



Response to Engineering Items Raised in An Bord Pleanála, Fingal County Council and Dublin City Council Pre-Application Consultation Opinion Reports

Proposed Strategic Housing Development at Belcamp, Dublin 17

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Comments

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Contents

- 1. Introduction1**
 - 1.1 Background of Report1
- 2. Responses to Engineering Items Raised in An Bord Pleanála’s Opinion Report2**
 - 2.1 Principle of Development2
 - 2.2 Design Strategy4
 - 2.3 Traffic and Transport.....5
 - 2.4 Specific Further Information: Item 6 – Irish Water8
- 3. Responses to Engineering Items Raised in Dublin City Council Written Opinion Report 10**
 - 3.1 Comments from Dublin City Council Transport Planning10
 - 3.2 Comments from Dublin City Council Water Services Comments15
- 4. Responses to Engineering Items Raised in Fingal Planning Authority Written Opinion Report19**
 - 4.1 Comments from Fingal County Council Roads & Transportation Department19
 - 4.2 Comments from Fingal County Council Water Services Department.....20

Figures

- Figure 1 | Belcamp SHD - Phasing.....3*
- Figure 2 | Proposed Urban Edge along R1394*
- Figure 3 | South Fingal Transportation Strategy6*
- Figure 4 | Phasing plan for DCC Lands (from CCK Phasing Drawing)16*
- Figure 5 | DCC Lands Surface Water Outfall Calculation (Appendix B, Engineering Assessment Report)17*
- Figure 6 | Riparian Corridor, 25m either side of river centreline, at minimum.....18*

1. Introduction

1.1 Background of Report

This document has been prepared by Waterman Moylan in response to the engineering items raised in An Bord Pleanála, Fingal County Council and Dublin City Council Pre-Application Consultation Opinion reports (case reference ABP-31570-21) as part of the planning documentation for the proposed Belcamp SHD development, Malahide Road, Dublin 17.

This report briefly addresses each engineering item and cross references to where the item is further addressed in detail within the accompanying SHD documentation. The purpose of the report is to clearly inform the reader of the response to the various engineering items raised and to refer to which Report and Section in accompanying reports that the items are further detailed, for ease of reference to the reader.

The Engineering Items raised in the An Bord Pleanála Opinion report are set out below in Section 2 in bold italics with the response provided below each item.

The Dublin City Council engineering items raised in their Opinion report are set out below in Section 3 in bold italics with the response provided below each item.

The Fingal County Council engineering items raised in their Opinion report are set out below in Section 4 in bold italics with the response provided below each item.

2. Responses to Engineering Items Raised in An Bord Pleanála's Opinion Report

2.1 Principle of Development

Further consideration and/or justification of the documents as they relate to Objective Balgriffin/Belcamp 6 of Fingal County Development Plan 2017-2023. The submitted documentation should address the higher-level planning policy, including inter alia, the need for a Local Area Plan for the site. The consideration/justification of documentation should cross reference the appropriate development and phasing strategy necessary to comply with national guidance for sustainable residential development and self-sufficient communities. In addition, any references to delivery of the development at this location and the circumstances of the surrounding area, including those relating to the availability or otherwise of infrastructure, employment, retail, commercial or social services, should be based on verifiable facts.

Response:

Please refer to Downey Planning's report titled "Statement of Responses to An Bord Pleanála's Pre-Application Consultation Opinion" for a full planning response to this item including discussion of higher-level planning policy. The response below addresses the **proposed development and phasing strategy**, which is designed to comply with national guidance for sustainable residential development and to provide a self-sufficient community. This response also addresses the circumstances of the surrounding area, including the availability of **infrastructure** in the vicinity of the site, and provision of transport infrastructure to access these services.

The following is an outline of physical infrastructure available to serve the development lands:

Water supply is available on site via connections to the north fringe watermain. Irish Water have confirmed in their Confirmation of Feasibility and subsequent opinion reports that the development can be facilitated without upgrade works to the existing water supply network.

Foul water drainage from the site can discharge by gravity to the north fringe sewer which also traverses the site. Irish Water have confirmed in their Confirmation of Feasibility and subsequent opinion reports that the development can be facilitated without upgrade works to the local foul water network. The proposed foul water design provides a sustainable drainage solution that can drain the entire Belcamp lands by gravity to a north fringe sewer that has capacity and no requirement for a foul water pumping station.

Surface water drainage is also available on site and the strategy has been agreed with Fingal County Council and Dublin City Council Water Services Departments. The sustainable drainage strategy utilises the River Mayne which traverses the site and the two large existing ponds which will be used as natural sources for surface water treatment and attenuation.

Refer to accompanying Engineering Assessment report, Sections 2, 3 and 4 for further detail on existing and proposed infrastructure for foul water, surface water and water supply, respectively.

Road infrastructure with access to the R107 (Malahide Road) is provided at two locations, both of which are approved by Fingal County Council. Road access is proposed to the R139 at two locations, including the existing access to Belcamp College, with a third access to the R139 proposed as a bus gate for bus-only access (with cycle and pedestrian access also provided). Further accessibility is provided for active travel modes via the Mayne River cycle/pedestrian route, along the southern bank of the Mayne River and designed in accordance with the NTA 2021 Cycle Network Plan for the Greater Dublin Area, and via several cycle/pedestrian access points from the R139.

Public Transport infrastructure is available adjacent to the site, connecting the development lands to Malahide and Dublin City via the Malahide Road QBC. BusConnects D route is amongst the first Bus Connects Core Bus Corridors to be provided and will connect Clongriffin Train and Dart station to the city centre, via the Malahide Road which is located 500m to the east of the proposed development. This route is currently due to be in operation for the end of 2023.

Additionally, the N8 BusConnects orbital route originally designed to run adjacent to the proposed development connecting Clongriffin Train and Dart station to Dublin Airport and Blanchardstown, via the R139 along the south of the proposed development. This route is due to be in place before the end of 2024. During pre-planning discussions with the NTA, FCC and DCC, the NTA advised that they envisage the N8 route coming through the heart of the proposed Belcamp development, along the East West Link Road (EWLR) and then southwards onto the R139. This route will avoid the currently congested Clarehall junction. The proposed development has designated bus lanes and bus only routes through the site to ensure the buses will have priority over cars with quick transit through the development.

Active modes of transport connecting to adjoining areas are also available and are being enhanced as part of the proposed development.

Refer to accompanying Engineering Assessment report, Sections 5 for further detail on existing and proposed road and transport infrastructure. Also refer to below Phasing Figure which outlines the proposed delivery of all main transport road, cycle, and pedestrian infrastructure as part of Phase 1 of the development.

