

Millstreet Housing Development

For Cork County Council

Landscape Design Report including Green Infrastructure Statement

Issue for inclusion with planning application
Friday, March 1, 2024

Prepared By:

Rianne van Setten of DRLA Landscape Architects

12 Barrington Street, The Georgian Quarter, Limerick

Tel: 061 590 001

Email: info@DRLA.ie

Mob: 087 314 5270

Web: www.DRLA.ie



Table of Contents

1. Introduction.....	3
1.1 Development Description.....	3
1.2 Featured Developments	3
1.3 Plans and Drawings Register.....	3
2. The Site.....	4
2.1 Context and Receiving Environment.....	4
3. Landscape Design Statement	5
3.1 Design Features	5
3.2 Planting.....	6
3.3 Furniture	10
3.4 Surface Treatments	12
3.5 Biodiversity enhancement measures	14
4. Green and Blue Infrastructure	15
4.1 Green Infrastructure Analysis.....	15
4.2 Blue Infrastructure Analysis.....	16
4.3 Proposed Green Infrastructure Approach.....	17
4.4 Importance of maintaining, expanding and improving existing Green and Blue Infrastructure.....	18
4.5 Proposed Green and Blue Infrastructure on the plan.....	18

1. Introduction

1.1 Development Description

The Landscape Design Report and Green Infrastructure Statement accompanies the planning application for the proposed residential development at Drishane Rd., Millstreet, Co Cork. The proposed development consist of 26 new homes to the Southeast of Millstreet. The total size of the site is approximately 11.20m², with a central amenity area of approximately 600m².

This report will look at how our proposals seek to protect, manage and enhance the green infrastructure within the wider area and will give insight into the proposed landscape design.

1.2 Featured Developments

This report includes the proposed landscape design for the housing development, as informed by the analysis of the receiving context, current plans and policies. The following elements have been incorporated in to the landscape proposal:

- a) Retaining of existing native hedgerows on site.
- b) Introduction of new mixed native hedgerows.
- c) Proposed planting of pollinator friendly shrub and perennial planting, solitary tree planting and mixed shrub planting in accordance with the All-Ireland Pollinator Scheme.
- d) Proposed planting of rain gardens.
- e) Introduction of a naturalized wildflower meadow.
- f) Proposed creation of natural informal play area.
- g) Creation of a naturalized attenuation hollow.
- h) Proposed grass bio swales.

1.3 Plans and Drawings Register

The Following Drawings are to be read in conjunction with this report:

Number	Title	Scale	Print Size
P608-201	Tree Retention Removal Plan	1:400	A1
P608-202	Landscape Plan	1:300	A1
P608-203	Detail Sheet 1 of 2 Hard Works Details	1:20	A1
P608-204	Detail Sheet 2 of 2 Soft Works Details	1:20	A1

2. The Site

2.1 Context and Receiving Environment

The existing site is located 600 meters from the main street (R583) in Millstreet. It is situated off the Drishane Road leading South from Millstreet Main Street. The site neighbours existing housing estates such as Murphy's Terrace and Old Coach Avenue. Following the road further down the urban structure is replaced by agricultural/rural setting with scattered fields bordered by hedgerows. The current condition of the site is described as grassland with some mature gorse and hedgerows. The site is overlooked by the adjacent estates currently, this is something we have taken into consideration when determining measures to take on site. The proposed scheme aims to retain the existing hedgerows as much as possible (75% to be retained) and remove the gorse. For more detail see drawing P608-201 Tree Retention Removal Plan.

a) Existing Site Features

- Mature Mixed Native Hedgerow
- Grassland
- Mature Gorse growth

b) Site Elevation and Soil Condition

The entire site slopes gently upwards from the West to the East with an overall height difference of 3.5 meters. The site's soil conditions can be described as a well-draining soil. The proposed scheme focuses heavily on protecting proper drainage on site by implementing different drainage options such as; permeable paving for parking areas, reduced congealed surfaces, rain gardens to be able to retain and infiltrate rain and storm water, grass bio swales and an attenuation hollow.



