourage legibility. Routes between nodes draw users through and around the site.

The aspiration to create a genuinely sustainable development informs every aspect of the proposed development. One of the key sustainable design principles is that consistent and integrated green infrastructure will serve to unify all other development components and play a major part in the creation of a genuinely sustainable development..

The design of both hard and soft landscape components will follow similar sustainable design principles to those for new buildings. The materials palette will be restricted and emphasis will be placed upon the use of local materials with low embodied energy. Unnecessary clutter or variety of materials will be avoided. Generally, the design of hard and soft landscape elements will be led by and integrated with the masterplan development layout.



5.1 / Biodiversity - Flora

PLANTING SSPECIFICATION

TREES

Street / Avenue Trees

Code	Scientific name	Common name	Size
Ac	*Acer Campestre 'elsrijk'*	Field maple	r/b, 4x trpt 20-25cm girth
Bp	*Betula pubescens* *	Downy Birch	r/b, 4x trpt 20-25cm girth
Gb	*Ginkgo biloba*	Maidenhair tree	r/b, 4x trpt 20-25cm girth
Ls	*Liquidamber styraciflua*	Sweetgum	r/b, 4x trpt 20-25cm girth
Ph	*Platanus x hispanica*	London Plane	r/b, 4x trpt 20-25cm girth
Pc	*Pyrus calleryana 'Chanticleer'*	Ornamental Pear	r/b, 4x trpt 20-25cm girth
Sa	*Sorbus aria majestica* *^	Whitebeam	r/b, 4x trpt 20-25cm girth
Tc	*Tilia Cordata 'Greenspire'*^	Small leaved lime	r/b, 4x trpt 20-25cm girth

Street Tress on front gardens

Code	Scientific name	Common name	Size
Ac	*Acer Campestre 'elsrijk'*	Field maple	r/b, 4x trpt 12-14cm girth
Bp	*Betula pubescens* ^^	Downy Birch	r/b, 4x trpt 12-14cm girth
Gb	*Ginkgo biloba*	Maidenhair tree	r/b, 4x trpt 12-14cm girth
Ls	*Liquidamber styraciflua*	Sweetgum	r/b, 4x trpt 12-14cm girth
Pc	*Pyrus calleryana 'Chanticleer'*	Ornamental Pear	r/b, 4x trpt 12-14cm girth
Sa	*Sorbus aria majestica* *^	Whitebeam	r/b, 4x trpt 12-14cm girth

Rain Gardens

Code	Scientific name	Common name	Size
Ar	*Acer rubrum*	Red maple	r/b, 3x trpt 14-18cm girth
Ag	*Alnus glutinosa* *^	Alder	r/b, 3x trpt 14-18cm girth
Bpe	*Betula pendula* *^	Birch	r/b, 3x trpt 14-18cm girth
Bn	*Betula nigra**	River Birch	r/b 14-18cm gt.
Ca	*Corylus avellana* *^	Hazel	r/b, 3x trpt 14-18cm girth
Opa	*Quercus palustris*	Spanish Oak	r/b 14-18cm gt.
Cam	*Cornus amomum*	Silky dogwood	c/g 20L. 1m tall
Vo	*Viburnum opulus* ^	Eur. cranberry bush	c/g 20L. 1m tall

Wetland

Code	Scientific name	Common name	Size
Sb	*Salix Babilonica* *^	Willow	r/b, 3x trpt 14-18cm girth
Sc	*Salix cinerea* *^	Grey willow	r/b, 3x trpt 14-18cm girth
Sp	*Salix pentandra*	Bay willow	r/b, 3x trpt 14-18cm girth

Parkland

Code	Scientific name	Common name	Size
Ah	*Aesculus hippocastanum*	Horse Chestnut	r/b, 4x trpt 20-25cm girth
Au	Arbutus unedo *^	Strawberry tree	m/s, c/g 50L, 3.5m tall
Bj	*Betula Jaquimontii*	Hymalayan Birch	m/s, c/g 50L, 3.5m tall
Bpe	*Betula pendula* *	Silver Birch	r/b, 3x trpt 14-18cm girth
Bp	*Betula pubescens*	Downy Birch	r/b, 3x trpt 14-18cm girth
Ca	*Corylus avellana*^	Hazel	r/b, 3x trpt 14-18cm girth
Cm	*Crategus monogyna* *^	Hawthorn	m/s, c/g 50L, 3.5m tall
Fs	*Fagus sylvatica*	Beech	r/b, 3x trpt 14-18cm girth
Fs	*Fagus sylvatica purpurea*	Purple Beech	r/b, 3x trpt 14-18cm girth
Ps	*Pinus syvestris* *	Scots pine	r/b, 4x trpt 20-25cm girth
Pt	*Populus tremula* *	Aspen	r/b, 4x trpt 20-25cm girth
Pcn	*Prunus Cerasifera 'nigra*	'Black Cherry Plum	r/b, 4x trpt 20-25cm girth
Psr	*Prunus sargenti 'Rancho'*	Sargent's Cherry	r/b, 4x trpt 20-25cm girth
Pa	*Prunus avium*^	Cherry	r/b, 4x trpt 20-25cm girth
Psp	*Prunus spinosa*^	Blackthorne	r/b, 3x trpt 14-18cm girth
Qp	*Quercus petraea* *	Sessile Oak	r/b, 4x trpt 20-25cm girth
Qr	*Quercus robur* *	Oak	r/b, 4x trpt 20-25cm girth
Sn	*Sambucus nigra*^	Elder	m/s, c/g 50L, 3.5m tall
Sa	*Sorbus aria majestica*^	Whitebeam	r/b, 4x trpt 20-25cm girth
Sau	*Sorbus aucuparia* *^	Rowan	m/s, c/g 50L, 3.5m tall

Fruit Trees

Code	Scientific name	Common name	Size
Pch	*Pyrus chantiller*	Pyrus tree	r/b 8-10cm gt.
Md	*Malus domestica* *^	Apple tree	r/b 8-10cm gt.
Pd	*Prunus domestica*	Common Plum	r/b 8-10cm gt.
Pa	*Prunus avium*^	Cherry tree	r/b 8-10cm gt.

Podium / Planters Trees

Code	Scientific name	Common name	Size
Si	*Sorbus intermedia 'Brouwers'*	Swedish Whitebeam	r/b, 3x trpt 18-20 cm girth
Ag	*Acer griseum*	Paperbark maple	m/s, c/g 50L, 3.5m tall
Au	*Arbutus unedo* *^	Strawberry tree	m/s, c/g 50L, 3.5m tall
Bj	*Betula Jaquimontii*	Hymalayan Birch	m/s, c/g 50L, 3.5m tall
Bpe	*Betula pendula* *^	Silver Birch	r/b, 3x trpt 14-18cm girth
Cm	*Crataegus monogyna* *^	Hawthorn	m/s, c/g 50L, 3.5m tall
Mh	*Magnolia'Heaven Scent'*	Magnolia'Heaven Scent'	m/s, c/g 50L, 3.5m tall
Rt	*Rhus typhinia*	Staghorn sumac	m/s, c/g 50L, 3.5m tall
Sn	*Sambucus nigra*^	Elder	m/s, c/g 50L, 3.5m tall
Sau	*Sorbus aucuparia* *^	Rowan	m/s, c/g 50L, 3.5m tall

Boundary / Screening Trees

Code	Scientific name	Common name	Size
Bpe	*Betula pendula* *	Silver Birch	r/b, 3x trpt 14-18cm girth
Cm	*Crategus monogyna* *^	Hawthorn	m/s, c/g 50L, 3.5m tall
Ia	*Ilex aquifolium* *^	Holly	r/b, 3x trpt 14-18cm girth
Psp	*Prunus spinosa* *^	Blackthorne	r/b, 3x trpt 14-18cm girth
Qp	*Quercus petraea* *^	Sessile Oak	r/b, 4x trpt 20-25cm girth
Qr	*Quercus robur**	Oak	r/b, 4x trpt 20-25cm girth
Qrf	*Quercus Robur Fastigiata* *	Cypress Oak	r/b, 3x trpt 18-20cm girth 5m t

Ornamental parkland / woodland Shrubs

Common Name	Species Name	Specification	Code
Hydrangea	*Hydrangea paniculata*	c/g 5L	Hp
Hawthorn	*Crataegus monogyna*^	c/g 5L	Cm
Elder	*Sambucus nigra*^	c/g 5L	Sn
Myrtle	*Myrtus communis* *^	c/g 5L	Mc
Common juniper	*Juniperus communis*^	c/g 5L	Jc

* ***Species Native to Ireland***
^ ***Plants for Pollinators***
These plants will provide nectar and pollen for bees and the many other types of pollinating insects All selected species have an ornamental, native biodiversity or pollinator-stimulating purpose. Sele based on the ***"All Ireland pollinator Plan"****.*

SHURB/ HERBACEAS/ GRASSES AND MEADOWS

Ornamental Planting Mixture 1

Code	Scientific name	Common name	Size
OP1	*Allium sphaerocephalon*	Allium	c/g 3L 30-40cm ht.
	Blue Fortune 'Agastache'	Anise Hyssop	c/g 3L 30-40cm ht.
	Crocus spp.	Crocus	c/g 3L 30-40cm ht.
	Deschampsia cespitosa 'Goldschlier'	Tufted hairgrass	c/g 2L 20-30cm ht.
	Echinacea 'sunset'	Coneflower	c/g 3L 30-40cm ht.
	Eryngium yuccifolium	Button snakeroot	c/g 3L 30-40cm ht.
	Eupatorium macalatum 'Atropurpureum'	Joe-Pye Weed	c/g 3L 30-40cm ht.
	Festuca mairei	Atlas Fescue	c/g 2L 20-30cm ht.
	Knauta macedonia	Scabious	c/g 3L 30-40cm ht.
	Molinia transparent	Tall moor grass	c/g 2L 20-30cm ht.
	Peroviskia 'Little spire'	Russian Sage	c/g 2L 20-30cm ht.
	Stipa gigantea	Giant feather grass	c/g 2L 20-30cm ht.
	Tulipa spp.	Tulip	c/g 2L 20-30cm ht.
	Veronia crinita	Speedwell	c/g 3L 30-40cm ht.
	Veronicastrum virginicum 'Temptation'	Culver's root	c/g 2L 20-30cm ht.
	Hydrangea	*Hydrangea paniculata*	c/g 2L 20-30cm ht.

