

### 3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

#### 3.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) describes the proposed development and its component parts. A preliminary masterplan for the entire site has been developed, setting out proposals for buildings, spaces and a movement and land use strategy. The proposed project strategy envisages that the subject lands will be developed in two distinct stages, with two separate planning applications:

- Phase 1: Commercial Offices (Blocks A-E), Hotel and Site Infrastructure, including all basement structures for the entire site
- Phase 2: Strategic Housing Development - Residential, Leisure and Ancillary Uses

The proposed masterplan includes 85,554sq m of gross floor area (above ground) on a stated site area of 5.1 ha (51,148 sqm), which equates to a plot ratio of 1.67:1. It is considered that the proposed development will provide for a development of suitable mass and scale which makes a considerable contribution to the civic amenity of this rejuvenating area.

Figures 3.1-3.3 provide an overview of the proposed development both above and below ground level. Figure 3.4 shows in outline of the Phase 1 stage at the site, which has been granted by Galway City Council under Pl Ref 18/363.

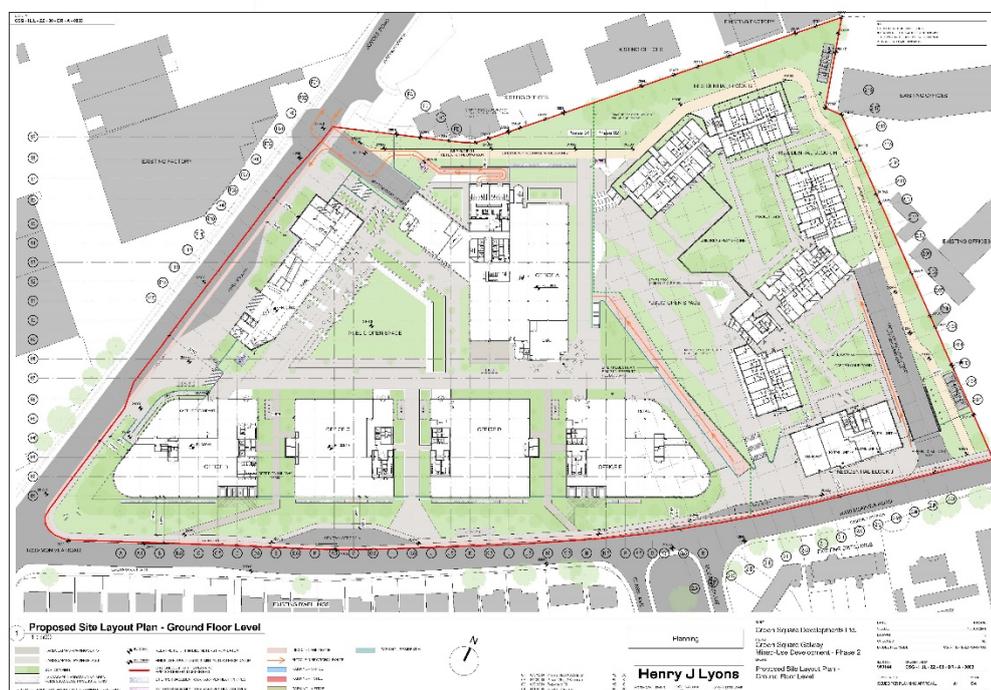


Figure 3.1: Ground Level Layout. Image extracted from Henry J Lyons Design Statement

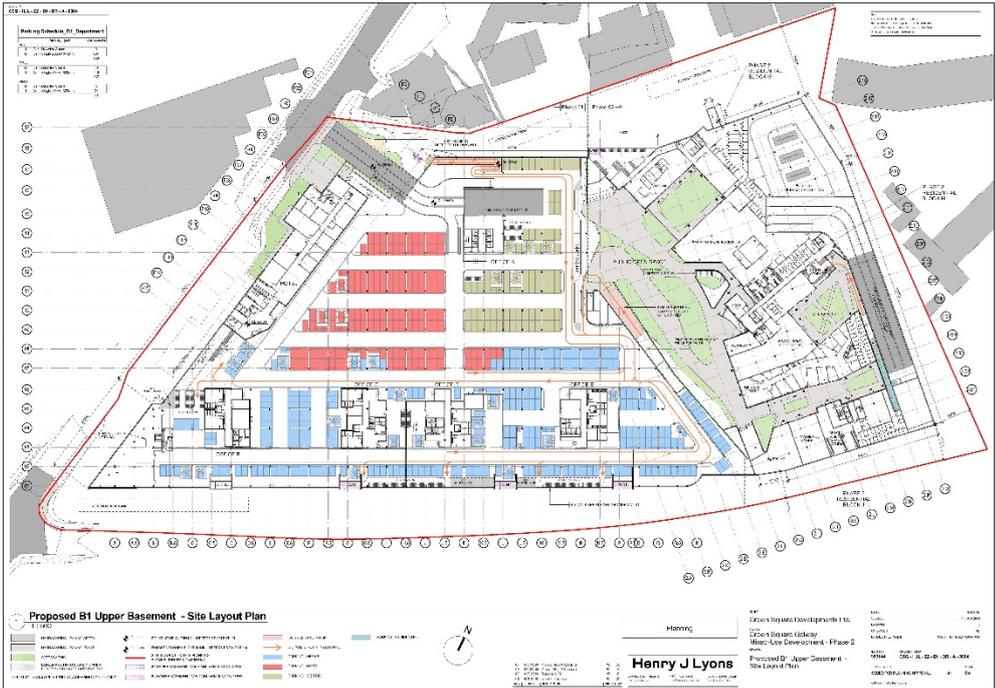
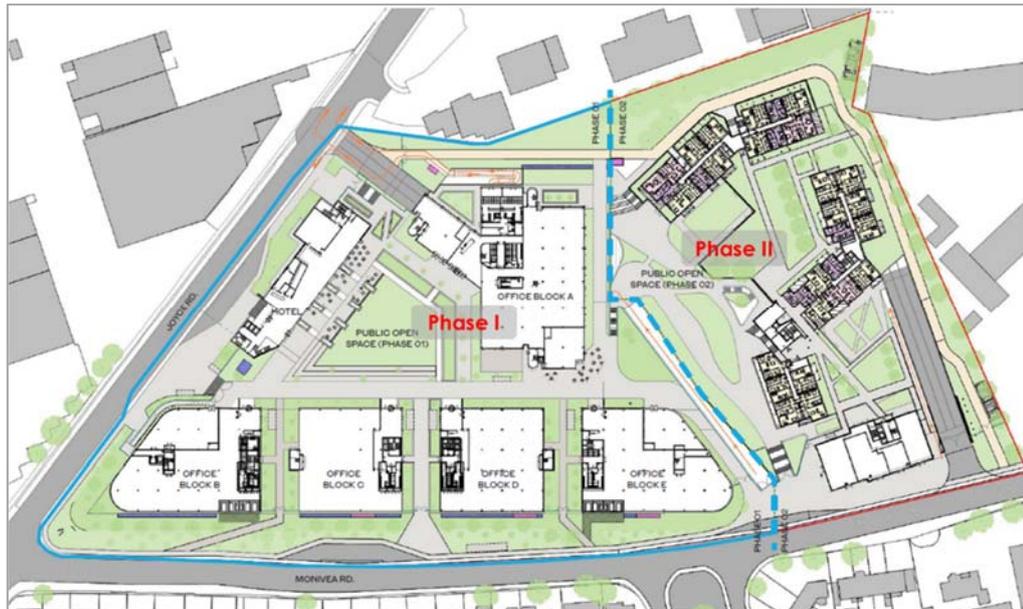


