

19 SUMMARY OF MITIGATION MEASURES

19.1 INTRODUCTION

This Chapter of the EIAR collates and summarise the mitigation measures recommended for each of the environmental topics examined in Chapters 5 – 18 of this EIAR.

These mitigation measures and any associated monitoring comprise what would be implemented during the Construction and Operational Phase to reduce the potential for significant adverse impact of the proposed development on the environment.

This chapter does not expand on the reasoning or expected effectiveness of the proposed mitigation or monitoring measures. For such descriptions, we refer to each of the individual chapters of the EIAR.

A number of the recommended mitigation measures would be expected to be required as a condition of any grant of permission by Louth County Council.

19.2 PROPOSED MITIGATION MEASURES

19.2.1 Population and Human Health (Chapter 5)

Construction Stage

Any perceived nuisance impacts on the immediate local population will be short-term in nature due to the length of the construction process for the Proposed Development. The remedial and mitigation measures to address the potential effects on population and human health from the Proposed Development have been assessed within the corresponding chapters of the EIAR.

Businesses and Residences

The construction contractor will establish a feedback mechanism for residents to report any concerns or issues related to construction activities. The construction contractor will engage with the community to address concerns and provide updates on mitigation efforts.

Landscape Amenity and Tourism

As outlined in Chapter 13 (Landscape and Visual Impact), consideration of landscape and visual aspects was integral to the design and layout of Proposed Development. The design intent is to integrate the Proposed Development into its surrounding environment. This will be achieved through the retention of existing vegetation and hedgerows where possible, supplemented by additional screen planting to enhance visual buffers and promote biodiversity. These measures will also support the creation of habitats for local bird and wildlife species.

Mitigation measures have been embedded in the design from the outset to minimise potential visual and landscape impacts, ensuring that the development responds sensitively to its setting. The layout and design of the buildings in relation to the existing landscape, together with the retention of a significant amount of mature tree planting at the site boundaries and within the site, are key considerations in the landscape design process. A number of specific mitigation measures have been incorporated at the design stage and are listed in Section 13.10.1.1 of Chapter 13.

As noted in Section 13.10.1.2, mitigation of potential construction effects will follow industry best practice standards, including the use of appropriate site perimeter hoarding. Additional mitigation measures during the construction phase will focus on the implementation of site management procedures, such as the control of site lighting, appropriate storage of materials, strategic placement of site offices and compounds, management of vehicular access, and effective dust and dirt control measures.

Land and Water Emissions

The mitigation measures outlined in Chapter 7 (Land, Soils and Geology) and Chapter 8 (Water) will be implemented during construction to protect human health and populations. Both chapters set out specific measures addressing activities such as topsoil stripping, subsoil excavation, weather

conditions, surface water runoff, dewatering, accidental spills and leaks, and protection of the geological environment.

Additionally, Chapter 8 includes mitigation measures for the discharge of wash water from concrete trucks, improper discharge of foul drainage from the contractor's compound, and potential cross-contamination of the potable water supply to the construction compound.

Air Emissions

In order to mitigate the potential dust-related health impacts during the construction phase, dust related mitigation measures have been provided in Chapter 9 (Air Quality) of this EIAR. The mitigation measures draw on best practice guidance from Ireland (DCC (2018), DLRCC (2022)), the UK (IAQM (2024), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). The measures relate to communications, site management, preparation and maintenance, operating vehicles and machinery, waste management, demolition, earthworks, construction, trackout and monitoring.

Noise and Vibration Emissions

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid exceedance of the adopted construction noise threshold values at the nearest NSLs. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 will be complied with. Further details on best practice noise and vibration measures are provided in Chapter 12 (Noise and Vibration) Section 12.6.1.1 and relate to selection of quiet plant, noise control at source, screening, liaison with the public and project phasing programme.

Traffic and Transportation

With reference to Chapter 14 (Material Assets – Transport), Section 14.6.1.1, a Construction Traffic Management Plan will be implemented during the construction phase to minimise impacts on the surrounding road network. Traffic and transport mitigation measures will include the provision of appropriate on-site parking and compound areas to prevent overflow onto surrounding roads, the use of shared transport such as vans and minibuses to reduce worker trip numbers, and the scheduling of deliveries throughout the day to limit the volume of HGV movements during peak hours.

Major Accident Hazards and/or Natural Disasters

There is no specific mitigation measures required during construction in respect of Major Accident Hazards and Disasters.

Operational Stage

Businesses and Residences

Once construction works are completed, no specific mitigation measures are required for local businesses and residences.

Amenity and Tourism

As outlined in Chapter 13 (Landscape and Visual Impact), Section 13.10.1.3, mitigation has been integrated into the design process through a strong emphasis on design quality. Measures have been incorporated across multiple design iterations to minimise visual impact and ensure the Proposed Development integrates sensitively with its surroundings. These measures include consistent and effective maintenance of hard and soft landscape areas (in particular entrance areas, open space areas and gathering spaces), which, together with quality site and building management, are key to avoiding or minimising negative landscape and visual impacts arising from the operation of the proposed development.

The landscape contractor and future landscape maintenance providers will be required to adhere to the project "Landscape Specification and General Maintenance" standards.

Land and Water Emissions

As noted in Chapter 7 (Land, Soils & Geology), no specific mitigation measures are required during the operational phase, as no further impacts on land, soils, or the geological environment are anticipated.

In accordance with Chapter 8 (Water), several best practice measures are proposed to safeguard human health and populations during the operational phase of the Proposed Development. To prevent potential contamination from surface water runoff originating from roads and hardstanding areas, a Sustainable Drainage System (SuDS) will be implemented. The SuDS measures include:

- Permeable paving in driveway areas;
- Routing of roof runoff to the surface water network via porous aggregates beneath permeable driveways;
- Drainage of road runoff to swales for treatment and runoff reduction, where feasible;
- Attenuation of 1-in-100-year storm events with a 20% allowance for climate change;
- Installation of flow control devices (Hydrobrake or similar) to limit surface water discharge to greenfield runoff rates at outfalls to the Cunnigar Stream and Broad and Castletown Stream;
- Treatment of surface water discharge via Class 1 fuel/oil separators, sized in accordance with permitted discharge limits.