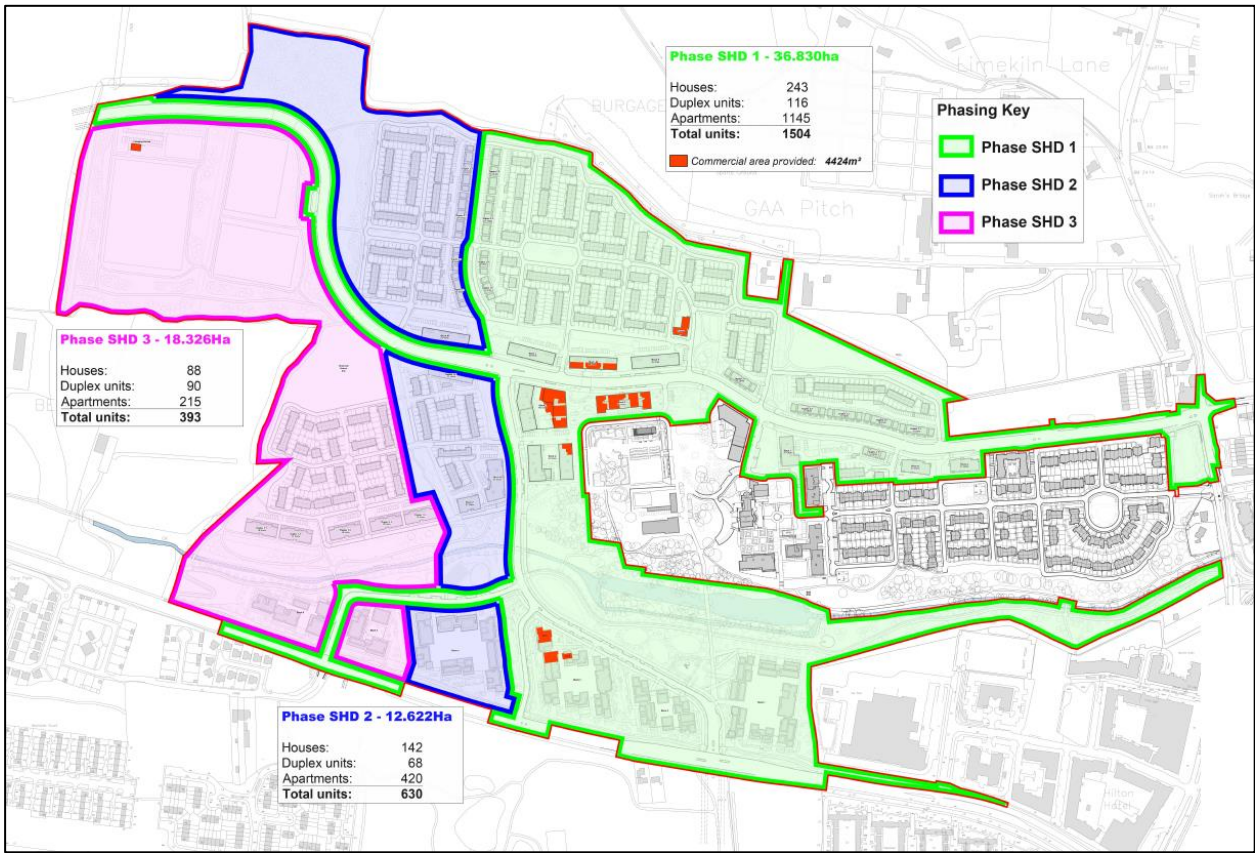


Figure 1 | Belcamp SHD - Phasing

2.2 Design Strategy

Further consideration and/or justification of the documents as they relate to the design approach of the proposed development and the need for a high quality, strong urban edge which integrates effectively along the R139. The further consideration/ justification should address the proposed design and layout, inter alia the unit mix proposed across the entire site, the design of the ground floor apartments units, passive surveillance and functionality of open space (in particular along the River Mayne), compliance with DMURS guidance and interaction with lands currently permitted within the applicant’s ownership. Particular regard should be had 12 criteria set out in the Urban Design Manual which accompanies the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (May 2009) and the requirement for good design and the inclusion of a sense of place.

Response:

Please refer to Downey Planning report, Statement of Responses to An Bord Pleanála’s Pre-Application Consultation Opinion, for full planning response.

In regard to **the design approach of the proposed development and the need for a high quality, strong urban edge which integrates effectively along the R139**, please note the following:

The section of the R139 that the development fronts onto will extend the urban edge from northern cross up to the western end of the proposed development, to the employment zoned lands.

The proposed urban edge along the development will take the form of a wider verge from the R139 to a proposed 5.0m wide footpath / 2-way cycle track that will meander in a naturally designed east / west route with frequent filtered permeability access points linking pedestrians and cyclists in between each of Block that front onto the R139. Refer also to the accompanying architect’s and landscape architect’s drawings which show further details of the proposed road frontage.



Figure 2 | Proposed Urban Edge along R139

It is also proposed to provide 3 new signalised junctions onto the R139 as follows:

1. 4-way junction located at the junction of Belcamp Parkway. This junction is located at the Dublin City Council Belcamp / Belmayne Masterplan junction to lands south of the R139. There is currently a signalised pedestrian crossing at this location.
2. Bus only junction located mid-way along the frontage of the development. This bus only route is located directly south of the junction of the East West Link Road (EWLR) and Belcamp Parkway. This route was introduced following a meeting with the NTA, DCC and FCC in which the NTA requested a direct south link from the EWLR to the R139 to accommodate the N8 BusConnects route, in which the NTA envisage the N8 route coming through the Belcamp development and avoiding Clarehall junctions which is along its original intended route.

This bus only junction will also be provided with a toucan crossing linking Belcamp to the centre of Darndale Park to allow for an additional access into the park.

3. A 4-way signalised junction is proposed at the west side of the development opposite the existing T-junction into the Tara Lawns settlement.

It is noted that the spacing of the junctions continue at regular intervals from Clarehall junction which has the signalised junction at Bewleys 280m to the west, which in turn has the Belcamp Parkway junction 290m to the west, which in turn has the bus only junction 270m to the west, which in turn has the western junction at Tara Lawns 280m to the west of it.

We note that toucan crossings are proposed at each of the proposed signalised junction crossings which ties in with our design strategy of high-level pedestrian and cycle facilities and connectivity proposed throughout and to the site.

The introduction of these new signalised junctions, along with the active pedestrian and cycle facilities provided along the frontage on to the R139, will assist with reducing the vehicular speeds along this section and providing a strong urban edge.

For **compliance with DMURS and interaction with lands currently permitted within the applicant's ownership**, please refer to accompanying DMURS Report and Statement of Design Consistency and to the accompanying Car Parking Strategy report.

2.3 Traffic and Transport

Further consideration and/or justification of the documents as they relate to the traffic and transport provision. The submitted documentation should address the requirements of the South Fingal Transport Study and the delivery of the East West Link Road. Regard should be given, in the Traffic and Transport Assessment, inter alia, the capacity of the surrounding junctions and the impact of the proposed development on the surrounding road network and the delivery of sustainable transportation options

Response:

A detailed review of the requirements of ***the South Fingal Transportation Study (SFTS) and the delivery of the EWLR*** is provided in Section 5.2 and 5.4.1 of the accompanying Engineering Assessment Report.

The main transport routes proposed through the subject site, as envisioned in the SFTS, are shown in the Figure below. This strategy is in accordance with the DCC and FCC Development Plans.