Ornamental Planting Mixture 2 - dry planting (podium)

Code	Scientific name	Common name	Size
OP2	*Festuca mairei*	Atlas Fescue	c/g 2L 20-30cm ht.
	helenium rubinzwerg	Sneezeweed	c/g 2L 20-30cm ht.
	Molinia transparent	Tall moor grass	c/g 2L 20-30cm ht.
	Persicaria amplexicaulis 'Orange Field'	Persicaria orange field	c/g 2L 20-30cm ht.
	Stipa gigantea	Giant feather grass	c/g 2L 20-30cm ht.

Ornamental Planting Mixture 3 - Raised Planters

Code	Scientific name	Common name	Size
OP3	*Cistus ladanifer*	Gum rockrose	c/g 2L 20-30cm ht.
	Echinacea pallida	Echinacea	c/g 2L 20-30cm ht.
	Eryngium yuccifolium	Button snakeroot	c/g 2L 20-30cm ht.
	Peroviskia 'Little spire'	Russian Sage	c/g 2L 20-30cm ht.
	Polystichum	Herren	c/g 2L 20-30cm ht.
	Rudbeckia maxima	large coneflower	c/g 2L 20-30cm ht.

Rain gardens Planting Mixture 3

Code	Scientific name	Common name	Size
OP4	*Miscanthus sinensis*	Eulalia	c/g 3L 30-40cm ht.
	Filipendula Ulmaria	Maedowsweet	c/g 3L 30-40cm ht.
	Persicaria bistorta 'superba'	Adderwrf	c/g 2L 20-30cm ht.
	Iris pseudacorus	Yellow iris	c/g 2L 20-30cm ht.
	Calamagrostis brachytricha	Reed grass	c/g 2L 20-30cm ht.
	Achillea millefolium	Yarrow	c/g 2L 20-30cm ht.

Native Hedgerow Mixture (450mm topsoil depth) (one or two rows, as indicated)

Scientific name	Common name	Size
Crataegus monogyna *^	*Hawthorn*	*c/g 2L 20-40cm ht.*
Prunus spinosa *^	*Blackthorn*	*c/g 2L 20-40cm ht.*
Ilex aquifolium *^	*Holly*	*c/g 2L 20-40cm ht.*
Rosa canina^	*Dog rose*	*c/g 2L 20-40cm ht.*

WILD FLOWER MEADOW

M An appropriate dry meadow type with wildflowers for these areas would simulate NVC type MG5. Appropriate herbs for this type of meadow include:
Agrostis capillaris, arthoxanthum odoratu, centaura nigra, cynosurus cristatus, pestuca rubra, galium verum, leontodon autumnalis, leontodon hispidus, leucanthemum vulgaris, lotus corniculatus, pimpinella saxifraga, plantago lanceolata, poa pratensis, primula veris, trifolium pratense, ranunculus acris, ranunculus bulbosus, rhinanthus minor, rumex acetosa

AMENITY GRASS AREAS

G Coburn's Low Maintenance seed at 300mm topsoil depth

WETLAND

WL	*Alisma plantago-aquatica*	Water-plantain
	Carex aquatilis	Water sedge
	Carex riparia	Greater pond-sedge
	Carex rostrata	Bottle sedge
	Eleocharis palustris	Spikerush
	Equisetum fluviatile	Water horsetail
	Iris pseudacorus	Yellow iris
	Lythrum salicaria	Purple loosestrife
	Phragmites australis	Common reed
	Sparganium erectum	Bur-reed
	Typha latifolia	Reedmace / bulrush (note: small quantity)
	Nuphar lutea -lily	Yellow water - lily (note: aquatic specie)
	Nymphaea alba	White water - lily (note: aquatic specie)
	Myriophylium verticillatum	Whorled water-milfoil (note: aquatic specie)

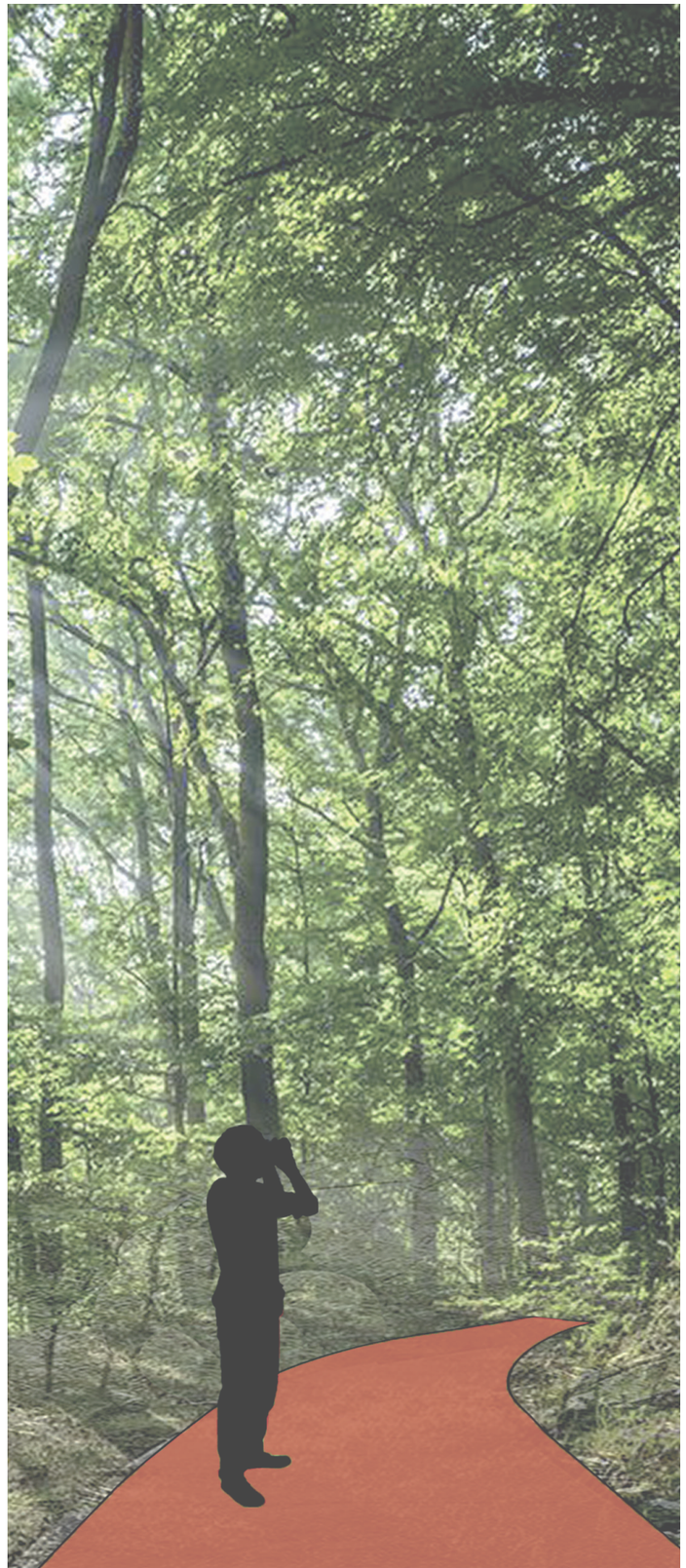
TREES

MULTI-STEM TREES

SHRUBS AND HERBACEOUS

WETLAND

BULBS AND GRASSES



5.2 / Biodiversity - Fauna

BATS

ALL IRELAND POLLINATOR MIX

BADGER EVIDENCES AND UNDERPASS

OTHER MAMMALS

OTTERS

WETLAND HABITAT

BATS

Bat boxes to be provided throughout unlit parts of the park area such as the central retained hedgerow. Wetland feature as well as the planting plan will improve foraging opportunities for bat bases on bat preferable vegetation.
Lighting to be bat sensitive.

BEES

All planting guided by the All Ireland Pollinator Plan will provide ample opportunities for bees. Bee hives to be a feature of the development, managed by the management co. as part of the apartment green roofs.

WETLAND

Of value for newts and other amphibians, it's also of value for wetland birds, invertebrates and plants.

BIRDS

Wider food chain pyramid approach to encourage a mix of birds from Birds of Prey to Warblers, Thrushes, Finches and Tits. Wetland is likely to attract new species, such as, Sedge Warbler and Reed Bunting

BADGERS and OTHER MAMMALS

Hedgehog, Irish hares and Pygmy shrews are probable species for this area, since activity has been noted in nearby lands. Rabbits are known to be present and relatively abundant.

INSECTS AND NEWTS

Ponds to be created to encourage frog and newt activity on site. Bug hotels to feature in each of the podium courtyards.