Air Emissions

With reference to Chapter 9 (Air Quality), no additional mitigation measures are required for the operational phase of the Proposed Development. As the impact of operational traffic on air quality is predicted to be **not significant** in the **long-term**.

Noise and Vibration Emissions

With due consideration as part of the detailed design process, this approach will result in the site operating within the constraints of the best practice guidance noise limits that have been adopted as part of the detailed assessment included in Chapter 12 (Noise and Vibration). No further mitigation is required.

Changes to traffic flows will result in an imperceptible to not significant increase in noise level within the surrounding environment. Therefore, no mitigation measures are necessary.

Traffic and Transportation

With reference to Chapter 14 (Material Assets – Transport), Section 14.6.1.2, a package of integrated mitigation measures has been identified to offset the additional local demand that the Proposed Development may generate as a result of the forecast increase in vehicle movements by future residents. These measures, discussed in detail in Chapter 14, include a parking management strategy, mobility management initiatives, infrastructure improvements, and car-sharing provisions.

Major Accident Hazards and/or Natural Disasters

Once construction works are completed there are no specific mitigation measures required in respect of Major Accident Hazards and Disasters.

19.2.2 Biodiversity (Chapter 6)

Construction Stage

In addition to mitigation measures outlined elsewhere in the EIAR, the following measures will be implemented to protect biodiversity:

- An Ecological Clerk of Works (ECow) will be appointed to oversee the construction phase and to oversee the implementation of all mitigation including compliance with Wildlife Acts

and Water Pollution Acts and ensure that biodiversity within the site and neighbouring areas, including mammals, birds, bats and watercourses, will not be impacted.

- Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August). If removal is required during this season the removal of woody material will be carried out under the supervision of an ecologist. If nesting birds are present NPWS will be contacted, and removal will be subject to conditions outlined by NPWS.
- The full suite of mitigation measures as outlined in the accompanying Natura Impact Statement (NIS) should be implemented to minimise the risk of significant effects on the Castletown Estuary and Dundalk Bay, and the Natura 2000 sites located there. These include measures outlined in the CEMP in relation to surface water runoff and silt/petrochemical interception.
- During the construction phase, lights should be incorporated onto cranes (if required) illuminating their entirety to reduce collision risk to birds from cranes and other relevant equipment/structures.
- The construction area will be marked out prior to the commencement of construction. All construction work will be confined strictly to the construction area. Any construction works required outside the construction area will require prior approval from the ER.
- Lighting during construction should not spill outside the proposed development.
- The adjacent watercourses along the perimeter of the site will be maintained in their current states and sufficient measures implemented and monitored to prevent downstream impacts on Dundalk Bay SPA during construction and operation.
- The effectiveness of the proposed mitigation will be monitored throughout the construction period.
- A preconstruction survey for mammals will be carried out to determine activity levels at the sett, whether any new badger setts have been established, and whether any additional protected mammal species have become established within the site since the original survey was carried out.
- A minimum 30m exclusion zone around the active badger sett will be marked out and sign-posted prior to construction. No personnel (excluding ECoW and relevant bodies), machinery, equipment, materials or works (ground, landscaping or otherwise) will be permitted within the exclusion zone.
- Construction operations outside of daylight hours should be kept to a minimum in order to minimise disturbance to fauna in addition to roosting bird species.
- Silt interception should be integrated into all surface water run-off during construction prior to discharge off site.
- Large pipes (> 300mm) laid on the ground will be sealed at both ends.
- Excavations will be carried out leaving an escape route/slope for mammals.

Operational Stage

The biodiversity value of the site would be expected to improve as the landscaping matures. The proposed development has a sustainable drainage strategy and detailed landscape strategy and mitigation during operation will be carried out as outlined elsewhere in the EIAR. The following operation mitigation measures will be carried out:

- A project ecologist will be appointed to oversee completion of all landscape, lighting and drainage works.

- Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts and County Council requirements.

19.2.3 Land, Soils, Geology & Hydrogeology (Chapter 7)

Construction Stage

Stripping of Topsoil

Stripping of topsoil will be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development.

At any given time, the extent of topsoil strip (and consequent exposure of subsoil) will be limited to the immediate vicinity of active work areas.

Topsoil stockpiles will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains. These stockpiles will be monitored throughout the construction phase.

Topsoil stockpiles will also be located so as not to necessitate double handling.

Excavation of Subsoil Layers

The design of road levels and finished floor levels has been carried out in such a way as to minimise cut/fill type earthworks operations.

The duration that subsoil layers are exposed to the effects of weather will be minimised. Disturbed subsoil layers will be stabilized as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping).

Similar to stripped topsoil, stockpiles of excavated subsoil material will be protected for the duration of the works. Stockpiles of subsoil material will be located separately from topsoil stockpiles. These stockpiles will be monitored throughout the construction phase. Monitoring of ground conditions and stability of excavations will be monitored on an on-going basis.

Measures will be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection and earth bunding adjacent to open drainage ditches).

Weather Conditions

Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion and silt generation. The approach of extreme weather events will be monitored to inform near-term operational activities.

Surface Water Runoff

Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate. Monitoring of these sediment control measures will be undertaken throughout the construction phase.

Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.

On-site settlement ponds are to include geotextile liners and rippapped inlets and outlets to prevent scour and erosion.

Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed on site.

Surface water discharge points during the construction phase are to be agreed with Louth County Council's Environment Section prior to commencing works on site.

Water Pumped from Excavations

Rainwater pumped from excavations is to be directed to on-site settlement ponds.

Groundwater pumped from excavations is to be directed to on-site settlement ponds.

On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion. Monitoring of same will be undertaken.

Surface water discharge points during the construction phase will be agreed with Louth County Council prior to commencing works on site.