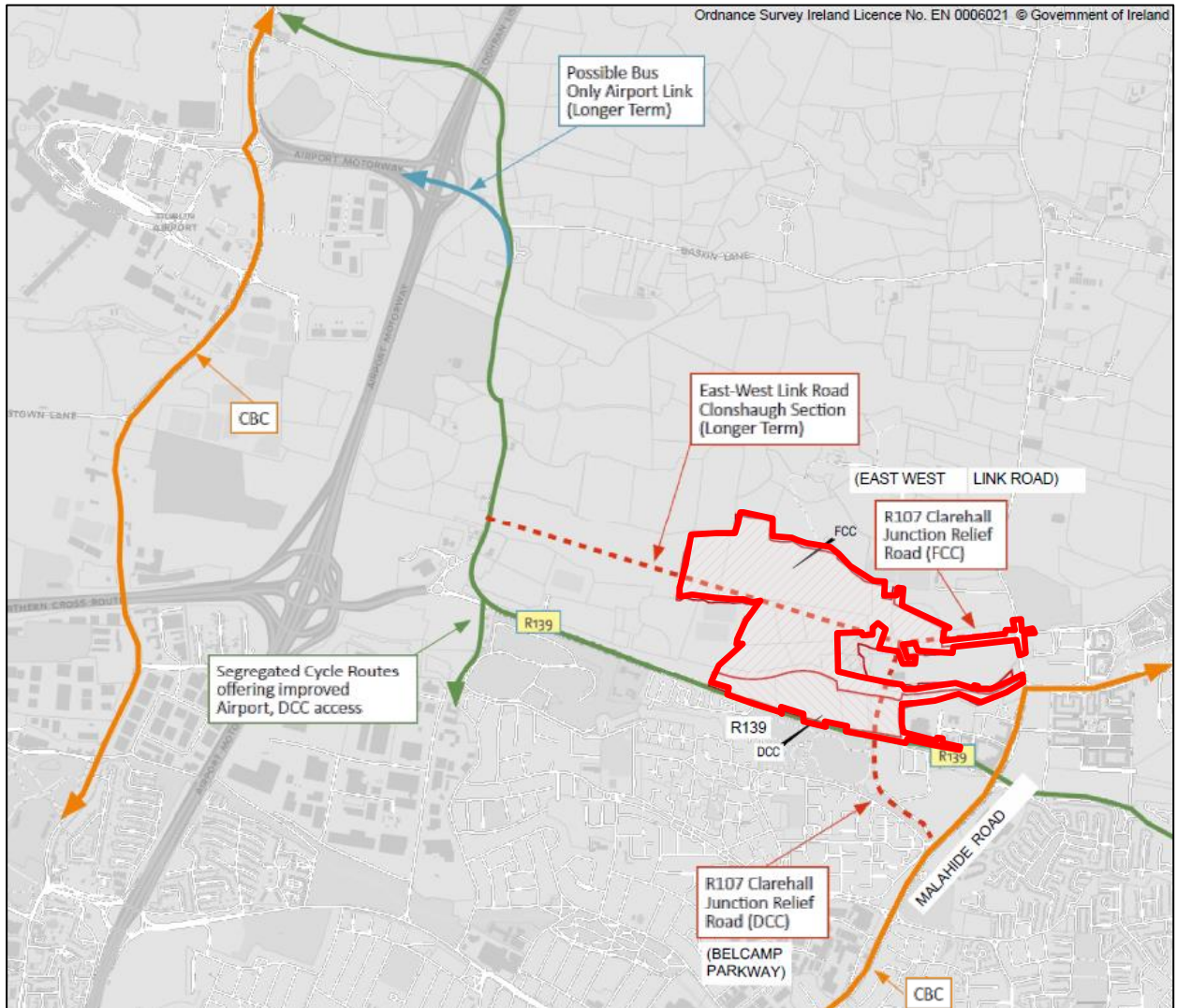


Figure 3 | South Fingal Transportation Strategy

The South Fingal Transportation Study report has informed the Belcamp Design and the development of the transport strategy and infrastructure:-

SFTS Recommendation 21: Clare Hall Junction Relief Road (Belcamp Parkway)

The Clare Hall Junction Relief Road, referred to in this submission as Belcamp Parkway, is described by the SFTS as a proposed relief road connecting from the Malahide Road to the EWLR, and forming a new junction with the R139. This connection is in accordance with both the DCC and FCC development plans.

Belcamp Parkway, as set out in the SFTS, crosses the Mayne River west of Belcamp Hall. It is proposed under the subject application for the Relief Road to connect with the EWLR in the vicinity of Belcamp Town Square.

SFTS Recommendation 22: Malahide Road/Balgriffin Road Junction Upgrade

The SFTS recommends that the Malahide Road/Balgriffin Road junction should be upgraded with signals and turning lanes, while also providing a safe and attractive environment for pedestrians

and cyclists. This upgrade has been given a decision to grant permission by Fingal County Council under Phase 1B of the Belcamp development works (F21A-0401), along with approximately 350m of the EWLR. Nonetheless, this subject application also includes the proposed junction upgrade works, along with the approved ~350m of the EWLR, to ensure this application can provide the entirety of the link road from the Malahide Road to the site.

The junction is proposed to be upgraded to form a new 4-way signalised junction, with the EWLR forming the western arm of the new junction. The proposed junction includes new right-turning lanes and cycle facilities. The upgrade works will extend south on the Malahide Road to connect with the upgrades currently being carried out as part of the Phase 1 development.

SFTS Recommendation 23: East-West Link Road

The SFTS recommends that the EWLR be designed based on DMURS principles, placing an emphasis on public transport and active modes of transport. This would indicate that the road should be envisaged as part of the development rather than as a boundary at the edge of the development.

Accordingly, the road's proposed route is through the development, with connections/links to the north and to the south.

The SFTS envisages the EWLR as the main bus route providing east–west linkages to the fringe area and ultimately to the airport environs. Waterman Moylan met with representatives from the NTA, FCC and DCC in March 2022 to discuss the transport requirements of the proposed Belcamp SHD development. The current N8 BusConnects route departs from Clongriffin train station, continuing along Main Street before turning south onto the Hole in the Wall Road and then continuing west along the R139. At the meeting, the NTA advised that they require the N8 BusConnects Route to be altered to run through the subject development along the East–West Link Road (EWLR) into Belcamp Town Square and then, preferably, directly south onto the R139. The EWLR road is therefore designed to comply with the principles of a Core Bus Corridor and to accommodate optimum cyclist and pedestrian facilities.

The proposed development includes more than half of the orbital bus service route linking Malahide Road to Stockhole Lane, as described in the SFTS, to link the employment zoned lands north of the R139 with Dublin Airport and Swords. The remainder of the route to Stockhole Lane is within lands under the ownership of the IDA, who we understand are actively considering development of these lands.

The Applicant has liaised with the IDA, who have requested connectivity via the Belcamp Lands and who have made a submission to DCC on the draft Belcamp/Belmayne Masterplan in 2020. This subject application will not only be providing the EWLR into the employment zoned lands but will also be providing excellent pedestrian/cycle facilities along the R139 and River Mayne, which will link the IDA lands directly to Belcamp and Belmayne Town Square.

For ***assessment on the capacity of the surrounding junctions and the impact of the proposed development on the surrounding road network*** refer to Section 8 of the Traffic and Transport Assessment.

It is noted that there are certain junctions in the vicinity of the site experiencing congestion at certain times of the day; in particular, the Clarehall junction between R107 and R139. The proposed development will provide additional road and active travel infrastructure which will mitigate the traffic impact of the development on these junctions, and in fact traffic modelling suggests that the introduction of the East-West Link Road and Belcamp Parkway will help to relieve congestion in the area – refer to the accompanying

Traffic and Transport Assessment report for additional information on the traffic modelling. The EWLR is envisaged as a core bus route, providing east–west linkages to the fringe area and ultimately to the airport environs. Accordingly, this road is designed to comply with the principles of a Core Bus Corridor and to accommodate optimum cyclist and pedestrian facilities. The NTA have confirmed that the N8 bus route will utilise this new infrastructure, continuing south via a new bus gate. This alternative route would avoid the congested Clarehall junction between R107 and R139, improving the efficiency of the bus network.

Although there are currently no proposals to bring one of the D routes through the Belcamp development, BusConnects routes are subject to future change depending on demand and future development. Emphasis has therefore been placed on providing a robust design that can facilitate various future bus routes through the site, and as such Belcamp Parkway and the R139 Link Road have been designed as bus capable roads that can accommodate bus routes and bus stops. Both roads are designed with signalised junctions onto the R139 that can provide bus priority if required.