BATS

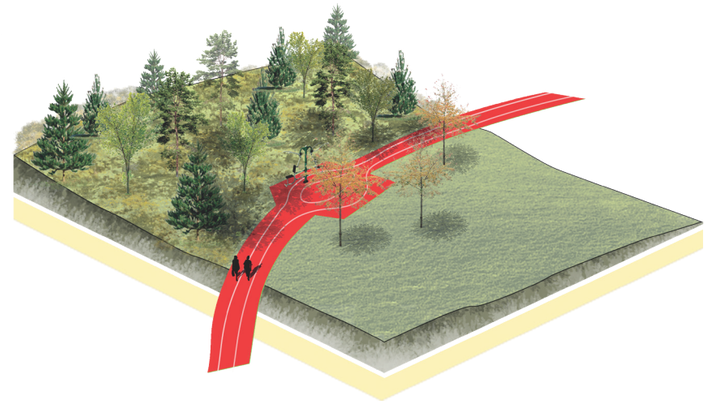
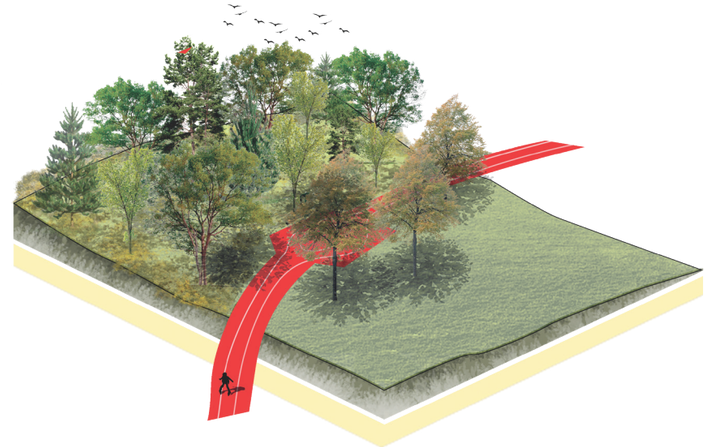
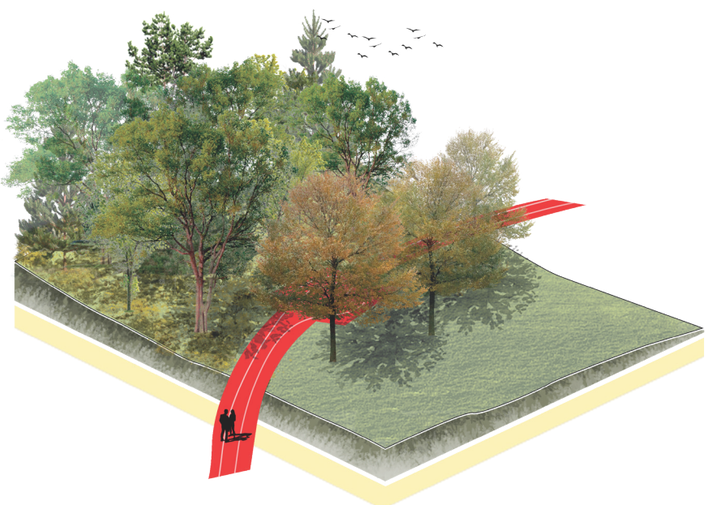
BIRDS

BEES

INSECTS AND NEWTS

BADGERS

WOODLAND WALK TREE GROWTH RATES

TREE GROWTH GUIDES

AT IMPLEMENTATION

20m

AFTER 5 YEARS GROWTH

AFTER 10 YEARS GROWTH

GREEN INFRASTRUCTURE ECOLOGICAL

5.3 / SuDS

SUDs Pillars

Water Quantity - The control the quantity of runoff to support the management of flood risk, maintaining and protecting the natural water cycle.

Water Quality - Managing the quality of the runoff and this way prevent and reduce pollution.

Amenity - Contributing for quality of life and sustainability.

Biodiversity - Contributing to more sustainable habitats and forms of life.

Suds reduce the impact of new construction by replicating natural drainage systems, as they have a low environmental impact and collect, store, filter and clean water before releasing it back into the environment.

Site controlled SuDs cover the entire development site and tend to include larger scale methods mixed with the smaller scale products. They include:

Detention basins – A depression covered with vegetation to hold rainfall and slowly drain it, integrated in urban design, also part of recreation activities and play.

Retention ponds – A larger depression which stores water, even during dry conditions.

Wetlands – A vegetative area with shallow ponds and marshland.

Swale

Permeable paving

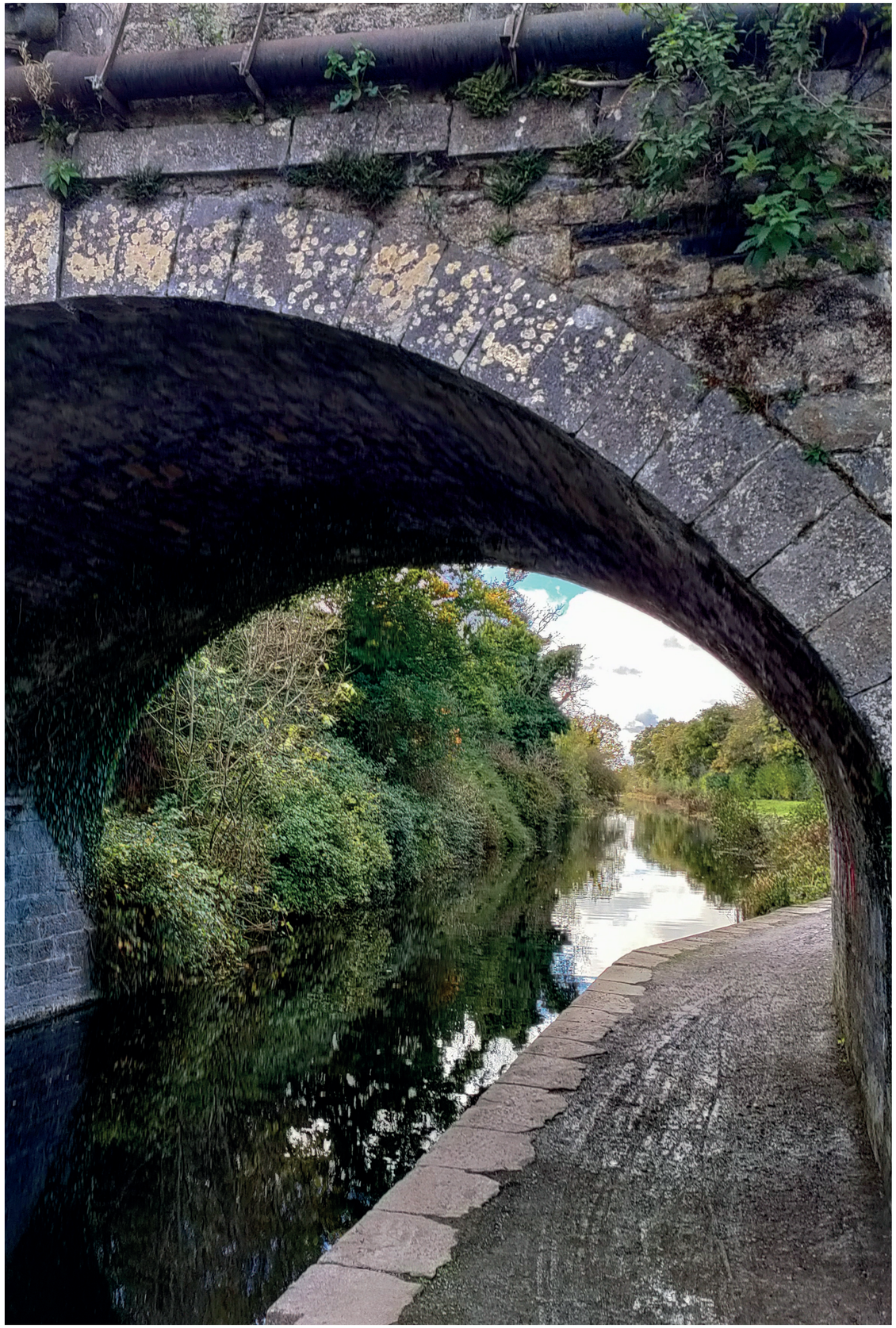
Filter drains

Rain Gardens along streets

Wetland Pond

Green Roofs

Bio-retention Area



6 / DESIGN SPECIFICATIONS

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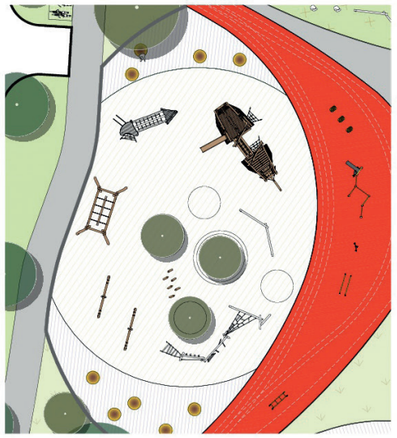
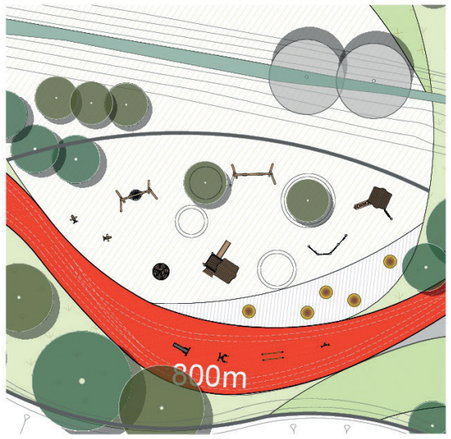
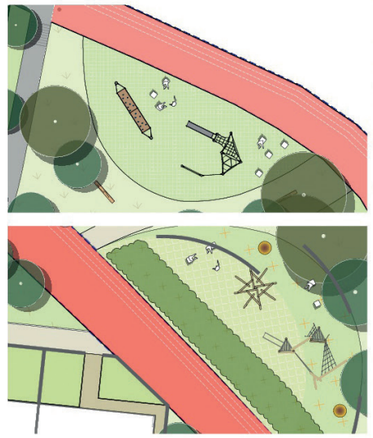
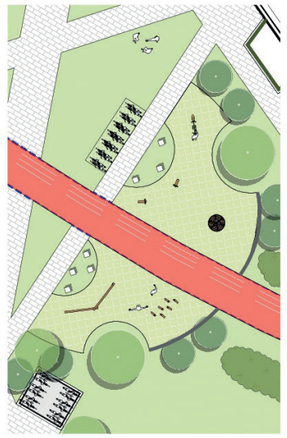
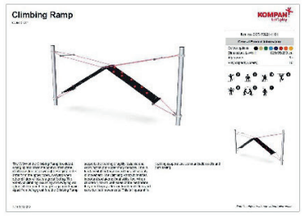
6.1/ Play Rational + Quantum

