

## 2 NON-TECHNICAL SUMMARY

This Environmental Impact Assessment Report (EIAR) has been prepared to support the proposed Woodbrook Strategic Housing Development (SHD) application for residential development and associated infrastructure on a site generally bounded by the Old Dublin Road (R119) to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands to the south.

The EU Directive requires the production of a Non-Technical Summary as part of the production of an EIAR. The Non-Technical Summary ensures that the public is made aware of the environmental implications of any decisions about whether to allow new developments to take place. The Non-Technical Summary is laid out in a similar, but summarised format to the main EIAR, describing the project, existing environment, impacts and mitigation measures.

Assessments have been conducted in an integrated, collaborative and analytical process in accordance with the Guidelines on the environmental topics to be examined. This seeks to identify the potential for significant adverse environmental impacts arising from the proposed project. The overall finding of these studies is that, subject to the specified ameliorative, remedial or reductive measures being implemented, the likely effects of the proposed development on the environment during both the construction and operational stages will not be significant.

### 2.1 Purpose of the EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development as well as to describe the means and extent by which they can be reduced or ameliorated, to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

### 2.2 A Note on Quotations

Environmental Impact Assessment Reports by their nature contain statements about the proposed development, some of which are positive and some less positive. Selective quotation or quotations out of context can give a misleading impression of the findings of the study.

Therefore, the study team urge that quotations should, where reasonably possible, be taken from the overall conclusions of specialists' section or from the non-technical summary, and not selectively from the body of the individual chapters.

### 2.3 The Requirement for an EIAR

The process to determine whether an EIA is required for a proposed development is called Screening. This is dependent on the mandatory legislative threshold requirements or the type and scale of proposed development and significance or environmental sensitivity of the receiving environment.

Annex I of the EIA Directive 85/337/EC requires as mandatory the preparation of an EIA for all development projects listed therein. Schedule 5 (Part 1) of the Planning & Development Regulations 2001-2018 brought Annex 1 of the EIA Directive directly into Irish planning legislation. The Directive prescribes mandatory thresholds in respect to Annex 1 projects. Annex II of the EIA Directive provides EU Member States discretion in determining the need for an EIA on a case-by-case basis for certain classes of project having regard to the overriding consideration that projects likely to have significant effects on the environment should be subject to EIA.

Schedule 5 (Part 2) of the Planning & Development Regulations 2001 – 2018 set mandatory thresholds for each project class. Sub-section 10(b)(iii) and (iv) addresses 'Infrastructure Projects' and requires that the following class of project be subject to EIA: (b)(i) **Construction of more than 500 dwelling units**. Category 10(b)(iv) refers to 'Urban development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.'

The proposed development comprises 685no. residential units and ancillary supporting facilities, on a site of c. 21.9 Ha. The project exceeds the 500 no. dwelling units threshold requiring mandatory EIA.

## 2.4 Description of Proposed Development

The residential site is located in an area identified for development under the Woodbrook – Shanganagh Local Area Plan 2017 – 2023; the ‘Woodbrook’ lands. There is also an area east of the existing DART line that lies outside of the LAP boundary which forms part of the application site. This area is proposed for a golf course use. The LAP is predicated on delivery of the Woodbrook DART Station, the two new golf holes on Council owned land is fundamental to the Applicant securing vacant possession of the DART Gateway lands and thus the two new golf holes are proposed for inclusion as part of this forthcoming SHD planning application to allow both Dun Laoghaire-Rathdown County Council and An Bord Pleanála to consider all related elements of the Woodbrook Phase 1 proposal.

The site consists of lands generally bounded by the Old Dublin Road (R119) to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands to the south.

As such, the Woodbrook lands are considered to represent a distinct ‘parcel’ of zoned land surrounded by a green belt area with existing access routes (both road and DART) generally running along its western and eastern boundaries.

The proposed land use is primarily residential. A childcare facility is proposed as a ground floor use as part of an apartment block adjacent the Old Dublin Road (R119). Significant areas of public open space, green infrastructure networks and supporting physical infrastructure works are also proposed including a temporary surface car park serving the future Woodbrook DART Station and foul pumping station and associated 24hr storage tank. 2no replacement golf holes are also proposed on lands to the east of the existing DART line (northeast of the future DART Station).

The proposed development subject of this SHD Planning Application will generally comprise 685no. units (207no. houses, 48no. duplex / apartments and 430 no. apartments) ranging from 2 to 8 storeys.

In terms of land use planning, under the Dun Laoghaire-Rathdown County Council (DLRCC) Development Plan 2016 – 2022 the subject site has primarily been zoned Objective ‘A1’, the objective of which is *“to provide for new residential communities in accordance with approved local area plans.”* The type of uses proposed (residential, childcare, and amenity spaces) are either ‘Permitted in Principle’ under the ‘A1’ zoning objective. The residential and ancillary uses proposed are fully compliant with the over-arching zoning objective for the subject lands.

Generally, the design proposes the integration of the Woodbrook – Shanganagh Local Area Plan 2017 – 2023 structure of open spaces and green loops, hierarchy of street, urban blocks, land uses and building height. The Applicant has prepared a Masterplan setting out how the proposal and future phases of the Woodbrook lands are consistent with the Local Area Plan.

The net residential density of the proposed development will be 78no. units per Ha, based on a net developable site area of 8.8 Ha. The Masterplan consist of approximately 1,402no. residential units with a density of 93no. units per Ha, based on a net developable site area of 15.1 Ha. The Masterplan also considers the future development of the proposed temporary car park which consists of approximately 1,488no. residential units with a density of 96no. units per Ha, based on a net developable site area of 15.6 Ha.

The landscape proposal is premised on the basis of maximising existing natural features and providing functional green spaces and green links to serve both the prospective residents but also the wider surrounding residential areas. The proposed development provides c. 2.96 Ha of public open space. The landscape proposal includes 2no. north / south linear parks which will include areas for formal and informal play. These green links will include formal access point to the north to provide connectivity with Shanganagh Public Park.

The proposed development includes the development of an internal road network, with a clear hierarchy of streets each of which provides for cycle and pedestrian safety and access. The proposed scheme itself has been designed so as to be highly permeable, ensuring ease of circulation throughout and easy access to proposed areas of public open space and local centre facilities. Formal access will be from the Old Dublin Road (R119). 3no. access layout / scenarios from Old Dublin Road have been prepared to demonstrate that the development facilitates the future implementation of BusConnects.

The proposal includes the provision of Woodbrook Avenue to future Woodbrook DART Station to support its implementation. The layout of the proposed development has been designed in accordance with the Design Manual for Urban Roads and Streets (2013). In general, the layout is permeable and encourages walkability.

The following wastewater infrastructure is proposed, including: -

- Pumping station located adjacent the southern boundary of the application site.
- Associated 24 hour emergency storage tank.
- Rising main through Shanganagh Public Park to the north to connect with existing foul network in St. Anne's Park residential estate.
- Internal wastewater network commensurate to residential development.

Irish Water have confirmed that a final solution to provide a rising main for Woodbrook – Shanganagh Local Area Plan direct to the Shanganagh Wastewater Treatment Plant is at design stage and that an interim solution to discharge to the St. Anne's Park residential estate to the North of the Woodbrook lands is feasible and acceptable.

The proposed pumping station has been sized so as to accommodate not just the development of the Applicant's lands, but also the development of the lands at Shanganagh to be developed by DLRC in due course.

The surface water network proposed has been designed to cater for the entire Woodbrook – Shanganagh Local Area Plan. SuDS measures will include: underground modular system, porous / permeable paving, swales / filter drains, green roof on apartment blocks where possible and vortex flow controls.

The surface water will be discharged at greenfield run-off rates along the southern boundary of the site in a westerly direction to the Old Dublin Road (R119) and then continuing along the Old Dublin Road in a southerly direction until discharge to the existing culverted section of the Crinken Stream at the location of Woodbrook College.

A temporary surface car park is proposed in the north east of the application site. The surface car park provide 164no. car parking spaces to server the future Woodbrook DART Station.

The Masterplan for Woodbrook included the development of part of the residential development of lands currently occupied by Woodbrook Golf Course. In order for the lands in the immediate vicinity of the planned DART Station to become available for development, the replacement golf holes will need to be constructed and ready for use. These lands are located on the eastern side of the rail line.

The work on this parcel of land will include the development of 2no. replacement golf holes which will necessitate the following principal works incusing removal of existing trees / hedgerow where required, excavation, regrading and shaping of the soil to form the golf holes, installation of associated irrigation and surface water system and extensive additional planting.

## 2.5 Alternatives Considered

Potential alternatives to the proposed development were considered as the scheme progressed and are summarised below.

A number of site layout and alternative designs were considered during the iterative design process in consultation with Dun Laoghaire-Rathdown County Council. Further design alterations were informed at planning design stage by the Opinion of An Bord Pleanála on foot of Pre-Application Consultation held on 17 December 2018.