The introduction of high-quality pedestrian and cycling infrastructure, including upgrades along the R139 and the Malahide Road, along with the introduction of Core Bus Corridors and bus-priority junctions, will provide significant opportunity for a modal shift to active travel and public transport in the area.

For an assessment of **the delivery of sustainable transport options** refer to accompanying Travel Plan and accompanying Public Transport Capacity Assessment of Belcamp Site prepared by Derry O'Leary, Transport Consultant.

2.4 Specific Further Information: Item 6 – Irish Water

A report that addresses the contents of the submission from Irish Water (dated 8th of November 2021) concerning the need to ensure no impact on the proposed future wastewater treatment plant adjacent to the proposed development. In addition, the report shall address the concerns raised in relation to the need for a detailed Local Network Plan (Master Plan) of the Development Area, including water distribution and wastewater collection networks servicing the planned building blocks.

The text of the Irish Water letter is shown below:

In respect of Wastewater:

Please note, records indicate that there are critical Irish Water assets on proposed development site (1050mm and 375mm sewer). Also, the site of a future wastewater treatment plant is adjacent to the proposed development. The applicant must demonstrate that proposed structures and works will not inhibit access for maintenance or endanger structural or functional integrity of the infrastructure during and after the works. The applicant is required to engage with Irish Waters Diversion prior to SHD application prior to SHD application to agree the required separation distances and assess feasibility of any potential build over/diversion(s) which may be required.

Response:

The report that addresses Irish Water's concerns as noted above are contained within the Engineering Assessment report. Waterman Moylan have been in correspondence with Irish Water regarding the existing on-site sewers a number of times and also in respect of the proposed wastewater treatment plant (WWTP). Proposed housing has been located accordingly, with the open space used as a buffer between the proposed WWTP site and proposed Belcamp residential development.

To address future maintenance, a permanent wayleave of 23m is provided, 11.5m either side of the 1050mm sewer centreline, with no structures proposed within this wayleave. Part of the 375mm sewer is to be diverted and the route of this sewer has been agreed with Irish Water. The diverted 375mm sewer and its wayleave will be fully within the future road reservation and its wayleave will not impact structures or private property. The above was discussed and agreed in principle with Irish Water at a meeting on 22 April 2022.

Refer to drainage drawings P2000 to P2110. Refer also to Engineering Assessment Report appendices for a Statement of Design Acceptance from Irish Water.

In respect of Water & Wastewater

A detailed Local network Plan (Master Plan) of the Development Area, including water distribution and wastewater collection networks servicing the planned building Blocks, is required. The networks should be appropriately designed and suitably sized to provide effective and economical management of the networks with minimum number of pumping stations. The plan shall be submitted for review and approval by Irish Water prior to the applicant progressing to SHD application.

Response:

A detailed Local network plan has been prepared and issued to Irish Water. On 08 April 2022 a submission was made to Irish Water for a Statement of Design Acceptance to [cgsdesignqa@water.ie](mailto:cdsdesignqa@water.ie). Refer to Engineering Assessment Report appendices for a Statement of Design Acceptance from Irish Water.

All proposed wastewater systems for taking in charge by Irish Water will be drained by gravity to existing networks. No pumped mains are proposed. The above was also discussed and agreed in principle with Irish Water at a meeting on 22 April 2022.

Planning Observations:

Connection(s) to the public network are subject to a Connection Agreement with Irish Water.

All development is to be carried out in compliance with Irish Waters Standards Codes and Practices and that design layouts for the development proposal, within the redline boundary have been submitted to Irish Water and that a Statement of Design Acceptance has been issued to the applicant by Irish Water ahead of any SHD application.

Response:

An application for a connection agreement will be made made prior to any construction.

Refer to Engineering Assessment Report appendices for a Statement of Design Acceptance from Irish Water.

Irish Water does not permit build over of its assets and the separation distances as per Irish Waters Standards Codes and Practices which must be achieved. In order to ensure appropriate and access to existing infrastructure(s) the applicants are required to engage with Irish Water Diversions to assess feasibility of any potential build over/diversions(s) which may be required, separation distances, appropriate wayleaves and or access ahead of any SHD application.

Queries relating to the observations above should be sent to planning@water.ie.

Response:

Refer above to comments about proposed diversions and engagement with Irish Water to date.

3. Responses to Engineering Items Raised in Dublin City Council Written Opinion Report

Section 3 provides a summary of Dublin City Council's written opinion report (engineering items) with our response to each item provided below.

3.1 Comments from Dublin City Council Transport Planning

The Transportation Planning Division's (TPD) in Dublin City Council have provided comments relating to the appropriateness of the proposed development having regard to the transportation infrastructure. For context, TPD draw comparison with the Poolbeg West SDZ Planning Scheme which provides for 3000-3500 residential (pop c.8000 persons) while the Belcamp lands in total could provide up to c. 3200 units (pop c. 7500 persons). The key TPD comments include:

- *The proposed residential development should be linked to the provision of crucial strategic infrastructure and should be phased in accordance with the delivery of same. A similar process was undertaken for the Belmayne/Clongriffin lands.*

Response:

The proposed Belcamp development has been specifically designed to avoid a car dominated environment, and the proposed construction phasing includes the main internal transportation infrastructure as part of the first phase of development to ensure that there is adequate transportation provision in place before the development is occupied.

In order of importance, DMURS prioritises pedestrians, cyclists, public transport and private cars, and notes that the number of walkable/cyclable routes between destinations should be maximised. As such, promotion of active travel is a key component of the proposed development, in accordance with the objectives of DMURS. The development will include a network of footpaths throughout the site and connecting with the surrounding pedestrian infrastructure, providing efficient, high-quality routes along desire lines to destinations within and surrounding the development area.

High quality pedestrian linkages will be provided to connect to Malahide Road (R107), the Mayne River, City Junction and to the R139, linking the development with the existing Clarehall Junction shopping and commercial area and to the future Belmayne Square.

Junctions will be designed with raised pedestrian tables/crossings at main pedestrian desire lines, allowing pedestrians to cross at grade. In addition to pedestrian and toucan facilities at signal-controlled junctions, on-call pedestrian signals will be provided at key desire lines. Refer to the accompanying Waterman Moylan drawing no. 19-114-P1005 which show proposed pedestrian routes through the site.

Cycling is also a key component of active travel. The proposed development will include dedicated cycle facilities, including an off-road cycle track along the East-West Link Road and upgrade works along the R139 to introduce a new, 2-way cycle lane, separated from the vehicular carriageway by a verge. The proposed junction upgrade at the site entrance from Malahide Road includes new cycle stopping areas and new cycle lanes along the Malahide Road, to connect with the Malahide Road upgrade works approved as part of Phase 1 of the Belcamp development.

The Department of Housing, Local Government and Heritage document "*Sustainable Urban Housing: Design Standards for New Apartments*" states that in order to apply and justify the use of a reduced car parking ratio, new developments must be comprehensively equipped with high

quality cycle parking and storage facilities for residents and visitors. This document recommends a general minimum standard of 1 cycle storage space per bedroom with a visitor parking standard of 1 space per 2 residential units. In this regard, it is proposed to provide significant bicycle storage, over and above the recommendations in the Design Standards for New Apartments – refer also to the accompanying Car Parking Strategy report which sets out the proposed bicycle parking.