Construction Traffic

Earthworks plant and vehicles delivering construction materials to site will be confined to predetermined haul routes around the site.

Vehicle wheel wash facilities will be installed in the vicinity of any site entrances and road sweeping implemented as necessary in order to maintain the road network in the immediate vicinity of the site. The cleanliness of the adjacent road network will be monitored throughout the construction phase.

Dust suppression measures (e.g. dampening down) will be implemented as necessary during dry periods.

A construction traffic management plan will be prepared by the contractor prior to any works commencing on site.

Accidental Spills and Leaks

In order to mitigate against spillages contaminating underlying soils, all oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area.

Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets and outlets (when not possible to carry out such activities off site).

A response procedure shall be put in place to deal with any accidental pollution events and spillage kits shall be available and construction staff will be familiar with the emergency procedures and use of the equipment.

Monitoring of all fuel / oil storage areas will be undertaken and spill kits will be available on site.

Geological Environment

A more detailed Ground Investigation will be undertaken prior to construction to verify the Preliminary Ground Investigation and where possible the works will be designed to minimize the bedrock excavation required. At any given time, the extent of exposed bedrock will be limited to the immediate vicinity of active work areas. Where bedrock is encountered, it will be crushed, screened and tested for use within the designed works to reduce the volume of material required to leave site. This will also reduce the volume of material to be imported to the site.

With the consideration of mitigation measures the construction phase of the proposed development will likely have an overall Neutral, Short Term, imperceptible residual impact.

Operational Stage

For the operational phase no specific mitigation measures are proposed as there will be no further impact on land, soils and the geological environment.

Character of potential impact	Mitigation measure
Construction Phase	
Stripping of topsoil	Stripping of topsoil will be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development.
Excavation of subsoil	The need to excavate subsoil layers has been minimised as the proposed levels have been

layers	designed to follow the natural
Materials imported to site for use as fill	Fill material will be natural stones sourced from locally available quarries or materials that have been approved as by-products by the EPA
Construction Traffic	Earthworks plant and vehicles delivering construction materials to site will be confined to predetermined haul routes around the site and designated delivery areas. Vehicle wheel wash facilities will be installed in the vicinity of any site entrances and road sweeping implemented as necessary in order to maintain the road network in the immediate vicinity of the site.
Accidental Spills and Leaks	Response procedure will be put in place to deal with any accidental pollution events. Refuelling and servicing of construction machinery will take place in a designated hardstand area (when not possible to carry out such activities off site).

19.2.4 Water (Chapter 8)

Construction Stage

- A Construction and Environmental Management Plan (CEMP) will be submitted prior to works commencing on site and the approved CEMP will be implemented by the contractor during the construction phase. Site inductions will include reference to the procedures and best practice as given in the CEMP.
- All water pumped from excavations will be directed to on-site settlement ponds for treatment to reduce pollution to acceptable levels before being discharged to the local environment at a controlled rate.
- Surface water runoff from areas stripped of topsoil, from the construction compound, and from access tracks will be directed to on-site settlement ponds for treatment to reduce pollution to acceptable levels before being discharged to the local environment at a controlled rate.
- Weather conditions and seasonal weather variations will be taken into account when planning stripping of topsoil and excavations, with an objective of minimizing soil erosion and silt runoff. Short term weather forecasts will also be taken into account.
- In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstand area in the construction compound. Refuelling and servicing of construction machinery will take place in a designated hardstand area which will be remote from any surface water inlets and outlets (where it is not possible to carry out such activities off site). Hydrocarbon spill kits will be available and to hand for refuelling crews in the event of any spills.
- Concrete batching will take place off site and wash out of concrete chutes will take place at designated locations in the site and the washout of truck drums will take place after back at the batching plant to minimise pollution release within the subject site.
- Discharge from any vehicle wheel wash areas will be directed to on-site settlement ponds for treatment prior to discharge to the local environment.
- Groundwater pumped from excavations is to be directed to on-site settlement ponds for treatment prior to discharge to the local environment.

Character of potential impact	Mitigation Measure
Construction Phase	

Increased silt levels in surface water runoff and rainwater pumped from excavations	Extent of topsoil strip (and consequent exposure of subsoil) will be limited to the immediate vicinity of active work areas. Weather conditions will also be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion.
Accidental spills and leaks	Response procedure will be put in place to deal with any accidental pollution events
Discharge of wash water from concrete trucks	Concrete batching and wash down / wash out of concrete trucks will take place off site.
Improper discharge of foul drainage from contractor's compound	Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established
Cross contamination of potable water supply to construction compound	The contractor shall obtain a temporary connection from the existing water supply network along Trim Road in accordance with Irish water requirements for same

Operational Stage

The design of proposed site levels (roads, etc.) was completed to replicate existing surface contours, break lines etc., therefore replicating existing overland surface water flow paths, to minimise changes to the site characteristics and not concentrating water run-off in any particular location(s).

Surface water runoff from the site will be attenuated to the existing greenfield runoff rate as outlined in the Greater Dublin Strategic Drainage Study (GSDS). Surface water discharge rates will be controlled by Hydrobrake type vortex flow control devices, located at all attenuation areas, in conjunction with attenuation storage in all locations.

The design of the proposed development incorporates the following SuDS surface water treatment train solutions, and these SuDS features will need ongoing maintenance in line with what is recommended in the CIRIA SuDS manual.:

- Permeable paving in driveway areas.
- Surface water runoff from roofs will be routed to the proposed surface water pipe network via the porous aggregates beneath permeable paved driveways.
- Surface water runoff from roads, where allowable, will drain to swales for treatment and runoff reduction.
- Attenuation of the 100-year return event storms with a 20% allowance for climate change.
- Installation of flow control devices (Hydrobrake or similar) limiting surface water discharge from the site to greenfield runoff rates at the outfalls to the Cunnicar stream and Broad and Castletown stream.
- Surface water discharge to pass via Class 1 fuel / oil separator (sized in accordance with permitted discharge from the site).
- Non-Return Valve fitted at outlet locations to prevent any water from both streams draining back into the systems.

