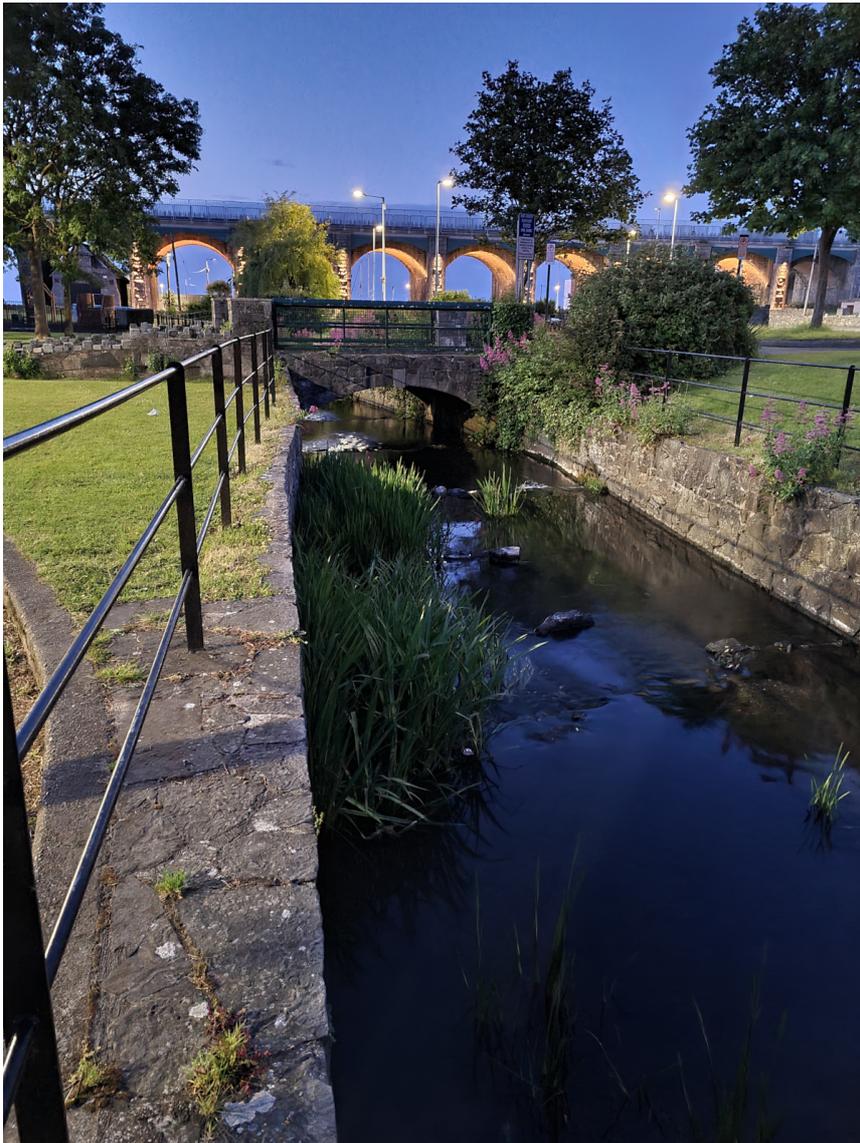


**Outline Construction Environmental Management Plan (CEMP)
for the proposed development of a for a proposed development
at Quay Street, Balbriggan, Co. Dublin.**



24th June 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Fingal County Council

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie
Directors: Bryan Deegan and Sara Corcoran
Company No.427560 VAT No. 9649832U
www.altemar.ie

Contents

Executive Summary	3
1. Introduction	4
<i>Outline of CEMP</i>	4
2. Project Description	4
<i>Description of the Proposed Project</i>	4
Landscape	11
<i>Arboricultural Assessment</i>	15
<i>Lighting</i>	18
<i>Drainage</i>	23
<i>Flood Risk Assessment</i>	24
<i>Proposed Construction Methods</i>	26
Pre-Construction Activities	26
Outline Traffic Management Plan	26
River Widening Works	27
Site Working Hours	28
<i>Sensitive Receptors</i>	29
3. Analysis of the Potential Impacts	30
<i>Potential Construction Impacts</i>	30
<i>Potential Operational Impacts</i>	31
4. Mitigation Measures & Monitoring	32
Environmental Management Plan	37
Riparian Corridor Construction Stage	38
Drainage on site outside the riparian corridor.	38
<i>Adverse Effects likely to occur from the project (post mitigation)</i>	39
5. Site Information	40
Roles and Responsibilities	40
Implementation	40
<i>Environmental Induction</i>	41
<i>Environmental Incidents and Complaints Procedures</i>	41
<i>e) Environmental Complaints and Incidents</i>	41
Waste Management	42
6. Invasive Species	44
7. Monitoring of Matt/Bracken River	44
8. Conclusions	44

Executive Summary

Fingal County Council (Economic, Enterprise, Tourism & Cultural Development Department) is proposing to carry out development on a site of 19,300 m² / 1.93 ha approx. It includes parts of Mill Street and of Quay Street and Harbour Road to the beach and up to the and encompassing the site of the demolished night club on the East Pier of Balbriggan Harbour (Protected Structure RPS 0038), and includes public footpaths, public roads, open green space, public carparks, a section of the Bracken River, foot and road bridges over the Bracken River, lands beneath the arches of the Balbriggan Railway Viaduct (Protected Structure RPS 0036), the former RNLI boat house (Protected Structure RPS 0035), existing public toilets and playground.

This outline Construction Environmental Management Plan (CEMP) has been developed to detail the commitments and mitigation measures to be implemented by Fingal County Council and it's appointed contractors during the redevelopment and riparian works. This CEMP is being submitted in tandem, and should be read in conjunction, with the AA Screening and Ecological Impact Assessment (EcIA) prepared by Altemar and the Preliminary Construction Management Plan prepared by Hayes Higgins Partnership for the proposed development.

The purpose of the CEMP is to provide details of the proposed project, proposals for noise reduction, proposals for dust reduction and details on how the proposed project is intending to use a comprehensive and integrated approach to protecting the Matt/Bracken River and other sensitive environmental receptors including the marine environment downstream of the proposed works.

This CEMP also outlines the potential impacts of the development, details the sensitive receptors, environmental controls, and the mitigation measures that will be implemented to minimise any potential impacts. The sensitive receptors include the Matt/Bracken River, which is located within the proposed development site, and it is proposed to carry out significant instream and landscaping works. The CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project.

1. Introduction

Outline of CEMP

Altemar Ltd. has been commissioned by Fingal County Council to prepare an outline Construction Environmental Management Plan (CEMP) for the development on a site of 19,300 m² / 1.93 ha approx. It includes parts of Mill Street and of Quay Street and Harbour Road to the beach and up to the and encompassing the site of the demolished night club on the East Pier of Balbriggan Harbour (Protected Structure RPS 0038), and includes public footpaths, public roads, open green space, public carparks, a section of the Bracken River, foot and road bridges over the Bracken River, lands beneath the arches of the Balbriggan Railway Viaduct (Protected Structure RPS 0036), the former RNLI boat house (Protected Structure RPS 0035), existing public toilets and playground. The site includes the area between the Railway Viaduct and the Harbour Road and includes that part of Harbour Road to the north-east of the Railway Viaduct and that part of the Harbour Road on the East Pier of Balbriggan Harbour up to and including the site of the demolished night club on the East Pier).

The purpose of the CEMP is to provide details of the proposed project, proposals for noise reduction, proposals for dust reduction and details on how the proposed project is intending to use a comprehensive and integrated approach to protecting the Matt/Bracken River and other sensitive environmental receptors including the marine environment downstream of the proposed works.

This CEMP also outlines the potential impacts of the development, details the sensitive receptors, environmental controls, and the mitigation measures that will be implemented to minimise any potential impacts. The sensitive receptors include the Matt/Bracken River, which is located within the proposed development site, and it is proposed to carry out significant instream and landscaping works. The CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project.

This CEMP is subject to permission being granted for the development as per the drawings submitted. The CEMP is a live document subject to change based on the following (if required):

1. final permission granted and conditions
2. compliance requirements of Fingal County Council
3. requirements by other bodies including Inland Fisheries Ireland and the National Parks and Wildlife Service
4. concerns raised by residents affected by the works

The final CEMP prepared for the development will be submitted prior to commencement of the relevant phase on site and will be subject to periodic review as part of the management of the construction process.

2. Project Description

Description of the Proposed Project

Fingal County Council (Economic, Enterprise, Tourism & Cultural Development Department) is proposing to carry out development on a site of 19,300 m² / 1.93 ha approx. It includes parts of Mill Street and of Quay Street and Harbour Road to the beach and up to the and encompassing the site of the demolished night club on the East Pier of Balbriggan Harbour (Protected Structure RPS 0038), and includes public footpaths, public roads, open green space, public carparks, a section of the Bracken River, foot and road bridges over the Bracken River, lands beneath the arches of the Balbriggan Railway Viaduct (Protected Structure RPS 0036), the former RNLI boat house (Protected Structure RPS 0035), existing public toilets and playground. The site includes the area between the Railway Viaduct and the Harbour Road and includes that part of Harbour Road to the north-east of the Railway Viaduct and that part of the Harbour Road on the East Pier of Balbriggan Harbour up to and including the site of the demolished night club on the East Pier.

The proposed development includes:

- (i) Redevelopment of the existing carpark areas, open space and playground to form a reordered pedestrianised public open space / market space with play space off Quay Street, focused around the arches of the Railway Viaduct.
- (ii) Upgrade of the carpark areas and green open space located between Mill Street, Quay Street and the harbour, including the Bracken River, to provide new hard landscaping and planting zones to encourage flora.
- (iii) Upgrade of street surfaces, pavements, landscaping and green infrastructure, including widening of footpaths, to improve pedestrian linkages from Main Street to Quay Street, the Railway Viaduct, the Beach and the Harbour area.
- (iv) New public lighting and street furniture.
- (v) Redesign of existing surface carparking, including closure of vehicular access point on Quay Street, and incorporating modifications to traffic flow and parking on Quay Street, Mill Street and Harbour Road (Seapoint Lane).
- (vi) Works to redirect the existing overflow (currently discharging into the Bracken River) from the Irish Water pumping station off Harbour Road to a new discharge location into the Bracken River.
- (vii) Enhancement works to the Bracken River within the existing open space between Quay Street and Mill Street, including widening of the water course to encourage biodiversity, increase planting and improve flood resilience along the riverbank (including temporary piping of the Bracken River during the construction period of the proposed development).
- (viii) Resurfacing areas under the Railway Viaduct arches with new granite paving.
- (ix) Removal of existing low level stone walls to provide a more accessible link between Quay Street and the harbour.
- (x) Provision within the vicinity of the Railway Viaduct to facilitate future potential market stalls, street food outlets and outdoor dining, to include appropriate utility connection points.
- (xi) Reduction of overall car parking on site, including removal of Quay Street carpark, reduction of on-street carparking and reduction of Town Carpark (Mill Street), resulting in a car park provision of 63 spaces (a reduction of 175 spaces).
- (xii) Provision of 152 cycle parking spaces, seating and integrated play equipment.
- (xiii) Provision of a new single storey Harbour Building (151 sqm) on site of former night club on East Pier of Balbriggan Harbour (Protected Structure) to contain:
 - (a) 1 no. commercial unit with services facing onto the harbour.
 - (b) Provision of associated storage space, office and staff toilet.
 - (c) Provision of public toilets and changing places unit.
 - (d) Provision for seating in vicinity of the harbour building and kiosks.
- (xiv) Provision of two new single storey, kiosk buildings (33 sqm each) on site of former night club on East Pier of Balbriggan Harbour (Protected Structure), to accommodate visitor information, retail, café, hot food take away, rental of leisure boats, cycles, paddleboards and other recreational equipment.
- (xv) Demolition of the existing public toilet block immediately south-west of the Railway Viaduct at the entrance to the beach and provision of temporary toilet facilities pending construction of new toilet block.
- (xvi) Construction of a new single storey building south-west of the Railway Viaduct to include toilets, changing, lockers, '*Changing Places Unit*' and a retail kiosk.
- (xvii) Proposed conservation of the Former RNLi Boathouse, (Protected Structure RPS no. 0035) at Harbour Road, Balbriggan, Co. Dublin, including change of use to commercial café/retail use with associated site development, services and internal alterations. The area of the single storey building is 63 sqm.
- (xviii) All associated site development works, landscaping, services, piped infrastructure and ducting, changes in level; site landscaping and all associated site development and excavation works above and below ground.