In addition to Active modes of travel, the development has been designed to incorporate public transport. The East–West Link Road (EWLR) is envisaged as a core bus route, providing east–west linkages to the fringe area and ultimately to the airport environs. Accordingly, this road is designed to comply with the principles of a Core Bus Corridor, including dedicated bus lanes and new bus stops, and to accommodate optimum cyclist and pedestrian facilities.

Waterman Moylan met with representatives from the NTA, FCC and DCC in March 2022 to discuss the transport requirements of the proposed Belcamp SHD development. The NTA advised that they envisage the N8 BusConnects Route being altered to run through the subject development along the East–West Link Road (EWLR) into Belcamp town square and then, preferably, directly south onto the R139. The proposed road layout was amended following this meeting, to ensure that the requirements of the NTA are met. The amended proposal provides a bus gate linking directly southwards from the EWLR onto the R139. The bus gate gives bus priority over cars and provides a direct south link from the EWLR onto the R139.

The NTA advised that there are currently no proposals to bring one of the D routes through the Belcamp development. However, BusConnects routes are subject to future change depending on demand and future development. As such, emphasis has been placed on providing a robust design that can facilitate various future bus routes through the site.

Belcamp Parkway has therefore been designed to accommodate a possible future route for one of the D routes and has been designed with a 3.25m wide verge that can facilitate future bus lanes. This route would divert buses from the Malahide Road onto Belcamp Lane through the DCC Masterplan lands, south of the R139, through a signalised junction on the R139. This D route would not use the proposed Bus Gate, which is part of the N8 route. This will ensure a straight-through crossing of the R139.

The R139 Link Road has also been designed to be bus-capable and can accommodate bus routes with 3.25m wide lanes, locations for bus stops and signalised junctions that can provide bus priority. This provides a robust, flexible design with options for future bus routes. The removal of the bus gate and the use of the R139 link Road as N8 bus route can be accommodated without compromise to the proposed submission if that is the NTA’s preference for the N8 BusConnects route.

It is proposed to include the main internal transportation infrastructure as part of the first phase of development, including the EWLR, Belcamp Parkway and the Bus Gate. This will ensure that there is adequate transportation provision in place before the development is occupied. Refer to the Phasing Plan Figure included in Section 2.1, above.

Refer also to Section 5 of the accompanying Engineering Assessment report for further details on existing and proposed road and transport infrastructure, to the accompanying DMURS Report and Statement of Design Consistency which sets out specific design features that have been incorporated within the proposed scheme with the objective of delivering a design that is in compliance with DMURS and to the accompanying Public Transport Capacity Assessment by Traffic Consultant Derry O’Leary, which assesses the capacity of the public transport network in the vicinity of the site to cater for the development.

- ***The intended operation of a shuttle bus to the Clongriffin DART station by the applicant highlights the lack of public transport accessibility from the site and such a provision cannot be considered a long-term viable option when developing a sustainable community.***

Response:

Following the Tripartite meeting, several meetings took place between Dublin City Council, Fingal County Council and the NTA, with follow up meetings with the Applicant. The main crucial strategic infrastructure that developed from those meetings into the proposed design is as follows:

1. N8 Route: The N8 BusConnects route is to come through the site via the East-West Link Road, Belcamp Parkway and a new Bus Gate connecting to the R139. As noted above, all of these roads have been designed to facilitate a Core Bus Corridor in accordance with NTA requirements.
2. Flexibility for possible D Route: Although the NTA advised that there are currently no proposals to bring one of the D routes through the Belcamp development, emphasis has been placed on providing a robust design that can facilitate various future bus routes through the site.
3. Pedestrian/Cycle Facilities, Car Sharing, Bicycle Sharing, E-Bike Charging: The proposal includes significant pedestrian and cycle facilities, including provision for a bicycle sharing scheme, ample resident and visitor bicycle parking, public E-bike charging stations, and a comprehensive network of footpaths, cycle lanes, pedestrian and toucan crossings. Provision has also been made for the introduction of car sharing vehicles, and GoCar have issued a letter of intent for the development (refer to the accompanying Car Parking Strategy report).
4. Phasing to Include Infrastructure at Early Stage: The main road infrastructure is to be completed as part of the first phase of development, to ensure that there is adequate transportation provision in place before the development is occupied.

On 4 March 2022, the NTA/DCC/FCC advised/informed the design team to provide a shuttle system in the short term. However, the NTA have advised that they envisage the N8 BusConnects Route being altered to run through the subject development along the East–West Link Road (EWLR) into Belcamp town square and then, preferably, directly south onto the R139.

This proposed altered route provides several benefits:

- The new route would avoid the Clarehall junction between R107 and R139, which is currently above capacity and suffers from long queues and delays.
- The East–West Link Road is envisaged as a core bus route, and accordingly, this road is designed to comply with the principles of a Core Bus Corridor, including dedicated bus lanes, new bus stops, and segregated cycle lanes.
- The inclusion of a Bus Gate at the south of the site ensures that the bus route will follow a direct path and will avoid a meandering route through the site.
- The Bus Gate also avoids any traffic, given that it provides bus-only access, and on-demand signal controls will ensure efficient wait times before turning onto the R139.
- The new route will serve a large population in Belcamp.

The proposed road layout has been designed to ensure that the requirements of the NTA are met, and as noted above the road infrastructure, including bus lanes, bus gate and bus stops, are to be constructed as part of the first phase of development to ensure that there is adequate transportation provision in place before the development is occupied.

While the Applicant is open to providing a shuttle bus service in the short term, it is envisioned that the BusConnects Orbital Route N8 would be in service through the development prior to the first units being occupied. As such, the development is not reliant on a shuttle bus service, but will instead be served by the frontloaded delivery of the BusConnects network, including the N8 route through the site and D route adjacent to the site (with ample provision for future additional routes through the site).

It is further noted that operational improvements will help to incentivise residents to use public transport. In particular, the new TFI ticket pricing structure offers major benefits in promoting sustainable travel. The TFI 90-Minute Fare gives TFI Leap Card customers the option to transfer between most DART, Commuter Rail, Dublin Bus, Luas and Go-Ahead Ireland services in the Dublin area at no additional cost for 90 minutes. To avail of the TFI 90 Minute Fare, customers simply use travel credit on their TFI Leap Card. Previously, each stage of the journey would have to be paid for separately. This is particularly relevant to the subject site, with the proposed N8 BusConnects route providing direct access to the Clongriffin Rail/Dart Station. The new ticket pricing structure will allow Belcamp residents to travel by bus to Clongriffin and then by train on one fare.

Refer to Section 5.3.7 of Waterman Moylan's Engineering Assessment Report, Sections 4.2 and 5.0 of Waterman Moylan's Traffic and Transport Assessment and to accompanying Public Transport Capacity Assessment of Belcamp Site from Derry O'Leary, which further describes the potential for bus networks serving Belcamp, early contribution/support for the N8 route through Belcamp development.

- ***As currently proposed, based on the existing and proposed transport services for this area, the development of the Belcamp lands would result in the establishment of a car-based community that will lead to unsustainable travel patterns and which will necessitate the community accessing services by car outside of their area. As such, the development would constitute unsustainable development which would be contrary to national, regional and city policy and which would serve to exacerbate rather than mitigate climate change.***

Response:

The proposed development at Belcamp has been specifically designed to avoid a car dominated environment and to instead cater for alternative modes of transport, with significant active travel infrastructure for pedestrians and cyclists, with dedicated bus lanes and a bus gate, with car sharing services to reduce reliance on car ownership and with a central transport hub to allow residents and visitors to travel to Belcamp Town Centre by means other than private car.