Figure 3.2: Upper Basement Layout. Extracted from Henry J Lyons Planning Drawings



Figure 3.3: Lower Basement Layout. Extracted from Henry J Lyons Planning Drawings



**Figure 3.4: Proposed above ground Site Layout, showing the phased development for phase 1 and phase 2.**

The first phase of development for which permission has already been obtained from Galway City Council provides for:

- 5 no. blocks of commercial offices which range in height from 3-6 stories over ground floor level (40,405 sqm).
- A hotel development with 5 floors over ground floor level, comprising 175 no. bedrooms, conferencing facilities and restaurant/bar areas (8,675 sqm).
- A double basement which includes a 'high bay' area for service, delivery and waste management vehicles; in addition to the provision of plant, car and bicycle parking, changing/shower areas and locker/amenity facilities (62,175 sqm), incorporating alterations to the existing structures on site permitted under Pl Ref. 06/223/ ABP Ref. PL 61.220893.
- Public realm and landscaping works, including pedestrian and cyclist linkages.
- The provision of vehicular access/egress via Monivea Road and Joyces Road, public transport set-down areas and cycle lanes.
- The provision of substations and associated ancillary works.
- All other associated site development and servicing works.

The second phase of development (to which this EIAR applies) comprises a residential scheme with associated commercial, leisure and ancillary uses. The Phase II development (Figure 3.1) will consist of:

1. A residential scheme comprising 288 no. apartments and amenity accommodation with a gross floor area of 32,379 sqm, which will include:
  - Block G (104 no. units); Block H (136 no. units) and Block J (48 no. units).
  - 75 no. one-beds (26%); 185 no. two-beds (64.2%); and 28 no. three-bed units (9.7%)
  - Ancillary residential amenity areas (1,275 sqm).
  - Block G extends to eight-storeys, Block H extends to seven-storeys and Block J extends to five-storeys.

- External balconies are provided on all elevations.
2. A commercial scheme with a cumulative gross floor area of 4,096 sqm, which will include:
    - A neighbourhood facility comprising a restaurant (500 sqm), café (50 sqm), local convenience store (225 sqm), a pharmacy (200 sqm), 5 no. retail/commercial units (797 sqm in total), a crèche (310 sqm)
    - A fitness/leisure facility (1,140 sqm); and
    - A medical centre (655 sqm).
  3. Public realm and landscaping works, including pedestrian and cyclist linkages.
  4. Vehicular access to the double basement permitted under Pl Ref 18/363 and the allocation of 288 no. car parking spaces located on the lower basement level to service the residential units. Visitor car parking will be provided on the upper basement level and will be managed in accordance with an Operational Management Plan and a Mobility Management Plan.
  5. The provision of a dedicated cyclist ramp and 733 no. secure bicycle parking spaces located in the upper basement permitted under Pl Ref 18/36 (comprising 529 no. residential; 144 visitor parking and 60 no. bicycle parking spaces to service the neighbourhood facility).
  6. All other associated site development, plant and servicing works.
  7. The application will be supported by an Environmental Impact Assessment Report and a Natura Impact Statement.

While this EIAR relates only to the second phase of the proposed project strategy, the first phase has been included in the cumulative assessments for each chapter. The groundworks and basement structures are included in both phases, but will only be constructed once. The application will be supported by an Environmental Impact Assessment Report and a Natura Impact Statement.

## **3.2 Existing Site Description**

### **3.2.1 Site Layout**

The subject site extends to 5.12 ha and is located in the north-east of Galway City in Mervue, at the junction of the Monivea Road and Joyce's Road. The IDA Business Park and Mervue Industrial Estate are located to the west/south-west of the site and the Eircom Telecommunications site immediately borders the subject site to the north-east. Medium density residential development is located to the east of the site along the Monivea Road. The proposed development layout is shown on Figures 3.1-3.3.

Development permitted under Pl Ref. 06/223/ ABP Ref. PL 61.220893 has previously commenced and substantial works have been completed. Following the onset of the economic recession, development was put on hold and the site was hoarded up. An Extension of Duration was granted until 12/09/2017 which has since expired. Phase 1 of the current site masterplan was given permission by Galway City Council under Pl Ref 18/363, and the site has recently become active. A summary of the site's planning history is provided in Section 2.2 of this EIAR.

There are no Protected Structures or Recorded Monuments on the proposed site. The nearest Recorded Monument to the subject lands comprises a 18<sup>th</sup>/19<sup>th</sup> Century House (Recorded Number GA082-088), located circa 200 metres south of the site. The building is also designated as a Protected Structure under the extant Development Plan (RPS no. 6002).

The Galway Bay Complex Special Area of Conservation (Site Code 000268) and Inner Bay Special Protection Area (Site Code 004031) is located circa 1km south west of the proposed site.

### **3.2.2 Site Access**

Existing vehicular access to the development is available via Joyce's Road (note: Connolly Avenue, as shown on the OSI mapping, is generally locally called Joyce's Road). A Traffic Management Plan (TMP) will be issued to Galway City Council for approval prior to works commencing on site. The approved TMP and any revisions thereof will be set up and implemented on site. All necessary signage will be erected in the weeks prior to any works commencing along and on adjacent roads to the proposed development giving advance warning to traffic, pedestrians / members of the public.

Access for vehicles to the proposed development after the construction phase will be via a new site entrances from the R339 Regional Road, known as the Monivea Road, and a second entrance from Joyces Avenue local road as shown below in Figure 3.4. Both of these entrances will descend into the underground basement levels. Surface roads will therefore be limited to immediately inside the site entrances only.

Various access points will also be required along the Monivea Road and Joyces Avenue to be engineered with ease and safety of access for pedestrians and cycle transport. The proximity to Galway City centre and other suburbs such as Wellpark will mean that sustainable forms of transport to and from the site will be designed into the project.