The proposed site outline, location, site plan (existing and proposed), and elevations are demonstrated in Figures 1-5.



 Site outline

Project: Quay Street, Balbriggan
 Location: Balbriggan, Co. Dublin
 Date: 14th April 2022
 Drawn By: Bryan Deegan (Altemar)

ALTEMAR
 Marine & Environmental Consultancy



Figure 1. Proposed site outline and location



Project: Quay Street, Balbriggan
 Location: Balbriggan, Co. Dublin
 Date: 14th April 2022
 Drawn By: Bryan Deegan (Altemar)

ALTEMAR
 Marine & Environmental Consultancy



Figure 2. Proposed site outline

Landscape

A Landscape Design Report was composed by Austen Associates. In relation to tree retention, the report states that: *'An arboricultural survey has been undertaken. All of the trees on site have been surveyed and evaluated. Consultations meetings have taken place with Paul Keogh Architects and an approach to tree protection has been agreed. The general consensus is to retain significant trees on site where possible.'* The green infrastructure plan is seen in Figure 6, rain garden detail in Figure 7 and riparian marginal planting is seen in figure 8. Furthermore, the report states that:

'Planting Approach

Early on in the project, a planting approach influenced by the work of the plantsman Piet Oudolf has been favoured for many of the planting areas. This approach takes a naturalistic view to the planting using a mixture of robust perennials and grasses, along with some other planting, to create patterns visible in nature. For Quay Street, this planting style is worked into angular landscape wedges in the garden area alongside open grass lawn zones to create a comforting tapestry. This is interspersed with paving, which follows desire lines through the landscape areas. Gradually ascending Corten steel edging defines the landscape wedges and works with the planting to create an interesting blend of naturalistic planting and complementary man-made elements.

Riparian planting will be used close to the river to create waterside planting that will be of high habitat value for wildlife and will also soften the river edge at its interface with the stepped approaches to the river. The planting will be set into biodegradable wraps that are held in place at the river edge with a low quantity of placed rocks. Elsewhere, planting to the edge of the hardscape areas is in the form of rain gardens. These planting areas will take a quantum of surface water flow from the paved areas both to water the plants and also to provide filtration of the water as it seeps to groundwater levels. Plants selected for these areas will be tolerant of periodic wetting and dry spells.

Elsewhere, planting to the edge of the hardscape areas is in the form of rain gardens. These planting areas will take a quantum of surface water flow from the paved areas both to water the plants and also to provide filtration of the water as it seeps to groundwater levels. Plants selected for these areas will be tolerant of periodic wetting and dry spells.

Tree Planting

Native specimen trees will be selected for planting after discussion between the Architect and Landscape Architect, taking on board Fingal County Councils approach to tree planting.

The proposals require the removal of 33 existing trees to facilitate the development. However, 37 no. new trees are being planted resulting in a net gain in the quantity of trees at this location at the end of the development of the new park.

Wild Cherry Prunus avium 'Plena' specimen trees are proposed to soften the interface between the plaza and the river edge to the south. These are relatively good in a coastal situation and will have a degree of added protection from the harbour and viaduct infrastructure. They will provide seasonal interest, with white double flowers in the spring and red/orange autumn colour._

Where trees are located in paving, the Stockholm paving system will be utilised. A tree pit of 16m³ will be allocated for each tree planted in paved areas.

Green Infrastructure

invertebrates, smaller mammals, birds and other species.

Further ecological measures will be incorporated such as bird boxes and insect hotels. The retained trees and proposed tree planting will provide habitat linkage through the site and play its part in retaining an environmentally friendly green space in Balbriggan town centre. This will be part of a network of green spaces in the town and connect with the nearby maritime habitat, providing resting and nesting opportunities for birds and other wildlife.

The development will link with the wider pedestrian network, providing local connections and walking routes in the active travel strategy for Balbriggan. Linkage to cycle routes is promoted through the site.'



Proposed plants

01	02	03	04	05	06
07	08	09	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	Sa	Bp	Cp	Cb	Pc
Sb	Au	Cps	Pa	Al	rr

Sound (Speaker icon) Touch (Hand icon) Native Irish Plants (Leaf icon)
 Taste (Tongue icon) Scent (Nose icon)
 Visual (Eye icon) Pollinator (Bee icon)

PLAY EQUIPMENT

	Existing carrousel to be relocated	Ino.
	Existing train and house to be relocated	Ino.
	Tree climber by Kompan or equivalent	Ino.
	Tower and net by Kompan or equivalent	Ino.
	3 sizes Djembes by Percussion Play or equivalent	Ino.
	Pentatonic tambos by Percussion Play or equivalent	Ino.
	Marimba by Percussion Play or equivalent	Ino.

Legend

SOFT LANDSCAPING

Trees

Existing trees to be retained

Ornamental trees

- Sa Sorbus aria 'Lutracens', rb 25-30cmg
- Bp Betula pendula 'Tristis', rb 18-20cmg
- Cp Craetagus persimilis 'Prunifolia', rb 15-20cmg
- Cb Carpinus betulus 'Fastigiata', rb 18-20cmg
- Pc Pyrus calleryana 'Chanticleer', rb 18-20cmg
- Sb Salix babylonica, rb 18-20cmg
- Au Arbutus unedo, rb 18-20cmg
- Cps Craetagus 'Paul's Scarlet', rb 18-20cmg

River alignment trees

Quantities

Pa Prunus avium 'Plena', rb 50-60 cm girth

Rain gardens shrubs

- Al Amelanchier lamarckii
- Ra Rosa rugosa
- Ca Cornus alba 'Elegantissima'

Bulbs

- 01 Allium hollandicum 'Purple Sensation', 20m²
- 02 Crocus tommasiniana, 40m²
- 03 Fritillaria meleagris, 15m²
- 04 Narcissus 'Thalia', 15m²
- 05 Narcissus poeticus, 15m²
- 06 Narcissus tete-a-tete, 20m²

Oudulf-style planting of perennial/grass mix

- 07 Achillea 'Lilac Beauty', 2L, 3/m², 4%
- 08 Agastache 'Blue Fortune', 2L, 3/m², 4%
- 09 Anemone lessoniana, 2L, 3/m², 4%
- 10 Calamagrostis x acutiflora 'Karl Foerster', 2L, 3/m², 4%
- 11 Deschampsia cespitosa, 2L, 3/m², 4%
- 12 Digitalis purpurea, 2L, 3/m², 4%
- 13 Oenothera umbellata, 2L, 3/m², 4%
- 14 Eryngium 'Big Blue', 2L, 3/m², 4%
- 15 Eupatorium maculatum, 2L, 3/m², 4%
- 16 Geranium 'Rozanne', 2L, 2/m², 5%
- 17 Helium 'Sahin's Early Flowerer', 2L, 3/m², 4%
- 18 Leucanthenum vulgare, 2L, 3/m², 4%
- 19 Lythrum salicaria, 2L, 3/m², 4%
- 20 Molina caerulea subsp. arundinacea 'Skyracer', 2L, 3/m², 5%
- 21 Persicaria amplexicaulis 'Rosea', 2L, 3/m², 4%
- 22 Rubeckia fulg. 'Goldsturm', 2L, 3/m², 4%
- 23 Salvia nemorosa 'Caradonna', 2L, 3/m², 4%
- 24 Sangisorba officinalis 'Red Thunder', 2L, 3/m², 4%
- 25 Sedum 'Herbstfreude', 2L, 3/m², 5%
- 26 Stachys officinalis 'Hummel', 2L, 3/m², 5%
- 27 Symphoricarpos 'Little Carlow', 2L, 3/m², 5%
- 28 Verbena bonariensis, 2L, 4/m², 4%
- 29 Veronicastrum virginicum 'Fascinator', 2L, 3/m², 5%

895m² Marginal planting

- 30 Catha roseaeflora, 3/m², 10%
- 31 Autumna umbellata, 4/m², 10%
- 32 Carex rostrata, 4/m², 10%
- 33 Juncus effusus, 4/m², 10%
- 34 Phalaris arundinacea, 3/m², 10%
- 35 Sagittaria sagittifolia, 5/m², 10%
- 36 Sparganium erectum, 5/m², 10%
- 37 Iris pseudocorus, 3/m², 10%
- 38 Myosotis scorpioides, 5/m², 10%
- 39 Lythrum salicaria, 3/m², 10%

30 Coirmat, biodegradable coir fibre, size (800x3000mm bags with soil) fixed with wood stakes and rocks for watercourse lining with marginal planting, soil reinforcement and sediment entrapment

Grass Seeding, 30 g/m²

Festuca ovina, Hard Fescue (20%); Poa pratensis, Smooth stalked Meadow Grass (10%); Festuca rubra, Strong Creeping Red Fescue (30%); Festuca rubra subsp. Commutata, Chewy's Fescue (20%); Agrostis capillaris, Browsetop Bent (15%); Trifolium repens, White Clover (5%)

131m² Rain garden with Oudulf-style perennial planting

- 38 Rudgeria assutifolia, 3/m², 7.5%
- 40 Ligularia przewalskii, 3/m², 7.5%
- 41 Osmunda regalis, 3/m², 7.5%
- 42 Iris sibirica, 3/m², 10%
- 19 Lythrum salicaria, 3/m², 10%
- 43 Ranunculus acrisifolius, 4/m², 7.5%
- 44 Carex elata 'Aurea', 4/m², 10%
- 45 Camassia lechtelini, 6/m², 7.5%
- 46 Primula bulliana, 7/m², 10%
- 47 Geranium nodosum, 4/m², 7.5%
- 48 Primula vialii, 5/m², 10%
- 49 Persicaria bistorta 'Superta', 4/m², 5%

56m² HARD LANDSCAPING

- Epm Edm mulch surface
- Hoggin Hoggin (Ballylusk dust)

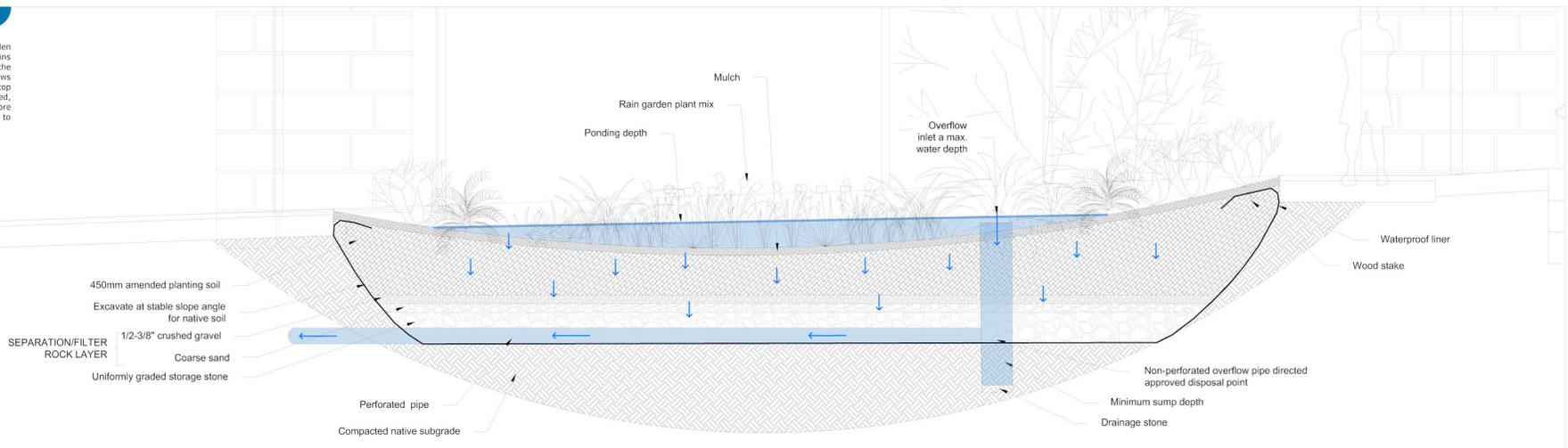
C	2/7/2022	CM	Upgrade tree size
B	26/05/22	CM	Upgrade plan
A	11/05/22	CM	Landscape plan
Rev	Emb	ly	Details