As noted in the Sections above, significant active travel infrastructure is proposed throughout the site and connecting with the surrounding area. Provision for public transport has been considered and discussed with the NTA, who envisage the N8 bus route utilising the proposed development.

The proposed transport hub is located at Belcamp Town Square, where most of the commercial units will be centred. This Transport Hub will have new bus stops for the N8 BusConnects route, as discussed with the NTA. E-Bike charging stations and bicycle racks are to be provided at the transport hub, to encourage active travel to the town square.

The Transport Hub will include multiple designated car-share fleet parking spaces. These car share spaces form part of the strategy to reduce reliance on private car usage, since car sharing is a less car intensive means of urban transport compared to car ownership. Research has found that car sharing can reduce car ownership at an estimated rate of one rental car replacing 15 owned vehicles. Neighbourhood car sharing encourages members to walk, cycle or utilise public transport for most trips, with car use reserved only for necessary journeys where other travel modes are impractical. Long-term studies of members of car share services have found that up to 30% of car-owning households that joined a car share service subsequently sold a car. Public transport use, bicycling, and walking increase among car share members, with a significant decline in annual vehicle kilometres travelled.

A new bus terminus/turning area is provided along the East–West Link Road, within the open space at the west of the proposed Belcamp Development. This allows for a robust design of bus routes that can come into Belcamp Town Square, turn around and travel back along the same route alignment.

In addition to the provision of transport infrastructure, the proposed introduction of commercial and amenity spaces will help to create a self-sufficient neighbourhood, reducing the number of journeys made by residents outside the development and reducing the travel distance for many journeys to destinations including parks, bars, cafés, restaurants, shops and childcare facilities.

Refer also to the accompanying DMURS Report and Statement of Design Consistency, to the accompanying Car Parking Strategy report, to Section 5 of the accompanying Engineering Assessment Report, to the accompanying Sustainable Transport Strategy Study prepared by SYSTRA and to the accompanying Public Transport Capacity Assessment prepared by Traffic Consultant Derry O’Leary.

- ***At present, while the applicant is proposing to construct the east-west link road as part of the overall development, the western end of this road does not link to any road proposal that is to be delivered in the short to medium term. Therefore, the provision of a public transport network and the ability of the entire area to be served by buses in the future needs to be considered in the context of the design of the roads to ensure that they can be serviced should a redesign of the bus network be required and agreed with the NTA.***

Response:

As noted above, the NTA envisage the N8 BusConnects Route being altered to run through the subject development along the East–West Link Road (EWLR) into Belcamp town square and then, preferably, directly south onto the R139. The proposed road layout has been amended in accordance with the requirements of the NTA. The amended proposal provides a bus gate linking directly southwards from the EWLR onto the R139. The bus gate was introduced to give bus priority over cars and to provide a direct south link from the EWLR onto the R139, as discussed with the NTA in March 2022.

A bus terminus/turning area is provided along the EWLR, within the open space at the west of the proposed Belcamp Development. This allows for a robust design of bus routes that can come into Belcamp, turn around and travel back along the same route alignment, until such time as the EWLR is extended beyond the Applicant’s lands.

Belcamp Parkway and the R139 Link Road have both also been designed to be bus capable and can accommodate bus routes with 3.25m wide lanes, locations for bus stops and signalised junctions that can provide bus priority. This provides a robust, flexible design with options for future

bus routes. The removal of the bus gate and the use of the R139 link Road as N8 bus route can be accommodated without compromise to the proposed submission, if that is the NTA's preference for the N8 BusConnects route.

The proposed development includes more than half of the orbital bus service route linking Malahide Road to Stockhole Lane, as described in the South Fingal Transportation Study, to link the employment zoned lands north of the R139 with Dublin Airport and Swords. The remainder of route to Stockhole Lane is through lands zoned for High Technology (HT), "to provide for office, research and development and high technology/high technology manufacturing type employment in a high quality built and landscaped environment", and these lands are under the ownership of the IDA, who we understand are actively considering development of these lands.

The Applicant has liaised with the IDA, who have requested connectivity via the Belcamp Lands in their submission to DCC on the draft Belcamp/Belmayne Masterplan in 2020. This subject application will not only be providing the EWLR into the heart of the employment zoned lands but will also be providing excellent pedestrian/cycle facilities along the R139 and River Mayne, which will link the IDA lands directly to Belcamp and Belmayne Town Square. During a meeting in March 2022, the IDA requested that the EWLR be moved northwards towards the northern boundary of the Belcamp Lands, which has been accommodated in the current proposals.

- ***TPD cannot support the development of the proposed lands in their current context in the absence of an integrated land use and transport framework. DCC would welcome the opportunity to work with FCC, NTA and TII as well as the landowner, to develop a strategy that would result in the delivery of a sustainable community for future residents. This however cannot be done through the Development Management process.***

Response:

Waterman Moylan met with representatives from the NTA, FCC and DCC in March 2022 to discuss the transport requirements of the proposed Belcamp SHD development. The development has subsequently been amended to meet the requirements of the NTA.

The East–West Link Road is designed to facilitate continuation west beyond Belcamp, in accordance with the Fingal Development Plan and the South Fingal Transportation Study. The proposed Belcamp Parkway route from the R139 to the EWLR follows the alignment provided in FCC / DCC Development Plans, the Belcamp / Belmayne Masterplan and the South Fingal Transportation Study.

Refer also to the accompanying Sustainable Transport Strategy Study prepared by SYSTRA and to the accompanying Public Transport Capacity Assessment prepared by Traffic Consultant Derry O'Leary.

3.2 Comments from Dublin City Council Water Services Comments

1. Detailed surface water management plan layout for the development lands within DCC boundary shall be submitted including

- ***Proposed location of connection from each block to the proposed public surface water system***

Response:

Each block location will have a surface water outfall manhole that discharges to the proposed surface water sewers as indicated in the accompanying Engineering Drawings.

- **Detail of proposed phasing of surface water drainage works.**

Response:

The phasing for the site is as per the phasing drawing provided by Conroy Crowe Kelly Architects, see extract below.

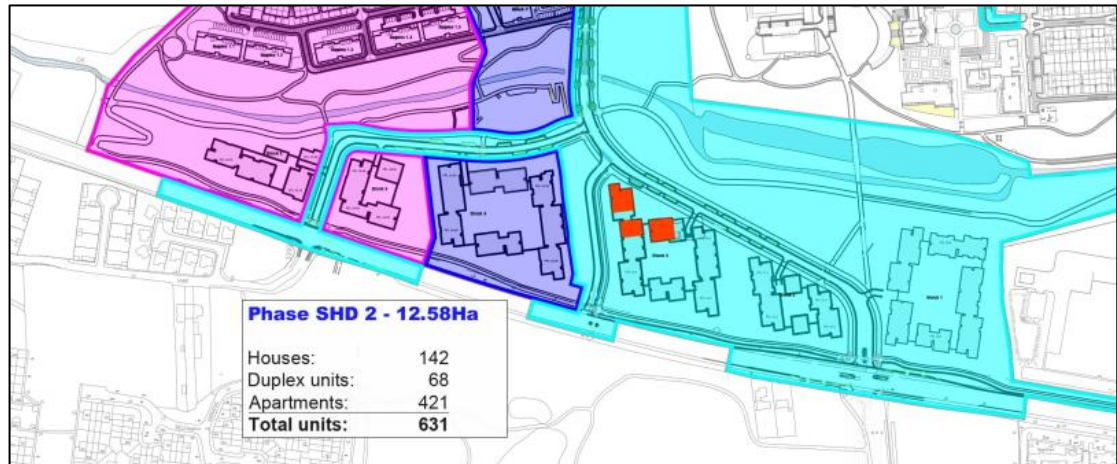


Figure 4 | Phasing plan for DCC Lands (from CCK Phasing Drawing)

The Cyan area is phase 1, Blue is phase 2, and Magenta is phase 3. The attenuation area is within phase 1, and subsequent phases follow logically behind so there is no issue with delivery.