Car parking, bicycle parking and service delivery temporary parking will be located in the basement levels. A network of footpaths throughout the proposed development will provide a high rate of accessibility to the local facilities in Galway. The inclusion of these attractive, well designed walking routes will encourage pedestrians to access the local facilities on foot as opposed to taking their personal vehicles, as well as encouraging those living in the surrounding area to walk to the proposed development, rather than taking their car.

#### **3.2.2.1 Access arrangements for pedestrians**

During the construction phase of the proposed development, pedestrian access will not be permitted for the public to the site. In the final stages of works completion, barriers and/or signage will be used to prevent the public from accessing any areas where works are ongoing if necessary.

### **3.2.3 Site Constraints**

There are currently no site constraints which are creating issues for the proposed development

## **3.3 Proposed Development Construction Operations**

The detailed drawings for the proposed development can be seen as Appendix 3-1 to this EIAR. A Construction and Environmental Management Plan (CEMP) has been produced and is included as Appendix 3-2. The CEMP provides the Construction and Environmental management framework to be adhered to during the pre-commencement and construction phases of the proposed development and it incorporates the mitigating principles to ensure that the work is carried out in a way that minimises the potential for any environmental impacts to occur.

### **3.3.1 Hoarding**

The site areas will be enclosed with a hoarding, details of which are to be agreed with Galway City Co. Hoarding panels will be maintained and kept clean for the duration of the project. The Contractor will be responsible for the security of the site. The Contractor will be required to undertake the following:

- Operate a Site Induction Process for all site staff,
- Ensure all site staff will have current 'Safe Pass' cards,
- Install adequate site hoarding to the site boundary,
- Maintain Site Security staff at all times,
- Install access security in the form of turn-styles and gates for staff,
- Separate pedestrian access from construction vehicular access,
- Ensure restricted access is maintained to the works.

### **3.3.2 Pedestrian and Cyclist Safety**

Until such time as the construction of the first phase (i.e. the proposed development) is complete, the site will not be open to members of the public. However, the general public will have right of way along the roads surrounding the site. When vehicles are entering the site, or leaving the site, these movements will be supervised by road marshals. The construction site gates will be kept closed when not in use and monitored by security. Traffic cones and set-back signage will be put in place to warn and safely direct cyclists around obstructions.

### **3.3.3 Proposed Hours in which Vehicles will Arrive and Depart**

In general, the hours in which vehicles will arrive and depart will coincide with the expected site working hours of 7.00am to 7.00pm in the evening from Monday to Friday, and 7:00am to 2:00pm on Saturday. The construction phase of the proposed development is expected to last approximately two-three years in total.

### **3.3.4 Access Arrangements for Vehicles**

The access arrangements will be as specified in the statutory publications with reference to the publications "Traffic Management Guidelines" manual and the "Traffic Signs Manual" and as agreed with Galway City Council.

It is assumed that most construction traffic approaching the site will travel via the Tuam Road and Monivea Road. The Traffic and Transport Assessment (located in Appendix 12-1) for the construction stage will identify haulage routes and restrictions as appropriate in discussion with the Local Authority.

### **3.3.5 Size of Vehicles**

It is anticipated that there will be numerous types of delivery vehicles used to bring material to and from the site. These include:

- Skip lorries. These will include roll on/roll off skips for major demolition works and standard yard skips for waste.
- Spoil/rock excavation. – Some limited and localised excavations will be required to construct foundations, etc. The site has
- Ready mix concrete lorries.
- Flatbed delivery vehicles for the delivery of various material.

### **3.3.6 Parking and Loading Arrangements**

Material deliveries comprise largely of steel and concrete for the substructure, and concrete/precast concrete units/steel, timber, glazing and cladding for the superstructure. The main activity is likely to occur during the construction of the remaining substructure, where large concrete pours may be required.

A “Just in Time” approach will be implemented for the delivery of particular building materials such as concrete formwork and large structural steels. The location of this materials storage facility will be within the site boundary and highlighted within the Construction Management Plan.

Parking for site operatives will be a requirement throughout the contract. It would be expected that a site of this size would generate a requirement for in the region of 300 site operatives during the peak period of construction, and which would lead to a parking requirement for about 100 vehicles.

During the early stages parking will be available on the areas of site where construction of blocks has yet to begin. Given the close proximity of the bus routes and bus stops to the development site it is considered reasonable that this could be a mode of transport during the construction stage. It is anticipated that due to the large area of the site the parking demand will be accommodated within the site.

During the main period of construction, space for parking will become available for site operatives in the basement car park, and the reliance on alternative facilities will be reduced. Parking demand will be accommodated in the basement car park which is proposed to contain 1,425 car parking spaces. A Traffic Management Plan for the construction stage would include parking arrangements and be agreed with Galway City Council prior to commencement of the works on site.

### **3.3.7 Temporary Site Accommodation and Facilities**

Temporary site accommodation will be provided including suitable washing and dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure. The compound will be constructed using a clean permeable stone finish and will be enclosed with security fencing.

### **3.3.8 Phasing**

The proposed development is the second of two distinct phases for the site. This EIA deals directly with this second phase, as well as cumulatively assessing the first phase of the site works. Layout details of the development are shown in Figures 3.1-3.3, and in Appendix 3-3 of this EIA.

The Phase 1 development will be to the west of the site along the Monivea and Joyce’s Roads. Phase 1 will comprise of the construction of 5 office blocks, 4 of which are located on the footprint of the previously constructed basement carparks, and a standalone hotel building. The hotel fronts and has vehicular set-down on the Joyce’s Road. It is also accessed as are all of the offices from the new central public space at ground level.

Phase 2 will front the eastern end of the Monivea Road frontage and extend to the northern site boundary over the following basement level completion. This basement structure is included in both the Phase 1 and Phase 2 applications, as it is intrinsically

linked to both. Phase 2 is mainly residential apartments. Other complementary and neighbourhood facilities are proposed including a Restaurant, Cafe/Coffee Shop, Convenience Store, Medical Centre, Pharmacy, Other Small Retail/Service. These are proposed at ground/lower ground and first floor levels fronting both Monivea Road and the new Phase 2 public open space.

The site as proposed would be expected to require approximately 3 years to complete from occupation of the site (Appendix 3-4 Outline Construction Programme). Activities would include:

- Site Clearance;
- Excavation and Spoil Removal;
- Construction of Substructure;
- Construction of Superstructure; and
- Fitting and finishing.

The site will exhibit distinct characteristics during each stage of the construction programme, with varying demands for site deliveries, spoil removal, and car parking by site operatives.

Further information on phasing activities, including construction of the lower and upper basement, as the proposed order of construction for each element of the Phase 2 works included in Section 3.5.5 below.