Figure 1 Aerial of Site and receiving context, taken from Bing Maps (2023)

c) Receiving Landscape

The surrounding landscape is characterized by a mosaic of agricultural grasslands, small holdings and mature hedgerows. Native Hedgerow field boundaries prevail in the area, the size and form of the field is small and irregular. A small stream flows to the East of the proposed development.

3. Landscape Design Statement

3.1 Design Features

The overarching masterplan concept for the proposed landscape design is to use a mix of nature based solutions to answer some of the pressing challenges facing built-up environments today. A high focus on native species and habitat creation has led to a diverse approach to planting. Different surface treatments, filter drainage, Grass bio swales, Rain gardens, and SUDS measures included are proposed to approach a diligent way of dealing with surface water runoff. A small amenity area in the center will allow for some informal play and generally to have a meeting point in the area. The entire site has been made accessible from the entrance by providing two paths with an accessible (not steeper than 1:20) slope, and an alternative path with steps. See Drawing P608-202 Landscape Plan, for more detail and plant list.



Figure 2 Proposed Landscape Plan, drawing P608-202 Landscape Plan

Features proposed:

Planting

- a) Mixed Native Hedgerow
- b) Pollinator Friendly Shrub and Perennial Beds
- c) Rain Garden
- d) Shrub Planting
- e) Solitary Tree Planting
- f) Naturalized Wildflower Meadow
- g) Wildflower Lawn
- h) Grass Bio Swal
- i) Naturalized Attenuation Hollow

Furniture

- j) Natural Play Elements
- k) Seating
- l) Bicycle Parking

Surface Treatments

- m) Permeable Paving for Parking
- n) Fine Bound Gravel Pedestrian Path
- o) Public Concrete Footpath
- p) Grasscrete at ESB substation
- q) Steps at entrance

3.2 Planting

a) Mixed Native Hedgerow (60Linm)

Mixed Native Hedgerows are proposed throughout the site, these hedgerows will consist of the following species; Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Guelder Rose (*Viburnum opulus*), Holly (*Ilex aquifolium*). At the Northern boundary of the site we propose this hedge to continue the already established characteristics of hedgerows in the area. In other areas we aim to retain the existing hedgerow and plant transplants in gaps present on site with the same mix of species.



Figure 3 Mixed Native Hedge along Roadside



Figure 4 Low Native Hedge to front garden

b) Pollinator Friendly Shrub and Perennial Beds (260m²)

A total area of 260m² of perennial and shrub are to be planted on the site. These beds are located adjacent to the housing. The mix of perennials and shrub is to consist of Native and non-native species and is created by selecting plants from the All-Ireland Pollinator Plan. The Shrub and Perennials are to be planted into prepared planting beds and should be mulched with fine bark upon completion.



Figure 5 Example of Perennial Planting



Figure 6 All-Ireland Pollinator Plan Border

c) Rain Garden (70m²)

Rain gardens are created along hard surfaces where surface rainwater can be diverted in bio swales, these bio swales are planted with a mix of perennial plants selected from the All-Ireland Pollinator Plan. The bio swales are located above perforated drainage pipes, allowing water infiltrate even deeper into the soil.



Figure 7 Example of two Rain Garden Bio Swales

d) Native Habitat Screening Scrub Planting (750m²)

In this site we propose Habitat Screening Scrub Planting, this exists out of a mix of native shrub species such as; Hazel (*Corylus avellana*), Spindle (*Euonymus europaeus*), Blackthorn (*Prunus spinosa*), Elder (*Sambucus nigra*), Rowan (*Sorbus aucuparia*), Alder Buckthorn (*Frangula alnus*) and Guelder Rose (*Viburnum opulus*). These are to be planted at 2 per square meter, and are to create a habitat that will support the local wildlife.



Figure 8 Example of birds in two of the species proposed, Alder Buckthorn (*Frangula alnus*) and Spindle (*Eunoymus europaeus*)

e) Native Solitary Tree Planting (62no.)

A total amount of 62 solitary trees are to be planted on site, they vary from large specimen to small specimen trees. There is a focus on pollinator friendly trees such as Cherry (Prunus avium), Bird Cherry (Prunus padus). 7 different species are to be planted on the site including the following: Wild Cherry (Prunus avium), Bird Cherry (Prunus padus), Hazel (Corylus avellana), Field Maple (Acer campestre), Horse Chestnut (Aesculus hippocastanum), Rowan (Sorbus aucuparia) and Resilient Elm (Ulmus 'New Horizon'), these are to be semi-mature trees, rootballed and transplanted 3-4 times.