AUSTEN ASSOCIATES
 Project: 2123 Quay Street and Environs
 Client: Fingal County Council
 Drawing title: Soft Landscape Plan
 Drawn by: CM Scale: 1:200 on A1
 Approved by: TA Date: May 2022
 Status: Planning
 Drawing no: 074021_PP_01 Revision: C

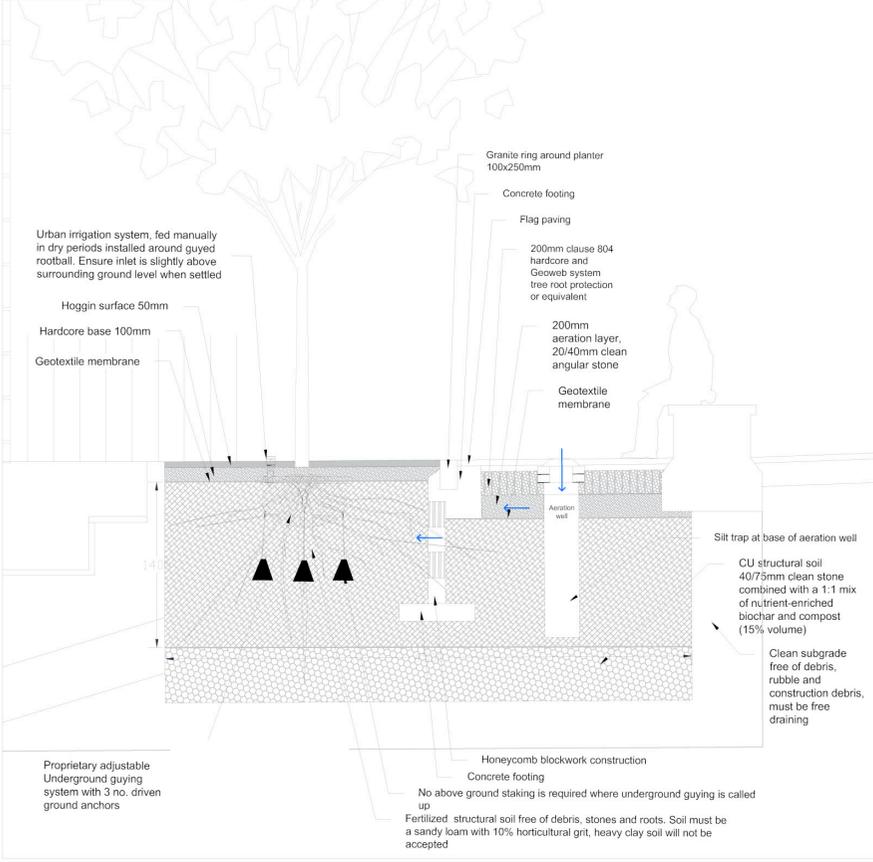
Figure 6. Integrated green infrastructure plan

Rain garden detail 1:20

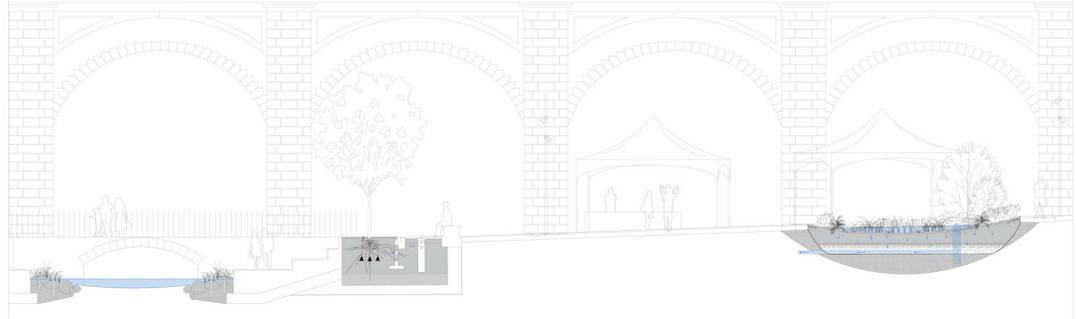
Filtration rain garden: Rain-garden system that cleanses and detains stormwater runoff before piping the water elsewhere. This system allows runoff water to pass through the top mulch and then the middle, amended, soil layers of the rain garden before being collected in a pipe and routed to an approved disposal point.



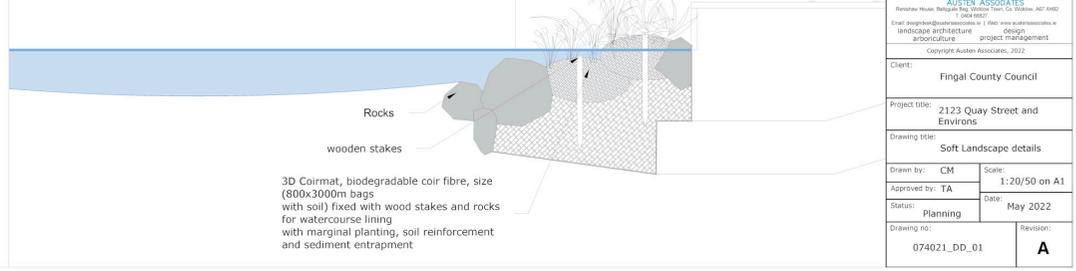
Tree pit detail 1:20



Section 1:100



Marginal planting detail 1:20



A 27/05/22 CM Landscape details	
Rev	Date By Details
Rev: Andrew Hogg, Manager, 100/100, 100/100, 100/100, 100/100 Email: andrew@austenassociates.com.au Phone: www.austenassociates.com.au landscape architecture design arboriculture project management Copyright Austen Associates, 2022	
Client: Fingal County Council	
Project title: 2123 Quay Street and Environs	
Drawing title: Soft Landscape details	
Drawn by: CM	Scale: 1:20/50 on A1
Approved by: TA	Date: May 2022
Status: Planning	Revision:
Drawing no: 074021_DD_01	A

Figure 7. Rain garden detail works

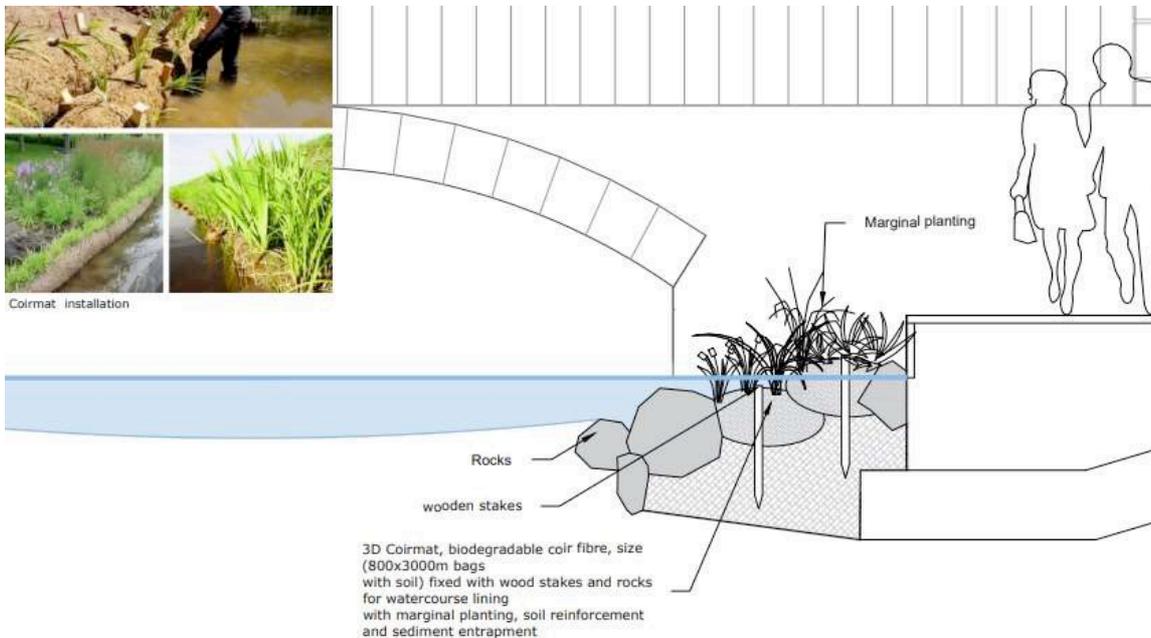


Figure 8. Riparian Marginal Planting

Arboricultural Assessment

Tree & Vegetation Survey, Assessment, Management & Protection Measures Report was composed by Austen Associates. In relation to the Arboricultural Impact Assessment, the report states that:

'4.0 Arboricultural Impact Assessment

This section of the report describes the impacts that the proposed development will have on the trees. To be read in conjunction with the tree survey and tree protection drawings 074021_TS_01 and 074021_TP_01. Refer to section 5 Arboricultural Method Statement below for details on the protective actions required.

Tree no.'s 1848, 1849, and 1850

These trees are Acer campestre Field Maple, Salix alba 'Tristis' Weeping Willow and Acer pseudoplatanus Sycamore respectively. They are located in a small green space to the south eastern edge of the site, tree no 1850 is located adjacent to the railway bridge across the road.

Impact of the development: It is expected that there will be no impact from the development on these trees.

Action: Protect with tree protective fencing.

Tree no.'s 1851-1854

These trees are Acer pseudoplatanus Sycamore species, located in and around the existing car park to the south east of the site.

Impact of the development: The car park layout will be altered and new public plaza installed.

Action: Remove.

Tree no. 1855

This tree is a mature Salix alba 'Tristis' Weeping Willow species, located in the green space adjacent to the Bracken River.

Impact of the development: The river will be widened at this location.

Action: Remove.

Tree no. 1856 - 1860

These trees are Cordyline australis New Zealand Cabbage and mature Acer pseudo-platanus Sycamore species. They are located in the green space in the park to the north of the Bracken River. The Cordyline australis New

Zealand Cabbage are small, poor specimens and their removal is recommended to allow for improved planting. The *Acer pseudoplatanus* Sycamore species are mature trees that contribute positively to the public realm and are to be retained.

Impact of the development: This area will be planted but otherwise largely unaltered.

Action: Remove *Cordyline australis* New Zealand Cabbage. Retain *Acer pseudoplatanus* Sycamore and protect with tree protective fencing.

Tree no. 1861 - 1868

These trees are *Cordyline australis* New Zealand Cabbage, mature *Acer platanoides* 'Drummondii' variegated Maple, and *Platanus x hispanica* London Plane species. They are located in the green space to the east of the entrance steps from Mill Street.

Impact of the development: The steps are to be removed and will be replaced by a universal access ramp. The root protection area of the trees has been shown on the drawings and worked out as per the guidance in BS 5837:2012. In reality, the roots will not have extended beneath the footprint of the steps.

Action: Remove tree numbers 1861, 1862, 1863, 1865 and 1867. Review retention of tree numbers 1864, 1866 and 1868 when further details of ramp construction are available.

Tree no. 1869 - 1877

These trees are *Fraxinus excelsior* Ash and *Acer pseudoplatanus* Sycamore. They are located in the green space to the south of the steps. The *Fraxinus excelsior* Ash are suffering from Ash Die Back disease *Hymenoscyphus fraxinea*. There is no treatment for this fungal infection and it is expected that the trees will be dead within 10 years. During this period, they will decline and are a health and safety risk.

Impact of the development: These trees are to be removed for health and safety reasons, the *Acer pseudoplatanus* Sycamore is to be removed also.

Action: Remove

Tree no. 1878 - 1888

These trees are *Cordyline australis* New Zealand Cabbage, mature *Acer platanoides* 'Drummondii' variegated Maple, and *Acer pseudoplatanus* Sycamore species. They are located in the green space to the west of the entrance steps from Mill Street.

Impact of the development: The steps are to be removed and will be replaced by a universal access ramp. The root protection area of the trees has been shown on the drawings and worked out as per the guidance in BS 5837:2012. In reality, the roots will not have extended beneath the footprint of the steps.

Action: Remove tree numbers 1879, 1881, 1888. Review retention of tree numbers 1880, 1882 and 1883 when further details of ramp construction are available.

Tree no. 1889 – 1896, 1899 – 0020 and Tree Group 01

These trees are semi-mature *Acer pseudoplatanus* Sycamore, one *Fraxinus excelsior* Ash, *Acer platanoides* 'Drummondii' variegated Maple and *Sambucus nigra* elder species. They are located in the car park to the north west of the site, accessed from Mill Street.