### **3.3.9 Property Management – Operational Stage**

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development.

An Estate Director will be responsible for the overall management of the development. The property management company will have the following responsibilities for the apartments within the development once constructed:

- Team management;
- Health and safety;
- Risk management;
- Implementation of estate policies and procedures;
- Tenant management;
- Security and,
- Cleaning and maintenance

Further details of the operational phase property management are provided in Appendices 3-9 and 3-10.

### **3.3.10 Energy Use**

As part of the proposed development the following strategies and technologies will be incorporated where practical to provide a new high efficiency installation;

- Where possible equipment will be listed on the SEAI Triple E register
- An intelligent, computer-based BMS - building management system - ensuring control systems are set correctly for different weather conditions and occupancy levels. Operational costs can be reduced by maintaining appropriate temperatures and ensuring that heating equipment and controls are operated and managed correctly.

- Set appropriate hot water temperatures - Excessive heating of hot water is wasteful and could scald staff or guests. The optimum temperature for stored hot water is 60°C which is adequate to kill Legionella bacteria and is sufficiently warm for staff and guests to use.
- Match ventilation to demand - Ventilation requirements may vary at different times and in different parts of a building throughout the day. Check that operating times for ventilation and cooling systems are consistent with the occupancy patterns of the building, unless ventilation is being used to provide cooling overnight.
- Low energy fans for ventilation systems
- Installing variable-speed drives to ensure pumps and fans only operate at the speeds necessary to meet demand. This reduction in speed saves energy and there are corresponding heating and cooling cost savings too.
- High efficiency motors – low loss and variable speed types with good controls
- LED lighting for both general and emergency lighting
- Automatic lighting controls to minimise electricity consumption where applicable
- Heat metering – every circuit will be provided with its own heat meter to allow quantification across the different areas.
- Water Saving Measures -wasting water is literally throwing money down the drain. All premises could benefit from the installation of water conserving devices such as:
  - Tap controls – these switch taps off after a certain time and are useful in communal areas such as toilets and leisure facilities.
  - Spray taps and water efficient showerheads – these reduce the volume of water coming out of a tap or shower and can reduce consumption without diminishing the service to the customer, provided the water pressure is adequate.
  - Urinal flush controls – these help to reduce unnecessary flushing in toilets.
- Rainwater harvesting - this is the process of collecting and the storing rainwater that falls on your property. Rainwater shall be collected at carpark level then in turn be distributed to each building. Each building shall be provided with a break tank and distribution system for rainwater and the water shall be used for flushing toilets. Rainwater harvesting is a simple way to reduce your environmental impact and reduce your water usage.
- Heat recovery - It costs money to heat the air inside a building and it may be possible to reclaim some of that energy.
- There is increasing recognition of the benefits of future proofing against increasing fuel costs through energy efficiency and using sustainable technologies. The final design solution will incorporate where possible the most energy efficient systems to provide a complete new operational and sustainable system.

Further details of the project energy saving features can be found in Appendix 3-5.

### **3.3.11 Site Activities**

#### **3.3.11.1 Environmental Management**

All proposed site activities will be provided for in an environmental management plan. A Construction and Environmental Management Plan (CEMP) has been prepared for the proposed development and is included in Appendix 3-2 of this EIAR. The CEMP includes details of drainage, waste and water management. It is intended that the CEMP would be updated prior to the commencement of the development, to include all

mitigation measures, conditions and or alterations to the EIAR and application documents that may emerge during the course of the planning process, and will be submitted to Galway City Council for written approval.

### **3.3.11.2 Refueling**

On-site refuelling will be carried out at designated refuelling stations on site. Drip trays will be used when refuelling all plant. Absorbent material and pads will be available in the event of any accidental spillages. Alternatively, mobile double skinned fuel bowsers may be used. Fuel bowsers will be parked on a level area in the compound when not in use.

Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays, spill kits and fuel absorbent mats will be used during all refuelling operations.

The following mitigation measures are proposed to avoid release of hydrocarbons at the site:

- Minimal maintenance of construction vehicles or plant will take place on site.
- Drip trays will be used to control on-site refuelling at controlled fuelling stations.
- On-site diesel tanks will be double skinned to 110% of their capacity.
- Containment stores will be used for refuelling of small plant such as consaws etc.
- Any fuel bowsers used on site will be custom-built / bunded to 100% of capacity. Fuel bowsers will be parked on a level area in the construction compound when not in use.
- Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.
- Fuels volumes stored on site will be minimised. Any fuel storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction.
- Plant used will be regularly inspected for leaks and fitness for purpose.
- Any Hazardous Materials will be stored in drip trays in secure containment stores.
- Refuelling/containment store signage will be erected at predetermined locations around the site.
- An emergency plan for the construction phase to deal with accidental spillages will be contained within Environmental Management Plan. Spill kits will be available to deal with any accidental spillage in and outside the refuelling area.

Further spill control measures are noted in Section 5.1.3 of Appendix 3-2 Construction Environment Management Plan.

## **3.4 Site Landscaping**

Before completion of the construction phase of the proposed development, landscaping works will be carried out to improve the visual amenity of the site. These landscaping works will follow the layout of the landscape plan provided in the Landscape Master Plan in Appendix 3-6 of this EIAR.

There are no landscape designations on the subject site. The site will not impact on any designated views or prospects within the Galway City Development Plan 2017-2023.

## **3.5 Construction Management**

### **3.5.1 Construction Timing**

It is expected that building works for the entire of Phase 1 will take in the region of 42 months to complete. Development of Phase 2 is expected to commence 11 months after Phase 1 commencement and will take circa 31 months to complete. These estimations are based on a high-level analysis of the site and proposed scheme. The total timeframe based on above is circa 42 months (3 ½ yrs.).

### **3.5.2 Construction Sequencing**

The development, as described in Section 3.3 above, will be completed in key phases as set out below;

- Temporary site accommodation & welfare facilities
- Final breaking/trimming of rock to formation
- Pads/foundations
- Lower basement drainage
- Lower basement slab
- Rising elements lower basement / upper basement
- Upper basement slab
- Rising elements upper basement / podium
- Podium / Ground floor slab
- Residential and commercial superstructure
- Residential and commercial façade / roof
- Boundary treatments
- Completion of vehicular access, car and cycle parking
- Residential fitout
- Commercial/leisure premises fitout
- Podium slab/courtyard hard/soft landscaping

Construction methodologies for all individual Phase 2 works, including construction of the basement (previously permitted under Phase 1), residential units, commercial premises and site access is contained within Appendix 3-2 Section 2.4.

### **3.5.3 Construction Phase Monitoring and Oversight**

As detailed in Section 7 of Appendix 3-2-Construction and Environmental Management Plan (CEMP), monitoring measures are listed which relate to the construction phase of the proposed development.