Figure 9 Example of trees, in order: Ulmus 'New Horizon', Sorbus aucuparia, Prunus avium and Carpinus betulus

f) Naturalized Wildflower Meadow (2150m²)

A large area of the site is proposed to become a Native Wildflower Meadow, the aim with this area is to allow the site to develop a Native Meadow. It is to **not** be seeded but instead to be allowed to naturalize with minimal maintenance. During construction the area will be disturbed yet we propose to leave the designated area as undisturbed as possible. This means it will not be rolled or seeded, but will be carefully managed with maintenance. Maintenance should aim at removing all cuttings off-site and to keep to a mowing regime specified for natural recolonized grassland.



Figure 10 Example of Naturalised Wildflower Meadow

g) Wildflower Lawn (375m²)

A floral lawn mixture is proposed for the amenity. This area can be used for informal play and relaxation. The floral lawn mixture is a low maintenance mixture that still provides flowering native species for pollinators. The mixture should be of conservation grade seed mixture. A total area of 375m² is to be rolled and resown with the mixture. This type of lawn allows for a less intense maintenance scheme. Seed mixture will result in less invasive species and suppliers will match seed mix to local area).



Figure 11 Example of a wildflower lawn

h) Grass Bio Swale (220m²)

The Raingarden Bio Swale is only proposed for certain areas in the site, for the rest of the site we propose Grass Bio Swales. Here a filter drain is laid underneath a graded swale, we either propose the swales to be placed in the wildflower lawn mixture or in the naturalized wildflower meadow. Maintenance should aim at removing all cuttings off-site and to keep to a mowing regime specified for natural recolonized grassland.



Figure 12 Examples of Grass Bio Swales

i) Naturalized Attenuation Hollow (175m²)

At the North of the site we propose a naturalized attenuation hollow, this hollow will be used for drainage of stormwater. We propose the hollow to be naturalized and mowed less than surrounding area. Maintenance should aim at removing all cuttings off-site and to keep to a mowing regime specified for natural recolonized grassland.



Figure 13 Example of Naturalized Attenuation Hollow

3.3 Furniture

j) **Natural Play Elements**

Natural play elements are proposed in the amenity area, these nature play elements are timber logs, small boulders and tree slices. These are to be placed on top of the surfaces and should not exceed 600mm in total height. The timber is to be locally sourced and cleaned, to not be treated but to be allowed to degrade slowly. Any of the timber can be replaced after several years when necessary. The stone boulders are to be locally sourced and to not exceed a height more than 550mm.



Figure 14 Example of nature play elements in meadow

k) Seating (1no. long bench, 1no. short bench and a picnic set.)

One number of seating is proposed in the open amenity area, this an area that is well lit and overseen by housing. The seating proposed is to have a comfortable backrest and two armrests. This will allow for easy rising from sitting down. The seating is to be partially timber and to be treated with a nature based concealer or oil based primer.



Figure 15 Example of seating elements

l) Bicycle Parking (16no.)

A total of 16 bicycle parking spaces are proposed across the site, with 8 spots being located within the bike and bin storages and with 8 being located in the public area. For those located in the public area the proposal is to have a simple bicycle bike stand made from CorTen Steel and timber. These are to be placed within the concrete surfaces.



Figure 16 Example of Bike Stands

3.4 Surface Treatments

m) Permeable Paving for Parking (633m²)

Permeable paving is proposed for all parking areas and to extend in certain areas to the front door of proposed housing. The permeable block paving systems will allow rainwater to drain directly into the soil and will reduce rain water runoff on site. The proposal is to have a light color of paver to match with architects choice of façade treatment for the housing.



Figure 17 Example of permeable block paving system

n) Fine Bound Gravel Pedestrian Path (233m²)

A fine bound gravel path is proposed for the walkway extending from the center of the existing estate to the West of the site and along the amenity area. This path is to be a minimum of 2m and 1.2m meters wide, to be rolled in two layers and to have a pressed timber kerb. The fine bound gravel is proposed to reduce the overall amount of concealed surfaces and allow for a permeable path surface. For the two paths from the entrance we propose a slope not exceeding 1:20 to make it fully accessible.