Character of potential impact	Mitigation Measure
Operational Phase	
Contamination of sensitive receptors during operational phase due to surface water network.	The proposed surface water drainage infrastructure has been designed in accordance with the relevant guidelines i.e., Greater Dublin Strategic Drainage Study (GSDS) and OPW Flood Risk Assessment Guidelines. Any other future development in the vicinity of the site would have to be similarly designed in relation to permitted surface water discharge, surface water attenuation and SuDS

Risk of localised flooding	Proposed drainage system to be maintained on a regular basis to reduce the risk of a blockage. Overland flow routes directed towards open space areas in the event of exceedance.
Failure of SuDS features	Regular maintenance of SuDS features in line with recommendation from the CIRIA SuDS manual to reduce the risk of flooding within the development.

19.2.5 Climate (Air Quality) (Chapter 9)

Construction Stage

The proposed development has been assessed as having a high risk of dust soiling impacts and a low risk of dust related human health impacts during the construction phase as a result of earthworks, construction and trackout activities (see Section 9.7.1). Therefore, the following dust mitigation measures shall be implemented during the construction phase of the proposed development. These measures are appropriate for sites with a high risk of dust impacts and aim to ensure that no significant nuisance occurs at nearby sensitive receptors. The mitigation measures draw on best practice guidance from Ireland (DCC, 2018), the UK (IAQM (2024), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). These measures will be incorporated into the overall Construction Environmental Management Plan (CEMP) prepared for the site. Mitigation measures for high-risk sites as recommended by IAQM construction dust guidance are detailed in

Mitigation Measure	Action
Communications	
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Highly Recommended
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information	Highly Recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in the IAQM Guidance. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	Highly Recommended
Site Management	
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.	Highly Recommended
Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.	Highly Recommended
Monitoring	

Mitigation Measure	Action
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.	Highly Recommended
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked	Highly Recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Highly Recommended
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	Highly Recommended
Preparing and Maintaining the Site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period	Highly Recommended
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Highly Recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	Highly Recommended
Cover, seed or fence stockpiles to prevent wind whipping.	Highly Recommended
Operating vehicle/machinery and sustainable travel	
Ensure all vehicles switch off engines when stationary – no idling vehicles.	Highly Recommended
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 24 kmph on surfaced and 16 kmph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)	Highly Recommended
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	Highly Recommended
Operations	
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems	Highly Recommended
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended

Mitigation Measure	Action
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended
Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	Highly Recommended
Waste management	
Avoid bonfires and burning of waste materials.	Highly Recommended
Measures Specific to Demolition	
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible to provide a screen against dust	Highly Recommended
Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Highly Recommended
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	Highly Recommended
Bag and remove any biological debris or damp down such material before demolition.	Highly Recommended
Measures Specific to Earthworks	
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable	Desirable
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable.	Desirable
Only remove the cover in small areas during work and not all at once.	Desirable
Measures Specific to Construction	
Avoid scabbling (roughening of concrete surfaces) if possible.	Desirable
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	Highly Recommended
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Desirable
For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.	Desirable
Measures Specific to Trackout	
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Highly Recommended
Avoid dry sweeping of large areas.	Highly Recommended
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Highly Recommended
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Highly Recommended
Record all inspections of haul routes and any subsequent action in a site logbook.	Highly Recommended

Mitigation Measure	Action
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsters and regularly cleaned.	Highly Recommended
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Highly Recommended
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	Highly Recommended
Access gates to be located at least 10 m from receptors where possible.	Highly Recommended

Table 119.1 Construction Phase Dust Mitigation Measures. (Source: Adapted from IAQM, 2024)

Operational Stage

The impact of the operational traffic associated with proposed development on air quality is predicted to be **not significant** with respect to the operational phase in the long term. Therefore, no site-specific mitigation measures are required.

19.2.6 Climate (Climate Change) (Chapter 10)

Construction Stage

Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- Ensure all plant and machinery are well maintained and inspected regularly.
- Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. A construction waste management plan will be implemented to minimise construction waste sent to landfills. Recycling of materials will be promoted to and reduce the environmental footprint of the site.
- Sourcing materials locally will be prioritised. This will help to reduce transport related CO₂ emissions and helps support local suppliers, further promoting economic sustainability.
- Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. For example, a 30% minimum clinker replacement in cement may be utilised in line with the requirements for public bodies.

In terms of impact on the proposed development due to climate change, during construction the Contractor will be required to mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will also be required to mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and this will require consideration during construction. During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.

Operational Stage

A number of mitigation measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. A Climate Action and Energy Statement was prepared by Fallon Design M&E Engineering in relation to the proposed development.

The Climate Action and Energy Statement states that the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2022 Part L requirements.

The residential units will aim to achieve an A rated Building Energy Ratio (BER) in line with the NZEB requirements. The dwellings shall include several energy conservation measures to achieve a high energy rating for each dwelling as outlined in the Climate Action Energy Statement:

- Exceed minimum U-Value standards where possible
- Achieve air tightness standards of 3 m³/m²/hr
- Thermally model all thermal bridging details to achieve thermal bridging factors of less than 0.15 W/m²K
- Install high efficiency gas fired boilers and time and temperature zone control in all dwellings
- Install centralized mechanical ventilation systems to ensure adequate ventilation rates are achieved in the dwelling which maximize the benefits of the airtight construction.
- Provide roof high efficiency heat pump technology to meet the renewal requirements and low running costs.

The proposed approach to achieving Part L Compliance for the non-residential building (buildings other than dwellings) will be as follows:

- Exceed minimum U-Value standards where possible.
- Achieve air tightness standards of 5 m³/m²/hr
- Adopt Acceptable Construction Details to limit thermal bridging.
- Analyse the proposed glazing proportions and orientations and select appropriate solar control glazing and/or shading devices to reduce the solar gain to the spaces to an appropriate level.
- Provide roof mounted PV panels to provide the required renewable energy contribution.

The above measures will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development.