It is intended that the CEMP will be updated prior to the commencement of the development, to include all monitoring measures, conditions and or alterations that may emerge during the course of the planning process and will be submitted to the Planning Authority for written approval.

Routine inspections of construction activities will be carried out on a daily and weekly basis by the Senior Project Manager, Senior Engineers and Foremen to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with this CEMP and all other planning application documents. Only suitably trained staff will undertake environmental site inspections.

Further information regarding site inspections, site environmental audits and environmental compliance are detailed in Appendix 3-2, Section 9.

## 3.6 Construction Methodologies

This section describes the construction methodologies that will be used for the proposed housing development. Further details are also provided in the Construction and Environmental Management Plan (CEMP) included as Appendix 3-2 of this EIAR.

### 3.6.1 General Construction Measures

Prior to any works commencing, surveys will be conducted of the adjoining roads, footpaths and adjoining buildings, photographing and noting any existing damage or defects to structure or road surfaces. A copy of this survey will be retained on site and issued to Galway City Council if required.

Communication with the public, local residences and businesses adjacent the development will be an important responsibility of the Senior Project Manager and delegated persons. All parties will be kept up to date and informed both shortly prior and during the construction period at all times. Two to three weeks before any work commencing reasonable efforts will be made to inform all parties of the oncoming works.

A Traffic Management Plan (TMP) will be issued to Galway City Council for approval prior to works commencing on site. The approved TMP and any revisions thereof will be set up and implemented on site. All necessary signage will be erected in the weeks prior to any works commencing along and on adjacent roads to the proposed development giving advance warning to traffic, pedestrians / members of the public. Every effort will be made to minimise the impact of the above works on local residences and traffic.

- All personnel will be inducted and made familiar with Risk Assessments / Method Statements (RAMS) and Traffic Management Plans.
- All site-specific safety rules will be adhered to.
- All plant operators will have appropriate CSCS training.
- All personnel will have SOLAS Safe Pass training
- Fire extinguishers and first aid supplies will be available in the work area.
- All adjacent roadways will be maintained in clean condition at all times.
- Helmets, high visibility clothing and safety footwear will be worn at all times.
- Competent foremen will be on site at all times.
- Biometric turnstiles will be used to prevent unauthorised access to the site.

### 3.6.2 Soil Stripping & Temporary Stockpiling

A very limited amount of soil stripping and temporary stockpiling of soils and subsoils may be required around the site as the proposed development progresses. The requirement for this will be very limited due to the existing excavated nature of the site. Where these works occur, the following will apply:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, Galway City Council etc. will be contacted and all drawings for all existing services sought.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- All plant operators and general operatives will be inducted and informed as to the identification of invasive species.

- A tracked 360-degree excavator will be used to strip the topsoil, and a dumper will be used to move the excavated materials to the temporary stockpile location.
- All excavated material which is not required for future landscaping works or for backfill of excavations will be removed to an authorised waste recovery facility. This will also apply to material which is not suitable for reuse on site.
- All stockpiles will be damped down or covered in a sheet of polythene, as required, which will prevent the creation of nuisance dust, and will also prevent sediment runoff in times of heavy precipitation.
- A silt filtration system will be used as appropriate to prevent contamination of any watercourse.

### **3.6.3 Temporary Site Compound**

One temporary construction compound is proposed for the construction phase of the proposed development, located on the northern edge of the development, near the location for the second phase of works. The proposed temporary compound area incorporates temporary site offices, staff facilities and car-parking areas.

A dedicated waste management area will be located within the compound, with waste to be sorted and collected from site by permitted collectors. Potable drinking water will be supplied via water coolers located within the staff facilities, which will be restocked on a regular basis as required during the construction phase. A supply contract will be set up with a water cooler supply company with water supplies delivered to site as required for the duration of the construction period.

Temporary toilets will be provided for the workers on the construction site. An application will be made to connect temporarily to the local sewage network for these site toilets. Wastewater arising on-site from these toilets will be then discharged to the foul sewer network for treatment. Power will be supplied to the compound area by an existing site power connection. The construction compound will be used for temporary storage of some construction materials, prior to their delivery to the required area of the site.

### **3.6.4 Site Roads**

It is currently not envisaged that any constructed site roads will be required. The site has been almost entirely excavated already, and the existing rock formation and temporary access ramp will be used for on-site transport. Another temporary access ramp may also be required on the Monivea and/or Joyces road. The concrete basement floors and access ramps will also be used for construction traffic. Where any areas of temporary roads might be required, a suitable aggregate will be laid on the ground. Before the completion of works on the site, this would be either removed or just covered before the finishing surface is applied.

### **3.6.5 Excavation and Services Installation**

Services will be required to all buildings in the proposed development. Where these are located, the following will apply:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, Galway City Council etc. will be contacted and all drawings for all existing services sought.
- A traffic management plan will be produced if required for connection works to the existing service network.

- A road opening licence will be obtained where required for connection to existing services.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- A tracked 360-degree excavator or similar will be used to excavate the trench to the required dimensions.
- All excavated material will be removed to an authorised waste recovery facility or, if suitable, stock piled and reused for backfilling and landscaping where appropriate.
- Once the trench has been excavated the ducting/pipework will then be placed in the trench as per specification.
- Once the service ducts/pipework has been installed couplers will be fitted as required and capped to prevent any dirt etc. entering the ducts/pipes.
- The as built location of the ducting/pipework will be surveyed using a total station/GPS.
- Backfill material will be carefully placed so as not to displace the ducting/pipework within the trench.
- The appropriate warning/marker tape will be installed above the ducts/pipes at the appropriate depths.
- The surface will be reinstated as per original specification or to the requirements of the site layout/Local Authority as appropriate.

#### **3.6.5.1 Existing Underground Services**

Any underground services encountered during the works will be surveyed for level and where possible will be left in place. If there is a requirement to move the service, then the appropriate body (ESB, Gas Networks Ireland, etc.) will be contacted, and the appropriate procedure put in place. Back fill around any utility services will be with dead sand/pea shingle where appropriate. All works will be in compliance with required specifications.

#### **3.6.6 Construction Site Management Incorporated into Project Design**

The following measures pertaining to water quality and invasive species have been incorporated into the design phase of the project to avoid effects on sensitive ecological receptors.

##### **3.6.6.1 Prevention Pollution Control Measures**

The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites ('Control of Water Pollution from Construction Sites, guidance for consultants and contractors', CIRIA, 2001), which provides guidance. This will ensure that surface water arising during the course of construction activities will contain minimum sediment. The following methods and best practice measures will ensure that sediment release and potential for pollution during the construction phase is minimised and reduced to insignificant:

##### **Drainage**

The proposed development site does not contain any mapped watercourses and no watercourses were identified within the site during site visits. The Terryland/Sandy River is located approximately 750m to the west of the proposed site.