No particular further alternatives to the nature, design and layout of this project have been identified in the preparation of this EIAR, further to the prescribed design parameters of the adopted Woodbrook – Shanganagh LAP and as a result of potential significant adverse impacts on the environment arising at planning design stage. The mitigation measures do not call for changes to the design and layout of the proposed residential scheme.

### **Dun Laoghaire Rathdown Pre-Planning Layout**

The initially proposed development consisted of c. 400no. residential units and associated landscaping, parking and open space on a c. 8 Ha site.

As a result of Pre-Planning discussion with DLRCC further consideration was given to the provision of sufficient and good quality public and communal open space, appropriate design in the context of the area (connectivity and permeability) and wastewater treatment and surface water management.

### **An Bord Pleanála Pre-Planning Consultation**

The scheme as submitted to the Board at Pre-Planning Consultation stage comprised of 428no. residential dwellings in a mix of houses, duplexes and apartments in a range of heights from 2 to 6 storeys. The layout provided for significant public open spaces and north/south green links to Shanganagh Park. A childcare facility and ancillary site development and landscape works were also provided for. 2no. replacement golf holes for the Woodbrook Golf Club on lands east of the railway line also formed part of this layout in order to facilitate future development.

The Board, in its assessment of the key issues to be further examined by the Applicant to support a reasonable basis for an application for strategic housing, identified the following issues for further consideration and/or justification: -

- Sustainable residential density that results in acceptable efficiency in use of serviceable land, balance with site context. Appropriate net density to be justified having regard to the relevant national and regional planning policy and guidance for a site at this location.
- Design, Layout & Unit Mix to have regard to the 12no. criteria identified in the Urban Design Manual (2009), in particular the creation of distinct character areas, layout and building height responding to the site context, connections to existing and proposed residential development and public open spaces.
- Surface water management and maximisation of SUDS measures.

The final iteration of the proposed development comprises 685no. units. Design changes to the built edge were made along the eastern boundary to provide an orthogonal arrangement in the form of courtyard apartment block with communal spaces facing east. An 8 storey element is provided in Block A at the end of Woodbrook Avenue to provide a focal point within the development. An additional apartment block was included to the Southern Housing Area adjacent to the pocket park. Furthermore, the proposed Masterplan (i.e. Phase 1 and Phase 2) was considered to allow for approximately 1,400no. buildings in total within increased densities along the Woodbrook Avenue and at the future DART Station. The wastewater and surface water management have been subject to detailed design and consultation with both Irish Water and DLRCC. The final iteration of the scheme is not considered to give rise to any significant adverse environmental impacts.

## **2.6 Population and Human Health**

This Chapter evaluates the impacts, of the proposed development on human health of the population surrounding the proposed residential development at Woodbrook, Shankill, Co. Dublin.

According to the 2016 census results there are 5,488no. people living within the study area. National health trends were consulted to give an overall indication of the general wellbeing of the population.

Studies have shown that well designed developments such as the one proposed (Residential with designed landscape aspects) have an overall positive effect on the overall mental and physical health of the local population.

Issues examined as part of the possible impact on human health from the proposed development including Air Quality, Noise and Vibration, Traffic, Visual and Health and Safety. These chapters should be consulted in relation to specific impacts and mitigation measures.

In relation to air quality the impact of construction of the proposed development is likely to be negative, short-term and imperceptible with respect to human health. The mitigation measures that will be put in place during construction of the proposed development will ensure best dust mitigation practice based on the Institute of Air Quality Management (IAQM) Guidance. Furthermore, mitigation will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. During the operational phase of the project the pollutants of most concern are NO<sub>2</sub> and PM<sub>10</sub>, as these pollutants are generated as a direct result of vehicles and have the greatest potential to exceed the air quality standards. There are no other impacts on air quality associated with the operational phase of the proposed development. Air dispersion modelling of operational traffic emissions was undertaken. Modelling results show emissions as a result of the proposed development are compliant with all National and EU ambient air quality limit values and, therefore, will not result in a significant impact on human health.

As detailed in Chapter 12: Air (Noise & Vibration) it is believed noise and vibration impact of the construction phase of the proposed development will not be significant. No predicted significant adverse impact arising from vibration during construction provided works are carried out so as to fall under the relevant vibration criteria.

Due to the type of proposed development (residential) the predicted increase in noise level at the nearest noise sensitive locations conclude that the associated impact is neutral, long term and imperceptible to minor during operation. The proposed development will not generate any perceptible levels of vibration during operation and therefore there will be no impact from vibrations on human health.

The impact of traffic generated by the proposed development on human health during both the construction and demolition phases of the proposed development is dealt with in Chapters 14: Material Assets (Transportation) of this EIAR.

There will be moderate to significant negative townscape impacts during the construction stage of the proposed development, however these will be short term in duration. Once operational, the new development will contribute positively to the form and function of the local area. The improved townscape and visual settings will result in a positive impact on population and human health in the area.

The proposed development has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) to minimise the likelihood of any impacts on worker's health and safety.

During the operational phase of the development, the operator will implement an Environmental Safety and Health (EH&S) Management System and associated procedures at the facility. Full training in the EH&S Management System and relevant procedures will be provided to all employees.

## **2.7 Biodiversity**

### **Introduction**

This section provides a non-technical summary of the likely significant effects on Biodiversity (Flora & Fauna) of the Proposed Development comprises a residential development of 685no. residential units and a crèche facility in buildings ranging from 2 to 8 storeys and for 2 new replacement golf holes on lands at Woodbrook, south of Shankill, County Dublin. Measures to mitigate the potential impacts on defined key ecological receptors are proposed.

Screening for Appropriate Assessment under the EU Habitats and Birds Directives has concluded that there will be no risk of significant negative effects on any European site as a result of the proposed project, either alone or in combination with other plans or project, in that regard, the Appropriate Assessment Process – preparation of a Natura Impact Statement – is not required.

### **Study Methodology**

The assessment involved a desk study and several field surveys by suitably qualified ecologists including specialists in habitat survey, winter birds and mammal ecology. The methodologies used to determine the value of ecological resources, to characterise impacts of proposed development and to assess the significance of impacts and any residual effects are in accordance with the NRA *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA/TII, 2009). This methodology is consistent with the *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland – Terrestrial, Freshwater, Coastal and Marine* ('the CIEEM Guidelines', CIEEM, September 2018).

The methodology used in this assessment has had regard to the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (Environmental Protection Agency, Draft, 2017).

### **The Existing Receiving Environment**

The Site is made up of 2 principal areas (the Woodbrook Residential Area and the Woodbrook Golf Development Area). The Woodbrook Residential Area comprises a number of fields, until recently in agricultural use (arable and grassland fields), bounded by mature hedgerows/tree lines. A section of Woodbrook Golf Club is also included (all/part of the existing second and third holes). The Woodbrook Golf Development Area is located immediately east of the railway and comprises a small triangular area of scrub to the west of the existing seventh golf hole, and two grassland fields to the west of the existing eighth golf hole at Woodbrook Golf Club. This part of the Site is to be used for the provision of two new golf holes in replacement of those lost on the existing course west of the railway. In addition, the study area includes a narrow band located on an existing path extending north through Shanganagh Park, for the purposes of providing the foul rising main connection to St. Anne's Park, Shankill.

### **Protected sites and Species**

No designated conservation areas occur within the area of the proposed development, nor in the immediate vicinity of the Woodbrook landholding. The nearest Special Areas of Conservation (SAC) are Ballyman Glen SAC, c.2.6km to the south west, Bray Head SAC, c.3.1km to the south east and Rockabill to Dalkey Island SAC, c.3.5km to the north east. The nearest Special Protection Areas (SPA) are Dalkey Islands SPA, c.5.8km to the north east, Wicklow Mountains SPA, c.7.9km to the west and South Dublin Bay and River Tolka Estuary SPA, c.8.8km to the north.

The nearest sites designated for nature conservation that are not already also listed as European sites are Loughlinstown Woods proposed Natural Heritage Area (pNHA) (c.2.6km to the north), Dalkey Coastal Zone and Killiney Hill pNHA (c.3.0km to the north), Dargle River Valley pNHA (c.4.0km to the south west), Dingle Glen pNHA (c.4.6km to the north west, and Powerscourt Woodland pNHA (c.4.9km to the south west). There are no known records of rare or protected plant species within the immediate vicinity of the proposed development.

### **Habitats and Species**

The majority of the site (i.e. the Woodbrook Residential Area) comprises large agricultural fields. These were by and large under arable crop production up until 2018. In 2019 no crops were grown and the fields have been left fallow. The fields in the southern-most part of the site are former agricultural grassland, grading into dry calcareous and neutral grassland, with encroaching willow and bramble scrub.

The north eastern-most part of the proposed Woodbrook Residential Area is part of the existing Woodbrook Golf Club, comprising amenity grassland. Further north and east (i.e. at the Woodbrook Golf Development Area) are two more agricultural/amenity grassland fields, with regularly mown paths around the edges. These fields are regularly accessed by dog walkers and others using Shanganagh Park to the immediate north.

