

Coachford Housing Development

For Cork County Council

Landscape Design Report including Green Infrastructure Statement

Issue for inclusion with Planning Application
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1. Introduction

1.1 Development Description

The Landscape Design Report and Green Infrastructure Statement accompanies the Planning Application for the proposed development of a housing estate at Coachford, Road R619, Co Cork. The proposed development consist of 26 new homes just north to the center of Coachford. The total size of the site consists of approximately 11.300m², including an area unavailable for development of 1700m². This area is left open for the future development of a different road layout. An amenity area is proposed that consists of 2500m² including natural play features and a natural attenuation pond.

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 into 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 native shrub screening planting in accordance with the All-Ireland Pollinator Scheme.
- d) Proposed planting of rain gardens.
- e) Introduction of a native wildflower meadow.
- f) Proposed creation of natural informal play area.
- g) Creation of a fenced-in natural attenuation pond.
- h) Timber post and rail fence to mark the site boundary.

1.3 Plans and Drawings Register

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

Number	Title	Scale	Print Size
P608-101	Tree Retention and Removal Plan	1:400	A1
P608-102	Landscape Plan	1:300	A1
P608-103	Boundary Plan	1:300	A1
P608-104	Detail Sheet 1 of 3	1:20	A1
P608-105	Detail Sheet 2 of 3	1:20	A1
P608-106	Detail Sheet 3 of 3	1:20	A1

2. The Site

2.1 Context and Receiving Environment

The existing site is located 120 meters from the main street (R618) in Coachford. It is situated in the vicinity of the current linear urban structure of the town. Beyond this a scattered pattern of rural/agricultural housing can be found stretching for kilometers. The current condition of the site is described as grassland with naturalized willow trees on site. Mature hedgerows surround the North, West and South of the site. To the West of the site lays a small stream and the overall site gradually slopes down towards the South. Only one adjacent home to the South of the site has the ability to overlook the site as it is. For more detail see drawing P608-101 Tree Retention and Removal Plan.

a) Existing Site Features

- Mature Mixed Native Hedgerow
- Grassland
- Young Willow wild growth (visible in aerial image below, see diagonal treeline separating the site).
- Bramble overgrowth to the Southern boundary along roadside.

The proposed scheme aims to retain the existing hedgerows, remove the willow and bramble overgrowth.

b) Site Elevation and Soil Condition

This site slopes from the North-Eastern Corner down to the South-Western Corner, a total of 5.5 meters in level difference can be found across the site. The site's soil conditions can be described as till soil, characterized by poor drainage. 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 where possible, rain gardens to be able to retain and infiltrate rain and storm water. An attenuation pond with overflow will allow for more water storage on site along with creating a habitat for wildlife and flora.



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 West of the proposed development. Within this proposal the public amenity area and attenuation pond separate the proposed housing from the stream, reducing the risk of any wash in of materials into any larger bodies of water.

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 to our urban environment. A high focus on native species and habitat creation has led to a diverse approach to planting. Different surface treatments, filter drainage, Natural Attenuation Pond and Raingarden bio swales, and SUDS measures included are proposed to approach a diligent way of dealing with surface water runoff. A large amenity area will encourage people to play and stay in the area. See Drawing P608-102 Landscape Plan, for more detail and plant list.



Figure 2 Proposed Landscape Plan, drawing P608-102 Landscape Plan

Features proposed:

Planting

- a) Mixed Native Hedgerow
- b) Pollinator Friendly Shrub and Perennial Beds
- c) Rain Garden Bio Swale
- d) Climbers on boundary walls
- e) Habitat Screening Shrub Planting
- f) Solitary Tree Planting
- g) Naturalized Wildflower Meadow
- h) Wildflower Lawn
- i) Grass Bio Swale
- j) Natural Biodiversity Attenuation Area

Furniture

- k) Natural Play Elements
- l) Timber Play Equipment
- m) Seating
- n) Bicycle Parking
- o) Timber Post and Rail Fence
- p) Wire and Mesh Fencing

Surface Treatments

- q) Permeable Paving for Parking
- r) Fine Bound Gravel Pedestrian Path
- s) Public Concrete Footpath

3.2 Planting

a) Mixed Native Hedgerows (115 Lin m)

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 South and Eastern boundary of the site we propose these hedges to be interplanted with native trees, this is to continue the already established characteristics of hedgerows in the area. Other areas where we propose the native hedge is in front of some of the housing, this is to separate the houses slightly from the road or parking areas. These hedges are to be trimmed neatly and to not exceed a total height of 1.2m. See below two examples of a mixed native hedge.



Figure 3 Mixed Native Hedge along Roadside



Figure 4 Low Native Hedge to front garden

b) Pollinator Friendly Shrub and Perennial Beds (235m²)

A total area of 235m² of perennial and shrub are to be planted on the site. These beds are located adjacent to the proposed dwellings. 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 grade bark mulch upon completion.