The following measures will be put in place to prevent the transportation of silt laden water or pollutants from entering the wider environments including any downstream watercourses:

- There will be no release of suspended solids to any watercourse as a direct or indirect result of the proposed works. There is no surface watercourse on the site of the proposed development.
- No watercourse will be interfered with as part of the proposed works. No instream works will take place.
- Any requirement for temporary fills or stockpiles will be damped down or covered with polyethylene sheeting as required to avoid sediment release associated with heavy rainfall.
- All discharge, whether foul or surface water discharge will enter the public sewer network via an external below ground drainage system as detailed below.

As noted in Appendix 3-3 - Engineering Planning Report; both foul and surface water drainage systems have been designed in accordance with “*Irish Water Code of Practice for Wastewater Infrastructure*” design guide.

#### Foul Water Drainage

The general approach taken for the design of the proposed foul water drainage system is to collect all foul water from ground level upwards and discharge to the public foul water sewer network by gravity via an external below ground drainage system. This will minimise the volume of foul water which will need to be pumped from the development and, furthermore, reduce the volume of emergency storage required in the pumping station.

It is noted that the development will incorporate water conservation measures in the sanitary facilities. These will include low flow dual flush toilets, and monobloc low volume push taps. These will reduce the foul discharge from the development.

Further information relating to foul water drainage is noted in Section 2 of Appendix 3-3.

#### Surface Water Drainage

The drainage system has been designed with the aim of providing a sustainable drainage solution ensuring, in so far as feasible, that the development has a minimal impact on the existing public surface water sewer system. This is achieved with the incorporation of Sustainable urban Drainage Systems (SuDS).

Similar to the design of foul water drainage, the general approach taken for the design of the proposed surface water drainage system is to collect all surface water from ground level upwards and discharge to the public surface water sewer network by gravity via an external below ground drainage system. This will minimise the volume of surface water which will need to be pumped from the development, hence reducing the whole life cost and impact for the development

Further information relating to surface water drainage and SuDS implementation is noted in Section 3 of Appendix 3-3.

#### Construction Phase Water Management

As the basement is already excavated only minimal water / rainwater will need to be removed from site. It is planned to let rainwater soak naturally back into the ground in areas not being worked on. In zones under construction it is proposed to run any excess water through an environmental structure such as a settlement tank / silt trap and

pump clean water into the combined sewer at an agreed discharge rate during the construction phase (subject to Galway City Council agreement).

A discharge monitoring inspection programme will be put in place and agreed with the Galway City Council Drainage Engineer. This methodology safeguards water quality and provides a solution for catching suspended solids and sediment prior to discharge into the combined sewer.

### **Hydrocarbons**

The use of hydrocarbons during the construction process can result in the potential for pollution and accidental spillage to enter natural watercourses downstream of the site via surface runoff and groundwater. The following measures have been built into the construction design phase of the project.

- Minimal maintenance of construction vehicles or plant will take place on site.
- Drip trays will be used to control on-site refuelling at controlled fuelling stations.
- On-site diesel tanks will be double skinned to 110% of their capacity.
- Containment stores will be used for refuelling of small plant such as consaws etc.
- Any fuel bowsers used on site will be custom-built / bunded to 100% of capacity. Fuel bowsers will be parked on a level area in the construction compound when not in use.
- Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.
- Fuels volumes stored on site will be minimised. Any fuel storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction.
- Plant used will be regularly inspected for leaks and fitness for purpose.
- Any Hazardous Materials will be stored in drip trays in secure containment stores.
- Refuelling / containment store signage will be erected at predetermined locations around the site.
- An emergency plan for the construction phase to deal with accidental spillages will be contained within Environmental Management Plan. Spill kits will be available to deal with any accidental spillage in and outside the refuelling area.

### **3.6.7 Landscaping works**

Prior to completion of works on the development site, the landscaping works will be carried out. The proposed landscaping plan is shown in Appendix 3-6 of this EIA. The finishes include areas of amenity grassland, footpaths and tree planting. This work will be carried out before the completion of the proposed development in order to ensure that the development will be aesthetically pleasing place for people to work and stay. These works will involve the use of plant and machinery in order to carry out tasks such as earth moving. Materials which have been stockpiled for the task will be used as much as possible, and material will only be imported where it is required. Solid barriers will be erected around the site boundary for the duration of the construction works.

### **3.6.8 Invasive Species**

No invasive species were recorded on the site; therefore no effects from invasive species are anticipated. The introduction and/or spread of invasive species such as

Japanese Knotweed and Himalayan Knotweed for example, could result in the establishment of the species and this may have knock on effects on the surrounding environs.

Appropriate control measures will be incorporated into the design and construction phase of the development to ensure that the relevant measures (outlined in the following section below) will be implemented.

### **3.6.8.1 Control Measures for the Management of Invasive Species**

Invasive species, such as Japanese Knotweed, Himalayan Knotweed, Himalayan Balsam, *Gunnera*, and Giant Hogweed pose a serious threat to biodiversity and the health of native vegetation types. Construction machinery can act as a vector for the spread of these plants. Machinery that has worked at an infected site is likely to cause the spread of such species by transferring their tiny seeds or plant fragments, in soil trapped in their tyre tread for instance. Equally, they can cause the spread of species within a site. The duration of the impact could be short-term or permanent depending on whether or not an eradication effort is made but once established, eradication is time-consuming and expensive. Himalayan Knotweed, for example, propagates vegetatively, forming a new plant from even very small plant fragments. Thus, there is a high risk of causing the spread of this species to other parts of the site. The UK Environment Agency's '*Japanese Knotweed Code of Practice*' provides guidance on managing Japanese Knotweed and Himalayan Knotweed on development sites. A number of control measures have been drawn up and included in the design and construction phase of the proposed works to avoid the introduction and spread of invasive plant species. The following project design elements have been devised to avoid such effects. The following measures address potential effects associated with the construction phase of the development:

- All earthworks machinery will be thoroughly pressure-washed prior to arrival on site and prior to their further use elsewhere.
- Care will be taken not to disturb or cause the movement of invasive species fragments, either intentionally or accidentally.
- There are not believed to be any existing stands of invasive species on site, but should any be found, they will be clearly demarcated by temporary fencing and tracking within them will be strictly avoided. A minimum buffer of seven metres will be applied to avoid disturbance of lateral rhizomes.
- If any excavations must be carried out in areas of Japanese Knotweed, the excavated material will not be moved from the location. The machinery must be thoroughly pressure-washed in a designated area at least 25 metres from any watercourse before moving on to an area that is not yet infected.
- All contractors and staff will be briefed about the presence, identification and significance of Japanese Knotweed before commencement of works.
- Good construction site hygiene will be employed to prevent the spread of these species with vehicles thoroughly washed prior to leaving any site with the potential to have supported invasive species. All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of invasive plant species such as Japanese Knotweed and Rhododendron. All washing must be undertaken in areas with no potential to result in the spread of invasive species.
- When working at locations in proximity to natural watercourses, a suitable barrier will be erected between the watercourse and the stand of invasive species. This will assist in preventing the spread of any invasive species into

the watercourse during their removal. There are no watercourses on the proposed development site, but cognizance will be had of any watercourses on neighbouring sites.