The field boundaries in the Woodbrook Residential Area are dominated by dense and mature but gappy hedgerows and tree lines. A block of mixed broadleaved woodland, dominated by lime, beech and sycamore and with a notably poor ground flora (ivy) is located to the south of the Residential Development area.

The hedgerows and tree lines are in poor ecological condition, with lower species diversity than would be expected at such a site. Although formerly dominated by planted hawthorn, much of the hawthorn has now been lost. Occasional wild cherry is present in some of the old hedgerows. In most parts of the site the field boundaries have associated pockets of bramble-dominated scrub, with dense pockets of ivy and nettles, with patches of old man's beard also present.

The nearest watercourse is the Crinken / Woodbrook Stream (also known as the Rathmichael Stream, located to the west and south of the site. It is within 150m of the south western corner of the site at its closest point and enters the Irish Sea approximately 1km downstream of the site at Bray Strand. Two other watercourses, the Shanganagh River and the Dargle River pass within 2km of the site, however neither of these features have any hydraulic connectivity to the site.

There are no watercourses on the site and few significant drainage ditches, except for a linear drainage ditch, associated with the field boundary tree line running from north to south through the centre of the site. It has no fisheries value whatsoever.

The bat surveys undertaken to inform this report concluded that there are no bat roosts within the Phase 1 area (either the proposed residential area or the golf development area), however this does not rule out the occasional use of features (mature trees) on the site by roosting bats. Three species of bat (common pipistrelle, soprano pipistrelle and Leisler's bat) were noted feeding or commuting within the site during the surveys undertaken.

A badger sett is located within a hedgerow/patch of scrub in the northern part of the Woodbrook Residential Area, just outside the Phase 1 development boundary. This is a long-established sett, likely to be in excess of 100 years old. It has been subject to vandalism in recent years, however, following a period of monitoring undertaken in late 2018/early 2019 (including for several weeks with a passive infrared camera) it was confirmed that the sett is an active 'main' sett, likely used by breeding badgers.

The majority of the birds recorded were not species of conservation concern. Rarer species noted included linnet, starling, skylark and stock dove, as well as yellowhammer, herring gull, curlew and lapwing (all present in small numbers).

The development lands (i.e. the Woodbrook Residential Area and the Woodbrook Golf Development Area) in their current state are not suitable for grazing Light-bellied Geese. Their unsuitability is due to the nature of the habitats present within the lands. That is primarily, stubble and unmaintained improved grassland.

### Overall Evaluation

The hedgerows/tree lines that form the field boundaries as well as patches of scrub associated with the linear features, are the main ecological feature on the Woodbrook Phase 1 site (both the proposed residential and golf club development areas). These features are of Local Importance (Higher Value), in accordance with the ecological resource valuations presented in the NRA Guidelines for Assessment of Ecological Impacts of National Road Schemes. They are considered to be sensitive ecological receptors. The fields that dominate the site are of Local Importance (Lower Value) and are not considered to be sensitive ecological receptors (other than as feeding and foraging habitat for badgers).

No features of significance for roosting bats are present within the Phase 1 lands at Woodbrook, however the site is of some importance for commuting and foraging bats. The larger hedgerows and tree lines within and around the site are all of importance for nesting birds. The site is of Local Importance (Higher Value) for bats and breeding birds and these species are considered to be sensitive ecological receptors.

Given the presence of an active 'main' badger sett on the site boundary to the north, the site is considered to be of Local Importance (Higher Value) for badgers, which are considered to be sensitive ecological receptors.

### **Potential Impact of the Proposed Development**

The AA Screening report (submitted separately) concluded on the best scientific evidence that it can be clearly demonstrated that no elements of the project will result in any likely significant impact on any relevant European site, either on their own or in-combination with other plans or projects, in light of their conservation objectives.

The proposed development will require the removal of the existing fields and their replacement with either residential development and landscaping or new golf club holes and associated features. There will be no significant impacts as a result of this habitat loss.

The proposed development will involve the loss of sections of the internal hedgerow and tree line network on the site as well as the removal of patches of scrub. The drainage ditch that runs from north to south through the site will also be partly culverted. In addition to being of local ecological value in their own right, these linear habitats are also wildlife corridors, allowing movement through the site and connectivity to the wider countryside. This loss is considered to be a probable permanent, significant negative impact at a site level.

Although the intention is to retain the badger sett as part of Phase 1, the proposed development under the current planning application will nevertheless result in potential disturbance to the sett. It is not proposed to close the sett even on a temporary basis in order to facilitate the Phase 1 development, however a licence to disturb badgers will be required. The mitigation will include the provision of buried fencing (e.g. chain link fencing) and solid hoarding to prevent badgers from accessing the works area and to prevent damage to badger sett tunnels. In the absence of mitigation to avoid disturbance to the badger sett the construction of elements of Phase 1 would be a temporary significant negative impact.

No significant impacts on otters, or any other large mammals are expected as a result of the proposed development.

Although no confirmed bat roosts have been recorded within the proposed development area at Woodbrook, the felling of mature trees nevertheless creates a risk of roost loss. Reduced vegetation will lead to reduced insect abundance. In the absence of mitigation this will be a permanent moderate negative impact.

There will be a reduction in vegetation cover for nesting birds as a result of the proposed development. In the absence of mitigation this will be a permanent moderate negative impact. It is not expected that impacts on amphibians, reptiles and lepidoptera will be significant, and the open space and landscaped areas provided as part of the proposed development will incorporate features suitable for use by all these species.

Both the construction and operational phases of the proposed development at Woodbrook could have impacts on water quality, via contaminated run-off and sedimentation. However, all construction works will proceed in line with the recommendations and guidance provided in the Outline Construction & Environmental Management Plan (OCEMP) for the proposed development. Contamination of water (including surface water and ground water) from foul water, hydrocarbons, silt or other pollutants will be prevented by these mitigation measures. Provided that site facilities are correctly designed and proper working procedures are strictly adhered to, no impacts on existing watercourses are expected, either during the construction or operation of the proposed development.



### **Avoidance, Remedial & Mitigation Measures**

No designated conservation areas will be impacted in any way by the proposed development and no mitigation measures are required in this regard.

In order to mitigate the habitat loss, and to maximise the biodiversity value of the retained habitat, significant new planting will be incorporated into the landscape design for the proposed development. The proposed planting/landscaping strategy will use a mix of appropriate species to replace the trees and other habitats that are to be removed. The planting will also incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. It will take account of and implement the relevant objectives of the All-Ireland Pollinator Plan 2015-2020. The planting will, over time, provide replacement habitat of benefit to the bats and birds that will continue to use the site and its boundaries. Connectivity to Shanganagh Park to the north will be maintained.

Where feasible and practicable, the removal of trees and other features suitable for use by nesting birds will be undertaken outside the bird nesting season (avoiding the period 1st March to 31st August). Should the construction programme require vegetation clearance between March and August bird nesting surveys will be undertaken by suitably experienced ecologists.

All mature trees shall be checked for bats by a bat specialist to identify trees with the highest potential prior to felling. Bat and bird boxes will be erected, with advice from the project ecologist, on mature trees, mainly in the woodland to the north of the proposed development area. A total of six bat boxes (such as Schwegler 2F) and four bird boxes (such as Schwegler 1B or similar) will be erected, with advice from the project ecologist, on mature trees, within or on the perimeter of the proposed development site.

All new lighting for the proposed development at Woodbrook has been designed taking account of the recommendations of Bat Conservation Ireland (2010).

### **Residual Impacts**

Overall, although the proposed development may have some temporary negative impacts at the local level, these impacts will be fully mitigated over time to be rendered negligible.

It will be possible to retain the badger sett in place as part of the delivery of Phase 1, however the sett will be removed as part of future development plans. Although the loss of the sett would be, if unmitigated, a significant impact at the local level, the provision of an artificial (replacement) sett will reduce this impact to slight or moderate negative over time.

There will be a limited loss of feeding within the site for bats and birds and a loss of nesting areas for birds. Vegetation will establish over time and these losses will be reduced considerably. There will still be less cover for birds following all mitigation. There will be very limited (negligible to slight negative) long-term impact upon bats within the site given the low level of bat activity noted. There will be limited or no loss of roost potential as the site develops and with the provision of bat boxes.

## **2.8 Land and Soils**

A desktop study, site walkover survey and ground investigation were carried out in order to inform the Land, Soils and Geology Chapter prepared by Atkins Ireland Limited (Atkins).

In general, land-use in the area of the proposed development is a mix of agricultural, recreational and residential with some industrial land-use further south.

The site has historically been used as agricultural land and continues to be utilised as such. The area of the proposed relocated golf holes is currently used for recreational / amenity purposes. The surrounding areas of the site are used for agricultural and recreational purposes, in addition to Shanganagh Cemetery and Woodbrook Golf Club. The Dart line and Dublin to Rosslare Railway line runs to the west of the development area for the proposed relocation of two Woodbrook golf holes. The railway bisects Woodbrook golf course which itself is located to the east of the proposed residential development. No significant sources of contamination associated with soils or bedrock beneath the proposed development were identified from the desktop review.