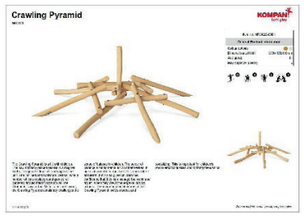


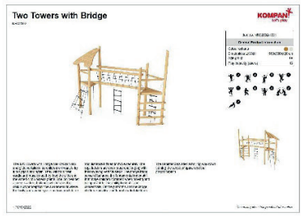


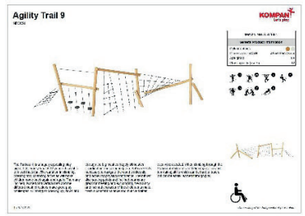


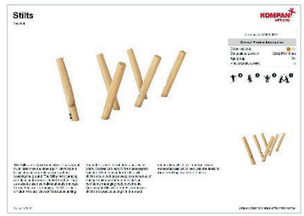


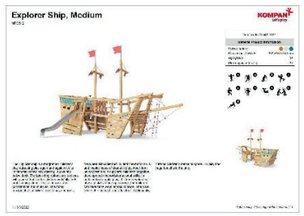


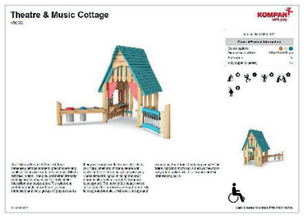


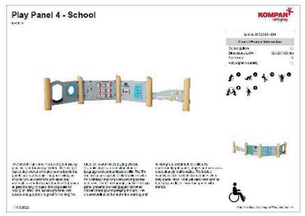


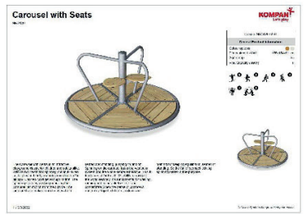


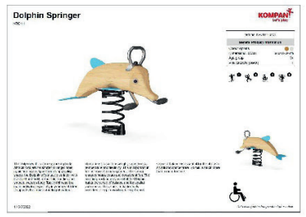


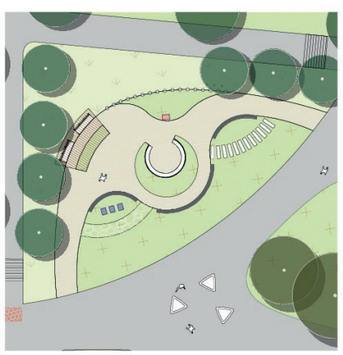


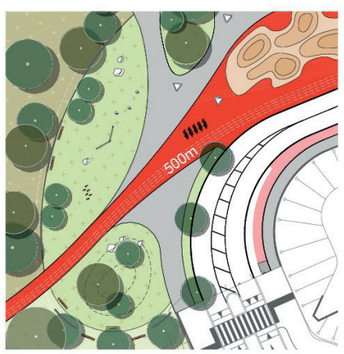


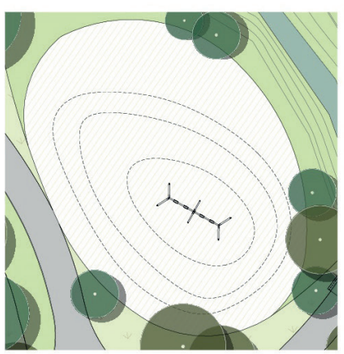


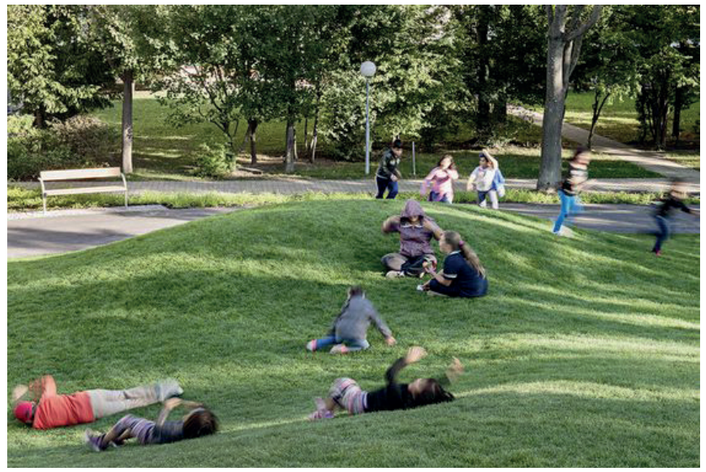












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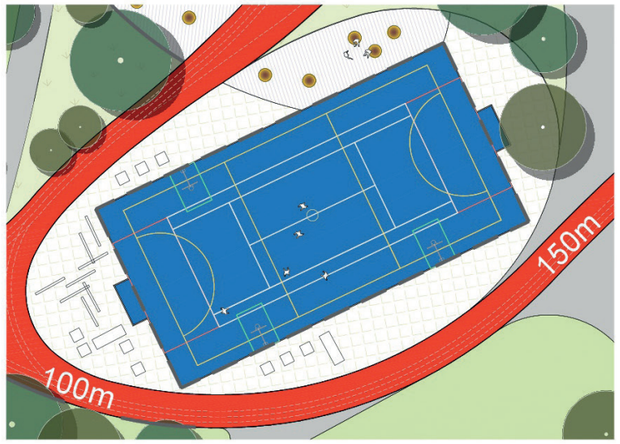