- Any material that is imported onto any site will be verified by a suitably qualified ecologist to be free from any invasive species listed on the 'Third Schedule' of Regulations 49 & 50 of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). This will be carried out by searching for rhizomes and plant material.
- Any soils or subsoils contaminated with invasive species will sent for disposal to an authorized waste facility.

The treatment and control of invasive alien species will follow guidelines issued by the National Roads Authority – *The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads* (NRA 2010) and the Environment Agency (2013) – *The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites* (Version 3, amended in 2013).

### **3.7 Other Site Details**

Further site details, including management and mitigation during construction and operation of the proposed development are detailed below and further referenced in Appendix 3-2, CEMP.

#### **3.7.1 Waste Management**

A project specific Waste Management Plan (WMP) has been prepared for the site (Appendix 3-7) which outlines the best practice procedures during the construction phases of the project. This WMP should be used alongside the CEMP (Appendix 3-2). The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage. Recycling of waste will be the preferred option with disposal of waste to landfill minimised as much as possible.

The primary aim of the WMP will be to prevent and thereby reduce the amount of waste generated at each stage of the project. Reusing as much of the waste generated on site as possible will reduce the quantities of waste that will have to be transported off site to recovery facilities or landfill. Where waste cannot be reused, a target of 92% of waste generated is to be recycled as noted in Appendix 3-2. There are a number of established markets available for the beneficial use of Construction and Demolition waste such as using waste concrete as fill for new roads. At all times during the implementation of the WMP, disposal of waste to landfill will be considered only as a last resort.

Prior to the commencement of the proposed development a member of the on-site construction management staff will be assigned the role of Waste Management Coordinator. The Waste Management Coordinator will be in charge of the implementation of the objectives of the WMP, ensuring that all hired waste contractors have the necessary authorisations and that the waste management hierarchy is adhered to. The person nominated will have sufficient authority so that they can ensure everyone working on the proposed development adheres to the WMP.

The WMP will be adhered to by all Subcontractors / Specialists and all other site personnel involved in the project. The WMP which will be explained during the induction process for all site personnel. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase. Reuse of certain types of construction wastes such as broken rock will cut down

on the cost and requirement of raw materials therefore further minimising waste levels.

In order to ensure appropriate segregation of waste on site, a material storage zone will be provided in the compound area. This storage zone will include material recycling areas and facilities. A series of 'way finding' signage will be provided to route staff and deliveries into the site and to designated compound or construction areas, as appropriate.

### **3.7.2 Dust**

Construction dust can be generated from many on-site activities such as excavation and backfilling. The extent of dust generation will depend on the type of activity undertaken, the location, the nature of the dust and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or, periods of dry weather. Construction traffic movements also have the potential to generate dust as they travel along haul routes.

Proposed measures to control dust include:

- Any site haul roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- The designated public roads outside the site and along the main transport routes to the site will be regularly inspected by the foremen for cleanliness and cleaned as necessary.
- Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind.
- Water misting or sprays will be used if required particularly if dusty activities are necessary during dry or windy periods.
- All construction related traffic will have speed restrictions on un-surfaced roads to 15 kph.
- Daily inspection of the construction site to examine dust measures and their effectiveness.
- When necessary, sections of the haul route will be swept using a truck mounted vacuum sweeper; and
- All vehicles leaving the construction areas of the site will pass through a wheel cleansing area prior to entering the local road network.

### **3.7.3 Noise**

Noise emissions arising from construction phase operations at the proposed development site will be at a level which is considered normal for such a building site, and will comply with legal requirements.

If it is necessary to undertake rock breaking along the northern or eastern boundaries, noise levels received at the Eir building, and at the office building outside the northwest corner of the site, may increase temporarily, and the following mitigation measures are proposed here:

- It is proposed that management at these buildings be given adequate advance notice.
- As the duration of breaking may be shortened to several hours by using two or more breakers simultaneously, it may be possible to agree suitable breaking periods which allows shorter intense breaking, thus completing the operation more quickly.

- Alternatively, it may be practical to carry out breaking near these buildings on a Saturday, when the buildings are less occupied.
- The use of quiet breakers is recommended. Such breakers typically produce sound pressure levels which are 2-5 dB lower than conventional units.
- Depending on the location of breaking, it may be feasible to insert a temporary barrier between the breaker and the office buildings. The requirement for a barrier, and the specific dimensions and type, may be determined following identification of locations to be broken out.

No other specific construction mitigation measures are warranted. General measures are proposed as follows:

- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- During the construction phase, an increased number of trucks may arrive at the site during certain activities eg. during concrete pours. It is recommended that a management plan be drawn up to prevent unnecessary congregation of trucks around the site entrance, and that queuing is prohibited on Monivea Road.
- Ensure that operations are designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors;
- Local hoarding, screens or barriers will be erected as required to shield particularly noisy activities.
- Drop heights will be minimised when loading vehicles with rubble.
- Vehicles will be prohibited from waiting within the site with their engines running or alternatively, located in waiting areas away from sensitive receptors.
- The use of particularly noisy plant will be limited, i.e. avoiding use of particularly noisy plant early in the morning.
- All pneumatic tools will be fitted with silencers/mufflers.
- Diesel generators will be sound proofed to minimise the potential for noise impacts.
- Plant and machinery with low inherent potential for generation of noise and/or vibration will be selected. All construction plant and equipment to be used onsite will be modern equipment and will comply with the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations.
- Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.
- Compressors will be of the “sound reduced” models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machines, which are used intermittently, will be shut down during those periods when they are not in use.
- Tool Box Talks will be provided to drivers to ensure smooth machinery operation/driving, and to minimise unnecessary noise generation; and,
- Access routes will be condition monitored and maintained in a clean condition.

Certain construction operations, chiefly rock breaking (if required), may give rise to ground borne vibration. If undertaken in proximity to the Eir building, or the office building outside the northwest corner, vibration may be perceptible to building occupants. PPV levels are not expected to approach typically applied criteria with respect to building damage. Nonetheless, it is recommended that real time monitoring of PPV levels be undertaken at both buildings if rock breaking is undertaken within 50 m.