Ground investigation was carried out to a maximum depth of 5 meters below ground level (mbgl). The site is underlain by topsoil and glacial till. The glacial till was found to consist of clay with bands of sand and gravel. The ground investigation indicates that bedrock is likely to be encountered at depths in excess of 5mbgl. The maximum depth of excavation to facilitate the construction of the proposed housing development is 2.98mbgl with the maximum depth to be excavated for the golf course at 3.42mbgl. Therefore, it is anticipated that bedrock is unlikely to be encountered. No evidence of soils contamination was encountered during the investigation.

The proposed development is expected to have a permanent moderate adverse impact on land, arising from the proposed change in land-use. However, this change in land-use is consistent with existing and emerging trends and is in keeping with the current zoning policy for the subject lands. Taking account of proposed mitigation measures, no residual significant adverse impacts on soils or geology have been identified associated with the construction of the proposed housing scheme and all ancillary services, the proposed golf course relocation, or the rising mains.

## 2.9 Water

This section addresses hydrology (i.e. surface water) and hydrogeology (i.e. groundwater) in the vicinity of the proposed residential development. The potential impacts of the proposed development (including potential flood risk) and mitigation where required were assessed

There are no onsite streams or rivers and none were identified during the two site walkover surveys completed. A drainage ditch is located within the site; however, this was observed to be dry during both site visits. During a storm event rainfall runoff from across the site is likely to drain primarily to this drainage ditch, with some recharge also occurring to ground. The drainage ditch then flows in a southerly direction and is assumed to discharge to Rathmichael River (also referred to as the Crinkeen / Woodbrook Stream) south of the site. This river then flows in a southerly and south easterly direction prior to discharging to Bray Strand c.1.2km downstream (and south east) of the site.

The Rathmichael River, the Shanganagh River, and the Dargle River are the only named watercourses identified within c.2km of the site. The Rathmichael River rises c. 3km upstream (c. 2.5km) northwest of the site and flows in an easterly and southerly direction before discharging to the Irish Sea at Bray Strand. The Rathmichael River is the only surface water course within c.2km of the site which is hydraulically connected to the proposed development site, as discussed previously. Therefore, it is likely that the site is directly connected to the Irish Sea at Shankill beach via. surface water flow (Rathmichael River), and also indirectly connected, via. shallow groundwater flow and diffuse discharge.

Groundwater vulnerability beneath the general vicinity of the proposed development, is classified as '*High*'. Based on topographic levels shallow groundwater from the western portion of the main site will flow in a south-easterly direction, while shallow groundwater from the eastern portion of the main site will flow in a south-westerly direction. Groundwater quality within the general vicinity of the site (located within the Wicklow Groundwater Body), was of '*Good Status*' for the 2010 to 2015 period. The overall objective of the Water Framework Directive for this groundwater body is to '*Protect*' the current good status.

There are no reported public supply wells within the vicinity of the site. Based on GSI (2019) records the closest reported well to the site is located c. 0.5km south; however, this well is of '*Poor*' yield class and its use is unknown. This localised supply is unlikely to be impacted by the proposed development. The adjacent golf course also abstracts groundwater via. onsite groundwater supply wells for irrigation purposes. Due to the nature and scale of the development, offsite groundwater abstraction wells located within the golf course are unlikely to be impacted by the proposed development.

There is a potential for degradation in groundwater quality resulting from potential pollution caused by construction activities e.g. plant, fuel / chemical spillage etc., particularly during excavations for the proposed residential units (up to eight storeys in height) and creche, wastewater pumping station, foul services and rising main, 7no. attenuation tanks, access road, storm water drainage system, watermain services, and 2no. replacement golf holes.

This could result in likely moderate adverse temporary effects directly to the quality of groundwater receptors (shallow groundwater, bedrock aquifer), and likely slight adverse temporary effects directly and indirectly (via groundwater migration) to the quality of surface water receptors (onsite drainage ditch, Rathmichael River).

During the operational phase of the development, the quality of groundwater receptors (shallow groundwater, bedrock aquifer) and surface water receptors (onsite drainage ditch, Rathmichael River) could be at risk from occasional fuel / oil leaks along the access roads and paved areas. However, the storm water drainage system has been designed to convey and attenuate design flows from the development and to accommodate the attenuated design flows from the proposed development. Proposed car parking areas will be paved, and the sub-base will filter storm water drainage in addition to attenuation of potential hydrocarbon contaminants via microbial action. Accordingly, appropriate design measures have been implemented to address this potential risk and traffic-related groundwater / surface water quality impacts do not warrant further consideration.

During the operational phase, groundwater receptors (shallow groundwater, bedrock aquifer) and surface water receptors (onsite drainage ditch, Rathmichael River) are at risk of becoming contaminated through leakages, spill events, equipment failure or structural failure of the proposed wastewater pumping station. However, the new pumping station will be designed, constructed and operated in accordance with Irish Waters Code of Practises and Technical Standards (IW-CDS-5030-01 to 04 & IW-TEC-800) and manufacturer recommendations. The potential scenarios of leakages, spill events or structural failure arising are therefore unlikely. An alarm will be triggered in the event of a system failure (e.g. equipment failure) this will trigger an alarm and the relevant authority will be informed of the failure. A back-up pump will automatically kick in. In the event of the failure of the back-up pump, the proposed wastewater pumping station has sufficient capacity for 24-hour emergency storage. Therefore, only in a worst-case scenario (i.e. both pumps have failed, and the system failure has not been resolved within a 24-hour period) will the emergency overflow discharge system be required. Emergency overflow discharge will comprise wastewater (which has passed through a screening process) and will discharge directly to Rathmichael River, via the storm water drainage network in the southern portion of the site. This could result in moderate adverse effects directly to groundwater receptors (shallow groundwater, bedrock aquifer) and significant adverse effects directly to surface water receptors (Rathmichael River) via emergency discharge of foul effluent. These effects are unlikely to occur and are likely to be localised, and temporary in duration. It is expected that any short-term release of contaminants would be attenuated via dilution in the receiving waters of Rathmichael River. Mitigation measures will be implemented during the operational phase to reduce these potential impacts.

Mitigation measures will be implemented during both the construction phase and operational phase to avoid these potential effects. Site specific mitigation measures are detailed within Chapter 8: Water.

As a precautionary measure, quarterly monitoring and annual surface water sampling is recommended. Routine inspections of all silt traps should be carried out on a quarterly basis. During each inspection, equipment should be checked, and a visual inspection of water quality in the final chamber should be carried out. Surface water sampling should be carried out at three key locations, on an annual basis (and in the event of a major onsite fuel / oil spill or fire). Samples should be analysed for hydrocarbon parameters. The results should be evaluated to confirm that the onsite storm water treatment system is fully effective.

A standalone Flood Risk Assessment (FRA) has been prepared and submitted with this planning application. A number of design recommendations are included in the FRA report, which have informed the final drainage design proposed as part of this residential development. The residual risk of flooding arising from or to the proposed development is therefore considered to be negligible and does not warrant further evaluation as part of this impact assessment.

In summary, there are no anticipated significant residual adverse effects to groundwater, surface water or transitional waters provided mitigation and monitoring measures proposed during the construction and operational phases are implemented. No residual flood risk has been identified.

## 2.10 Climate (Air Quality and Climate Change)

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on air quality and climate associated with the proposed development at Woodbrook, Shankill, Co. Dublin.

In terms of the existing air quality environment, baseline data and data available from similar environments indicates that levels of nitrogen dioxide, carbon monoxide, particulate matter less than 10 microns and less than 2.5 microns and benzene are generally well below the National and European Union (EU) ambient air quality standards.

Impacts to air quality and climate can occur during both the construction and operational phases of the proposed development. With regard to the construction stage the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors. Impacts to climate can occur as a result of vehicle and machinery emissions. In terms of the operational stage air quality and climate impacts will predominantly occur as a result of the change in traffic flows or congestion in the local areas associated with the proposed development.

Any potential dust impacts can be mitigated through the use of best practice and minimisation measures which are outlined in this report. Therefore, dust impacts will be short-term and imperceptible at all nearby sensitive receptors. It is not predicted that significant impacts to climate will occur during the construction stage due to the scale of the development and the low volume of vehicles and machinery predicted.

The local air quality modelling assessment concluded that levels of traffic-derived air pollutants resulting from the development will not exceed the ambient air quality standards either with or without the proposed development in place. Using the assessment criteria outlined in Transport Infrastructure Ireland's guidance document '*Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes*' the impact of the development in terms of PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub> and benzene is long-term and imperceptible. The proposed development is not predicted to significantly impact climate or regional air quality during the operational stage. Increases in traffic derived levels of NO<sub>x</sub>, VOCs and CO<sub>2</sub> have been assessed against Ireland's obligations under the EU Targets and emissions ceilings set out by Directive (EU) 2016/2284 "*On the Reduction of National Emissions of Certain Atmospheric Pollutants and Amending Directive 2003/35/EC and Repealing Directive 2001/81/EC*". Impacts to climate and regional air quality are deemed imperceptible and long-term with regard to NO<sub>x</sub>, VOCs and CO<sub>2</sub> emissions.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants for both the construction and operational stages of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible in the short and long term.