Some measures have been incorporated into the design of the development to mitigate the impacts of future climate change. For example, traditional drainage features and SuDS/ nature-based SuDS features, including the attenuation of surface water runoff and storage of runoff from a 1% AEP event to avoid potential flooding impacts due to increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the proposed development to climate change (see Section 10.5.2).

19.2.7 Climate (Daylight and Sunlight) (Chapter 11)

No significant adverse effects will be experienced from the completion of the proposed development. No mitigation measures will be required.

19.2.8 Air (Noise & Vibration) (Chapter 12)

Construction Stage

The assessment detailed in Section 12.5.3.1 has determined that construction activities can typically operate within the adopted construction noise threshold levels at the closest off-site NSLs when carried out at distances greater than 40m from the construction works. Predicted construction noise levels do exceed the threshold during the worst case assessment at NSLs within 100m of the site boundary.

Vibration levels at the closest neighbouring buildings are expected to be orders of magnitude below the limits set out in Table 12.4 to avoid any cosmetic damage to buildings.

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid exceedance of the adopted construction noise threshold values at the nearest NSLs. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 will be complied with. This includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- Selection of quiet plant;
- Noise control at source;
- Screening;
- Liaison with the public, and;
- Project programme.

Further comment is offered on these items in the following paragraphs. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise monitoring, where required.

Selection of Quiet Plant

This practice is recommended in relation to static plant such as compressors and generators. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item will be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action will be to identify whether said item can be replaced with a quieter alternative.

Noise Control at Source

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control at source. This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.

The following best practice migration measures will be considered:

- Site compounds will be located away from noise sensitive boundaries within the site constraints.
- The use lifting bulky items, dropping and loading of materials within these areas will be restricted to normal working hours.
- For mobile plant items such as cranes, dump trucks, excavators and loaders, maintaining enclosure panels closed during operation can reduce noise levels over normal operation. Mobile plant will be switched off when not in use and not left idling.
- For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system.
- For percussive tools such as pneumatic breakers, a number of noise control measures include fitting muffler or sound reducing equipment to the breaker tool and ensuring any leaks in the air lines are sealed.
- Erecting localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries.
- For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.
- For all materials handling, ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.

- For compressors, generators and pumps, these can be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.
- All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

Screening

Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Standard construction site hoarding (2.4 m in height) with a mass per unit of surface area greater than 7 kg/m² can provide adequate sound insulation.

Liaison with the Public

A designated Community Liaison Officer (CLO) will be appointed to site during construction works. Any noise complaints will be logged and followed up in a prompt fashion by the CLO. In addition, prior to particularly noisy construction activity the CLO will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

Project Programme

The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. If works are in progress on another site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to ensure noise limits are not exceeded due to cumulative activities. This will be reviewed in relation to other potential cumulative works occurring on adjacent construction site in close proximity to noise sensitive properties which have the potential to lead to significant construction noise impacts.

Operational Stage

Additional Traffic on Surrounding Road

During the operational phase of the development, noise mitigation measures with respect to the impact of traffic from the development are not deemed necessary.

Building Services and Plant

Proprietary noise and vibration control measures will be employed as part of the detailed design in order to ensure that noise emissions from building services plant do not exceed the relevant internal noise criteria within Table 12.7 for residential dwellings within the proposed development. In addition, noise emissions should be broadband in nature and should not contain any tonal or impulsive elements.

Considering that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria is achieved within the development, there are no mitigation requirements to control building services and plant at off-site NSLs.

Creche

The creche will operate during daytime hours. No mitigation is required.

19.2.9 Landscape & Visual Impact Assessment (Chapter 13)

Design Stage

Consideration of the impact on landscape and visual aspects has been integral in the design and layout of the scheme as the design proceeded. The design intent is to integrate the Proposed Development into its surrounding environment. This will be achieved by retaining existing vegetation and hedgerows where possible, supplementing with additional screen planting to enhance visual buffers and promote biodiversity. These measures will also support the creation of habitats for local bird and wildlife species. The layout and design of the building's vis a vis the

existing landscape and the retention of a significant amount of mature tree planting at the boundaries and within the site are the main considerations in the landscape design process to minimise negative visual impacts.

A number of mitigation measures have been addressed at design stage including: -

- The landscape proposals in this case have been designed by Gannon and Associates having regard to the provisions of the Development Plan and the LAP. The provision of a high-quality public realm is a key element of this proposal.
- Enhanced boundary treatments with existing trees, hedgerow and water courses to be retained and protected as per the Tree Survey and Constraints Plan prepared by CMK Horticulture & Arboriculture.
- A Woodland Walk riparian buffer zone along Greyacre Road with mitigation measures to protect the Castletown River and downstream designated sites.
- Proposed new green infrastructure networks and the addition of wildlife corridors with proposed native hedgerow and tree line links.
- The proposed development includes areas of public amenity open space (exclusive of private amenity communal open space) for the benefit of future residents as well the wider local community, and to integrate the scheme into the existing landscape. Approximately 5.45Ha of public open space will be provided, which equates to c. 18% of the development site.
- The landscape design draws from the cultural and historical significance of Cú Chulainn's Castle at the Castletown Motte. The zoned open space surrounding it is designed to enhance this existing built heritage feature. In order to preserve its character and setting a buffer of land around the motte has been zoned for open space uses which could be developed as a heritage park. The area will include a network of green spaces with permeable links between each of the spaces.

"In the Heritage Park, the design focuses on a central space featuring a sloped playground and an informal plaza. Pathways were created from this area, weaving through the park with seating, observatory viewpoints, and retaining walls integrated into the layout. The walkway has been designed to follow the sloping topography, winding through the Heritage Park. It provides a route for fitness and also serves as an observation trail, creating connections across the park. The design incorporates seating areas and viewpoints, seamlessly integrating the park with its historical context." g + a Landscape Architecture.