Impact of the development: The car park layout will be slightly rationalized, resulting in the loss of some of these trees.

Action: Remove tree numbers 1890, 1891, 1893, 1895, 1896, 0007, 0009, 0013 and 0014.

Tree numbers 1889, 1892, 1894, 1897, 1898, 1899, 1900, 0001, 0002, 0003, 0004, 0005, 0006, 0008, 0010, 0011, 0012, 0015, 0016, 0017, 0018, 0019 and 0020 are to be retained and protected with tree protective fencing.

Tree no. 1878 - 1888

These trees are *Cordyline australis* New Zealand Cabbage, mature *Acer platanoides* 'Drummondii' variegated Maple, and *Acer pseudoplatanus* Sycamore species. They are located in the green space to the west of the entrance steps from Mill Street.

Impact of the development: The steps are to be removed and will be replaced by a universal access ramp. The root protection area of the trees has been shown on the drawings and worked out as per the guidance in BS 5837:2012. In reality, the roots will not have extended beneath the footprint of the steps.

Action: Remove tree numbers 1879, 1881, 1888. Review retention of tree numbers 1880, 1882 and 1883 when further details of ramp construction are available.

Tree no. 1889 – 1896, 1899 – 0020 and Tree Group 01

These trees are semi-mature Acer pseudoplatanus Sycamore, one Fraxinus excelsior Ash, Acer platanoides ‘Drummondii’ variegated Maple and Sambucus nigra elder species. They are located in the car park to the north west of the site, accessed from Mill Street.

Impact of the development: The car park layout will be slightly rationalized, resulting in the loss of some of these trees.

Action: Remove tree numbers 1890, 1891, 1893, 1895, 1896, 0007, 0009, 0013 and 0014.

Tree numbers 1889, 1892, 1894, 1897, 1898, 1899, 1900, 0001, 0002, 0003, 0004, 0005, 0006, 0008, 0010, 0011, 0012, 0015, 0016, 0017, 0018, 0019 and 0020 are to be retained and protected with tree protective fencing.

Furthermore, the report states that: ‘The existing site contains a number of mature trees, they are generally of reasonable quality. Some of these trees are called up for removal and some for retention. Please refer to the drawing 074021_TP_01 and the Arboricultural Impact Assessment above for details. The principal standard for tree retention practices is BS 5837:2012.

Tree rooting:

*The majority of the tree’s roots are in the top 1000mm of the soil, with the majority of feeding and anchoring roots in the top strata. Typically, they spread laterally from the trunk out beyond the crown. The area of the tree roots is referred to as the **Root Protection Area, RPA**, and is indicated on the accompanying plans, 074021_TS_01 and 074021_TP_01. The RPA of the trees to be retained is not to be disturbed or impacted upon by construction. **CRITICAL: UNDER NO CIRCUMSTANCES ARE LEVELS TO BE RAISED OR LOWERED IN THE ROOT PROTECTION AREA!***

Removal of trees:

Trees are to be removed to the standard set out in BS 3998:2010. They are to be safely felled with stumps and roots to be removed. The trees proposed for removal are adjacent to trees proposed for retention. Care is to be taken so as to not damage the above ground parts, (bark, trunk, branches, shoots and leaves etc. of the retained trees). The roots of the retained trees are to be protected also. Note the rootzone that requires protection is indicated on the drawing 074021_TP_01.

Retention of trees:

- *The root protection area of the trees has been worked out in line with the guidance given in BS 5837:2012. It is indicated on drawings 074021_TS_01 and 074021_TS_02. This area is an estimate of the below ground root spread of the trees and protection of this area is of utmost importance. o No alterations of ground levels are to occur within the RPA, this includes excavations or raising of ground levels.*
 - *Any practices that would lead to compaction within the RPA such as storage of materials or location of site buildings are strictly prohibited.*
 - *Any spillages, washings or any other possible contamination of the soil in the rootzone from construction operations is prohibited.*
- *The above ground parts of the trees will be protected from damage from site traffic and machinery and from felling operations of adjacent trees.*

Tree work

Any tree work undertaken on site will be in line with BS 3998. An assessment shall be taken for the presence of any protected wildlife prior to removal and any ecological survey recommendations will be observed.

Tree protection areas

The alignment of the tree protective fencing will be as shown on Drawing No. 074021_TP_01 and is specifically designed to protect the tree roots. Construction traffic will be diverted between tree protection areas for the duration of construction and no heavy-duty traffic shall pass over the RPA of retained trees prior to erection of tree protective fencing. The fencing shall remain in place for the duration of the construction works and shall only be removed when all works are complete. The tree protective fencing alignments will not be altered, even on a temporary basis, without the written consent of the project arborist.

Where works are required within the tree protective fencing alignments, the project arborist will be informed in writing. The fencing shall not be altered without written approval from the project arborist. Such works will be agreed with the project arborist in writing. The fencing will be restored to the alignments shown on the drawing 074021_TP_01 on when these works are complete, or if there is a period of greater than one day where such works are halted.

Tree Protection

- *No materials, site storage areas, cement washing points, construction waste disposal areas shall be located in or around the Root Protection Areas.*
- *No noxious liquids shall be disposed of or deposited within the RPA.*
- *Rubbish shall not be burned in the RPA*
- *The soil level shall not be altered in any way, (raised or lowered) within the RPA.*
- *No action that might cause compaction within the RPA are to be carried out, this includes but is not limited to: placement of site facilities, storage of machinery, storage of materials, topsoil storage, staff parking.*
- *No signage, staples, boards or any other item/material shall be attached to any retained tree.*
- *Site machinery with extending arms, buckets etc. shall not damage the above ground parts of the trees.*

Tree Protective fencing

protective fencing shall be as outlined on Drawing No. 074021_TP_01 and shall re-main in place during the construction works. Any works within the tree protective fencing shall be supervised on site by the project Arboriculturist. Signage shall be attached to the fencing reading 'Tree Protective fencing KEEP OUT'

In conclusion, the report states that: 'There are a number of mature and semi-mature trees on the site. These are generally in reasonably good condition and have been surveyed and recorded in this re-port.

A number of these trees are suffering from Ash Die Back disease Hymenoscyphus fraxinea and will be removed. Other trees will be removed to allow for development of the site.

A number of the more mature trees will be retained along with some semi-mature trees in the car parking area to the north west of the site.

To allow for the retention of the trees, tree protection fencing will be erected to prohibit access to the rooting area of the trees. This tree protective fencing to BS 5837:2012 will be in place all through construction, along with adherence by all on site with the instructions regarding the protection of the RPA. These steps are critical to the successful retention of trees.'

The proposed tree protection plan and tree survey plan are demonstrated in Figures 7 & 8.

Lighting

The existing site services layout is demonstrated in Figure 9. The proposed lighting layout is demonstrated in Figure 10.



Figure 7. Tree Protection Plan (Red circles - Trees to be removed. Blue lines- tree protection measures)



Figure 8. Tree Survey Plan

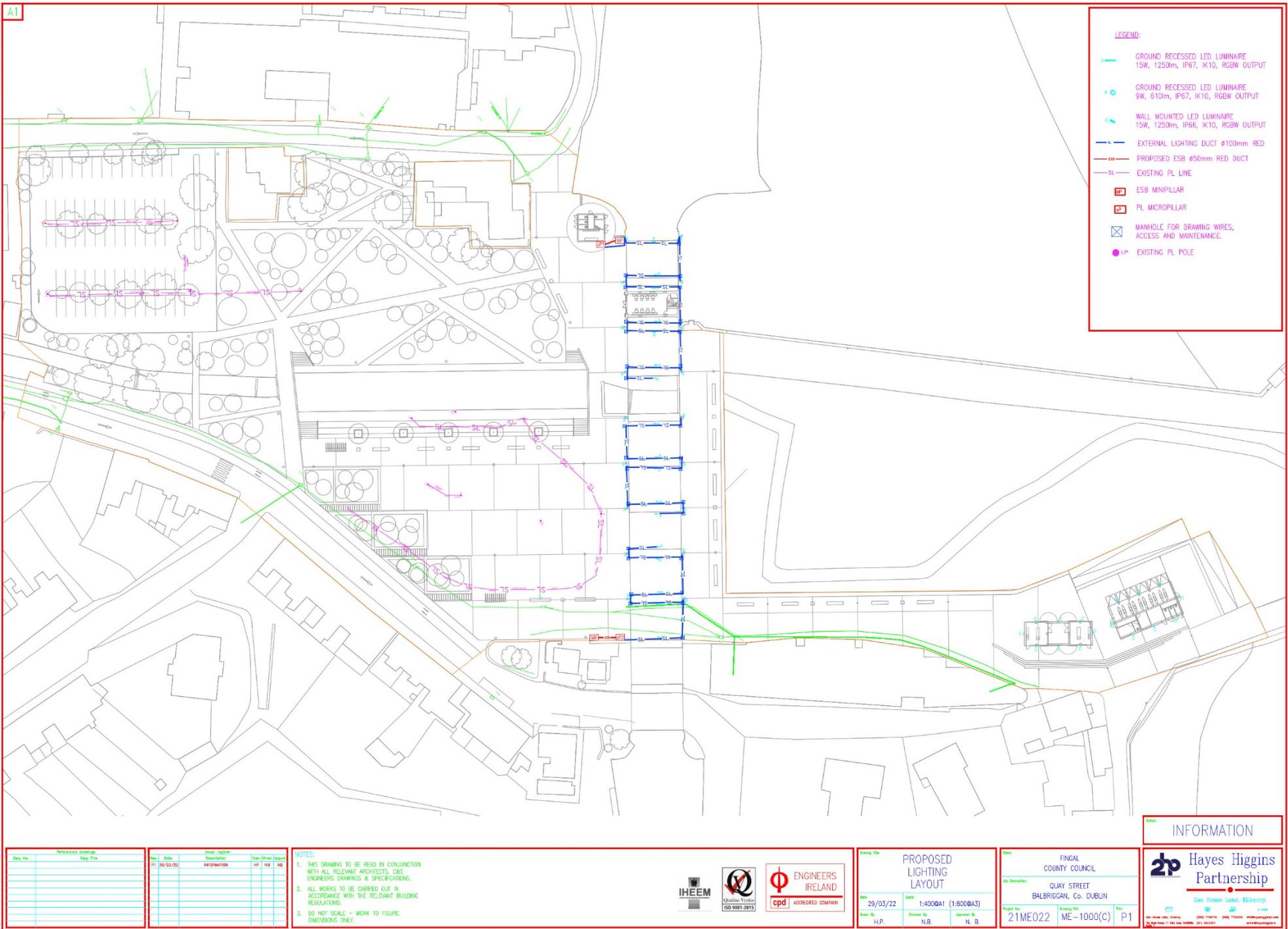


Figure 10. Proposed lighting layout

Drainage

A Civil Structure Engineering Pre-Planning Report was prepared by Hayes Higgins Partnership Chartered Engineers to accompany this planning application. This report outlines the following drainage strategy for the proposed development:

Surface Water Drainage

In relation to the existing and proposed storm water drainage, the report states that:

'By way of a site walk over and review of topographical survey, GPR survey and Irish Water drainage maps it is confirmed that there is currently public stormwater drainage infrastructure within the site. One system runs along Mill Street. A second system services the Quay Street/Harbour Road area. Existing Surface Water is currently drained from the site by a series of surface water road gullies connected to the existing drainage system.'

In accordance with the "Fingal Development Plan 2017-2023 and standards of FCC's Water Services Department It is proposed to provide sustainable storm water drainage infrastructure for the site conveying water more slowly to the existing drainage system which will include the following SuDS features

- *Integrated Constructed Tree Pits*
- *Plaza Drainage Channels connected to Rainwater Gardens*
- *Schemes Increases amount of Open Green / Garden Areas*
- *Permeable Paving in Car Parking Area*
- *Downpipe planters*
- *Attenuation Tanks*

The location of the large underground Irish Water Pumping Station under the existing Quay St Car Park which will be transformed into a new pedestrian priority Plaza along with the requirement not to disturb the heritage cobbles under the Viaduct restricts the installation of permeable paving in the Plaza Area, however to assist with the surface water management all drainage channels in the Plaza area will be connected to the 3 Plaza Rainwater Gardens that cleanses and detains stormwater runoff from the Plaza before piping the water to an underground attenuation tank further slowing the discharge of surface water to the existing drainage system. All new tree will have integrated tree pits.'