Figure 18 Example of fine bound gravel path

o) Public Concrete Footpath (900m²)

Concrete footpaths are to be laid in front of the houses to allow for easy maintenance and access, where possible a drain is to be incorporated that feeds into the adjacent raingarden bio swales. See image below for drainage and surface example.



Figure 19 Example of drainage within concrete footpath

p) Grasscrete at ESB substation (105m²)

An area for the ESB substation has been reserved to allow access for maintenance, here we propose a Grasscrete instead of a solid hard surface. This will allow for a vehicle to park and access but also for easy drainage and the opportunity for grass to grow.



Figure 20 Example of grasscrete surface at ESB

q) Concrete steps at entrance (30 steps)

Concrete steps are proposed at the entrance in five flights of 6 steps this allows people to reach to the estate in a direct line. We propose a handrail on each side, safety nosing and tactile paving in compliance with Part M. Level landings are proposed between the steps, two accessible paths are proposed as an accessible option to reach the estate.

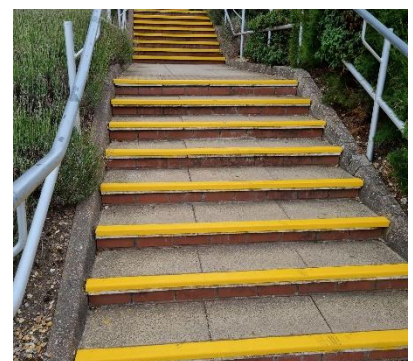


Figure 21 Example of steps with safety nosing and handrails

3.5 Biodiversity enhancement measures

We propose the fostering of biodiversity and promoting a thriving ecosystem. On site we propose targeted measures to enhance local fauna habitats. One significant initiative involves the installation of timber bat, bird, and bee boxes on-site, providing vital shelter and nesting spaces for the region's diverse wildlife. The primary goal is to contribute to the well-being of local fauna by offering purpose-built structures that cater to the specific needs of bats, birds, and bees. These timber boxes are thoughtfully designed to mimic natural environments, ensuring a safe and welcoming space for these important members of our ecosystem.

Timber Bat Boxes:

Bats play a crucial role in pest control and pollination. Carefully crafted timber bat boxes offer secluded roosting spots, allowing these nocturnal creatures to rest, reproduce, and contribute to a balanced ecosystem. By providing suitable habitats, we support their natural behaviors and contribute to the overall health of the environment. We provide these timber bat boxes near the shrub planting area to the Western border of the site where many new trees are proposed. However exact locations are to be determined by a site ecologist as per the Ecological Impact Assessment (EclA).

The bird boxes are strategically placed to attract a variety of local bird species. These avian habitats are designed to accommodate different nesting preferences, ensuring a diverse range of birds can find a comfortable home. From songbirds to cavity-nesting species, the bird boxes are to create a harmonious environment. Again exact positioning of the bird boxes and types are to be determined by a site ecologist as per the Ecological Impact Assessment (EclA).



Figure 22 Fauna houses in order ; Bat house and Bird house

4. Green and Blue Infrastructure

4.1 Green Infrastructure Analysis

The proposed development site is situated to the South of Millstreet with the Main street approx. 500m from the site. It is currently a greenfield site with traditional field boundaries comprising of mature native hedgerow and trees. There are no protected landscapes within 3km radius of the village (see figure 23 below). A spruce forest can be found 1km North, see map below. The local green infrastructure is characterized by Mature hedgerows with Native trees, laid in an irregular mosaic of small fields.



Figure 23 Existing green and blue infrastructure within 500m from the sites location

4.2 Blue Infrastructure Analysis

The Blackwater River system is within 1 km South from the site, a pond can be found on private property about 1.5km from to the East of the west, another small stream originates just North of the site. Besides these three key water infrastructures none else can be identified in 3km. We can derive that the area is somewhat deprived of small water bodies that contribute to local invertebrate and amphibian populations.