Figure 19.1: Gannon and Associates Proposed Site Masterplan with Landscape Features

Construction Stage

Appropriate measures will be taken to mitigate any potentially adverse construction-related effects on immediately adjoining neighbours. Operation of a well-managed organised and planned construction site, with adequate control of construction traffic and working activity, is key to avoiding or minimising impact. A preliminary Construction Management Plan (CMP) is being submitted with the planning application, which details construction management measures during the construction phase. Other measures shall include:

- Adequate measures to protect existing mature trees including the provision of hoarding / tree protection fencing where there could be damage from delivery vehicles or site vehicles. The Arboricultural Assessment included within the application has been prepared by Mr. Ciaran Keating of CMK Horticulture & Arboriculture. The associated Tree Survey & Constraints Plan to be implemented during the construction phase can be seen in Figure 19.2 below.

- Excavated soil, rubble or rubbish shall not be tipped against any hedgerow, into any ditch or stream nor under the canopy of any tree. No store, cabin or compound shall be erected against any hedgerow, nor under the canopy of any tree. No machinery shall be parked under any tree.
- Use of hoarding for screening works and higher-level webbing on scaffolding to prevent materials falling from a height endangering road and footpath users close to the site.
- Directing site lighting away from surrounding properties.
- Phasing development to reduce impacts on adjoining residential properties.

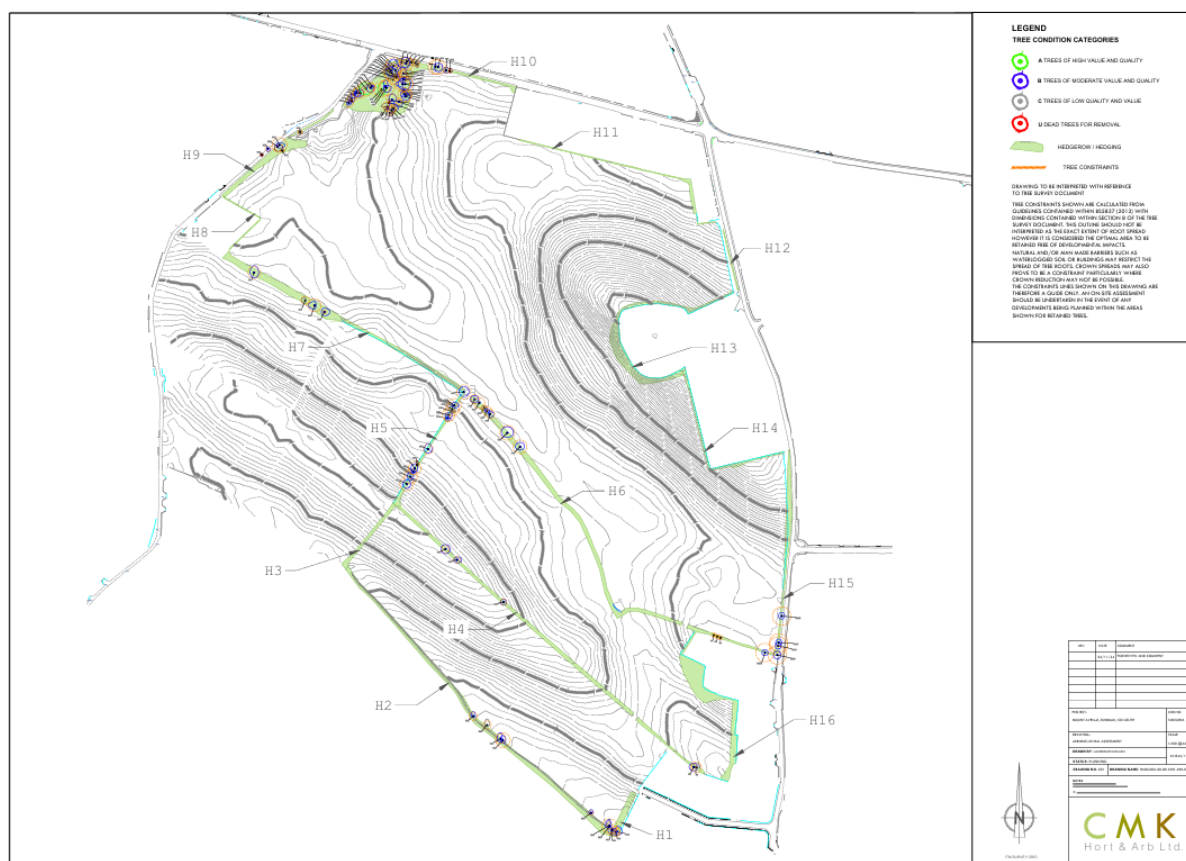


Figure 19.2 CMK Horticulture & Arboriculture Proposed Tree Survey & Constraints Plan

Operational Stage

Consistent and effective maintenance of hard and soft landscape areas, (in particular entrance areas, open space area and gathering spaces) together with quality site and building management are key to avoiding or minimising negative landscape and visual impacts arising from the operation of the proposed development.

The landscape contractor and future landscape maintenance providers will be required to adhere to the project "Landscape Specification and General Maintenance" standards.

Adopting ongoing maintenance and management of hedgerows through the wider site should only be carried out by reputable tree surgeons and works shall be carried out in accordance with BS 3998(2010) Tree Works Recommendations. Long term tree and hedgerow management will be required along the boundaries to ensure that a continual robust and bio-diverse vegetation screening edge is achieved.