- **Detail of any proposed surface water sewers that shall be ‘taken in charge’ by DCC**

Response:

The detail of the sewers to be taken in charge are as per the engineering drawings submitted with the SHD application. The standards applied are the Greater Dublin Region Code of Practice for Drainage Works. A taking in charge plan is provided by the Architect for the DCC lands, Wilson Architecture.

- **Detail of Surface water discharge rate agreed in consultation with DCC Drainage Division - Greenfield run off rate in accordance with the requirements set out in the Greater Dublin Strategic Drainage Study or two litres per second per hectare as current Policy of DCC Drainage Division shall be applied.**

Response:

Surface water Discharge Rate:

The surface water discharge rate has been calculated in accordance with the GSDSDS, Criterion 4, River Flood Protection, wherein it is stated that runoff should be limited to either Qbar or 2 l/s/ha, whichever is the greater.

For the Belcamp site, there is extensive boulder clay and infiltration/soakaway tests have yielded no effective soil permeability. Waterman Moylan asked Site Investigations Ltd., who conducted all ground investigations for the site, to recommend an appropriate SOIL value. This was confirmed as a SOIL value of 4. The Qbar calculations below are from section 3 of the Engineering Assessment report, Appendix B.

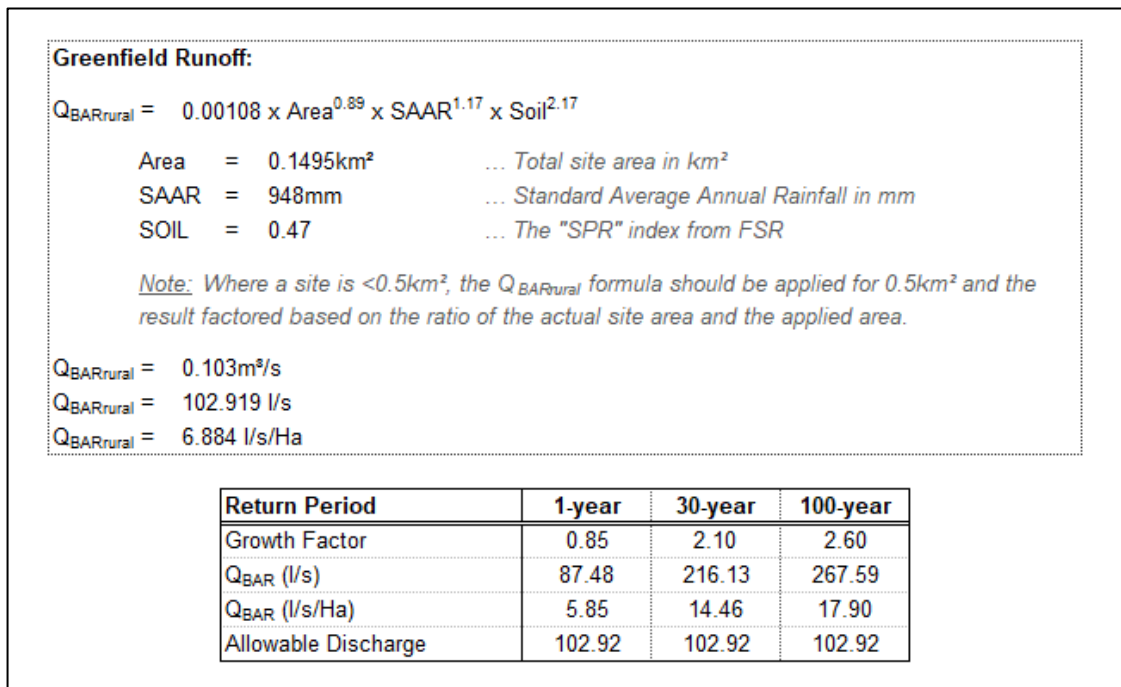


Figure 5 | DCC Lands Surface Water Outfall Calculation (Appendix B, Engineering Assessment Report)

From the above, The allowable outflow from the DCC lands with an area of 14.95 ha, with hardstanding of 32% and SOIL value 4, is calculated at 103 l/s.

- DCC drainage construction standards in accordance to the Greater Dublin Regional Code of Practice shall be applied to all external public spaces, to ensure they are constructed to the required standard, to accommodate any future needs for surface water infrastructure to be 'taken in charge' by DCC.**

Response:

All drainage construction details in the Engineering Details drawings are to the Greater Dublin Region Code of Practice for Drainage Works, and to standards for taking in charge.

- Detailed proposals for the proposed Riparian Corridor shall be agreed in writing with the Water Framework Directive Unit including the width of the corridor, quality and quantity of the Natural Water Retention measures proposed prior to discharge to River Mayne etc.**

Response:

The riparian corridor proposals were discussed with Maria Treacy of DCC Water Services in correspondence dating from 30 June 2021 and earlier. Detail on the corridor and path finishes were requested.

The main cyclist / pedestrian path is to the south of the paths for cyclists and pedestrians are provided with 80mm of asphalt and concrete pencil kerb edgings, as per DCC's cycleway specification. A minimum width of 3m is proposed, with the main pedestrian and cycle route south of the Mayne as a 5m reservation, with tar finish as per DCC's cycleway specification noted above.

Existing crossing points over the river Mayne to the west of the lakes will be reused and upgraded to accommodate 3m cyclist / pedestrian paths over the river. One new pedestrian / cyclist crossing point is proposed to the western boundary of the site. The new Belcamp Parkway distributor road will form a new vehicular crossing over the river just west of the lakes. One new crossing point east of the lakes is proposed as a box culvert, similar to the existing culverts that are to the west of the lakes. All of these crossing points are detailed on the Engineering Drawings.

A structure free riparian corridor of 25m has been provided each side of the Mayne River, with only paths and culverts proposed within this envelope. In most places a more generous corridor is provided, exceeding 25m either side of the bank edge, and a minimum of 25m either side of the river centreline is provided throughout.

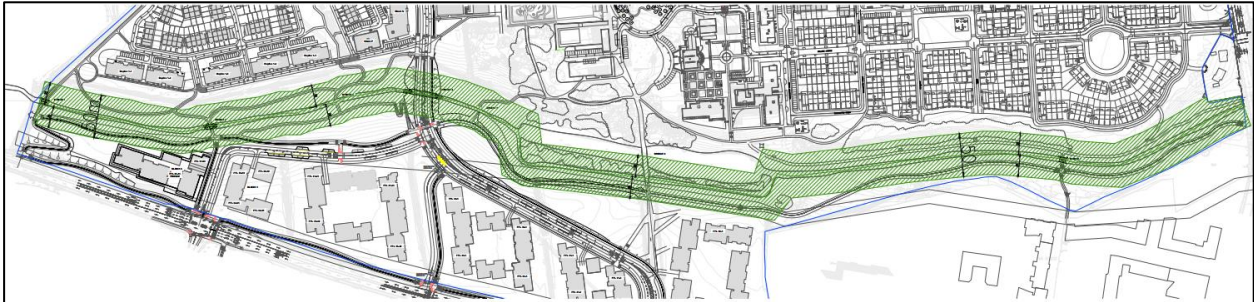


Figure 6 | Riparian Corridor, 25m either side of river centreline, at minimum

4. Responses to Engineering Items Raised in Fingal Planning Authority Written Opinion Report

Section 4 provides a summary of Fingal County Council's written opinion report (engineering items) with our response to each item provided below.