Figure 24 Protected and priority Landscapes, site location indicated with red circle

4.3 Proposed Green Infrastructure Approach

The proposed Landscape design strives to implement Green Infrastructure key components by incorporating a strategically planned network of natural and semi-natural areas with other environmental features. These include green spaces, hedgerow, woodland areas and individual tree planting. Designed to deliver a wide range of ecosystem services, enhancing wildlife and biodiversity, supporting ecological connectivity.

a. Mixed Native Hedgerow and retaining hedgerows

The Implementation of a new Mixed Native Hedgerow along the Northern side boundary will tie in with the hedgerow structure in the surrounding area. A mix of native species is proposed to match the already existing hedgerows on site. In regards to the existing hedgerows on site that are mature we propose light trimming and planting of extra transplants to re-enforce them. This approach will reduce impact on local fauna.

b. Habitat Shrub Planting

Habitat S Shrub Planting is an addition to the hedgerows proposed, the forest and creek nearby is a key component for flora and fauna, this close to the center of Millstreet we see less representation of this biodiverse of habitat. With the Native Habitat Screening Shrub Planting we encourage the slow establishment of native species and a biodiverse habitat that allows wildlife to reach down further in to the landscape.

c. Solitary Tree Planting

The site currently has no trees on site, we propose the planting of 62 new trees over the entirety of the site. Millstreet and surrounding area sees a fair amount of tree numbers. Some of the local newer developments show a reduction or complete loss of tree planting in the public realm. In our proposal the implementation of a larger number of solitary trees is not only to tie in with the existing green infrastructure but is also to set example for future local development.

d. All-Ireland Pollinator Plan selected planting

The planting both in the pollinator friendly perennial beds and the raingarden bio swales is selected from the All-Ireland Pollinator Plan. The All Ireland Pollinator plan is a national initiative that promotes greater awareness for bees, insects and other invertebrates that feed on pollen. It is a collaborative initiative that brings together local authorities, business', schools, sports clubs, farmers, tidy towns and other organizations in an effort to increase habitat to support pollinating insects. Pollinators are under threat globally and one third of Irish wild bee species are threatened with extinction. Not only does the perennial planting boost the quality of place but it's importance for pollinators is essential.

4.4 Importance of maintaining, expanding and improving existing Green and Blue Infrastructure

- Climate change adaptation and mitigation

A well-established green and blue infrastructure helps mitigate the change of our climate and will be there as a tool to adapt to the protect against the increasing challenges that come with climate change.

- Quality of place, Improved air quality and reduced heat island effect.

The cultural significance of landscape allows the local community to identify to an already know local landscape, and will draw in people from further locations to visit and populate local towns and villages. The attractiveness of the new proposed infrastructure will allow for a comfortable and welcoming estate. The careful approach to maximize vegetation on site will improve local air quality and tackle heat island effect caused by build areas.

- Support to flora and fauna

Creating new corridors, layered dense shrub areas and meadows. Will support the local flora and fauna to flourish in a diverse setting. Being able to co-habitat with the urban environment, even the simple implementation of boulders on the edge of a small water body can result in a very obvious increase of invertebrates in the area. Now more than ever sensibility to even the smallest input into harboring the natural world into our urban space is of high importance.

- Flood alleviation and management

Within any new built environment the pressure on rain water drainage in the local area increases, dealing appropriately with rain water on site will avoid displacing this weight onto other areas. It allows for the local groundwater level to be restored on site.

4.5 Proposed Green and Blue Infrastructure on the plan

The overall aim is to ensure delivery of multifunctional green spaces that support biodiversity, promote active and passive recreation, flood and surface water management and local habitat improvements (see fig. 24 below). The multi-functionality of the proposed development will be balanced against the need to protect and enhance local habitat and the recreational and functional requirements. The proposal contributes to the village's existing green infrastructure network and aims to minimize the fragmentation of green spaces in site design. Specific implementation proposals include the introduction of new tree planting to link to and connect with existing tree canopy outside of the site boundary, supported by existing native hedging along most of the site perimeter to enhance the wildlife corridors for insects and mammals. Accompanied by diverse perennial and shrub planting scheme to introduce further biodiversity within the site, which offers pollen and nectar to pollinators as well as seeds for birds in the autumn / winter months.



Figure 25 Proposed Green and Blue Infrastructure on Site