Figure 5 Example of Perennial Planting



Figure 6 All-Ireland Pollinator Plan Border

c) Rain Garden Bio Swales, (115m²)

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 to infiltrate even deeper into the soil.



Figure 7 Example of two Rain Garden Bio Swales

d) Climbers on boundary walls (72no.)

A total of 36 stainless steel wire systems are to be installed on the concrete privacy walls at the boundary of the gardens. Each stainless steel wire system exists of two tensioned vertical wires with horizontal wires in between. This allows for plenty of support of climbers of any species to attach and hold on to. For this site we propose a variety of four different species, all selected from the All-Ireland Pollinator Plan. The species include: Clematis cirrhosa, Lonicera periclymenum, Hydrangea petiolaris and Jasminum officinale. Species to be selected depending on the exact location on site to ensure they have thriving conditions. These climbers are to be placed within perennial beds that are prepared with BS:3882 quality topsoil.

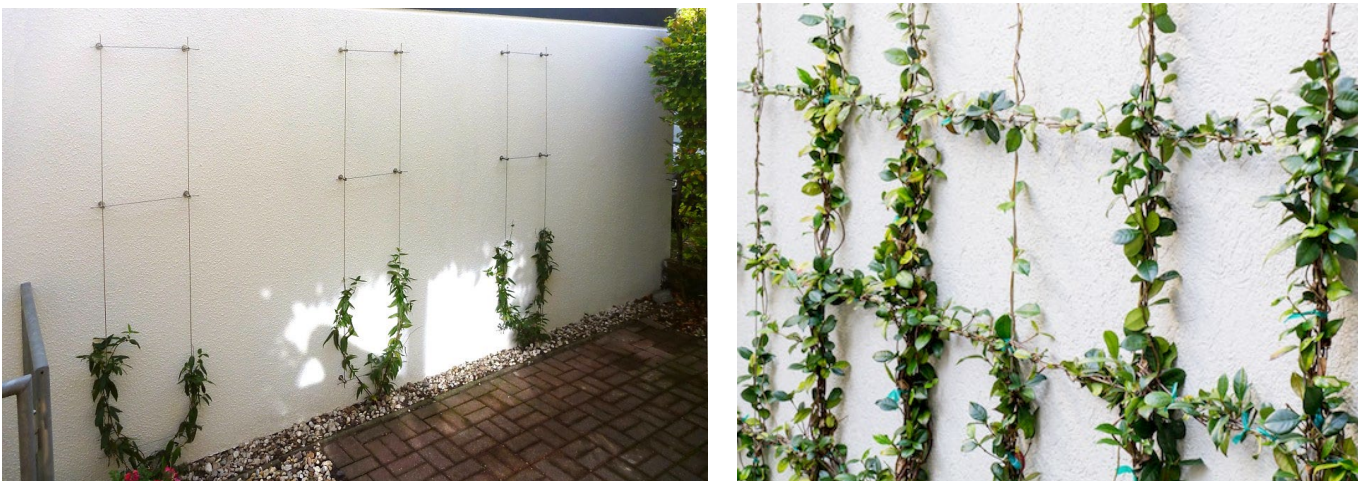


Figure 8 Example of double wire trellis system with horizontal wires.

e) Native Shrub and Habitat Planting (750m²)

On this site we propose Habitat Screening Scrub Planting. This exists 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 no. plants per square metre and are suggested to create a habitat that will support the local wildlife.



Figure 9 Example of birds in two of the species proposed, Alder Buckthorn (*Frangula alnus*) and Spindle (*Euonymus europaeus*)

f) Solitary Tree Planting (47no.)

A total of 47 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*). Six different species are to be planted on site including the following: Cherry (*Prunus avium*), Hazel (*Corylus avellana*), Oak (*Quercus pallustris*), Hornbeam (*Carpinus betulus*) and Resilient Elm (*Ulmus 'New Horizon'*). These are to be semi-mature trees, rootballed and transplanted 3-4 times.



Figure 10 Example of trees, in order: *Ulmus 'New Horizon'*, *Sorbus aucuparia*, *Prunus avium* and *Carpinus betulus*

g) Native Wildflower Meadow (2741m²)

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 11 Example of Naturalised Wildflower Meadow

h) Wildflower Lawn (980m²)

Natural regeneration of wildflower lawns is proposed for a part of the amenity, this is a strip along the bound gravel footpath and allows people to use the area for play. This area can be used for informal play and relaxation. It provides flowering native species for pollinators. This type of lawn allows for a less intense maintenance scheme.