The existing Town Car Park is being reduced in size and the new car parking area will have Permeable Paving with 500mm stone layer will be constructed in the Town Car Park. The drainage strategy surrounding the harbour is surface water will drain directly into the harbour. The new harbour buildings downpipes will be connected to downpipe planters

Due to the nature of this multi-use area for community and events and the need for almost level surfaces, this creates a difficulty in creating features such as swales in the garden area, but all paths will drain into the garden area. A combination of 120m³ storm water attenuation tanks for the Plaza area and a 20m³ attenuation tank for the paved area next to the Toilet Block which are adequately sized attenuation system as per Sustainable Urban Drainage Systems' (SuDS) principles. The Rainwater Gardens, Permeable Paving, Integrated Constructed Tree Pits and surface water attenuation system will reduce the total surface water discharges from the site into the sewer system. No surface water will discharge into the foul sewer system..'

Foul Water Drainage

In relation to the existing and proposed foul water drainage, the report states that:

'By way of a site walk over and review of topographical survey, GPR survey and Irish Water drainage maps it is confirmed that there is currently public foul drainage infrastructure on both Mill Street and Quay Street/Harbour Road. It is proposed to connect the Toilet Block, Kiosks and Harbour Building to these existing services as necessary.'

The proposed discharge will be calculated based on usage (once determined). A preconnection enquiry will be submitted to Irish Water which will confirm if the proposed connection is viable and can cater for this development (not anticipated that capacity issues will arise).

At the time of writing this report no correspondence has been submitted to Irish Water for foul drainage connections.

The existing Irish Water underground pumping station located under Quay Street Car Park pumps sewage from the underground pumping station to the Sewage Treatment Plant at Barnageeragh near Skerries and the existing 750mm emergency overflow from the underground pumping station to the River Bracken will be repositioned approximately 20m eastwards downstream to accommodate the River Bracken widening works. Initial discussions have taken place with Irish Water to agree a repositioned route and an application has been made to Irish Water to agree final repositioned emergency overflow route.'

The foul water will go into the existing sewerage system to the pumping station underground in the southeast part of the site, just inland from the Railway Viaduct. From there, it will be pumped to Barnageeragh Wastewater Treatment Plant (WwTP) where it will be treated prior to being discharged into the marine environment.

The 2013 Annual Environmental Report for Balbriggan-Skerries states that: *'Subject to the allowances in Schedule B3 of the Licence, the plant operated satisfactorily throughout the year and passed the ELV requirements in the Licence and the UWWT Regs.'* The proposed foul and surface water drainage layout is seen in Figure 11.

Flood Risk Assessment

A Flood Risk Assessment was carried out by McCoy Consulting for the proposed development site at Quay Street, Balbriggan, Co. Dublin. In conclusion, the report states that:

'3.5 Flooding

3.5.1 The site is located adjoining the harbour. The Bracken River flows through the site.

3.5.2 A review has been conducted through the CFRAMS mapping system which indicated the site does suffer from fluvial and pluvial flooding and some coastal flooding.

3.5.3 McCloy Consulting have carried out a Stage 2 Flood Risk Assessment for the proposed public realm scheme and the initial assessment has determined that the site is affected by Flood Zone A and Flood Zone B as defined in the OPW Guidelines, however given the nature of the development (i.e., open amenity space) the proposal is considered "appropriate" in any flood zone. The impact of proposed changes to ground level and watercourse channel on flood risk at the site and elsewhere will require detailed, site-specific hydraulic modelling as part of a stage 3 Flood Risk Assessment which will be carried out prior to construction.

3.5.4 It is expected that the scheme as currently envisioned will lessen the potential/contribution to flooding events (attenuation/SuDS, widening of the river channel).

3.5.5 Prior to construction a hydraulic assessment on the impacts of the proposed widening of a section of the Bracken River will be carried out to establish any changes in flow pattern and will also consider the impact on ground water trajectory due to lack of permeability from proposed infrastructure changes.'

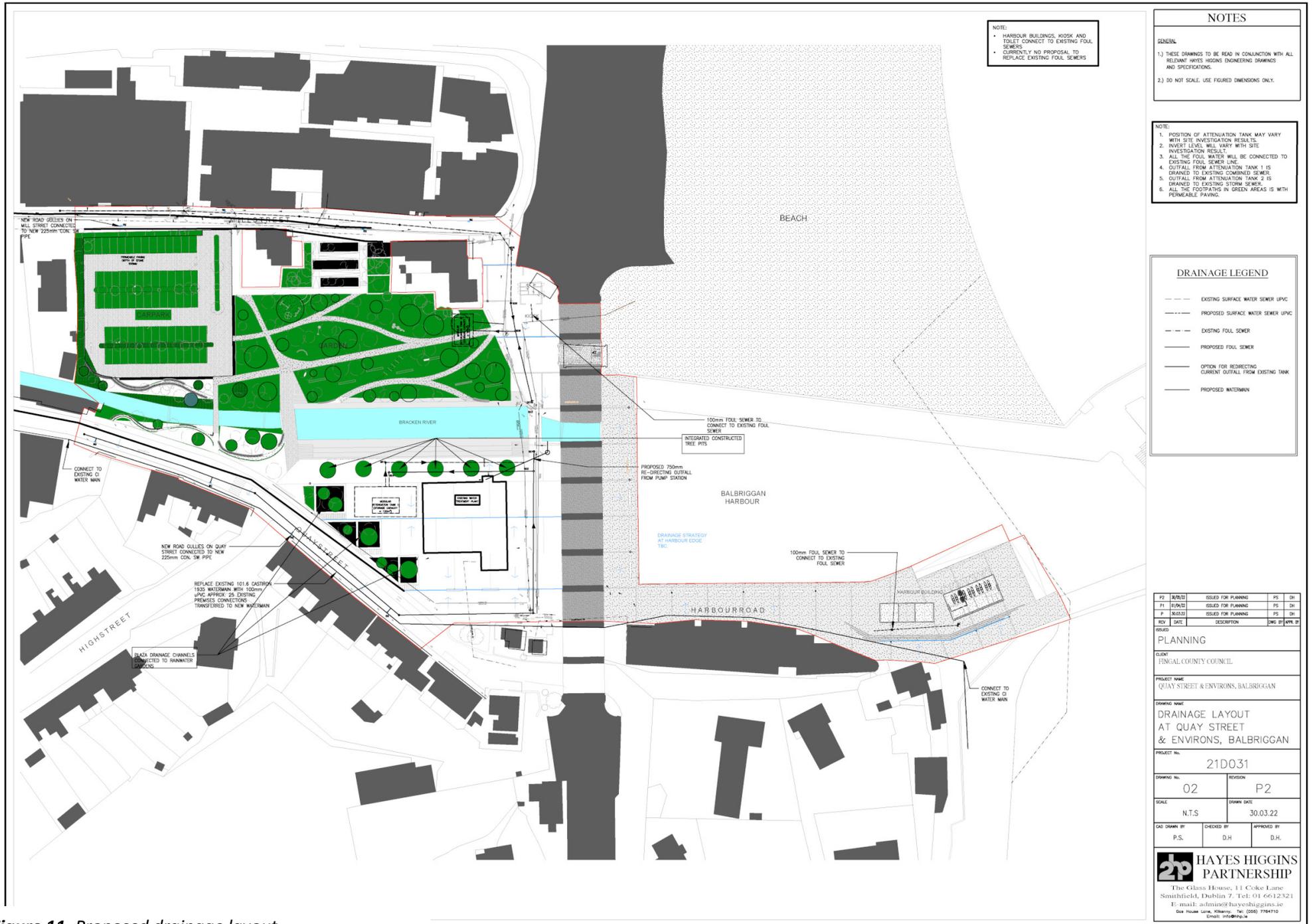


Figure 11. Proposed drainage layout

Proposed Construction Methods

A Planning Stage Preliminary Construction Management Plan (OCMP) has been prepared by Hayes Higgins Partnership at the request of our client Paul Keogh Architects & Fingal County Council. As outlined in the OCMP the following will be carried out:

Pre-Construction Activities

'The main contractor will establish site set up, appropriate signing, hoarding, security fencing and welfare facilities. Adequate space is available within the site boundary for the contractor to provide an adequate secure site compound which will include welfare facilities, material storage, site office and meeting room. Temporary connection to water, drainage and electricity will be set up to facilitate site works.

The appointed contractor will provide perimeter hoarding around the work zones to prevent unauthorised access from the public areas. Pedestrian and vehicular access will have to be maintained for harbour users.

The hoarding will be well maintained and may contain site graphics portraying project information.

Access to site will be controlled and monitored outside of site working hours.'

Outline Traffic Management Plan

'This Outline Traffic Management Plan, (OTMP) is designed to facilitate access to the site by plant, machinery, and work vehicles during collections/deliveries; and to minimise traffic impacts of construction to local residents in the vicinity of the site.

The main contractor will be required to ensure the elements of this outline OTMP shall be incorporated into the final TMP. The contractor shall also agree and implement monitoring measures to confirm the effectiveness of the mitigation measures outlined in the OTMP. The final TMP shall address the following issues (including all aspects identified in this outline TMP):

- *Site Access & Egress;*
- *Traffic Management Signage;*
- *Routing of Construction Traffic / Road Closures;*
- *Timings of Material Deliveries to Site;*
- *Traffic Management Speed Limits;*
- *Road Cleaning;*
- *Road Condition;*
- *Road Closures;*
- *Enforcement of Construction Traffic Management Plan;*
- *Details of Working Hours and Days;*
- *Details of Emergency plan;*
- *Communication;*
- *Construction Methodologies;*
- *Particular Construction Impacts*

Construction Traffic will enter the site from Georges Hill or Quay Steet, however due to the low level of the bridge 3.82m under the Viaduct on Quay Street leading to Seapoint, high vehicles or HGV will have to exit via Mill Street. Strong lines of communication with hauliers, strict delivery schedules and just-in-time delivery methods will be in operation to ensure no more than two trucks will visit the site at any one time.

The main contractor is required to ensure that the provision of adequate guarding and lighting appropriate to the circumstances. Traffic signs should be placed in advance of the works area on both sides to ensure adequate warning to the general public and maintained when necessary, they should be operated as reasonably required for the safe guidance or direction of the public with regard to the needs of people with disabilities. The main contractor will comply with Regulation 97 of the Safety, Health and Welfare at Work (Construction) Regulations 2013.

Construction vehicles will fall into 2 no. categories, heavy and light vehicles. Heavy vehicles will consist of HGV's involved in the removal of material off-site and for the delivery of concrete and other large construction materials. Light vehicles include cars and tradespeople's vans.

Estimates of vehicle movements per day for both categories will be outlined upon appointment of a contractor for the project. Deliveries of materials to site will be planned and programmed to ensure that the materials are only delivered when required by adopting a 'just in time', lean construction management approach. There will be periods where multiple vehicle deliveries will be required, e.g., site fill material under roads, buildings and landscape areas, pre-cast concrete and large concrete pours. These will be planned well in advance and no queuing of vehicles allowed on the public road at the entrance to the site.

All off-loading of material will take place within the site, remote from the public road and access via the agreed access construction point only. Bulk deliveries to take place outside of peak traffic hours within a six-day week as to minimise impact on the existing road network.

Sign Management: Signs are to comply with statutory requirements on public roads. Other construction sites may be carrying out construction activity at the same time as the subject site. It is therefore imperative that directions to each site are distinctly identifiable. Adherence to posted / legal speed limits will be emphasised to all contractors and subcontractors during induction training.

Drivers of construction vehicles / HGVs will be advised that vehicular movements in locations, such as local community areas, shall be restricted to 50 km/h. Special speed limits of 30 km/h shall be implemented for construction traffic in sensitive areas such as school locations. Such recommended speed limits will only apply to construction traffic and shall not apply to general traffic.

Road sweeping operations to remove any project related dirt and material deposited on the road network by construction / delivery vehicles will be utilised as required. All material collected will be disposed to a licensed waste facility. A regular program of site tidying will be established to ensure a safe and orderly site and mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate.

The traffic management plan will be enforced by both the Competent Contractor and the Resident Engineer.