No significant impacts to either air quality or climate are predicted during the construction or operational phases of the proposed development.

## 2.11 Climate (Sunlight)

ARC Architectural Consultants Ltd. has been commissioned by the Applicant to carry out an analysis of the impact of the proposed development on lands at Woodbrook, Shankill, Co. Dublin on sunlight access in the surrounding area.

A three dimensional digital model of the proposed development and, of existing buildings in the area was constructed by ARC Consultants based on drawings and three dimensional models supplied by the Design Team; on drawings and information available from the Dun Laoghaire-Rathdown Council online planning register; and with reference to on-site, satellite and aerial photography. Using the digital model, shadows were cast by ARC at several times of the day at the equinox and presented on shadow study diagrams submitted with this Environmental Impact Assessment Report. ARC also analysed the three digital models of the proposed development and of the existing buildings surrounding the development site using proprietary sunlight and daylight analysis software in order to quantify the likely impact of the proposed development on windows with a reasonable expectation of sunlight within chosen sample rooms in buildings and on existing amenity in close proximity to the development site.

ARC's analysis indicates that the construction of the proposed development on the Woodbrook lands (i.e. as now proposed and in combination with the envisaged future phase of development) has the potential to result in a change in the shadow environment. Under a worst case scenario, the potential impact of shadows cast by the proposed development and the potential cumulative impact of shadows cast by both phases of development on the Woodbrook lands on sunlight access to lands to the west, north and east of the application site is likely to range from "imperceptible" to "slight". ARC's analysis indicates that shadows cast by the proposed development on the Woodbrook lands (i.e. as now proposed or in combination with the envisaged future phase of development) do not have the potential to result in material impacts on sunlight access on lands to the south.

## 2.12 Climate (Daylight)

ARC Architectural Consultants Ltd has been commissioned by the Applicant to carry out an analysis of the impact of the proposed development on lands at Woodbrook, Shankill, Co. Dublin on daylight access in the surrounding area.

A three dimensional digital model of the proposed development and, of existing buildings in the area was constructed by ARC Consultants based on drawings and three dimensional models supplied by the Design Team; on drawings and information available from the Dun Laoghaire-Rathdown Council online planning register; and with reference to on-site, satellite and aerial photography. ARC analysed the three digital models of the proposed development and of the existing buildings surrounding the development site using proprietary sunlight and daylight analysis software in order to quantify the likely impact of the proposed development on daylight access within chosen sample rooms in buildings in close proximity to the development site.

ARC's analysis indicates that the construction of the proposed development on the Woodbrook lands (i.e. as now proposed and in combination with the envisaged future phase of development) has the potential to result in a minor impact on daylight access within neighbouring buildings. Under a worst case scenario, the potential impact of the proposed development and the potential cumulative impact of both phases of development on the Woodbrook lands on daylight access within existing buildings is likely to range from "imperceptible" to "not significant".

## 2.13 Air (Noise and Vibration)

### Introduction

Chapter 12: Air (Noise & Vibration) of the EIAR provides information on the assessment of noise and vibration impacts on the surrounding environment during both the construction and operational phases of the development proposed development at Woodbrook, Shankill, Co. Dublin. The assessment has considered potential impacts associated with Phase 1 of the development in addition to potential cumulative impacts associated with the full masterplan development for the site.

When considering the potential impacts, the key sources will relate to the short-medium term construction phase and the long-term impacts associated with the development as a whole once operational.

### Methodology

The study has been undertaken using the following methodology:

- A baseline noise survey has been undertaken within and in the vicinity of the site to determine the existing noise climate.
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development.

- Predictive calculations have been performed to assess the potential impacts associated with the construction and operation of the development at the most sensitive locations surrounding the development site.
- A schedule of mitigation measures has been proposed to reduce, where necessary, the identified potential impacts relating to noise and vibration from the proposed development.

### **Receiving Environment**

The proposed site for the mixed-use and residential development is primarily located within zoned development lands on a greenfield site between the suburbs of Bray town to the south and Shankill to the north. A noise survey was undertaken at locations representative of the nearest noise sensitive locations in order to determine existing noise levels in the surrounding environment and to note the main noise sources contributing to measured noise levels. There are a small number of noise sensitive properties located in close proximity to the development, predominately located along the western boundary. The noise environment at the off-site noise monitoring locations was noted to be influenced by road traffic along the Old Dublin Road, rustling foliage, birdsong and intermittent local sources from vehicles in residential areas. Overhead aircraft was also audible in the distance.

Along the eastern boundary of the proposed development site immediately against the rail line, passing rail dominated the ambient noise environment.

### **Construction Phase Impacts**

During the construction phase of the project, a variety of items of plant will be in use for the purposes site clearance and construction. The type and number of equipment will vary between the construction phases depending on the phasing of the works (i.e. site clearance, foundations, building works, landscaping etc). There will be vehicular movements to and from the site that will make use of existing roads. Due to the nature of these activities, there is potential for the generation of elevated levels of noise at the nearest noise sensitive locations.

Indicative noise levels have been calculated for the construction phase to assess the likely significant impacts during this phase at the nearest noise sensitive locations. Highest noise levels are calculated at a distance of 20m representative of the closest residential dwelling to the west of the development site. The calculations have indicated the recommended daytime construction noise limit has the potential to be exceeded if a number of construction activities are taking place at this distance in the absence of mitigation.

Given the variation of on-site activities and number of plant items during any one phase and the likelihood of works operating along the closest boundaries for a limited duration of the works, the calculated noise levels in the EIAR are considered to present a worst-case scenario. When works are occurring at distances of 50m and beyond from the works boundary, construction noise levels are reduced to within the recommended noise criteria.

The calculated noise levels indicate that during the main construction phase, activities can operate within the relevant construction noise criteria included within the EIAR at the majority of off-site noise sensitive locations. The potential impact during this phase will be moderate to significant, with negative short-term effects on a small number of noise sensitive locations.

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant noise and vibration impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 Code of practice for noise and vibration control on construction and open sites (2009 + A1 2014) Parts 1 and 2 will be complied with which are set out in the EIAR chapter.

The application of binding noise limits, hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact will have a negative, moderate to and short-term impact on the surrounding environment.

### **Operational Phase Impacts**

Once operational, the predicted change noise levels associated with additional traffic is predicted to be of imperceptible impact along the existing road network. In the context of the existing noise environment, the overall contribution of induced traffic is considered to be of neutral, imperceptible and long-term impact to nearby residential locations.

Noise levels associated with any mechanical and electrical plant required to service the development buildings will operate well within the adopted day and night-time noise limits at the nearest noise sensitive properties taking into account the site layout, distance to nearest off site noise sensitive locations and the development type which is largely residential. Any plant associated with retail units or apartment buildings units will be controlled to ensure a neutral noise impact. Assuming the operational noise levels do not exceed the adopted design goals included within the EIAR, the resultant residual noise impact from this source will be of neutral, minor, long term impact.

### **Cumulative Impacts**

The EIAR has assessed the potential noise and vibration impacts associated with Phase 1 of the Woodbrook development in addition to the potential cumulative impacts associated with the full masterplan development.

The assessment has concluded that similar construction phase magnitudes of residual noise and vibration impacts associated with Phase 1 of the development are relevant to the full Woodbrook masterplan development given the same construction noise and vibration criteria will apply to all phases.

During the operational phase, the assessment had considered all traffic flows onto the surrounding road network from the full masterplan development and the potential noise impacts associated with same. The assessment has concluded the potential noise impacts are neutral, long-term and not-significant.

For other potential sources, similar magnitudes of residual noise and vibration impacts are associated with the masterplan development as those associated with Phase 1 given the same operational noise, a criteria will apply to all phases.

## **2.14 Landscape and Visual Impact**

### **Introduction**

This section provides a non-technical summary of the likely significant landscape and visual effects of the Proposed Development comprises a residential development of 685 residential units and a crèche facility in buildings ranging from 2 to 8 storeys and for 2 new replacement golf holes on lands at Woodbrook, south of Shankill, County Dublin.

### **Study Methodology**

The methodology used in this assessment has had regard to the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, Draft, 2017).

The assessment include for a review of drawings of the Proposed Development; an analysis of survey mapping and aerial photography; visits to the Site and surrounding areas; and a review of other chapters of the EIAR, including Photomontages.

### **The Existing Receiving Environment (Baseline Situation)**

The Site is made up of 2 principal areas (Refer to Figure 13.1). The main area is the 'Woodbrook Residential Development Area', which is located to between the Dublin Road and the Dublin – Wexford (DART) Railway. A portion of existing lands at Woodbrook Golf Course is included in this area of the Site, which is bounded by: -

- The tree-lined R119 Dublin Road to the west.
- Crinken (St James') Church and grounds to the northwest.
- other lands at Woodbrook and Shanganagh Cemetery & Shanganagh Park to the north.
- the Dublin – Wexford (DART) Railway and Woodbrook Golf Course to the east.
- to the south by woodlands, properties and fields north of a local road leading to Woodbrook Golf Club.