Figure 12 Example of a wildflower lawn

i) Grass Bio Swale (485m²)

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 13 Examples of Grass Bio Swales

j) Natural Biodiversity Attenuation Area (440m²)

A native flora and fauna attenuation pond is to be created on site to deal with any storm water from built surfaces. This pond is to be created with soil from the site and the profile is formed up with two slopes and two landings. This will allow for different species of flora and fauna to thrive. The pond is not to be planted but similar to the naturalized wildflower meadow, here the approach is to allow for the banks of the pond to naturalize. This can be done with an infrequent mowing plan for the banks. Maintenance should aim at removing all cuttings off-site and to keep to a mowing regime specified for natural recolonized grassland. See Fig 14



Figure 14 Example of Naturlised Biodiversity Attenuation Pond

3.3 Furniture

k) 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 450mm.



Figure 15 Example of nature play elements in meadow

l) Timber Play Equipment (2no. stilts and 1no. triple balancing beam)

A total of 3 play equipment pieces are proposed alongside of the natural play elements. These allow for more explorative play and challenge. Two number stilts are proposed and one triple balancing beam, these are to be placed within the meadow and do not require any safety matting as the maximum fall height does not exceed 600mm.



Figure 16 Example of timber play equipment

m) Seating (1no.)

One bench seat is proposed in the open amenity area, this is an area that is well lit and overseen. 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 17 Example of seating elements

n) Bicycle Parking (22no.)

A total of 22no. bicycle parking spaces are proposed across the site, with 12 spots being located within the bike and bin storages and with 10 being located in the public area. For those located in the public area the proposal is to have a simple bicycle stand made from CorTen Steel and timber. These are to be placed within the concrete surfaces. For the parking spaces within the bike and bin storage we propose the addition of a timber bicycle shelter.



Figure 18 Example of Bike Stands and bicycle shelter

o) Timber Post and Rail Fence (165 linm)

A timber post and rail fence is proposed to the Eastern and Southern border of the site to demarcate the site boundary clearly. Behind the fence a mixed native hedgerow interplanted with solitary trees is proposed. The timber post and rail fence are to have a maximum height of 1200mm. See image below for example of proposed timber post and rail fence.



Figure 19 Example of timber post and rail fencing

p) Timber and Mesh Fencing (26 lin m at embankment)

The wire and Mesh fencing is proposed near the embankment running through the amenity area, here the fence will create a clear site boundary to the North of the site.



Figure 20 Example of wire and mesh fencing

3.4 Surface Treatments

q) Permeable Paving for Parking (866m²)

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 colour of paver to match with the architects choice of façade treatment for the housing.



Figure 21 Example of permeable block paving system

r) Fine Boundgravel Pedestrian Path (284m²)

A fine boundgravel path is proposed for the walkway extending from the center of Coachford into the site and along the amenity area. This path is to be a minimum of 2 meters wide, to be rolled in two layers and to have a pressed timber kerb. The fine boundgravel is proposed to reduce the overall amount of concealed surfaces and allow for a permeable path surface.



Figure 22 Example of fine bound gravel path

s) Public Concrete Footpath (900m²)

Concrete footpaths are to be installed 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 23 Example of drainage within concrete footpath

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 and bird 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 and birds. 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.

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.



Figure 24 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 North of Coachford with the R618 runs 100m from the site. It is currently a greenfield site with traditional field boundaries comprising of mature native hedgerow and trees. There seem to be no protected areas within 3km radius of the village (see figure 21 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 a irregular mosaic of small grassland fields.

4.2 Blue Infrastructure Analysis

The River the Lee and the Taiscumar Resevoir are within 1 km South from the site, a pond can be found on private property about 1.5km from to the East of the site, 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 25 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, hedgerows, 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 Hedgerows

The Implementation of a new Mixed Native Hedgerow along the proposed area for future road alignment will tie in with the hedgerow structure in the surrounding area. A mix of species and a mix of interplanted tree species is to allow for a biodiverse corridor. The trees planted on the Southern side of the site will be newly introduced and create a new corridor for birds and bats.

b. Native Habitat Screening Shrub Planting

Native Habitat Screening Shrub Planting is an addition to the hedgerows proposed. The forest nearby is a key component for flora and fauna, this close to the center of Coachford 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 South.

c. Solitary Tree Planting

The site currently has no trees on site, we propose the planting of 47 trees over the entirety of the site. Coachford and surrounding area sees a fair amount of tree numbers. Some of the local newer developments show a 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, businesses, 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.



Figure 26 Existing green and blue infrastructure within 500m from the sites location

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 and 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. With the proposal we not only aim to handle rainwater discharge appropriately but also we also take in consideration the possibility of flood risk from the local stream, the aim of the small embankment we propose is not to restrict the small creek adjacent to the site, but to allow for some area of overflow without running the risk of having any inflow of non-local materials.

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. 26 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 27 Proposed Green and Blue Infrastructure on Site