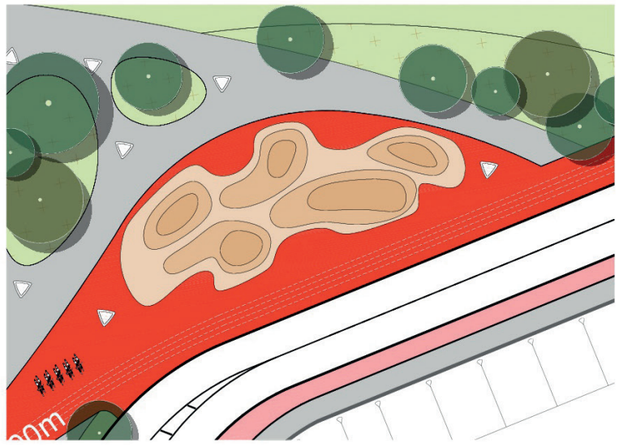

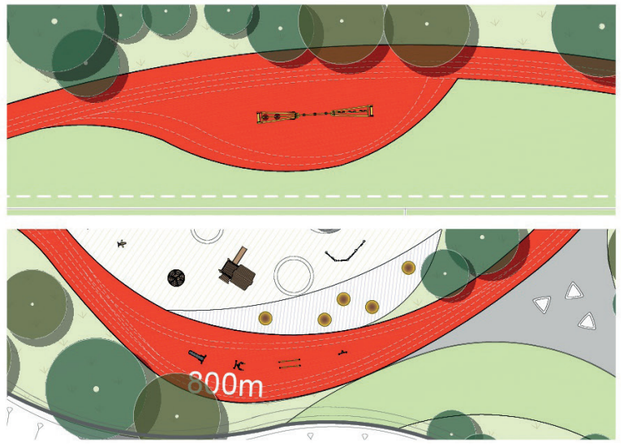

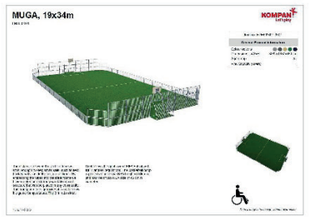

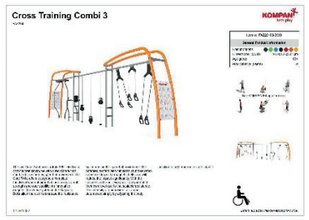

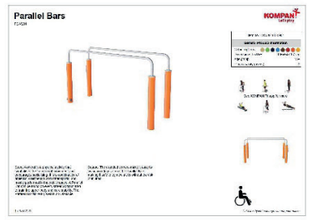

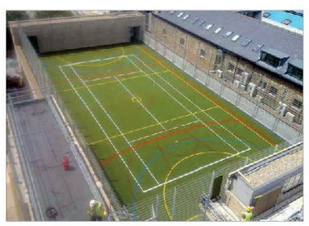

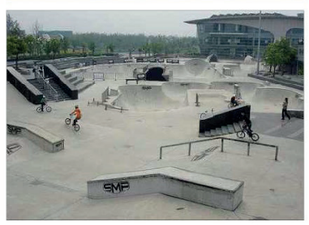

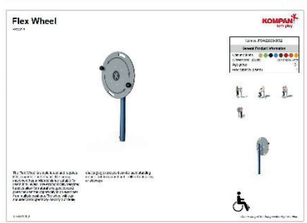

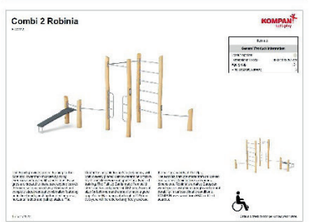

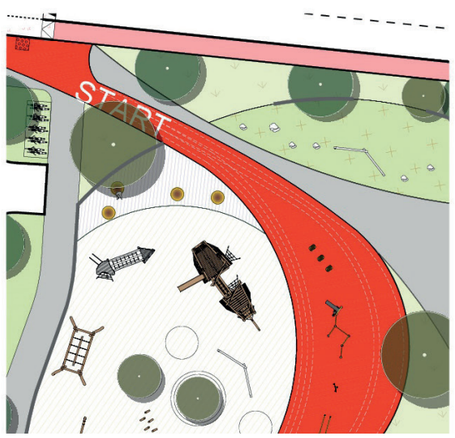

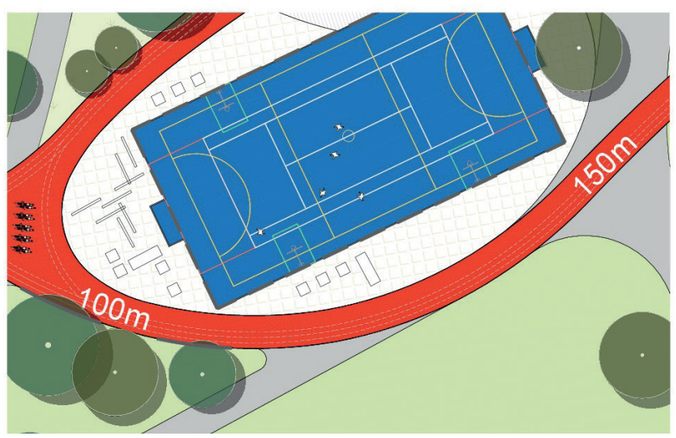

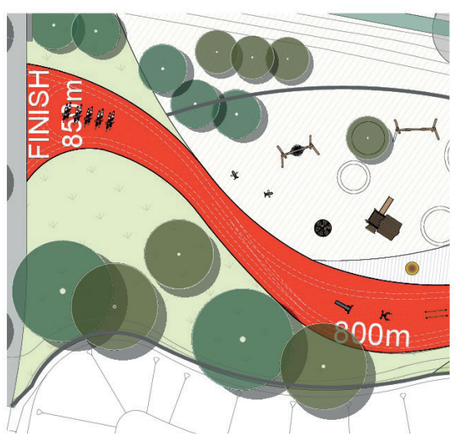

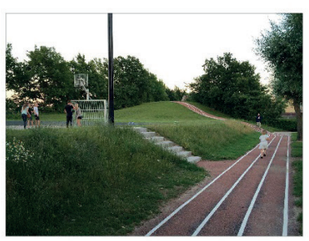

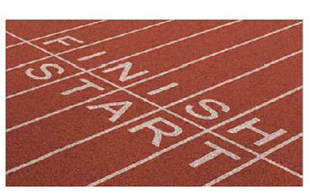

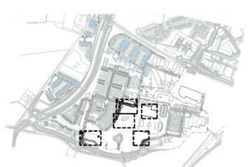

6.3/ Boundary Treatment Plan

The Open Space for Barnhill has been planned without boundaries as an open permeable and welcoming piece of public realm.

The significant boundary treatment applies to private amenities, semi-private, roads rails, play ground boundary and screening with existing private properties.

LEGEND

BOUNDARY TREATMENT

Boundary type 1
1.2m timber post and railing fence

Boundary type 2
Boundary Treatment as per Irish Rail spec.
2.0m high solid wooden fence as noise screening

Boundary type 3
1.8m high timber fence with concrete posts

Boundary type 4
2m high plaster rendered block wall with brick finish piers

Boundary type 5
1.2m high estate railing

Boundary type 6
1.2m high estate railing with
Double row b/r 1 meter tall 300mm ctrs
(see planting plan for spec.)

Boundary type 7
Double row b/r 1 meter tall 300mm ctrs
(see planting plan for spec.)

Boundary type 8
1.2m high plaster rendered block wall with brick finish piers

Boundary type 9
2.0m high Paladin green mesh

Boundary type 10
1.2m high picket timber fencing

Boundary type 11
1.8m high galvanized steel fence

Boundary type 12
0.5m high stone wall

Boundary type 13
Shrubs planting between houses

Boundary type 14
2.0m high front boundary railing

Boundary type 15
1.2m high front boundary railing

Boundary type 16
2.0m high feature entrance wall

Boundary type 17
Existing hedge (to be retained and protected)

6.4/ Landscape Elements

PAVING

Shared running, walking , cycle track

Avenues - Natural stone paving

Plazas / Squares / Meeting points - Natural Stone Paving

Bike parking - pearmeale concrete grass

Playgrounds - Environmentally friendly wood fibre material

LANDSCAPE FURNITURE

Outdoor communal chess tables

Urban tennis tables

Bike Repair and Pump Station

Fountain with accessibility for dogs

Feature urban furniture carefully selected within the concept

LANDSCAPE FEATURE ELEMENTS

Moongate Sculpture - Barnhill identity

Feature stone walls

Wetland fauna observatory point

Feature Planters

Trees strips aiming for green streets

6.5/ Architectural Character Areas

The proposed site was divided in character areas, based on the morphology and location of each area:

- **Railway Quarter**;
- **Station Plaza**,
- **Village Center**;
- **South Station Quarter**;
- **The Crescent**
- **The Cross**
- **Link road East**
- **Link road West**
- **Parkside**
- **Neighbourhood Park**

7 / APPENDIX

7.1/ Maintenance and Management

INTRODUCTION

This document sets out the proposed maintenance and management plans for the establishment and ongoing maintenance of the landscape element of the proposed development. There will be a
minimum 18 months defects period on all soft landscape works implemented. Thereafter the landscaping will be maintained in perpetuity consecutive 12 months periods.

1.0 SOFT LANDSCAPE WORKS SPECIFICATIONS

1.1 Site Clearance Generally

• General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
• Stones: Remove those with any dimension exceeding 25mm.
• Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life. In accordance with current Health and safety legislation.
• Vegetation: remove all weed growth.
• Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

1.2 Weed Control

Remove all noxious and undesirable weeds from the sit. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment.

1.3 Standards In preparing the landscaping, supplying plants and maintaining the landscaping the following standards are to be adhere to:

• BS 3882 Specification for topsoil and requirements for use
• BS 3936-1 to 10 Specification for the supply of nursery stock
• NPS National Plant Specification
• 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 5 Grounds Maintenance
• BS 8545 Trees: from nursery to independence in the landscaperecommendations
• BS 8601 Specification for subsoil and required use
• BS EN 1722-9 Fences Specification for mild steel - low carbon steel - fences with round or square verticals and flat horizontals
• RoSPA Standards for safety for play and exercise equipment.

The latest publications for each document are to be used.

1.4 Soil Conditions

• Soil for cultivating and planting: Moist, friable and do not plant if waterlogged.
• Frozen or snow covered soil: Give notice before planting. Provide additional root protection.
Prevent planting pit sides and bases and backfill materialsfrom freezing.

1.5 Climatic Conditions

• General: Carry out the work while soil and weather conditions are suitable.
• Strong winds: Do not plant.

1.6 Times of year for planting

• Deciduoustrees and shrubs: Late October to early March.
• Evergreens/Conifers: October/November or Feb/ March.
• Container Grown plants: Any time of years.

1.7 Mechanical Tools

Restrictions: Do not use within 100mm of tree and plant stems.

1.8 Watering

• Quantity: Wet full depth of topsoil.
• Application: Even and without damaging or displacing plants or soil.
• Frequency: As necessary to ensure establishment and continued thriving of planting.

1.9 Preparation, Planting and Mulching Materials

General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

1.10 Plants/ Trees - General

• Condition: Materially undamaged, sturdy, healthy and vigorous.
• Appearance: Of good shape and without elongated shoots.
• Hardiness: Grown in a suitable environment and hardened off.
• Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
• Budded or grafted plants: Bottom worked.
• Root system and condition: Balanced with branch system.
• Species: True to name.

1.11 Container Grown Plants/ Trees

• Growing medium: With adequate nutrients for plants to thrive until permanently planted.
• Plants: Centred in containers, firmed and well watered.
• Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
• Hardiness: Grown in the open for at least two months before being supplied.
• Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

7.1/ Maintenance and Management

1.12 Labelling And Information General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
- 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.

1.13 Plant/ Tree Substitution
Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering. Submit alternatives, stating the price and difference from specified plants/ trees. Obtain approval before making any substitution.

1.14 Plant Handling, Storage Transport and Planting
• Standard: To HTA 'Handling and Establishing Landscape Plants'.
• Frost: Protect plants from frost.
• 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 with best side to front.

1.15 Treatment of Tree Wounds
Cutting: Keep wounds as small as possible.
• Cut cleanly back to sound wood using sharp, clean tools.
• Leave branch collars. Do not cut flush with stem or trunk.
• Set cuts so that water will not collect on cut area.
• Fungicide/ Sealant: Do not apply unless instructed.

1.16 Protection of Existing Grass
• General: Protect areas affected by planting operations using boards/ tarpaulins.
• Excavated or imported material: Do not place directly on grass.
Duration: Minimum period.