In order to provide for the successful establishment of the soft landscape scheme the following defects liability periods post construction and instillation will apply:

The defects liability period shall be twelve months from completion of top soiling and tree, shrub / hedgerow planting. Any of the works found to be defective within this period due to materials or workmanship

19.2.10 Material Assets (Transportation) (Chapter 14)

Construction Stage

A Construction and Environmental Management Plan (CEMP) has been prepared as part of the planning application which incorporates a range of integrated control measures and associated management activities with the objective of minimising the construction activities associated with the development. The following initiatives will be implemented to avoid, minimise and/or mitigate against the anticipated construction period impacts:

- During the pre-construction phase, the site will be securely fenced off/hoarded off from adjacent properties, public footpaths and roads;
- Appropriate on-site parking (temporary parking for the duration of construction works) and compound area will be provided to prevent overflow onto the local network;
- A large proportion of construction workers are anticipated to arrive in shared transport. It is likely that some numbers of the construction team will be brought to/from the site in vans/minibuses, which will serve to reduce the trip generation potential;
- Delivery vehicles to and from the site will be spread across the course of the working day, therefore, the number of HGVs travelling during the peak hours will be relatively low;
- Truck wheel washes will be installed at construction entrances;
- Any specific recommendations with regard to construction traffic management made by Louth County Council will be adhered to;
- Potential localised traffic disruptions during the construction phase will be mitigated through the implementation of industry standard traffic management measures such as the use of traffic signage. These traffic management measures shall be designed and implemented in accordance with the Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks" and "Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition" (2010); and
- Site entrance point/s from the public road will be constructed with a bound, durable surface capable of withstanding heavy loads and with a sealed joint between the access and public highway. This durable bound surface will be constructed for a distance of 10m from the public road.
- Material storage zones will be established in the compound area and will include material recycling areas and facilities;
- 'Way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas;
- Dedicated construction haul routes will be identified and agreed with Louth County Council prior to commencement of activities on-site; and
- On completion of the works, all construction materials, debris, temporary hardstands etc. from the site compound will be removed off-site and the site compound area reinstated in full on completion of the works.

Operational Stage

A package of integrated mitigation measures has been identified to off-set the additional local demand that the proposed residential development at the subject site could potentially generate as a result of the forecast increase in vehicle movements by residents of the scheme. The identified measures and associated timescale for their implementation are summarised below.

- **Parking Management Strategy** - A management regime has been set out which will be implemented by the development's management company to control access to the on-street car parking spaces thereby actively managing the availability of on-street car parking for residents and visitors to the development
- **Management** – A preliminary Mobility Management (MMP) will be compiled (with the aim of guiding the delivery and management of co-ordinated initiatives by the scheme promotor to be implemented upon occupation of the site. The MMP will ultimately seek to encourage sustainable travel practices for all journeys to and from the proposed development.
- **Infrastructure** – Infrastructure measures identified to reduce reliance of private vehicles include the provision of ample secure cycle parking on site, exceeding minimum guidance (SCSG), and ensuring a design which promotes permeability for pedestrians and cyclists to, through and from the development. The lower level of car parking provision for the development will also act as a powerful mobility management measure, ensuring against an overprovision of parking and a resultant over reliance on the private vehicle.
- **Infrastructure** – Junction enhancements have been identified and proposed at both the Castletown Road and Mount Avenue site access junction, including an upgrade to the existing uncontrolled pedestrian crossing on Castletown Road to a protected junction, with the objective of creating a highly permeable environment for pedestrians and cyclists.
- **Car Sharing** – The provision of 2 No. dedicated car share (GoCar and development-owned) spaces at the mobility hub is proposed for the use of the scheme's residents and staff. The availability of these on-site provide a viable alternative to residents needing to own a private vehicle whilst still having access to a car as and when required.

19.2.11 Material Assets (Waste) (Chapter 15)

Construction Stage

The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible. The following mitigation measures are recommended for the construction phase of the Proposed Development regarding waste management:

- Waste materials will be separated at source and will follow the Resource and Waste Management Plan (RWMP) prepared by Awn Consulting (2025a) and Contractor(s) Construction Environmental Management Plan (CEMP);
- Prior to the commencement of the construction phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous;
- A policy of 'as needed' ordering and strict purchasing procedures will be implemented to minimise surplus materials and packaging waste;
- The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment);
- The Contractor will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems and regulatory compliance;
- The waste materials generated during the construction phase will be stored in appropriately sized receptacles and labelled receptacles and transferred offsite for appropriate processing, recycling and recovery;

- Waste materials generated from the construction phase that are unsuitable for reuse or recovery will be separately collected and managed;
- Disposal of construction generated wastes will be considered a last resort and only after recycling or recovery options have been ruled out;
- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the construction phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency;
- It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify LCC and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential effects at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures;
- Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase, in accordance with the RWMP.

These mitigation measures will ensure that the waste arising from the construction phase of the Proposed Development is dealt with in compliance with provisions of the Waste Management Act 1996, as amended, associated Regulations and Litter Pollution Act 1997, and The National Waste Management Plan for a Circular Economy 2024-2030. The mitigation measures will also ensure optimum levels of waste reduction, reuse, recycling and recover are achieved and will promote more sustainable consumption of resources.

The Contractor will have the responsibility to record resource and waste management at the site in line with the RWMP. Some of the principal duties and responsibilities of this role include:

- Report to Project Manager on the management of resources and waste at the site;
- Identify all destinations for resources taken off-site;
- Address end-of-waste and by-product notifications with the EPA, where applicable;
- Maintain full records of all resources (both wastes and other resources) for the duration of the project;
- Delegate responsibility to sub-contractors, where necessary;
- Coordinate with suppliers, service providers and sub-contractors; and
- Prioritise waste prevention and resource salvage.

Operational Stage

The OWMP (AWN, 2025b) sets out how waste generated during the operational phase of the Proposed Development will be stored and collected in order to mitigate any potential effects. Mitigation measures for operational waste management include:

- The allocation of four shared WSAs for the apartment blocks, with individual WSAs provided for each house, duplex, and bungalow unit. One shared WSA has been allocated for the commercial units in the Southern Block, one for the crèche unit, and one for the medical unit. Receptacles for organic waste, mixed non-recyclables (MNR), glass, and dry mixed recyclables (DMR) will be provided in the shared WSAs prior to the first residential or commercial unit being occupied. Each receptacle will be colour coded and clearly labelled to prevent cross-contamination of waste streams;
- Provisions for three-bin storage systems within residential units to facilitate waste segregation at source;
- Provisions for separate small bins in commercial food preparation areas (e.g. kitchens, dish/glass-wash areas, bar areas) to manage increased waste generation and support effective segregation;
- Weekly collection of DMR, MNR, glass, and organic waste by appropriately permitted waste contractors, with all waste transported to registered, permitted, or licensed facilities only. Medical and confidential paper waste will be collected as required; and
- Oversight by the Facilities Management Company, which will be responsible for ensuring proper waste storage and segregation practices, conducting frequent inspections of WSAs, maintaining a weekly register of waste quantities and types collected, and providing waste management guidance to residents and tenants.