All project staff and material suppliers will be informed of the measures proposed by the TMP during site induction and will be required to adhere to the final TMP. As outlined above, the contractor shall agree and implement monitoring measures to confirm the effectiveness of the TMP.

Deliveries of materials to site will generally be between the hours of 08:00 and 19:00 Monday to Friday, and 08:00 to 14:00 on Saturdays. No deliveries will be scheduled for Sundays or Bank Holidays.

The main contractor shall ensure that unobstructed access is provided to all emergency vehicles along all routes and site accesses. The contractor shall provide to the local authorities and emergency services, contact details of the contractor's personnel responsible for construction traffic management.

The contractor shall also ensure that the local community is informed of any proposed traffic management measures in advance of their implementation.

Due to works taking place on Mill Street and Quay Street there will be some impact on local residents in the vicinity of the site and also to harbour users.

River Widening Works

It is proposed to widen the Bracken River channel that flows through the site over a short section of its length (approx. 70m). The widening will result in a river cross section approximately twice the area as the existing river channel. One river edge will accommodate terraced seating while the second edge will be planted. This will encourage biodiversity and improve flood mitigation. An appropriate flood risk assessment report will be prepared.

To minimise the impact on the Bracken River during the widening works and the construction of the new terraced seating area on the southern bank and the landscaped area to the northern bank it will be necessary to divert / protect the river to allow "working in the dry" for the works in close proximity to the riverbanks.

It is proposed to construct a temporary cofferdam bund upstream of the works area with an in-flow gravity pipe within the existing watercourse channel to below the works area. This temporary diversion within the watercourse channel should be scheduled during drier times of the year and construction in the watercourse should progress as quickly as possible to reduce the risk of exceeding the temporary diversion capacity.

Timing and duration of construction are primary considerations for determining the design flow most appropriate for the diversion. Extended weather forecast should be continually evaluated to avoid periods of anticipated prolonged and heavy rainfall resulting in river flow overtopping the upstream bund and the resultant health and safety and workmanship consequences. A contingency plan should be put in place to prevent damage or pollution during extreme weather and high flow events.

The contractor will be required to engage a competent person to design the temporary works and prepare a detailed river works methodology plan with the objective of providing a safe place of work for anybody working in the vicinity of the river, minimising the risk of pollution and damage to the water environment and minimising the upstream impact from the works by careful planning and providing training to all site personnel to ensure they are aware of the potential impact of their activities and the part they play in preventing pollution and harm to the water environment which can occur during construction.

The main pollutants with potential to impact water quality are silt, fuel/oil, concrete and chemicals and the contractor should consult with Inland Fisheries Ireland prior to construction commencing to put in place control measures to eliminate contamination of site surface water runoff and watercourse.

Site Working Hours

Construction operations on site will generally be subject to the planning permission and conditions. However, it may be necessary for some construction operations to be undertaken outside these times, for example, service diversions and connections, concrete finishing and fit-out works, etc.

Deliveries of materials to site will generally be between the hours of 08:00 – 19:00 Monday to Friday, and 08:00 to 14:00 on Saturdays. There may be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.'

Sensitive Receptors

The sensitive receptors in the vicinity of the proposed development are summarised and the potential impact/mitigation are seen in Table 1. Satellite imagery of the site is seen in Figure 1.

Table 1. Sensitive Receptors and Potential Impact.

Sensitive Receptor	Location / Potential Impact
<p>Watercourses</p> <p>Marine Environment</p>	<p>Matt/Bracken River</p> <p>There are no designated sites with a direct hydrological pathway downstream of the proposed works.</p> <p>Balbriggan Harbour and the Irish Sea are downstream of the proposed works and would be sensitive to downstream impacts from silt and pollution.</p>
<p>Residents</p>	<p>In proximity of the proposed development</p> <p>As seen in Figure 1 the proposed development is proximal to residential areas that would be sensitive to noise, dust and lighting impacts. Mitigation measures should be put in place to avoid impacting the residents proximal to the proposed development during the construction phase of the project.</p>
<p>Terrestrial Fauna and flora</p>	<p><i>Plant Species</i></p> <p>No rare or plant species of conservation value were noted during the field assessment. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded within the proposed development site.</p> <p><i>Fauna</i></p> <p>No mammal of conservation importance was noted on site. Records of rare and threatened species from NBDC were examined. No rare or threatened terrestrial faunal species were recorded within the proposed site. However, it should be noted that small salmonids were observed within the watercourse.</p> <p><i>Bats</i></p> <p>Bat surveys were carried out and the results of the surveys are seen in Appendix I and Appendix II. Bats were observed in 2020 and in June 2022. As outlined in Appendix II in relation to a Leisler’s Bat “This bat had likely been roosting within the site and possibly within the boathouse itself, although its emergence was not observed. However, there are several potential exit points within the boathouse and it appears to be well suited as a potential roost site.” No bats were observed emerging from the building in the 2022 surveys and no evidence of utilising the building was noted. However, based on the 2020 bat survey findings a precautionary approach to the works must be taken. It should be noted that significant recent additional lighting has been placed on site under the arches and in the car park on site.</p> <p><i>Amphibians</i></p> <p>The common frog (<i>Rana temporaria</i>) was not observed on site.</p> <p><i>Birds</i></p> <p>Herring gulls were noted on site. Herring gull were not nesting on site but were foraging from bins/rubbish.</p>

3. Analysis of the Potential Impacts

Potential Construction Impacts

The overall development of the site is likely to have direct negative impacts upon the existing habitats, fauna and flora. Direct negative effects will be manifested in terms of the removal of the site's internal habitats and downstream impacts in the absence of mitigation. The removal of these habitats will result in a loss of species of low biodiversity importance. There is the potential for contaminants and pollutants to enter the Bracken River (a watercourse that traverses through the centre of the site) and impact on downstream biodiversity. Additionally, the redevelopment of the buildings on site may result in the loss of potential bat roosts.

Designated Conservation sites within 15km

It should be noted that the proposed development site is not within a designated conservation area. The closest Natura 2000 site is River Nanny Estuary and Shore SPA, located 4.9 km from the proposed development site. The nearest SAC to the proposed development site is the Rockabill to Dalkey Island SAC (7.6 km away). As can be seen from Figure 16, the Bracken River (MATT_010) traverses through the subject site and outfalls to the marine environment at Balbriggan Harbour. Given that works are proposed within and in close proximity to Bracken River, it is considered that there is a weak indirect hydrological connection to marine-based conservation sites during the construction phase of development. During operation, surface water drainage will discharge via a SuDs system into the ground. Foul wastewater from the proposed development will discharge to the existing sewerage system to the pumping station underground in the southeast part of the site, just inland from the Railway Viaduct. From there, it will be pumped to Barnageeragh Wastewater Treatment Plant (WwTP) where it will be treated prior to being discharged into the marine environment. There is therefore a weak indirect pathway from the proposed development site to conservation sites within the marine environment via foul and surface water drainage during operation. It would be expected that in the absence of any mitigation measures impacts from silt or accidental pollution from the proposed development would be negligible by the time it reaches the conservation sites in the marine environment, due to the dilution, mixing and considerable distance across a marine environment.

Potential Impacts in the absence of mitigation: Negligible / International / Neutral Impact / Not significant / Long-term. Mitigation is not required.

Biodiversity

The impact of the development during construction phase will be a loss of existing habitats and species on site. It would be expected that the flora and fauna associated with these habitats would also be displaced. The Bracken River traverses through the centre of the subject site, and demolition, excavation, and reprofiling works are proposed during the construction phase of development. In the absence of mitigation measures, there is the potential for impacts on downstream biodiversity located within the Bracken River, the estuarine environment of Balbriggan Harbour and the marine environment.

Terrestrial mammalian species

No protected terrestrial mammals were noted on site. Loss of habitat and habitat fragmentation may affect some common mammalian species.

Potential Impacts in the absence of mitigation: Low adverse / site / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction survey for terrestrial mammals of conservation importance.

Flora

No protected flora was noted on site. Site clearance will remove the flora species on site. Invasive species were noted upstream.

Potential Impacts in the absence of mitigation: Low adverse / site / Negative Impact / Not Significant / Short term. Mitigation is required in relation to invasive species.

Bat Fauna

Buildings that have been designated for redevelopment/demolition within the proposed development are of bat roosting potential. Increased lighting on-site has the potential to impact upon bat foraging and bat commuting and potentially bat roosts.

Potential Impacts in the absence of mitigation: Moderate adverse / site / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction survey, provision of additional roosting opportunities and control of light spill during construction/operation.

Aquatic Biodiversity

Enhancement works to the Bracken River within the existing open space between Quay Street and Mill Street, including widening of the watercourse, to encourage biodiversity, increase planting and improve flood resilience along the riverbank (including temporary piping of the Bracken River during construction period). Silt and pollution could potentially impact on instream and downstream biodiversity. Standard construction and operation measures will be followed to ensure the protection of the water quality of this river. There are no protected species recorded proximate to the Bracken River. However, salmonids were noted within the watercourse.

Given that the Bracken (Matt) River outfalls to the marine environment at Balbriggan Harbour, there is the potential for impacts on aquatic biodiversity, within the lower stretch of the river and within the estuarine environment, and the marine environment located downstream of the Bracken River. Mitigation measures are required in relation to preventing downstream impacts and the removing of salmonids prior to the commencement of works.

Potential Impacts in the absence of mitigation: Moderate adverse / county/ Negative Impact / Slight Effects / short term.

Bird Fauna

Removal of trees would result in a loss of potential nesting habitats.

It should be noted that Herring Gull (*Larus argentatus*) were noted onsite scavenging food from rubbish bins. However, given that the subject site is currently located within a busy urban environment with people, dogs, the herring gull would be accustomed to a level of human, canine and construction activity. It is also considered that the foraging activity on site was related to human activity and in particular rubbish bins and not the site itself and that the proposed development will not significantly impact on an important foraging or roosting areas for Herring Gull. Any potential impacts on Herring Gull would be short-term as a result of localised disturbance.

Potential Impacts in the absence of mitigation: Low adverse / Local / Negative Impact / Not significant / short term.

Potential Operational Impacts

Once developed, the site would be seen as a stable ecological environment. Planting of native species will be important to re-establish nesting and foraging habitats lost. Proximate bat species will be sensitive to light spill.

Appropriate measures should be taken to prevent light spill, contaminated surface water run-off and dust entering into adjacent riparian habitats, and in particular the Bracken River needs to be protected due to the potential for pollutants or dust entering the watercourse and ultimately the marine environment. The new drainage networks will have to comply with SUDS and County Council requirements and, as a result. However, the relocation of the foul overflow will continue to have a negative impact on the watercourse during overflow events.

Designated Conservation sites within 15km

The proposed development includes a sustainable drainage strategy. There are no designated sites located directly downstream of the works.

Potential Impacts in the absence of mitigation: Negligible / International / Neutral Impact / Not significant / Long-term

Biodiversity

Biodiversity value of the site will improve as landscaping matures, and improvements are made to the Bracken River and riparian corridor.

Terrestrial mammalian species

No protected terrestrial mammals were noted in the vicinity of proposed works. Increased disturbance and lighting could impact on the riparian corridor.

Potential Impacts in the absence of mitigation: Low adverse / local/ Negative Impact / Not significant / long term.

Flora

No protected flora was noted on site.

Potential Impacts in the absence of mitigation: Neutral / site / Not significant / long-term

Bat Fauna

The proposed development will change the local environment as structures are to be redeveloped and some of the existing vegetation will be removed. Species expected to occur onsite should persist, subject to an activity

assessment following the installation of the viaduct lighting. A sensitive lighting and landscape strategy have been prepared to incorporate bat foraging on site.

Potential Impacts in the absence of mitigation: Low adverse / International / Negative Impact / Not significant / long term.

Aquatic Biodiversity

Aquatic Biodiversity will improve after enhancement works to the Bracken River are complete. Standard measures will be in place in relation to surface water discharges. No additional mitigation is required. However, the foul overflow will continue to discharge to the lower reached Bracken River.

Potential Impacts in the absence of mitigation: minor beneficial / local / Positive Impact / Not significant / long term

Bird Fauna

The proposed development will enhance bird activity as improvements to the Bracken River and riparian corridor will be made.

Potential Impacts in the absence of mitigation: Neutral-Positive / site / Negative Impact / Not significant / long term.