1.17 Surplus Material
Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, pruning's and other arising's: Remove.

1.18 General Planting/Seeding
• Planting shall 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 exceeds field capacity.
• All containers and protective coverings including biodegradable coverings to root systems shall be removed prior to planting. Roots, except for emergent vegetation, shall be teased out from the root-ball,spread evenly and not twisted.
• All plant material shall be planted upright or placed so as to be well-balanced. Extreme care is to be taken to avoid damage to the root system, stem and branches when planting. The plant shall be positioned such that after planting the original soil mark on the stem is at finished ground level.
• Following completion of planting, grass seeding and turf laying, the soil over the whole of the planted, seeded or turfed area shall be sufficiently watered to achieve its field capacity.
• On completion of planting, watering and mulching, all areas shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.
• For shrub and transplant pit planting, notch planting and ordinary planting, the plant positions shall be set at equal centres in order to obtain a natural dense cover when mature. For notch and pit planting plants shall be planted in parallel lines. Planting positions in each row shall be staggered with the previous row.
• Finely-broken backfill material shall be carefully spread around roots and root trainers of all plants and the plants given slight shake to ensure that all interstices/ gaps are filled with soil, which shall then be consolidated by heeling. Careful filling and heeling shall continue as necessary at 150mm layers.

1.18.1 Mulching
Newly planted shrub areas shall be mulched immediately after planting to a depth of 50mm or in accordance with the details indicated on the drawing. Mulch shall be coarse chipped tree bark, composted for 2-4 months. Particle size 25-75mm diameter. No Fines.

1.18.2 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 shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.

1.19 Tree Planting Attached in the appendix are typical tree planting details for this site.

1.19.1 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.

1.19.2 Semi-Mature Trees
• Standard: Prepare roots and transplant to BS 8545.
• Planting shall be carried out by positioning the tree in the centre of the pit closely against the tree stake and spreading the tree roots to their fullest extent.
• Backfilling material: Previously prepared mixture of topsoil excavated from pit and additional compost as required.
• Immediately following planting, trees with stakes shall be secured with tree ties. Tree ties shall be fixed so that movement of the tree shall not cause damage or abrasion to the bark, top tie to be 50mm below top stake.

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1.19.3 Staking Generally Softwood, peeled chestnut, larch or pine, straight, free from projections and large or edge knots and with pointed lower end. Adjustable rubber ties to be fixed to all trees and at the correct size for the tree.

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

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

1.21 Hedgerow Planting
• Preparation: Dig trench to 500mm width for single staggered row, ensuing pit base is broken up 100mm deeper than plant rootball.
• Ameliorants: Compost at 10lt/m2 and 10:10:10 NPK slow release fertiliser at 150g/m2.
• Planting: Mix in soil ameliorants 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 to stop people walking through it until hedge is established. If there is livestock adjoining hedge install a stockproof fence or electrical fence 1m from hedge line until hedge is established.
• Prior to new growth cut the hedge back by 300mm to encourage new growth from base.

1.23 Removing Trees and 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.

1.24 Failures of Planting
• Defects due to materials or workmanship not in accordance with the Contract: 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 the greater.
• Defects Period: 5 years.

1.25 Green Roofs Due care is to be taken when planting in gardens to ensure no damage occurs to the waterproof membranes. All planting is to be laid over a green-roof system that complies with EEuropean Federation of Green Roof Associations, (EFB), or equivalent, and in accordance with the drawings provided.

1.26.1 Cultivation
• Compacted topsoil: Break up to full depth.
• Soil ameliorant/ Conditioner/ Fertilizer are to be used to boost late seeding only. Type to be used is to be agreed with the administrating body depending on the time of year and the condition of the soil.
• Tilth: Reduce topsoil to a tilth suitable for blade grading.
• Depth: 75 mm.
• Particle size (maximum): 20 mm.
• Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

1.26.4 Topsoiling
• Areas to be reinstated shall be top-soiled to a min. depth of 150mm.
• Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
• General: 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.

1.26.5 Grading
• General appearance to be achieved: A fine graded finish to bring the ground to a uniform and even grade at the correct finished levels with smooth, flowing contours.
• Topsoil condition: Reasonably dry and workable.
• Contours: Smooth and flowing, with falls for adequate drainage.
• Hollows and ridges: Not permitted.
• Finished levels after settlement: 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.
• Give notice: If required levels cannot be achieved by movement of existing soil.

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1.26.6 Fertilizer for Seeded Areas
• Types: Apply both:
• Superphosphate with a minimum of 18% water-soluble phosphoric acid.
• A sulphate of ammonia with a minimum of 20% nitrogen.
• Application: Before final cultivation and three to five days before seeding/turfing.
• Coverage: Spread evenly, each type at 70 g/m², in transverse directions.

1.26.7 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.

1.26.8 Grass Seed
• All seeds shall carry appropriate certificates.
• Seed shall be purchased fresh for each growing season and seed purchased impervious sowing seasons is not to be used.
• Seed shall be stored under non-transparent wrapping, off the ground, in a dry, shaded place, in well ventilated conditions under cover and shall be protected from vermin and contamination until required for use.
• No seeding shall take place until the seedbed is completed. All seeding shall be carried out within the sowing season.

1.26.9 Sowing
• General: Establish good seed contact with the root zone.
• Method: To suit soil type, proposed usage, location and weather conditions during and after sowing.
• Distribution: 2 equal sowings at right angles to each other.
• Protection: fence off areas with suitable fencing to stop people or animals from trampling new growth.

1.26.10 Grass sowing season
Grass seed generally: April to June or August to November.

1.27 Cleanliness
After completion of all works remove all debris and waste material from site.
• Soil and arisings: Remove from hard surfaces and grassed areas.
• General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

2.0 MAINTENANCE

The maintenance programme will be organised on the basis of specific performance standards which must be met by the contractor at all times and will be the basis on which this contract will be assessed. Along with these performance standards a monthly report sheet shall be filled out and returned each month. Details of the performance standards are outlined below.
Remove all noxious and undesirable weeds from the sit. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment. Performance Standards and Maintenance Operations

2.1 Grassed Areas

2.1.1 Fine-Cut Grass Areas
Fine cut grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. No more than 5% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

Fine-Cut Mowing

Where practical fine grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. All grass clippings shall be collected and removed off-site after each cut. Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 50mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.2 Amenity Grass Areas
Amenity grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. Unless otherwise agreed with the landscape architect no more than 15% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

7.1/ Maintenance and Management

Amenity Grass Mowing

Where practical grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. Unless excessive or unsightly, or likely to cause a nuisance or damage to the sward, arisings shall be spread evenly over sward areas collected.
Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 75mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Weed Control

Areas of invasive and noxious species in lawns, shall be spot sprayed.
Weed infestations shall be reviewed in the context of the aesthetic and amenity functioning of the grass and if necessary controlled or eradicated.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.3. Pollinator friendly meadow areas
It is essential, particularly in the first twelve months to manage the sward to aid seedling development and maintain a balanced composition from one year to the next. Wild flowers in most cases require a lower maintenance input with a more flexible approach than our traditional amenity grasslands.

Mixtures which have been established during the autumn, for example, are unlikely to require cutting until the following spring. By this time there should be a sufficiently developed sward of companion grasses. This will be growing faster than the flora content of the mixture. To reduce the grass canopy and allow established broad leaved species to develop a cut will be required. The timing of the first cut will depend mainly on the rate of growth of companion grasses. A rule to follow can be to cut the sward once the height exceeds 10cm (late March/early April) reducing the height to between 4-7cm according to evenness of the ground. The lower the cutting height, the slower the re-growth of grasses.

A second cut could be required if re-growth exceeds 10cm by the end of April/early May. This will be very much influenced by local growing conditions such as rainfall and ground temperatures. The greatest influence will be soil fertility. Subsoil may not require any more than one cut in comparison to a fertile site, which may need 3-4 cuts during the first year.

2.1.4 Edging and Strimming
Grass edges along pathways, planting borders, roadways, trees, lampposts, signs and any other obstacle shall be kept neat and tidy at all times.
Between the months of March and October inclusive edging shall be carried out to all areas of grass abutting isolated/ specimen trees or shrub borders or mulch circles. These areas shall be maintained using a half moon tool or similar to maintain straight or curved defined line and shall be carried out a minimum of 2 - 3 times per year.
Mowing strips against permanent obstacles shall be a max. width of 150mm and shall be maintained using a hand strimmer. Large areas of desiccated/ burnt off grass are not permitted. Strimming shall be carried out a min. of 12 times per year.
Grass clipping and all arisings shall be swept up and removed off site. Only cut grassed areas populated by spring bulbs after 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 grass height.

2.1.5 Spring Bulbs in Grassed Areas
2.2 Shrub Planting

Shrub areas shall be kept litter and weed free, particularly of perennial weeds. Healthy growth shall be maintained to cover as much as possible of the planting area and allowing the individual plants to achieve as near as possible their natural form. With the exception of hedges, boxing or pruning to shapes is prohibited. Plants shall be contained with designed planting areas and pruned to avoid obstructing pathways or sightlines. Climbers are to be pruned and tied into trellises as required, with two main inspections annually to check trellis system is intact and anchor points are secure.

2.3 Pruning
In general pruning shall be done only to enhance natural growth. Dead, damaged and diseased portions of the plant will be removed. All cuts shall be flush and clean, leaving no stubs or tearing of bark. All major pruning shall be done following flowering or during plant's dormant season. Emergency or minor pruning shall be done when needed.
Pruning shall be carried out to maintain proper size in relationship to adjacent plantings and intended function. Remedial attention and repair to shrubs shall be provided as appropriate by season or in response to incidental damage.
Groundcover plants shall be pruned as required to restrain perimeter growth to within planting bed areas where adjacent to walks and curbs. Tip prune selected branches of low growing shrub or groundcover masses to maintain even overall heights and promote fullness.
Certain plants, such as Cornus spp. will require heavy annual pruning in order to maintain healthy colourfulstems and healthy leaves. All arising's from pruning shall be removed of site.