The second area, the 'Woodbrook Golf Development Area', is located between the railway and Woodbrook Golf Course. This area is east of the railway. This part of the Site is bounded by: -

- Woodbrook Golf Course to the south and east (i.e. the seventh and eighth golf holes).
- The corridor of Dublin – Wexford (DART) Railway to the west.
- To the north by lands within Shanganagh Park.

The Site is laid out in broadly flat to gently rolling agricultural fields that are primarily in arable use west of the railway and in grassland with a small area of scrub east of the railway.

For the most part, the Site and fields are bounded by mature trees and hedgerows and views to and from the site from adjoining areas are generally restricted. However, the view of Crinken Church from areas within the Site is a prominent aspect of the landscape and visual environment.

The Site and surrounding areas have an attractive sylvan character, which is enhanced by attractive long-range views to surrounding hills and landmarks including Killiney Hill to the north Carrickgollogan to the west and to the Great and Little Sugar Loaf and Bray Head to the south.

The area is zoned for residential development in the Dun Laoghaire-Rathdown County Development Plan and in the Woodbrook Shanganagh Local Area Plan.

Landscape significance and sensitivity derives from the current undeveloped sylvan character of the site, the sylvan character of Dublin Road and surrounds; the proximity of Crinken (St James') Church, a protected structure, and the proximity of Shanganagh Park and Cemetery, and Woodbrook Golf Course.

Visual sensitivity derives from views along Dublin Road, views from Crinken Church, Shanganagh Park and Cemetery and from Woodbrook Golf Course, distant views from elevated surrounds and the dark nature of the area at night.





Figure 13.2: Site Context: Application Site outlined and shaded in red line (source google maps).

### Potential Impact of the Proposed Development

Potential landscape and visual impacts will arise from: -

- Landscape disturbance and visual unfamiliarity and effects associated with initial Site establishment, including provision of Site compound, provision of hoarding, construction access roads, etc.
- Visual effects associated with general construction activity and traffic movements on Site.
- Landscape and visual effects from demolition works and from removal of trees.
- Landscape effects from the loss of existing open landscape / visual character.

- Landscape and visual effects from provision of new entrance and access road.
- Visual effects from provision of services and infrastructure, including roads, sewers and surface water measures.
- Landscape and visual effects from phased emergence of new residential and apartment developments.
- Visual effects from provision of lighting, footpaths and cycleways etc.
- Landscape and visual effects from provision of landscape measures and planting.
- Landscape and visual effects from completion and occupation of the new residential development on a progressive phased basis.

### **Construction Stage**

The construction stage impact of the Proposed Development has the potential for significant negative short-term impacts on Dublin Road, Crinken Church, Shanganagh Park and Cemetery and Woodbrook Golf Course.

### **Operational Stage**

The operation stage impact of the Proposed Development has the potential for significant negative medium-term impacts on Dublin Road and Crinken Church.

### **Avoidance, Remedial & Mitigation Measures**

Significant consideration has been given to avoiding landscape and visual impacts in the design and layout of the scheme as a whole, including in the approach to the architectural, engineering and landscape layout of the Proposed Development (Refer to Figure 13.2).

### **Construction Stage**

Measures include: -

- Protection of trees to be retained.
- The erection of solid hoarding for screening.
- Protection of boundaries, including those with Crinken Church, Shanganagh Park/Cemetery and Woodbrook.

### **Operational Stage**

Measures include: -

- Provision of a high quality landscape setting for the residential development.
- Provision of two (2) main area of linear open space, providing amenity, connectivity and play opportunities, together with other open spaces.
- Provision of a high quality entrance off the R119 Dublin Road.
- Provision of semi-private / communal open space courtyards for apartments.

## Residual Impacts

This assessment of impacts must have regard to the appropriateness of the Proposed Development in relation to the residential zoning of the lands in the County Development Plan and Woodbrook Shanganagh Local Area Plan. In this regard the Proposed Development is in-keeping with the physical and visual character and scale of that envisaged in these statutory plans.

## Construction Stage

The residual construction stage impact of the Proposed Development will be significant negative short-term impacts on Dublin Road, Crinken Church, Shanganagh Park and Cemetery and Woodbrook Golf Course.

## Operational Stage

The residual operation stage impact of the Proposed Development will be moderate and neutral or positive in the longer-term.



Figure 13.7: Landscape Masterplan.

## 2.15 Material Assets (Transportation)

### Receiving Environment

The proposed development will access onto the R119 Dublin Road. The R119 Dublin Road is a single carriageway regional road with cycle lanes and bus lane provision provided along some sections of the route. In the vicinity of the development access junction the R119 is a single carriageway regional road with cycle lanes on both sides.

To the south the R119 Dublin Road provides access to town centre of Bray, via the R761, and the M11 via the Wilford Interchange facilitating access to the M50 to the north & M11 to the south. To the north the R119 Dublin Road connects through Shankill Village to the R837 facilitating access the N11 and thereby Cabinteely, Stillorgan, UCD and Donnybrook. Access is also provided to the north to Killiney, Dalkey, Sandycove and Dun Laoghaire, along the R119 Shanganagh Road.

There are a number of existing public transport facilities available in vicinity of the proposed development site ranging from bus services to rail services.

The proposed development is therefore advantageously located in terms of access to local services, amenities and public transport services.

### Future Transport Infrastructure

The R119 Dublin Road is an established bus route carrying a significant quantum of peak hour and off-peak hour bus services predominantly between Bray and the City Centre and Blackrock. These routes are subject to proposed improvements as part of the National Transport Authority's (NTA) Bus Connects network redesign. Furthermore, the Dublin Road forms part of the BusConnects Core Bus Corridor 13 that is planned between Bray and UCD / City Centre.

The Bus Connect route is programmed for delivery by 2027 as part of the National Development Plan 2018-2027. The first phase of public consultation on Corridor 13 has been completed. The proposed development, in particular the design of the proposed junction on Dublin Road, that will serve as the main vehicular access to the site, has been designed to take account of the NTA's design proposals for Corridor 13.

The proposed development facilitates the development of a new DART Station directly adjacent the Woodbrook site. The design of the station, to be fully integrated to the proposed development site, has been the subject of direct consultations between Irish Rail, the NTA, DLRCC and the Applicant. The proposed development includes for the provision of a 164no. space temporary station car park to be delivered in Phase 1 of Woodbrook. The NTA has confirmed a program of lodging a planning application for the station in the first quarter of 2020.

### The Proposed Development

In overall master planning terms, the development at Woodbrook is to consist of two phases and the impact of the total development of the lands is addressed in this TTA.

- Proposed Woodbrook Development – Phase 1: 685no. residential units and a crèche facility. Phase 1 development includes for the proposed traffic signal-controlled development access junction on Dublin Road and Woodbrook Avenue the main access route through the development. Phase 1 also includes a temporary park and ride car park to serve the proposed DART Station immediately adjacent the lands. The DART Station is subject to a planning application that is currently being prepared by Irish Rail.
- Cumulative Woodbrook Development – Phase 2: 803no. new residential, a neighbourhood retail centre and a primary school. The full build out of Phase 2 will include the removal of the DART Park and Ride car park which will be replaced by strategic park and ride site to be delivered by the NTA.

The site is subject to Local Infrastructure Housing Activation Fund (LIHAF) funding that has been secured by Dun Laoghaire Rathdown County Council (DLRCC). This LIHAF funding incorporates the road access, Woodbrook Avenue, to the new DART Station and the upgrade of the existing roundabout junction on the R119 and the M11 slip roads adjacent Junction 5 of the M11. The design of the roundabout upgrade to traffic signals is being undertaken by DLRCC and will be delivered under Section 38 of the Road Traffic Act (1994).

### **Promotion of Active and Sustainable Travel**

The site presents as a development wherein occupiers will be facilitated with a lifestyle that has direct access to high frequency bus and rail services and low dependency on car ownership and car usage. This opportunity is based on multi-faceted characteristics of the site and its location including the following aspects: -

- Woodbrook DART Station immediately adjacent the site.
- Dublin Road bus corridor and proposed Bus Connects bus and cycle route upgrades.
- Neighbourhood Centre, creche, primary school and open space provision within the site.
- Access to secondary schools, including Woodbrook College directly adjacent the site.
- Active and passive open space provision in the adjacent Shanganagh Park.
- Extensive pedestrian and cycle links through and within the site.
- Car club car provision.
- Extensive private and public cycle parking.

The transport planning aspects of the proposed site have been developed in close consultation between the Applicant, DLRCC, the NTA and Irish Rail. This consultation has included an extensive quantum of pre-planning meetings in the context of the proposed site layout, the LIHAF funding, the development of the design for the DART Station and temporary car park and the design of the Dublin Road junction.