4.1 Comments from Fingal County Council Roads & Transportation Department

- ***With regard to the Transport Study submitted, it appears that there are a number of junctions that experience capacity issues in the future design year scenarios. It is not clear from the information provided what stress testing if any has been incorporated into the assessment. This needs clarity;***

Response:

Modelling and Stress testing of these junctions are provided in the accompanying Sustainable Transport Strategy Report prepared by SYSTRA. Further modelling is included in Section 8 of the accompanying Traffic and Transport Assessment.

- ***A clearer breakdown of the parking provision for each of the Council Areas would be helpful for a better overview of the parking arrangements for the proposed development;***

Response:

Refer to Sections 5, 6 and 7 in the accompanying Travel Plan for a clear breakdown of the parking provision across the development. A Car Parking Strategy Report has also been prepared and accompanies this submission, setting out the proposed strategy including a breakdown of the proposed parking for each house, duplex block, and apartment block.

- ***Road Safety Audits should be carried out as part of the proposed development at the relevant stages as outlined in current edition of Transportation Infrastructure Ireland guidelines GE-STY-1027;***

Response:

An external Quality Audit, including a Stage 1 Road Safety Audit, was carried out by Bruton Consulting Engineers and is discussed in Section 3 of the accompanying DMURS Report and Statement of Design Consistency. The entire Quality Audit is included as an Appendix to the DMURS Report and Statement of Design Consistency.

- ***A swept path analysis of traffic movements within the proposed development particularly the secondary roads and shared surface areas that account for service vehicles and emergency vehicles should be provided. Care should be taken to ensure that the turning paths do not overrun parking areas, footpaths or areas of public space;***

Response:

Please refer to the accompanying Waterman Moylan drawings 19-114-P1134, P1135 and P1140 for swept path analysis.

- ***All the residential parking spaces should include EV charging points. A minimum of 10% of the residential parking spaces should have EV charging points from completion of the proposed development with all ducting and services provided as part of the proposed development to facilitate non-disruptive retro fitting of EV charging points for all of the***

remaining residential parking spaces. Details of the location and number of charging points should be provided with the main application;

Response:

All of the private residential parking spaces throughout the development are to be provided with Electric Vehicle (EV) charging points, with a minimum of 10% of the public/visitor parking spaces to be fitted with charging points from completion of the proposed development and with all ducting and services provided as part of the proposed development to facilitate non-disruptive retrofitting of EV charging points for all of the remaining parking spaces.

Refer to accompanying drawings submitted by Conroy Crowe Kelly and Wilson Architects.

- ***Bicycle parking should comply with the National and Planning Guideline requirements given the reduced parking provision for the proposed development. There is a significant discrepancy between the proposed quantum and the requirements. This should be addressed as part of the formal application.***

Response:

the Department of Housing, Local Government and Heritage document “*Sustainable Urban Housing: Design Standards for New Apartments*” states that in order to apply and justify the use of a reduced car parking ratio, new developments must be comprehensively equipped with high quality cycle parking and storage facilities for residents and visitors. This document recommends a general minimum standard of 1 cycle storage space per bedroom with a visitor parking standard of 1 space per 2 residential units.

It is proposed to provide ample cycle parking over and above the requirements set out in the Design Standards for New Apartments, with 5,394 bicycle parking spaces proposed in total throughout the site. Refer to Section 3.1.2 of the accompanying Car Parking Strategy, which sets out the required and proposed cycle parking broken down block by block.

Refer also to section 5 and 7 in the accompanying Travel Plan.

4.2 Comments from Fingal County Council Water Services Department

An internal Planning Report was prepared by Darragh Sheedy dated 21 October 2021, and the comments have been copied out below, as follows:

Foul Sewer: Acceptable

The applicant has submitted a Pre-Connection Enquiry Form to IW (CDS20001888) and received a response letter dated 23 rd April 2020 for 4,651 units. The letter confirms the feasibility of the wastewater connection of the proposed development to the IW foul drainage network, without the need for any upgrade. The applicant is requested to provide details of the necessary Statement of Design Acceptance with the full application.

1. ***The foul sewerage should comply with:***
 - a) ***IW Wastewater Infrastructure Standard Details (IW-CDS-5030-01)***
 - b) ***IW Code of Practice (IW-CDS-5030-03)***

Response:

The foul water drainage proposals have been designed in accordance with the Irish Water Code of Practice for Wastewater Infrastructure and with the Irish Water Standard Details. A Statement of Design Acceptance was received from Irish Water in April 2022 and is appended to the accompanying Engineering Assessment Report.

Water Supply: Acceptable

The applicant has submitted a Pre-Connection Enquiry Form to IW (CDS20001888) and received a response letter dated 23 rd April 2020 for 4,651 units. The letter confirms the feasibility of the water connection of the proposed development to the IW water network, without the need for any upgrade. The offer includes certain conditions that should be considered. The applicant is requested to provide details of the necessary Statement of Design Acceptance with the full application.

1. ***The water infrastructure should comply with:***
 - a) ***IW Water Infrastructure Standard Details (IW-CDS-5020-01)***
 - b) ***IW Code of Practice (IW-CDS-5020-03)***

Response:

The proposed water supply network has been designed in accordance with the Irish Water Code of Practice for Water Supply Infrastructure and with the Irish Water Standard Details. A Statement of Design Acceptance was received from Irish Water in April 2022 and is appended to the accompanying Engineering Assessment Report.

Surface Water: Acceptable

The site subject is a greenfield site that drains to the into the Mayne River. The surface water proposal is slit into tree sperate catchments that drain to the south via a series of SuDS measures into the Mayne River. The general strategy follows the natural characteristics and topography of the site and is acceptable. Proposed SuDS measures include green roofs, permeable paving, rain gardens, bioretention systems, tree pits, swales, detention basins, and attenuation lake. The development site incorporates green roofs on number of the apartment blocks. The inclusion of Green Roofs is a welcome addition with regards surface water. The inclusion of green roofs also provides a wide range of benefits that include urban cooling and combating the urban heat island effect, biodiversity, air quality, health and wellbeing, noise reduction, and potential for carbon sequestration. Their inclusion should not only be measure with regards the contribution to surface water runoff. The applicant is requested to clearly outline the extent of green roofs proposed and is encouraged to maximise the usage in accordance with Objective SW06 of the Fingal Development Plan which seeks to encourage the use of Green Roofs particularly on apartment, commercial, leisure and educational buildings. In summary, the surface water proposal is acceptable.

Response:

Noted. The extent of green roofs and details of the other SuDS measures, including permeable paving, rain gardens, bioretention systems, tree pits, swales, detention basins, and attenuation lakes, are outlined in Section 3 of the accompanying Engineering Assessment Report and drawings 19-114-P2310 to P2320.

Flood risk: Acceptable

A commensurate flood risk assessment has been prepared by Waterman Moylan Consulting Engineers. In accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities, the proposed development is considered to be a highly vulnerable development. There are area of the overall land holding at risk of flooding and identified in Flood

Zone A & B. These areas have been avoided. The residential units are located in its entirety within Flood Zone C (ie <0.1% AEP).

Response:

Noted. Refer to the accompanying Flood Risk Assessment Report.

UK and Ireland Office Locations