2.4 Weed Control
Planting beds shall be maintained relatively weed free (no more than 10% of weed cover at maximum) by hand weeding or spot spraying any emergent weeds during the growing season with Glyphosate or approved equivalent. Saplings shall be removed from all planting areas on emergence or immediately after to prevent establishment.
Specific weed control operations shall be carried out a min of 9no. times per year, however it will be the contractor's duty to control weeds by hand weeding or other if weed cover exceeds 10% of the planting area.

7.1/ Maintenance and Management

2.5 Mulching
Shrub beds shall contain a min. depth of 50mm bark mulch throughout the year. Contractor to top-up as 2 times per year or as appropriate to maintain depth. Mulch is not required in areas where plant foliage completely covers the soil surface, such that the soil is not visible through the foliage. The contractor shall spot treat to remove emergent weeds as specified above but do not cultivate or incorporate the mulch into the soil. Any mulch outside of designated planting areas shall be returned to the planter on a weekly basis.
Mulch shall be uniform in colour and appearance, and free of leaves, sticks, or trash. Mulch may be chipped or shredded wood, bark. When replacing existing mulch, use a mulch product that is similar in appearance to that already at the site.

2.6 Tree Planting Care
Trees shall be maintained in a healthy, vigorous growing condition with a well-shaped framework for future growth.

2.7 New Tree Planting
Spring and autumn of each year during the maintenance period the trees, double-stakes, rabbit guards and ties shall be checked and adjusted, 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 shall be replaced.
A 1m-diameter mulch circle/square shall 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.
During the first growing season all standard trees / semi-mature trees shall be watered at least five times during the growing season - in April, May, June, July and August unless otherwise directed by the Landscape Architect. During the second growing season trees will be kept well watered, particularly during June, July and August.
The edge of the mulch circle shall be maintained in a neat and tidy condition as above.
The surface of all planting pits is to be kept free of weeds during the maintenance period by hand weeding of annual weeds, for perennial weeds to be carried out on three visits during the growing season.

2.9. 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 / tie remove. Prior to handover, check all tree stakes and ties and remove those no longer required.

2.8 Woodland/Scrub Area Management

Woodland areas specified shall be maintained in a healthy, vigorous condition and free from litter and noxious weeds throughout the year.
Certain areas of woodland may require thinning over the 5-year period. These areas shall be thinned by no more than 10%, removing only the weaker tree specimens. Thinning shall be carried out as directed onsite by administrative authority.
Areas of natural scrub as indicated on the maintenance plans shall be contained by trimming back once per year. This shall be carried out 2no. times per annum.
All clearance operations within woodland and scrub areas shall 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.

2.09 Litter Clearance/Pick-up
The contractor shall maintain all areas free from litter. This shall mean the removal of all extraneous litter, rubbish and any other debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.
Notwithstanding the above it is expected that the contractor and his staff shall take sufficient pride in the appearance of the site and that they would pick up all visible litter during every site visit.
In addition to removal of litter from footpaths, planted areas, etc., the contractor shall make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has been deliberately been deposited on site by persons known or unknown (fly-tipping).

2.10 Replacements
Any tree, hedge or shrub that is removed, uprooted, destroyed or becomes seriously damaged, defective, diseased, or dead shall be replaced in the same location with another plant of the same species and size as that originally planted within 5 years after planting. All such replacements shall be carried out in the first available planting season after the requirement to do so is recognised.

7.1/ Maintenance and Management

3.0 Maintenance Programme

This programme is a guideline only and times of operations may vary on approval by landscape architect.

ONGOING REQUIREMENTS:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lawn grass cutting (Min 24 cuts)		*	**	**	***	***	***	***	***	**	**	
Meadow cutting (3/4 cuts / year)				*	*	*	*					
Edging to lawn grass areas				*			*			*		
Rough Grass							*					
Fertiliser application to lawn grass areas							*					
Hedge pruning/cutting										*		
Shrubs pruning and feeding							*					
Weed control of hedge and shrub planting areas				*			*			*		
Tree pruning											*	
Removal of tree stakes (3-5yr)				*								
Mulch top-up to tree circles/ squares				*			*					
Watering of new trees (or after 3 weeks of no rain)				*	*	*	*	*	*	*		
Trimming of scrub areas											*	
Weed control of scrub areas				*							*	
Application of residual weed killer to footpaths, cycle paths.				*								
Litter Clearance/pick up	***	***	***	***	***	***	***	***	***	***	***	***

7.2/ Hard Landscape Outline Specification

PAVING & KERBS

FOOTPATHS

General: Public footpaths, roadways, kerbs etc. shall be constructed in accordance with the requirements of the Roads Maintenance Dun Laoghaire Rathdown County Council.

Accuracy of Levels and Alignment: The levels of paths and paving shall be carefully set out and frequently checked. All care shall be taken to ensure that the correct cross sections are maintained. The finished face of paths shall be formed so as to provide adequate fall and satisfactory run off to surface water outlets, gullies, etc. Cross-falls of paths shall be carried without break across verges and kerbs to prevent ponding of water between back of kerb and path.

Sub-Base: Granular material shall comply with Clause 804 of the D.o.E. Specification for Roadwork's and shall be spread uniformly over the formation and compacted by vibrator roller. Rolling shall continue until there is no movement under the roller. The finished surface of the compacted sub-base shall be parallel to the proposed finished surface of the footpath. The surface levels for each layer shall not deviate from the design levels by more than +15mm or -15mm.

For sub-base thickness in paved areas see area engineers spec, and attached following schedule.
Each contractor shall do all necessary tests to ensure a well compacted, plain even surface on all areas with traffic movement.
If paving shows settling after 1 year which normally is related to an insufficient depth and compaction of the sub-base the contractor shall rebuilt the failed area to his own cost.

Use of Surfaces by Construction Traffic:
Constructional traffic used on pavements under construction shall be suitable in relation to the courses it traverses so that damage is not caused to the sub-grade. Where damage is caused to the formation of the subgrade in strength or level the damaged area shall be excavated for an area and depth which shall be determined by the Architect and this area shall be filled to the required levels with crushed rock of 50mm maximum size.

The degree of compaction for this area shall be the same as that specified for the remainder of the formation.
All this excavation and making good of damaged areas shall be carried out at the expense of the Contractor. Where damage is caused to the sub-base, the damaged area shall be made good as noted above, using the material of which the sub-base is composed. The wheels or tracks of plant moving over the various pavement courses shall be kept free from deleterious materials.

MODULAR PAVING
Concrete Pavers Precast concrete pavers shall conform to the requirements of BS 6717 Part 1.
Ensure that sub-bases are suitably accurate and to specified gradients before being laid.
Sample: Before placing orders submit representative samples for approval.
Ensure that delivered materials match sample.
Laying Generally:
1. Laying Specification
1.1 Paving blocks/bricks shall be laid to the requirements of Part 3:1997, BS 7533, except that the lip onto gully gratings is modified to 5 - 6 mm.

Note, in particular, the following requirements of Part 3.
1. The difference in level between two adjacent blocks shall not exceed 2 mm.
ii. The finished pavement surface shall not deviate more than 10 mm under a 3m straight edge.
iii. The accuracy of cutting a block should be such that the resulting joint should not exceed 5 mm.
iv. The surface course should be between
(a) 3 - 6 mm above drainage channels
(b) 5-10 mm above gullies (*BRL modify this to 5 - 7 mm above gullies to reduce "trips")
v. The surface course should be inspected soon after completion and at regular intervals thereafter - additional sand should be brushed in where necessary.

1.2 The surface course for chamfered units should be 3 - 5 mm above the kerb to facilitate surface drainage. The surface course for non-chamfered units should be 2 mm above the kerb to facilitate surface drainage.

1.3 When paving units need to be trimmed, pieces with a dimension less than 50 mm should not be used.

2. Drainage Channels
2.1 Where paving blocks are used in a channel, they shall be laid on freshly mixed moist 3:1 sand-cement mortar. The mortar should have thickness between 10 mm and 40 mm. Vertical joints should be filled with 3:1 wet sand-cement mix.

2.2 Mortar, which has been mixed for over 2 hours, should be discarded.

2.3 The mortar should be laid on a previously prepared concrete base as per construction drawing detail. Select blocks/paviors vertically from at least 3 separate packs in rotation, or as recommended by manufacturer, to avoid colour banding. Lay blocks/paviors on a well graded sand bed and vibrate to produce a thoroughly interlocked paving of even overall appearance with sharp sand filled joints and accurate to line, level and profile. Refill joints once a week three weeks after first fill. Commencing from an edge restraint lay blocks/paviors hand tight with a joint width of 2-3mm for pedestrian use and 3-5 mm for areas with traffic. Maintain an open working face and do not use mechanical force to obtain tight joints. Place blocks/pavers squarely with minimum disturbance to bedding. Supply blocks/paviors to laying face over newly laid paving but stack at least 1 m back from laying face. Do not allow plant to traverse areas of uncompacted paving. Continually check alignment of pavers with string lines as work

7.2/ Hard Landscape Outline Specification

vibrating plate compactor as laying proceeds but after infilling at edges. Apply the same compacting effort over the whole surface.
Do not compact within 1 m of the working face. Do not leave uncompacted areas of paving at the end of working periods, except within 1 m of unrestrained edges. Checks paving after compacting first few metres, then at frequent intervals to ensure that surface levels are as specified; if they are not, lift blocks/ pavers and relay.
Brush sharp sand into joints, revibrate surface and repeat as required to completely fill joints. Make sure that paving is held by a kerb on both sides before vibration to avoid uneven joints. Avoid damaging kerb haunching and adjacent work during vibration. Do not begin vibration until kerbs have matured. The paving pattern will be stretcher bond, make sure that the joints will be in straight line after vibrating. Also ensure joints are off equal width. The block pavement shall have a surface regularity/ flatness tolerance of less than 10 mm under a 3 m straight edge.
Sample: Before placing orders submit representative samples for approval.
Ensure that delivered materials match sample.