### **Construction Traffic Impact**

The likely traffic impact of the construction works will be short-term in nature. The number of staff on site will fluctuate over the construction phase of the subject development. Based on previous experience of similar developments, it is envisaged that on average there would be in the order of 60-70 staff on site on a typical day. It should be noted that construction workers will typically make use of shared transport thereby reducing traffic generation. Consequently, it is expected that the typical two-way vehicle traffic generation during the construction phase would be of a low level, of the order of 30- 50 arrival during the AM and the same departure trips during the PM periods over the construction period of the works.

However given the scale of the proposed development, during the peak of construction the level of staff on site could ramp up to approximately 250 - 350 staff. As such this peak level of construction activity could equate to approximately 150 – 210 arrival trip during the AM and the same during the PM. In terms of arrivals and departure times, on-site employees will typically arrive before 08:00 and will generally depart shortly after 16:00. These arrival and departure times are offset and outside of the commuter AM and PM peak hours, therefore further reducing the impact of the construction phase. Note, that the total operational stage vehicle trips during the AM and PM are in the order of 220-250 with these occurring during the peak commuter hours.

Consequently, given the shared use of transport and the offset arrival and departure times inherent with construction worker travel characteristics, the level of traffic impact on the adjacent local road network during the construction stage, even during the peak construction phase, will be significantly less than during the operational stage.

The main construction accesses to and from the proposed Phase 1 Development Site will be via the proposed development access off the R119 and a secondary access off the R119 Dublin Road south of the main entrance.

The main construction accesses to and from the proposed Golf Course Holes Site will be preferably via the R119 and the Shanganagh Cemetery access road, utilising a likely Bailey bridge or similar temporary structure subject to agreement with DLRC and IE. Alternative access proposals are via the R119 and Quinn's Road (for light vehicles) and the R119 and Corbaun Lane/Corbaun Drive (for heavy vehicles).

### **Operational Traffic Impact**

The assessment of the Operational Traffic Impact for the proposed development, i.e. Phase 1, during the Opening Year and Opening +5 Year and for the cumulative development, i.e. Phase 2, during the Opening +15 Year Scenario, indicate the majority of the key junctions analysed are operating under capacity. In particular the proposed development access junction, which is subject to two layouts; one during the Phase 1 proposed development wherein bus lanes are not provided and the other during the Phase 2 cumulative development, wherein bus lanes as per Bus Connects are incorporated into the layout, operates satisfactorily and within capacity in all scenarios.

The adjacent Wilford Junction is the only junction that is modelled as operating near or at capacity in the Opening Year + 15 Scenario. A sensitivity analysis has been conducted on Junction 2 wherein a 'No Growth' Scenario has been considered in terms of background traffic. This scenario eases the pressure on capacity at the junction to further level of acceptability. This scenario is considered more realistic on the basis that there is an appropriate finite capacity on an urban road such as the R119 Dublin Road and is all the more relevant in the context of the new DART Station and future Bus Connects provisions which will not only reduce the volume of proposed development traffic but also reduce the volume of background traffic by way of mode shift from private car to public transport and active travel modes.

### **Conclusion**

It is therefore concluded that the impacts of the proposed development in the context of the receiving environment, pedestrian, cyclist and public transport facilities and construction and operational impact on the adjacent local road network constitutes both an appropriate and sustainable form of development.

## **2.16 Material Assets (Waste)**

AWN Consulting Ltd. carried out an assessment of the potential impacts associated with waste management during the construction and operational phases of the proposed development. The receiving environment is largely defined by Dún Laoghaire Rathdown County Council as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

During the demolition and construction phases, typical C&D waste materials will be generated which will be source segregated on-site into appropriate skips / containers, where practical and removed from site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-site to minimise raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site. Completion of the basement and construction of new foundations, the installation of underground services and attenuation tank will require the excavation of c. 69,434m<sup>3</sup> soil, stone, gravel and clay from the entire site including the 2no. replacement golf holes. All excavated material from the golf course will be re-used on site and it is not envisaged that any of this material will be removed offsite. It is anticipated that c. 38,000m<sup>3</sup> of material will need to be excavated from the residential area of the site, however, it is envisaged that c. 29,300m<sup>3</sup> of excavated material will be reused onsite. The net surplus of the remaining excavated material (c. 8,700m<sup>3</sup>) will be taken for appropriate offsite reuse, recovery, recycling and/or disposal.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan (Appendix 15.1) during the construction phase will ensure that the effect on the environment will be short-term, neutral and imperceptible.

During the operation phase, waste will be generated from the residents as well as the commercial tenants. Dedicated communal waste storage areas have been allocated throughout the development for residents. The waste storage areas have been appropriately sized to accommodate the estimated waste arisings in both apartments and shared residential areas. The commercial tenants will have dedicated waste storage areas allocated within the development and can be viewed on the drawings submitted with the application. The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared which provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, mixed non-recyclable waste and glass as well as providing a strategy for management of waste batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture (Appendix 15.2). The Plan complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Provided the mitigation measures outlined in Chapter 15 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be *long-term, imperceptible* and *neutral*.

## 2.17 Material Assets (Built Services)

The Material Assets (Built Services) Chapter looked at the impact of the provision of utility services for the proposed residential development and the relocation of the 2no. golf holes.

The site is a greenfield site and thus is currently not serviced by utilities. EIR, ESB and communication cables run along the edge of the Dublin road to the west of the site in addition to mains water and surface water drains. A medium voltage ESB cable runs across the site. A rising foul main runs to the east of the site from Bray north to Shanganagh Waste Water Treatment plan (WWTP). No gas mains are noted in the vicinity of the site.

A pre-connection enquiry with Irish Water indicates that there is sufficient capacity at Shanganagh WWTP to accept the estimated increase in foul water discharge from the site. Foul water from the site will be transferred to a pumping station on the site prior to pumping by rising mains to St Annes Park foul water network on a temporary basis before final discharge to Shanganagh WWTP.

SuDs elements will be designed to allow infiltration or reduction of run-off volumes and rates where possible. Surface water will be collected via swales gullies and permeable paving to underground attenuation tanks which will have controlled discharge to the Rathmichael River (also known as the Crinken Stream) which will control discharge rates to greenfield rates.

The ESB loading for the site is calculated at 2.46MW and Gas diversified load at 1.65MW.

The predicted water consumption requirement of the proposed development is calculated at 277m<sup>3</sup>/day.

The proposed residential development will not result in any significant impact to the provision of existing utilities at or in the vicinity of the site.

The installation of utilities as required to facilitate the proposed development will not impact existing/future utility capacity in the vicinity of the site.

## 2.18 Cultural Heritage (Archaeology)

Irish Archaeological Consultancy Ltd has prepared this report on behalf of Stephen Little & Associates to study the impact, if any, on the archaeological and cultural heritage resource of the proposed development, which is located at Woodbrook, Shankill, Co. Dublin within the townlands of Cork Little and Shanganagh (ITM 725941/720644). The report was undertaken by Ross Waters and Faith Bailey of IAC Ltd.

Within the study area of the proposed development, a 250m radius, there is one site listed within the RMP, Shanganagh Castle (RMP DU026-120), c. 85m west-southwest of the pipeline.

Evidence of Bronze Age and post-medieval activity is present within the wider environs of the study area, comprising a Bronze Age burial site (RMP DU026-067; Licence E000505) and post-medieval ditch and a fulacht fia (RMP DU026-116). A geophysical survey (Licence 18R0223) and programme of testing (Licence 19E0098), carried out as part of the overall archaeological assessment, identified 17 archaeological areas within the proposed development area. Remains include a Bronze Age enclosure, a possible early medieval enclosure containing the remains of an adult male inhumation, two small ring ditch enclosures, 12 linear features, 25 pits, and a red-brick well with associated drainage.

An inspection of the cartographic sources revealed that the site remained undeveloped throughout the post-medieval period. The wider area was owned by the Walsh family during the 17th century. By the 18th century mapping the Dublin Road is depicted and demesne landscapes are being established. Throughout the 19th century demesnes continued to develop within the study area and the Dublin and South Eastern Railway was constructed to the east.

Phase 1 of the proposed development involves the construction of c. 685 dwellings (both houses and apartments) as well as road infrastructure, services and landscaping and 2no. replacement golf holes. Ground disturbances associated with the proposed development will result in a direct and negative impact, ranging from moderate to profound, on 12 archaeological areas (AA 1/3-8/10/11/14/15/17), comprising a Bronze Age enclosure, two ring ditches, linear and pit features, a hearth and a post-medieval well. Preservation in-situ is considered to be the most appropriate manner in which to ensure the conservation of archaeological remains. However, it is not possible to avoid impacts on sites AA 1/3-8/10/11/14/15/17, due to the requirements of the design layout. As such and in order to ameliorate negative impacts, the archaeological sites within the development area will be preserved by record (archaeological excavation), prior to construction taking place. This will be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and the National Museum of Ireland.