4. Mitigation Measures & Monitoring

Standard construction and operational controls will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (Zoi) including the Bracken River, downstream biodiversity, and local biodiversity within / proximate to the subject site are outlined in Table 5.

Table 5. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
<p>The Bracken/Matt River</p> <p>Marine Environment</p>	<ul style="list-style-type: none"> • Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts • Negative impacts on aquatic fauna 	<p>Construction Phase Mitigation</p> <ul style="list-style-type: none"> • A project ecologist will be appointed to oversee all works. • A preconstruction inspection for mammals will be carried out. • Local watercourses (The Bracken River) and drains will be protected from dust, silt and surface water throughout the works. • Local silt traps established throughout site. • Mitigation measures on site include dust control, stockpiling away from watercourse and drains • Stockpiling of loose materials will be kept to a minimum of 20m from watercourses and drains. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses. • Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches or the watercourse, excavations and other locations where it may cause pollution. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the stream. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. • Mitigation measures on site include dust control, stockpiling away from watercourses and drains • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. • During the construction works silt traps will be put in place in the vicinity of all runoff channels of the stream to prevent sediment entering the watercourse. • Petrochemical interception and bunds in refuelling area • On-site inspections to be carried out by project ecologist. • Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network. • During the works silt traps will be put in place • The diversion works will be undertaken before any other major works, minimizing the potential for down impact ie. Silting of the downstream watercourse. Diversion works will be subject Inland Fisheries Ireland approval of methodologies. All instream works will be carried out in the dry with no over pumping. The proposed temporary diversion strategy will incorporate placing the watercourse in a sealed pipe through the construction site. Importantly this will require robust seals upstream and downstream of the works to prevent both freshwater and seawater entering the construction site respectively. The ecologist will supervise the installation of the mitigation measures on site. • No discharges will be to the watercourse during and post works • Silt traps established throughout site including a double silt fence between the site and the watercourse.

Table 5. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
		<ul style="list-style-type: none"> • Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks. • The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained. • The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. • Abstraction of water from watercourses will not to be permitted. • Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis. • All site personnel will be trained in the importance of good environmental practices including reporting to the site manager when pollution, or the potential for pollution, is suspected. All persons working on-site will receive work specific induction in relation to surface water management and run off controls. Daily environmental toolbox talks / briefing sessions will be conducted to outline the relevant environmental control measures and to identify any environment risk areas/works. • Environmental risks due to construction and operation of the proposed development do potentially exist, particularly in relation runoff from sloping site, drains that could lead to the watercourse. Ecological supervision will be required during excavation and enabling works stages. Silt interception measures will need to be in place to ensure that the watercourses are not impacted during works and in particular during the site clearance and reprofiling stages. Landscaping of the areas of the site proximate to the watercourse will take place immediately following any re-profiling, to act as a buffer to protect the watercourse. The integrity of the marsh habitat is to remain as part of the riparian buffer and will be protected during works. • Daily turbidity, oxygen and photographic monitoring of the Bracken River (upstream, within & downstream of works) will take place during works and the results supervised by the project ecologist. This would be particularly important following high rainfall events. It is recommended that sufficient baseline readings are made prior to construction commencing to understand the existing turbidity on site particularly in the pond area as this appeared turbid during the site visit. • Materials, plant and equipment shall be stored in the proposed site compound location; • Plant and equipment will not be parked within 50m of the watercourse at the end of the working day; • Hazardous liquid materials or materials with potential to generate run-off shall not be stored within 50m of the watercourse. • All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater; • Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages;

Table 5. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
		<ul style="list-style-type: none"> • Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. They will not be stored within 50m of the watercourse. • Drip trays will be turned upside down if not in use to prevent the collection of rainwater; • Waters collected in drip trays will be assessed prior to discharge. If classified as contaminated, they shall be disposed by a permitted waste contractor in accordance with current waste management legal and regulatory requirements; • Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips; • No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction; • Re-fuelling of machinery, plant or equipment will be carried out in the site compound as per the appointed Construction Contractor re-fuelling controls; • The appointed Construction Contractor EERP will be implemented in the event of a material spillage; • All persons working will receive work specific induction in relation to material storage arrangements and actions to be taken in the event of an accidental spillage. Daily environmental toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant environmental control measures and to identify any environment risk areas/works. • Consultation with Inland Fisheries Ireland will be carried out pre and post works is essential and to be led by the project ecologist. • No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system. • Landscaping of the Riparian corridor will be carried out to the satisfaction of IFI and the project ecologist. • Removal of fish species from the section of the watercourse under licence from Inland Fisheries Ireland. A screen will be placed at both ends of the works to temporarily prevent fish from entering the work zone during instream works. <p>Operational Phase Mitigation</p> <ul style="list-style-type: none"> • A project ecologist will be appointed to oversee completion of all landscape and drainage works. • Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts. • Post Construction assessment/compliance with proposed lighting strategy
<p>Birds (National Protection)</p>	<ul style="list-style-type: none"> • Removal nesting habitat. • Removal foraging habitat. 	<ul style="list-style-type: none"> • “Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent.

Table 5. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
	<ul style="list-style-type: none"> • Destruction and/or disturbance to nests (injury/death). 	
Bats (International Protection)	<ul style="list-style-type: none"> • Removal roosting/foraging habitat. • Lighting Impacts 	<ul style="list-style-type: none"> • Precautionary approach to boathouse redevelopment in consultation with an ecologist. • Pre Construction building inspection for bats. • Ecological supervision during boat house roof stripping works if required. • Compliance with conditions of the bat derogation licence if required • Lighting at all stages should be done sensitively on site with no direct lighting of treelines. • Post Construction assessment/compliance with proposed lighting strategy. • As an enhancement measure the provision of at least two roosting opportunities for bats within the structure of the building will be provided in consultation an ecologist.
Invasive Species	<ul style="list-style-type: none"> • Spread of invasive species distribution 	<ul style="list-style-type: none"> • Prior to construction commencing an ecologist will inspect the site for invasive species.
Mammals	<ul style="list-style-type: none"> • Death/injury • Destruction of resting/breeding places • Disturbance 	<ul style="list-style-type: none"> • A pre-construction inspection will be conducted.
Residents	<ul style="list-style-type: none"> • Disturbance 	<ul style="list-style-type: none"> • The Environmental Management Plan in the OCMP will be followed (see below). • During construction compliance with National legislative requirements in relation to noise and dust will be in place. • Any lighting on site will be directed downwards and inward facing within the site.

Environmental Management Plan

An Environmental Management Plan is also outlined in the OCMP. In this it states that:

'Due to this development being in close proximity to residential units this section outlines suitable measures to minimise nuisance noise, water and dust emissions to minimise any impact of the proposed development on surround receptors

Noise and Vibration

The Contractor will be required to restrict noise levels to the following levels:

- *Daytime (08:00 to 19:00 hrs) – 55dB*
- *Evening (19:00 to 23:00 hrs) – 50dB*
- *Night-time (23:00 to 08:00 hrs) – 45dB (measured from nearest noise sensitive location)*

To minimize noise from construction operations, no heavy construction equipment/ machinery (to include pneumatic drills, construction vehicles, generators, etc) shall be operated on or adjacent to the construction site before 08.00 or after 19.00, Monday to Friday, and before 08.00 or after 14.00 on Saturdays. No activities shall take place in site on Sundays or Bank Holidays. No activity, which would reasonably be expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 19.00 and 08.00. No deliveries of materials, plant or machinery shall take place before 08.00 in the morning or after 19.00 in the evening.

The proposed development will be obliged to comply with BS 5228 "Noise Control on Construction and Open Sites Part 1". The appointed contractor shall implement the following measures to eliminate or reduce noise levels where possible:

- *All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.*
- *All staff should be briefed on the complaint's procedure, the mitigation requirement and their responsibilities to register and escalate complaints received.*
- *Good quality site hoarding is to be erected to maximise the reduction in noise levels.*
- *Contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours.*
- *Material and plant loading and unloading shall only take place during normal working hours.*
- *Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC.*
- *Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.*
- *Use all plant and equipment only for the tasks for which it has been designed.*
- *Locate movable plant away from noise sensitive receptors.*
- *Ensure at least 4 days' notice is given to Fingal County Council Planning Department when applying for extensions to normal working hours. No out of hours work to be undertaken unless permission to do so has been granted.*

Dust and Air Quality

Dust prevention measures will be put in place for any particulate pollution. The extent of dust generation under construction activities being carried out is dependent on environmental factors such as rainfall, wind speed and wind direction. The most likely sources of dust generation at this site include stripping of existing surfaces and the sawing of concrete throughout the duration of the project.

Control Measures are outlined as follows:

- *Material stockpiles will be strategically placed to reduce wind exposure. Materials will be ordered on an "as needed" basis to reduce excessive storage.*
- *The contractor will spray water on the surface of all roads in the vicinity of the site if required in order to minimise dust generation from the construction activities.*
- *Appropriate dust suppression will be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways if required.*
- *Restrict vehicle speeds to 15 kmph as high vehicle speeds cause dust to rise.*

- Covers are to be provided over soil stockpiles when high wind and dry weather are encountered if required.
- All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers shall be covered during transit on and off site.
- No materials shall be burned on-site.

Surface Water and Groundwater Protection

The main pollutants with the potential to impact water receptors are silt, fuel/oil, concrete and chemicals. There are a number of steps outlined below to eliminate contamination of site surface water runoff especially protection of River Bracken which runs through the site during the construction phase:

- Monitoring of potential impacts to the Bracken River will be carried out for the duration of the construction programme to ensure there is no impact from site activities.
- The contractor will implement a pollution prevention programme and will ensure daily checks are carried out to ensure compliance.
- An environmental Emergency Response Plan will be put in place for the duration of the construction programme.
- Harmful materials such as fuels, oils, greases, paints and hydraulic fluids must be stored in bunded compounds well away from storm water drains, gullies and Bracken River.
- Refuelling of machinery should be carried out using drip trays. The site compound should include a dedicated bund for the storage of dangerous substances including fuels oils, solvents etc.
- Runoff from machine service and concrete mixing areas must not enter storm water drains and gullies leading off-site.
- Stockpile areas for sands and gravel should be kept to minimum size, well away from storm water drains and gullies leading off-site.
- Open excavations to be backfilled immediately following installation of services/foundations etc.'

Riparian Corridor Construction Stage

As significant site clearance is involved in the project and the site is on sloping land adjacent to a river, measures need to be put in place to ensure that runoff from the site during construction is contained and that silt is intercepted. A silt interception system will be prepared in consultation with the project ecologist. The purpose of this is to ensure that silt is removed from runoff prior to entering the stream throughout the construction process. The following measures will be carried out to ensure that the site runoff is suitably contained during construction:

- a) Inland Fisheries Ireland will be consulted prior to any works within the riparian corridor. A detailed methodology statement will be submitted at least one week prior to the commencement of works on site. Works will commence with the placing of silt fences in the riparian corridor and the layout will be approved by the project ecologist prior to commencement of the project. It is important that the bases of these are buried deeply in the soil as this area has the potential to be flooded and they could cause downstream impacts if not installed correctly.
- b) Following the completion of this element of the project this area of the site will be closed off to machinery access.

Drainage on site outside the riparian corridor.

- a) Channels will be prepared on site. Within these channels silt fences/barriers will be placed and will consist of woven/terram style material of suitable density to remove the majority of silt from runoff. These will be maintained throughout the construction phase.
- b) Mitigation measures including silt fences will be in place (in consultation with the project ecologist and IFI) to capture silt from runoff and prevent it from entering the watercourse.

Adverse Effects likely to occur from the project (post mitigation)

Standard construction and operational mitigation measures are proposed. These would ensure that water entering the surface water drainage network and the Bracken River is clean and uncontaminated. However, early implementation of ecological supervision and consultation with Inland Fisheries Ireland, prior initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation, the removal of salmonids from the works area, bat mitigation and the protection of riparian habitats.

With the successful implementation of standard mitigation measures to limit surface water impacts on the watercourses, biodiversity mitigation/supervision, no significant impacts are foreseen from the construction or operation of the proposed project on terrestrial or aquatic ecology. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works and would be deemed to be minor beneficial long term particularly in relation to aquatic biodiversity.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on terrestrial biodiversity, aquatic biodiversity and bats through the application of the standard construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt and pollution entering the Bracken River will satisfactorily address the potential impacts on downstream biodiversity. No significant adverse impacts on designated conservation sites are likely in the absence of mitigation measures outlined above.