Implementation of the OWMP will support high levels of recycling, reuse, and recovery during the operational phase. Recyclable materials will be segregated at source to reduce waste contractor costs and maximise diversion from landfill. The waste strategy ensures that sufficient storage capacity is provided for the estimated waste volumes, and that the design of the WSAs accommodates the required receptacles in accordance with best practice and regulatory guidance.

19.2.12 Material Assets (Utilities) (Chapter 16)

Construction Stage

Please refer to section 8.6 – Water for mitigation measures associated with the surface water treatment.

Mitigation measures proposed in relation to the drainage and water infrastructure include the following:

- A site-specific Construction and Environmental Management Plan (CEMP) will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the CEMP.
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- The construction compound will include adequate staff welfare facilities including foul

drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

- The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.

Relocation of existing ESB infrastructure will be fully coordinated with ESB Networks to ensure interruption to the existing power network is minimized (e.g. agreeing power outage to facilitate relocation of cables). Ducting and / or poles along proposed relocated routes (to be agreed with ESB) will be constructed and ready for rerouting of cables in advance of decommissioning of existing medium and high voltage power lines to minimize outage durations.

As there are no gas networks running through the site relocation will not be necessary.

Character of potential impact	Mitigation measure
Construction Phase	
Damage to existing utilities	Contractor to prepare Method Statement detailing the proposals for works in the vicinity of existing utilities (method statement to be agreed with Project Supervisor Design Process (PSDP)).
Contamination of surface water runoff due to construction activities	Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
Improper discharge of foul drainage from contractor's compound	Foul drainage discharge from the construction compound will be transported off site to a licensed facility until a connection to the public foul drainage network has been established.
Cross contamination of potable water supply to construction compound	The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.
Damage to existing underground and overground infrastructure and possible contamination of the existing systems with construction related materials.	A site-specific Construction & Environmental Management Plan will be developed and implemented during the construction phase. Please refer to DBFL Construction & Environmental Management Plan which has been attached in Appendix 16. 5 .
Potential loss of connection to the Gas Networks Ireland and Telecommunications infrastructure while carrying out works to provide service connections	Connections to the existing gas and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors.

Operational Stage

Please refer to section 8.6 – Water for mitigation measures associated with the surface water treatment.

All new foul drainage pipes will be pressure tested and will be subject to an internal CCTV survey in order to identify any possible defects prior to being made operational.

No additional mitigation measures are proposed in relation to water supply; however water conservation measures such as dual flush water cisterns and low flow taps will be included in the design.

On completion of the construction phase no further mitigation measures are proposed in relation to the electrical, gas and telecommunications infrastructure

Character of potential impact	Mitigation measure
Operational Phase	
Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff	Please refer to Chapter 8 – Water: Hydrology and Hydrogeology for mitigation measures associated with the surface water treatment.
Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas).	Please refer to Chapter 8 – Water: Hydrology and Hydrogeology for mitigation measures associated with the surface water treatment.
Contamination of surface water runoff from foul sewer leaks.	All new foul drainage lines will be pressure tested and will be subject to a CCTV survey in order to identify any possible defects prior to being made operational.

19.2.13 Cultural Heritage (Architectural & Archaeological) (Chapter 17)

Construction Stage

Archaeological Heritage

Whilst it is noted that preservation in-situ is the preferred manner in which to conserve the archaeological resource, this will not be possible for the small archaeological areas identified at AA1, 2, 3, 6, 7, 8, 9, 11, during archaeological test trenching. As such, these archaeological areas will be preserved by record prior to the commencement of construction. This will be carried out under licence to the National Monuments Service of the DoHLGH.

AA4, 5 and 11 will be preserved in-situ as part of the development, but in order to prevent inadvertent impacts from surrounding construction activities, the sites will be fenced off during the construction phase.

In addition, the buffer area surrounding the motte and bailey castle (National Monument in state guardianship (Nat Mon. 388), recorded monument LH007-118007) and standing stone (LH007-

118006), will be temporarily fenced off during construction, in order to prevent inadvertent impacts during construction.

All topsoil stripping associated with the development will be subject to archaeological monitoring and a strategic programme of metal detecting. These works will be carried out by a suitably qualified archaeologist under licence to the National Monuments Service of the DoHLGH. If any archaeological remains are identified during the course of these works, further mitigation will be required such as preservation in-situ or by record. Any further mitigation will require agreement from the National Monuments Service.

No mitigation measures are required for the architectural heritage resource during the construction phase.

The removal of the townland boundary between Castletown and Newtownbalregan will be subject to archaeological monitoring. This work will be carried out by a suitably qualified archaeologist under licence to the National Monuments Service of the DoHLGH.

Operational Stage

Archaeological Heritage

In order to enhance the public appreciation of the motte and bailey castle and recorded standing stone, which will be set within public open space, information panels will be erected at appropriate locations within the development area that provide information on these monuments and the results of archaeological investigations carried out during the construction of the development.

19.2.14 Risk Management (Major Accidents & Disasters) (Chapter 20)

Construction Stage

The mitigation measures relevant to each environmental factor outlined in chapters 5 – 19 of the EIAR, as well as the CEMP, will be implemented during the Construction Phase of the development and will collectively mitigate the risk of major accidents and disasters during this time.

The Construction Phase of the Proposed Development will be carried out in accordance with best practice site management measures relating to health and safety and emergency response. These measures are described in the CEMP.

Operational Stage

No mitigation or monitoring measures are proposed specific to reducing the risk of major accident / disaster during operation.