The 2no. replacement golf holes within the area to the east of the railway will see extensive ground disturbances associated with the proposed landscaping. Ground disturbances associated with the proposed development will result in a direct and negative impact on two archaeological areas (AA 2 and 16), comprising a pit and a section of a possible bivallate enclosure, which was found to contain a burial during archaeological testing. It is not possible to avoid impacts on these sites due to the landscaping requirements. As such and in order to ameliorate negative impacts, AA2 and 16 will be preserved by record (archaeological excavation), prior to construction taking place. This will be carried out under the direction of a licence eligible archaeologist, in consultation with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and the National Museum of Ireland.

There may be an adverse impact on previously unrecorded archaeological feature or deposits that have the potential to survive beneath the current ground level outside of the footprint of the excavated test trenches. This will be caused by ground disturbances associated with the proposed development. All topsoil stripping associated with the proposed development will be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

Three archaeological areas (AA 9/12/13), linear and pit features, are all located in Phase 2 of the development lands, which will form part of a Phase 2 application. The impact of any development on these areas will be reported on as part of any future Phase 2 application.



Following the completion of the mitigation measures, all archaeological remains at the site will have been preserved by record. Therefore, there would be no residual impacts on archaeological resource from the proposed development.

## 2.19 Cultural Heritage (Architectural Heritage)

Cathal Crimmins Architects, RIAI Grade 1 Conservation Architects has prepared this report on behalf of Stephen Little & Associates to study the impact, if any, on the architectural and designed landscape heritage resource as a result of the proposed development, which is located at Woodbrook, Shankill, Co. Dublin within the townlands of Cork Little and Shanganagh (ITM 725941/720644). The report was undertaken by Julia Crimmins of Cathal Crimmins Architects.

There are no protected structures or structures which are included in the National Inventory of Architectural Heritage (NIAH) inventory for Dun Laoghaire Rathdown within the subject site.

In the wider neighbourhood there are two buildings or sites which are included in the Record of Monuments and Places. Shanganagh Castle (RMP DU026-120) which is also a protected structure (RPS 1845), is 509.4m from the subject site. The site of Shanganagh Martello Tower (RMP DU026-070) is 696.7m from the site. There are 11 groups of protected structures within the study area, all of which are listed on the NIAH Inventory. In addition to Shanganagh Castle, protected structures in the vicinity include, structures in its curtilage such as the pillar, gate lodge, gates and railings (RPS 1845; NIAH 60260147; 60260148; 60260149), 390.2m, 595.9m and 222.8m from the site respectively. The Hackett Memorial Hall (RPS 1858; NIAH 60260173) 192.1m from the site; Askefield House and Gate lodge (RPS 1860; NIAH 60260170; NIAH 60260171) 220.8m & 105.6m from the site; Beauchamp House and Gate lodge (RPS 1862; NIAH 60260168; NIAH 60260169) 159.7m & 30.5m from the site; Saint James's Church Crinken (RPS 1863; NIAH 60260154) 14.6 m from back of church to site boundary (at closest point); The Aske and its gate lodge, gates, railings and walls (RPS 1866; NIAH 60260165; NIAH 60260166; NIAH 60260167) 132.4m, 69.6m & 60.2m from the subject site; Wilford House (RPS 1873; NIAH 60260164) 338.9m from the subject site; Woodbrook House, walled garden, gate lodges, gates and railings (RPS 1870; RPS 1874; RPS 1871; NIAH 60260157; NIAH 60260158; NIAH 60260162; NIAH 60260160; NIAH 60260161) 84m, 198m, 491.3m, 179m and 146.3m at closest point; and Corke Lodge and Stables (RPS 1869; NIAH 60260155; NIAH 60260156) 73m and 59.3m away respectively.

Further NIAH sites within the study area include The Orchard gate lodge (NIAH 60260175) 254.5m from the site; a Milestone (NIAH 60260172) 163m from the site and Woodbrook Club House (NIAH 60260159) 103.1m from the subject site.

A number of these sites are associated with Demesne Landscapes. The northern extents of the proposed development area are located within the historical demesne of Shanganagh Castle (NIAH Garden DU- 50-O-256212). The proposed development also directly adjoins Corke Lodge which is shown as having a small demesne or designed landscape around it.

Historic maps, specifically the Griffith Valuation, indicate that the subject site was also part of Wood Lawn / Corke Lodge land holding. Field inspection confirmed the presence of boundary walls to the west of the subject site which are associated with this land holding. Within the study area there are a further four demesnes recorded within the NIAH Garden Survey and two that are not.

Field inspection confirmed the presence of the walls and railings to St James's Church (RPS 1863) and walls to the rear of Corke Lodge (RPS 1869) along the southern and western limits of the subject site. The site is bound by hedgerows, trees and a lane where it meets the lands associated with Woodbrook Golf Club.

Beauchamp Lodge (NIAH 60260169), and the Aske (RPS 1866), located on the western side of the Dublin Road (R119) also adjoin the subject site. A bridge over the Dart line was also identified to the west of the eastern half of the site.

Cartographic sources suggest that the subject site remained largely undeveloped throughout the post-medieval period and in agricultural use. The wider area was owned by the Walsh family during the 17th century. By the 18th century mapping the Dublin Road is depicted and demesne landscapes are being established. Crinken Church was built in the early 19th century. The Dublin and South Eastern

Railway was constructed to the east. 19<sup>th</sup> century maps indicate that demesnes continued to develop on the lands adjoining the subject site.

The 1850s Griffith Valuation map suggests that the subject site was part of Corke Lodge as it is included in the same land valuation. The desk based review of cartographic sources confirms that there are no historical or protected buildings on the site and that land use at the site has remained primarily agricultural.

Phase 1 of the proposed development comprises a residential development of 685no. residential units and a childcare facility in buildings ranging from 2 to 8 storeys on lands at Woodbrook, County Dublin.

The Proposed Development includes for a new entrance from the R119 Dublin Road; site infrastructure; a temporary carpark adjacent to Woodbrook Dart Station; a series of linear parks and open spaces supplemented by smaller pocket parks; and for all associated drainage, servicing and site development works. In addition, the Proposed Development includes for 2no. replacement golf holes for Woodbrook Golf Course.

### **Summary effects**

Whilst a number of protected structures, designed landscapes and structures included in the National Inventory are located within the surrounding landscape, in most cases, the level of existing mature screening that exists means that no direct or indirect negative impacts are predicted upon the architectural heritage resource as a result of the development going ahead.

The proposed will have some visual impact on the adjoining Crinken Church, a protected structure. The impact will be very slight however owing to the setback of the proposed development and the retention of existing planting.

The Proposed works include the creation of pedestrian and vehicular access through the boundary wall to the R119. This will result in the removal of part of the existing boundary walls. In general however, most of this boundary and associated trees will be retained thus preserving the sylvan character of the R119 road and reference to the history of the area.

## **2.20 Summary of Mitigation Measures**

This Chapter provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.

### 2.21 Summary of Cumulative Impacts & Interactions

This section describes interactions between impacts on various environmental factors. A summary matrix showing interdependencies between these environmental attributes is presented below for the proposed development.

	Population & Human Health	Biodiversity	Land, Soils & Geology	Water	Climate – Air Quality & Climate Change	Climate - Sunlight	Climate - Daylight	Air – Noise & Vibration	Landscape & Visual impact	Material Assets - Transportation	Material Assets - Waste	Material Assets – Built Services	Cultural Heritage - Archaeology	Cultural Heritage – Architectural Heritage
Population & Human Health		x	x	x	✓	x	x	✓	✓	✓	x	x	x	x
Biodiversity	x		✓	✓	✓	x	x	✓	✓	x	x	x	✓	x
Land, Soils & Geology	x	✓		✓	x	x	x	x	x	x	x	x	x	x
Water	✓	✓	✓		x	x	x	x	x	x	x	x		
Climate – Air Quality & Climate Change	✓	x	x	x		x	x	x	x	✓	x	x	x	x
Climate - Sunlight	x	x	x	x	x		x	x	x	x	x	x	x	x
Climate - Daylight	x	x	x	x	x	x		x	x	x	x	x	x	x
Air – Noise & Vibration	✓	x	x	x	x	x	x		x	✓	x	x	x	x
Landscape & Visual impact	✓	x	x	x	x	x	x	x		x	x	x	✓	x
Material Assets - Transportation	x	x	x	x	✓	x	x	✓	x		x	x	x	x
Material Assets - Waste	x	x	✓	x	x	x	x	x	x	✓		x	x	x
Material Assets – Built Services	x	x	✓	x	x	x	x	x	x	✓	x		x	x
Cultural Heritage - Archaeology	x	x	✓	x	x	x	x	x	✓	x	x	x		x
Cultural Heritage – Architectural Heritage	x	x	✓	x	x	x	x	x	✓	✓	x	x	✓	

**Figure 2.1:** Matrix of Interactions between Environmental Factors (During Construction and Operational Phases) – See Chapter 21: Summary of Cumulative Impacts & Interactions.

Where there is an interaction = ✓ No Interaction = x

All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.