Prior to rock breaking (if required), it is also recommended that the management at the office building outside the northwest corner, and at a laboratory at the northeastern end of the same commercial park, be contacted to determine if inhouse medical or analytical equipment requires real time monitoring of PPV levels while breaking is undertaken.

No specific mitigation measures have been identified with respect to the commissioned development, apart from the following which have been agreed with the applicant:

- Traffic speeds on external site areas will be restricted through layout design and signage. Speed bumps will not be used, due to their tendency to increase noise emissions.
- Clear signage will be posted in carpark areas advising users to refrain from hooting.

#### **3.7.4 Road Cleaning and Wheel Washing**

The Contractor will make provision for the cleaning by road sweeper etc. of all access routes to and from the site during the course of the works as required. It is intended that cleaning will be undertaken as required. A wheel wash facility will be provided on site to clean site traffic leaving the site. Waste water generated at this washing facility will be sent off site for recovery. All road sweeping vehicles will be emptied off site at a suitably licensed facility as per our construction stage environmental waste management document.

#### **3.7.5 Water Supply**

As noted in Appendix 3-3, the following existing public watermain infrastructure exists adjacent to the development:

- 9-inch nominal diameter asbestos watermain located on Joyce's Road with a 150mm diameter Cast Iron connection to the proposed development;
- 300mm nominal diameter asbestos watermain located on Monivea Road and
- 300mm nominal diameter asbestos watermain located on the Tuam Road.

The existing water supply connection is to be retained on site. The extent of the existing connection within the site is not known. This is intended to be confirmed through a utility survey currently being undertaken.

The design loading for foul drainage is used to evaluate an approximation of the water demand on the site, without additional flow to allow for surface water infiltration.

To further reduce the water demand on Irish Water, water supplies and to reduce the foul discharge from the development, water conservation measures will be incorporated in the sanitary facilities throughout the development, e.g. dual flush toilets, Monobloc low volume push taps and waterless urinals.

### **3.7.6 Water Management**

As the basement is already excavated only minimal water / rainwater will need to be removed from site. It is planned to let rainwater soak naturally back into the ground in areas not being worked on. In zones under construction it is proposed to run any excess water through an environmental structure such as a settlement tank / silt trap and pump clean water into the combined sewer at an agreed discharge rate during the construction phase (subject to Galway City Council agreement).

A discharge monitoring inspection programme will be put in place and agreed with the Galway City Council Drainage Engineer. This methodology safeguards water quality and provides a solution for catching suspended solids and sediment prior to discharge into the combined sewer.

Temporary toilets will be provided for the workers on the construction site. An application will be made to connect temporarily to the local sewage network for these site toilets. Wastewater arising on-site from these toilets will be then discharged to the foul sewer network for treatment.

A project specific Waste Management Plan (WMP) has been prepared to accompany the CEMP which outlines the best practice procedures during the construction phases of the project. The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage. Recycling of waste will be the preferred option with disposal of waste to landfill minimised as much as possible.

Further information on Waste Water Management is referenced in Appendix 3-2 and 3-3.

### **3.7.7 Aggregates**

The aggregates required for the construction of the proposed development will be sourced, as much as is possible and practicable, from quarries and suppliers located as near as possible to the proposed development. This will reduce the potential for any negative impacts associated with the haulage of the materials to the site of the proposed development. Existing soils and subsoils located on the site will be used where possible to reduce the amount of such materials required for import onto the site.

### **3.7.8 Construction Traffic/Plant**

The following mitigation measures will be implemented in relation to construction traffic and plant/machinery:

- All vehicles to switch off engines when not in use – no idling vehicles
- Effective vehicle cleaning and wheel washing on leaving site and damping down of haul routes
- No site runoff of water or mud.
- On-road vehicles to comply to set emission standards.
- All non-road mobile machinery (NRMM) to be fitted with appropriate exhaust system and be regularly serviced.
- Hard surfacing and effective cleaning of haul routes and appropriate speed limit around site

Further information can be found in Appendix 3-8, the Construction Traffic Management Plan.

### **3.8 Operational Phase**

The proposed development will require periodic maintenance throughout the operational phase. The operation of a mixed-use development such as this is not a recognised source of environmental emissions or nuisance and so there will be no adverse effects associated with its operation.

It is proposed that any surface water that enters the basement levels of the proposed development will drain via gravity to a silt trap and then an attenuation tank acting as a basement sump, with a hydrocarbon interceptor which is already existing on site. From here, water will be pumped to the Monivea foul sewer which runs along the public road on the Monivea Road.

Surface water from the site will pass through a silt trap before entering attenuation tanks prior to discharging to outfalls on either Connolly Avenue or the Monivea Road. It is proposed that approximately 70% of this surface water discharge will be to Connolly Avenue, while the remaining 30% will be to the Monivea Road.

As described in the Engineering Report (Section 2.2.2) a below ground drainage system will be provided for the site. This will deal with foul water from both the residential/commercial developments and the suspended drainage system in the basement. It is proposed to connect this drainage system to the 675mm diameter public foul water sewer located in the Monivea Road. The limited volume of foul water associated with the -1 & -2 basement is proposed to be collected via an on-site network of pipes in the lower basement and discharged to the Monivea public (Irish Water) foul sewer via two pumping stations. One at the southwestern corner of the site would deal with the foul water from the commercial development, including the hotel, while the residential development on the eastern side of the site would discharge via a pumping station on the southeastern corner. The pumping stations would have expected storage for 24 hours.

Further information on Waste Water Management is referenced in Appendix 3-2 and 3-3.

Water supply to the site will be via an existing onsite 125mm connection to the adjacent public (Irish Water) watermain.

An Operational Phase Waste Management Plan is provided in Appendix 3-9 of this EIAR.

The development will provide approximately 1,104 bike parking spaces. Consideration will be given to the provision of a cycle for rent scheme such as the existing 'Coke Zero' Galway Bike scheme. Car parking spaces (1,377 no.) will be provided in the basement levels of the proposed development. In accordance with the extant Galway City Development Plan requirements provision will be made for disabled parking an area within the car-park visitor spaces may be reserved for 'GoCar' type (rental) facilities and Electrical Vehicle (EV) charging Points will be provided in accordance with the EU Directive - Energy Performance in Building Directive 2018 and the GCDP.

Further information on site operation is provided in the Operational Management Plan (Appendix 3-10).

### **3.9 Decommissioning Phase**

It is not intended that the proposed buildings will be removed, as permanent planning permission is being sought for this development. The proposed development will form

an integral part of the local commercial, recreational and tourism needs. Therefore, it is intended that the proposed development will be retained as permanent, with no intention or requirement for decommissioning.