It is essential that these measures outlined are complied with, to ensure that the proposed development does not have “downstream” environmental impacts and significant impacts on biodiversity on site.

5. Site Information

Roles and Responsibilities

The roles and responsibilities of the personnel involved in the construction works are outlined in Table 4. However, it will be necessary that all personnel involved in the project are responsible for ensuring the requirements of the CEMP are followed.

Table 4. Roles and responsibilities of the personnel involved in the development project

Role	Roles and responsibilities
Applicant	Fingal County Council will have overall responsibility for the compliance with the CEMP. They will appoint staff and contractors to deliver the various elements of the development and oversee works carried out on site.
Contractor	Contractors will be hired to carry out all works on site. Works carried out will be overseen by Fingal County Council and on a day to day basis by the site manager. All contractors on site are required to comply with all elements of the CEMP.
Site Manager	The Site Manager will be responsible for the day to day management of the site including compliance of all personnel with the CEMP, in addition to Health and Safety, Environmental and Quality elements. The Site Manager is responsible for ensuring that all people on-site are provided with relevant information concerning environmental protection. The Site Manager will be responsible for overseeing any environmental monitoring programmes, carrying out site environmental inspections and audits as necessary, and will co-ordinate the environmental monitoring programme. All records of incidents and environmental issues will be collated and maintained by the site manager. The Site Manager will also be responsible for reviewing all risk assessment method statements and ensuring an appropriate programme of tool box talks are developed and effectively communicated. The site manager will be responsible for overall waste management issues arising from the project. These would include: Implementation and monitoring of waste minimisation, segregation and safe disposal measures, Dissemination of waste reduction, and waste management procedures to all relevant personnel on site.
Monitoring	Noise and Dust specialists will be appointed to oversee mitigation measures on site.
All Staff and Subcontractors	All staff and subcontractors have the responsibility to comply with the CEMP including environmental procedures on site to minimise environmental impacts, avoid pollution on-site, including noise and dust, and to respond quickly and effectively to an incident to avoid or limit environmental impacts. All incidents must be reported to the Site Manager immediately.

In addition the following has been outlined in the OCMP:

Implementation

The Competent Contractor will have the overall responsibility of ensuring the measures outlined in the Project CMP are adhered to for the duration of the construction phase. The primary responsibilities of the Construction Project Manager are as follows:

- *Promotion of awareness of environmental issues associated with each project phase.*
- *Ensure adherence with all environmental and traffic management standards listed in the Project CMP.*
- *Facilitate environmental audits and site visits.*
- *Monitor the impact of construction traffic on local traffic conditions*
- *Awareness and implementation of relevant legislation, codes of practice, guidance notes as stated in the CMP.*
- *Conduct regular site inspections to facilitate the timely identification of environmental risks or incidents.*
- *Ensure all construction activities are carried out with minimal risk to the environment.*
- *Report environmental incidents in a timely manner to the Design Team and the relevant authorities.*

Environmental Induction

The key environmental topics outlined in the Project CMP will be summarised and integrated into the general site induction. Site-specific concerns and best work practices will be outlined to all contractors and sub-contractors due to carry out work at the site. As a minimum this will include:

- The roles and responsibilities of the Competent Contractor along with the responsibilities of contractors/sub-contractors themselves.
- Incident and complaints procedure.
- Outline of the CMP structure.
- Site specific environmental concerns.
- Best work practices

Environmental Incidents and Complaints Procedures

'The Contractor will maintain a register of environmental incidents which will document the nature, scale and severity of any environmental incident or complaint which arises because of site activities. In the event of an environmental incident the following steps must be followed:

- The Project Environmental Consultant is notified immediately.
- The Project Environmental Consultant will liaise with the competent authority if necessary.
- The details of the incident will be recorded on an Environmental Incident Form which will record the following details:
 - Cause of the incident
 - Extent of the Incident
 - Immediate actions
 - Remedial measures
 - Recommendations made to avoid reoccurrence
- If the incident has impacted on an ecologically sensitive receptor (SPA, SAC, NHA) an ecological specialist will be consulted.
- The Project Environmental Consultant and Contractor will fully cooperate with any investigations conducted by the competent authority.'

To ensure the CEMP remains 'fit for purpose' for the duration of the project it should be reviewed prior to commencement of the relevant phase of development and, if necessary, updated during the life of the project to ensure that it remains suitable to facilitate efficient and effective delivery of the project environmental commitments. The environmental review would consider past performance from inspections, audit report and monitoring data, plan actions required to mitigate forthcoming risks and disseminate best practice.

e) Environmental Complaints and Incidents

The site manager will develop and implement an appropriate queries / complaints procedure. Records will include full details of the concerns expressed and ensure that a formal assessment is commenced of the reported concern. The site manager will also discuss complaints with Fingal County Council and oversee an initial response to the person who has submitted the complaint/concern confirming its receipt.

An investigation to assess the issue of concern will be carried out and decisions made to see what corrective and/or preventive action, or further investigation is necessary. With overall responsibility for complaints, the site manager will respond within a reasonable timescale and maintain records of all correspondence. If significant corrective action and external stakeholder involvement is required, the site manager / project manager will oversee all elements of the process.

Complaints that may be received will be logged, assessed and appropriate action taken as soon as practical. The construction company will be actively seeking liaison with all parties throughout the construction periods. It will be critical to the success of the project that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

In the event of spillages or other incident, steps will be taken to prevent environmental pollution, for example through protection of drains by use of drain covers or booms, use absorbent granules following and oil / chemical spill, and turning off equipment or other sources of noise or dust.

Once the situation has been rectified, full details about the incident and remedial actions undertaken will be provided to the corporation and relevant authorities and recorded in the site environmental register.

Waste Management

This section of the CEMP sets out a basic structure for a Site Waste Management Plan and how the construction company will best use them to improve and manage our operations at all stages of site activity. Fingal County Council is committed to maintain the highest environmental standards.

All waste will be source separated into recyclable and general non-recyclable waste. In addition to general waste bins and recycling bins, there will also be bins provided for the storage of glass, batteries, and printer cartridges. General waste and recycling waste shall be stored in secure designated external waste storage areas, located a short distance away from each of the buildings.

As outlined in the OCMP:

'The Waste Management Plan (WMP) will address the following points;

- *Analysis of waste arisings / material surpluses*
- *Specific waste management objectives for the project including the potential to re-use existing on site materials for further use.*
- *Methods proposed for prevention, reuse and recycling*
- *Waste handling procedures*
- *Waste storage procedures*
- *Waste disposal procedures*
- *Waste auditing*
- *Record keeping*

Policy and Legislation

The principles and objectives to deliver sustainable waste management for this project have been incorporated in the preparation of this report and are based on the following strategic objectives:

- *Environmental Protection Agency Act 1992*
- *Waste Management Acts 1996 to 2005*
- *Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)*
- *Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008), as amended.*
- *The Waste Framework Directive (Directive 2008/98/EC)*
- *Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – July 2006*
- *In reference to the above legislation the below hierarchy has been adapted for this site:*
- *Reduction of the amount of waste generated by the construction process.*
- *Segregation of waste will be implemented during the construction phase of the development to enable easy re-use and recycling, wherever possible.*
- *Recycle waste material where feasible, including the use of excess excavations as fill material, recycling of various waste fractions such as metals, packaging etc.*

Waste Minimisation

The Competent Contractor shall take primary responsibility for the minimisation and prevention of waste generation. The following initiatives should be implemented to assist in this task;

- *Materials to be ordered on an "as needed" basis to prevent oversupply and material build up on site.*
- *Appropriate storage facilities should be provided to ensure materials are correctly handled and stored thus reducing damage to materials.*
- *Material ordering shall coincide with the programme of works to reduce the need to store materials on site.*
- *Sub-contractors will be responsible for the management of their wastes.*

Ongoing Review of WMP

It is proposed that a review of waste management practices will form part of regular site inspection audits to be conducted by the construction contractor. This information should be

forwarded to the Competent Contractor to assist in determining the best methods for waste minimisation, reduction, re-use, recycling and disposal as the works progress.

Management of Construction/Demolition Waste Disposal

It is proposed to establish a dedicated and secure compound on site for the setting down of bins / skips to facilitate waste storage prior to disposal. The site manager on behalf of the construction contractor will ensure that all staff are made aware of their responsibility in relation to waste management on site. The Competent Contractor shall inform staff by means of clear signage and verbal instruction of housekeeping and waste segregation practices. It will be the responsibility of the Competent Contractor to ensure that a written record of all quantities and nature of waste removed off site are maintained on site in a waste file to be kept at the project office.

It is the responsibility of the Competent Contractor or nominated person that all contracted waste hauliers employed at the site hold an appropriate waste collection permit for the waste streams which will be generated and that all waste materials are disposed of at an appropriately licensed or permitted waste facility.

The Competent Contractor nominated person is also responsible for ensuring that all waste materials are disposed of at an appropriately licensed or permitted waste facility.

Typical waste materials anticipated to be generated throughout the course of the project are classified under Section 17 – Construction and Demolition Wastes – of the List of Waste (LoW) as detailed in Table 7.1, of the OCMP.

It is proposed that materials will be collected and stored in separate, clearly labelled skips, within a predefined waste storage area in the site compound and that these materials will be collected by a permitted waste contractor and disposed of at an appropriately licensed/permitted waste facility.

Prior to the commencement of the project the Competent Contractor will instruct an appropriately permitted waste contractor to collect the waste and ensure that the waste contractor and licensed/permitted waste facility hold relevant waste permits and licenses.

All waste soils shall be classified as inert, non-hazardous or hazardous in accordance with the EPA's Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous prior to being exported off site. This is to ensure that the waste material is transferred by an appropriately permitted waste collection permit holder and brought to an appropriately permitted or licensed waste facility.

Onsite Waste Reuse and Recycling Management

Each waste stream will have a dedicated area for segregation to allow easy reuse or recycling of materials. Collections for these will be as usage requires. Where possible recyclable waste will be kept dry and clean to allow processing. Recyclable waste will be transferred by suitable means to a licenced/permitted facility. Material for recycling will be segregated into suitable containers which have adequate access for collection vehicles.

Record Keeping

It is the responsibility of the Competent Contractor or his/her delegate that a written record of all quantities and natures of wastes reused / recycled during the project are maintained in a waste file at the Project office. Details to be included are as follows:

- Contractors and subcontractors on Site every day*
- All main contractor employees on Site*
- All plant and equipment on Site*
- All visitors [including Health and Safety procedures] and any associated reports*
- Weather every day*
- Activity during the day*
- Invoices showing standard of material installed adheres to specifications*
- Results of concrete cube, slump and other testing*
- Any accident and incident reports, safety audits internal or external*

- *Safety statement and safety file*
- *Site programme*
- *Any other items required by the Contractor to maintain on site by law, building regulations, building control or health and safety.*
- *Minutes of all site meetings*
- *Any applicable certificates*

Waste Collector and Waste Facility Details

Details of all waste collectors and waste facilities details will be maintained by the competent contractor.'

5. Invasive Species

No invasive species that could impact on the movement of soil on or off site were noted. However, Japanese knotweed is located upstream of the proposed works and the ecologist will be vigilant in relation to invasive species.

7. Monitoring of Matt/Bracken River

A project Ecologist will be appointed to oversee the project and mitigation measures, prior to the commencement of works on site. During the construction works there will be ongoing monitoring of the Matt/Bracken River for any visible signs of pollution (suspended solids, silt, hydrocarbon sheen and or other products). If any evidence of pollution is observed, then immediate corrective action will be taken to eliminate the source of the pollution. The project ecologist will be consulted to oversee installation of mitigation for the works and consultation with Inland Fisheries Ireland and Fingal County Council in relation to environmental matters. Twice daily checks of turbidity will be made on site from the commencement of site works to the completion of enabling works and the data sent to IFI if requested.

8. Conclusions

This CEMP has been submitted to show Fingal County Council's commitment to Environmental Management of the proposed project. This CEMP has outlined the environmental principles that will be adopted to ensure that potential environmental impacts and health and safety issues associated with the construction processes are effectively managed, minimised and / or eliminated. The plan details the roles and responsibilities of the applicant, the site manager, project manager and site workers and how these controls are to be implemented. The CEMP will require regular updating and monitoring throughout the construction period to ensure potential risks are adequately managed throughout the construction works.