PRECAST CONCRETE FLAGS
Pre-cast Concrete Flags:
1. Precast concrete flags shall be laid to the requirements of BS 7533 Part 4.
Note the following selected items from BS 7533, Part 4.

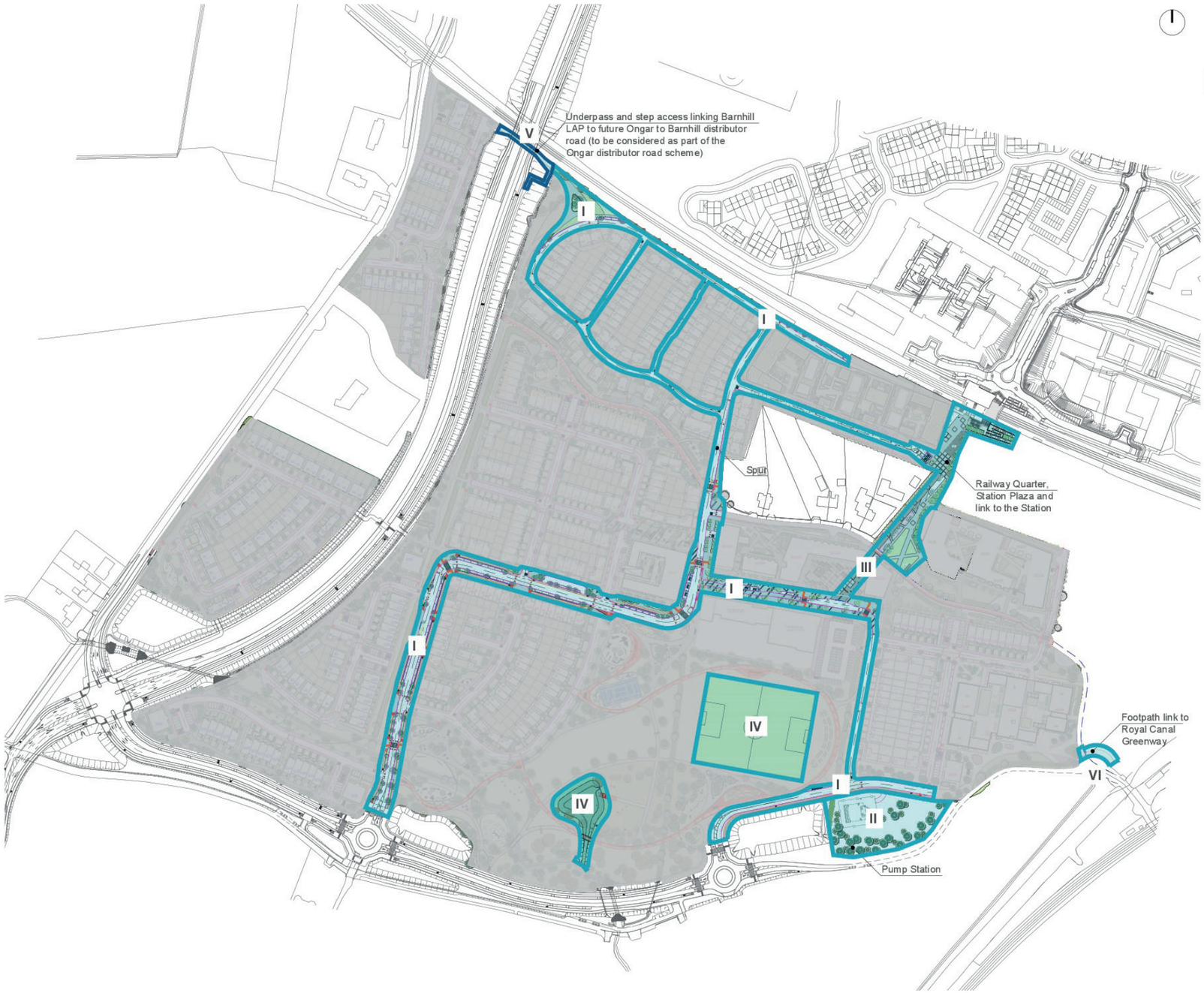
- The difference in level between two adjacent flags should not exceed 3 mm.
- The top surface of the paving units should stand 3-6 mm above the drainage channel.
- A 30 - 50 mm (compacted thickness) of the sand laying course is given as suitable (for narrow joints)

2. Flags should be laid with narrow joints (2-5 mm)Joints should be filled with dried sand (conforming to table 4 of the code), or as determined by the Landscape Architect.

KERBS

Kerbing General: Kerb radii shall be in accordance with Architects and Engineers drawings. Use radius kerbs for all new kerbs.
Laying Generally: Natural stone and precast concrete kerbs shall meet the requirements of BS 435 and BS 7263-1.
1. Precast concrete kerbs shall be laid to the requirements of BS 7533, Part 6.
2. Units shall be laid on fresh concrete or mortar bed and adjusted to line and level.
3. Concrete for foundations and haunching shall be to BS 5328.
4. Bedding mortar shall be freshly mixed, moist 3:1 sand-cement between 12 and 40 mm thick.
5. Kerbs shall be backed with concrete as per drawing.
6. Radius kerbs shall be used on radii of 12 m or less.
7. Kerbs should not deviate from the required level by more than 6mm.
8. Kerbs should not deviate by more than 3 mm under a 3 m straight edge.
9. Open-jointed kerbs should have joints of 2 - 4 mm wide.
Mortar jointed kerbs should have joints of 7 -10 mm wide filled completely with 3:1 sand-cement mortar, and finished to give a smooth flush joint or as specified by the Landscape Architect.

7.3/ Phasing



ENABLING WORKS PHASING

I- Road infrastructure, spur to Link Road East (including cycle paths and footpaths) and connection to Ongar Barnhill Road from Link Road East

II- Pump Station and related infrastructure

III- Station Access and Plaza

IV- Footpath link to Royal Canal Greenway and Park SuDS features

V- Underpass and step access linking Barnhill LAP to future Ongar to Barnhill distributor road, to be considered as part of the Ongar distributor road scheme.

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G	06/07/22	Phasing - Enabling works phasing	AP	JG

CLIENT
Alanna Homes & Alcove Ireland Four Ltd.

PROJECT TITLE
Barnhill Garden Village - Proposed development at Barnhill, Clonsilla, Co.Dublin

PROJECT ARCHITECT
CDP Architects / CWOB Architects / Delphi Design

SHEET TITLE
Phasing - Enabling works phasing

SHEET NO.	SHEET SIZE
21154_LP_G_PH_01	A3
SCALE	REVISION
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STAGE	DATE
Planning Stage	July 2022

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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 1A

PHASE 1A

I - Creche Building at Station Plaza and Link Road East

II - School Site (Accessible to Department of Education and Skills. Shared Parking for School and Park)

Previous phases

Phase 1

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SHEET TITLE
Phasing - Phase 1A

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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 1B

PHASE 1B

Public Park; Railway Quarter and Station Plaza

School site available to Department of Education and Skills or earlier if required

Previous phases

Phase 1

Phase 1A

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SHEET TITLE
Phasing - Phase 1B

SHEET NO.	SHEET SIZE
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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 2

Phase 2

Village Centre + Market Square (Civic Space) + Station Quarter South A

Previous phases

Phase 1
Phase 1A
Phase 1B

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SHEET TITLE
Phasing - Phase 2

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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 3

PHASE 3
Barnhill - The Cross

Previous phases
Phase 1
Phase 1A
Phase 1B
Phase 2

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PROJECT ARCHITECT
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SHEET TITLE
Phasing - Phase 3

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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 4

PHASE 4

I - The Crescente
II - Station Quarter South B

Previous phases

- Phase 1
- Phase 1A
- Phase 1B
- Phase 2
- Phase 3

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G	06/07/22	Phasing - Phase 4	AP	JG

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PROJECT TITLE
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PROJECT ARCHITECT
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SHEET TITLE
Phasing - Phase 4

SHEET NO.	SHEET SIZE
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7.3/ Phasing

BARNHILL GARDEN VILLAGE
Phase 5

PHASE 5

I - The Stream
II - Parkside
III - Link road West

Previous phases

Phase 1
Phase 1A
Phase 1B
Phase 2
Phase 3
Phase 4

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G	06/07/22	Phasing - Phase 5	AP	JG

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PROJECT TITLE
Barnhill Garden Village - Proposed development at Barnhill, Clonsilla, Co.Dublin

PROJECT ARCHITECT
CDP Architects / CWOB Architects / Delphi Design

SHEET TITLE
Phasing - Phase 5

SHEET NO.	SHEET SIZE
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7.3/ Phasing

BARNHILL GARDEN VILLAGE
All Phases Completed

ALL PHASES COMPLETED

- Phase 1
- Phase 1A
- Phase 1B
- Phase 2
- Phase 3
- Phase 4
- Phase 5

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G	06/07/22	Phasing - All phases completed	AP	JG

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PROJECT TITLE
Barnhill Garden Village - Proposed development at Barnhill, Clonsilla, Co.Dublin

PROJECT ARCHITECT
CDP Architects / CWOB Architects / Delphi Design

SHEET TITLE
Phasing - All phases completed

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