

August 2019

Environmental Impact Assessment Report (EIAR)



Clongriffin EIAR:
Proposed Mixed Use Development
Lands at Clongriffin, Dublin 13

Applicant: Gerard Gannon Properties



Non-Technical Summary

Description of Project

This Environmental Impact Assessment Report (EIAR) has been prepared for a proposed project which provides for a total of 1,950 residential units and c.22,727.5 sq.m. of commercial development at Clongriffin, Dublin 13. The Project (i.e. masterplan lands) is divided into three separate planning applications, in accordance with the legislative provisions of the Strategic Housing Development process. Thus, this EIAR has been prepared in parallel with the preparation and formulation of 2 no. Strategic Housing Development Applications being lodged to An Bord Pleanála (Clongriffin SHD 1 and Clongriffin SHD 2) and 1 no. Section 34 application being lodged to Dublin City Council.

This EIAR assesses the entire masterplan development at Clongriffin of 1,950 residential units and c.22,727.5 sq.m which are proposed across 15 no. Blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build To Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m of commercial development including c. 30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. creche facilities, 1 no. 8 screen cinema, 1 no. commercial gym, 7 no. cafes/ restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks and all associated works. For a full detailed description of the proposed development, please refer to Chapter 2 of this EIAR

The lands subject to this EIAR form part of the wider Clongriffin area that has been under construction by Gerard Gannon Properties since the late 1990s. Construction to date has included the Train Station, Main Roads including a QBC, residential dwellings, commercial development in addition to Father Collins Park and additional amenity development. The construction to date of Clongriffin has been subject to a parent masterplan (Reg. Ref. 0132/02 ABP Ref. PL29N.131058) which was granted in 2003 for a scheme of some 3,500 residential units with c.85,000 sq.m. of shops, services and employment. A further c.15,000 sq.m of commercial development was subsequently granted permission over the years through varying permissions such that c. 100,000 sq.m. of commercial development has been permitted at Clongriffin.

To date 13,950 sq.m. of commercial development has been constructed along with 1,685 dwellings, duplexes and apartments have been built with a further 503 units under construction. In addition to the construction of residential units, Gerard Gannon Properties have constructed over 80% of the roads, drainage and landscaping and have heavily contributed to the financing of the Clongriffin Train Station. The permitted Masterplan informed the formulation of the Clongriffin- Belmayne LAP and there is a strong emphasis throughout Clongriffin on the delivery of quality homes, sustainable neighbourhoods to support successful communities, timely social infrastructure provision and a city-wide green network with links to the city region. An updated Masterplan being submitted as part of this application sets out how to date there has been some c. 1,685 homes constructed (predominantly private homes) in close proximity to public infrastructure including the railway station and quality bus

corridors, a mix of community and social infrastructure is in place with Father Collins Park and indeed community facilities in place, in conjunction with a mix of commercial and retail uses which supports the provision of sustainable neighbourhoods.

The current applications seek to complete the overall masterplan vision for the lands and provide for a higher density of development in close proximity to the town centre and the Rail Station. Clongriffin provides for a range of household types with dwellings, duplexes and apartments forming part of the overall masterplan for the lands. To date, a significant quantum of private dwellings and duplexes have been completed. The current applications provide for apartment units, which have previously been approved, and will complete the overall development. The proposed applicants provide for a mix of apartments for both Build to Rent (i.e. rental properties) and Build to Sell (i.e. can be privately owned). The overall development of Clongriffin provides for a mix of tenures, providing residential units that serve a range of age groups within walking distance of the centre of Clongriffin where retail/offices/commercial uses as well as community facilities are within close proximity to their home.

The proposed development represents the completion of Clongriffin Town centre.

Gerard Gannon Properties, the applicant, is applying to An Bord Pleanála and Dublin City Council for planning permission for the following developments:

Clongriffin SHD 1

The development will consist of the construction of a mixed-use development (within 9 no. blocks i.e. Blocks 6, 8, 11, 17, 25, 26, 27, 28 and 29) comprising of 1,030 no. apartment units (421 no. one beds, 541 no. two beds, and 68 no. three beds) of which 352 no. units are residential and 678 no. units are 'build to rent' residential units with ancillary residential amenity facilities; 2 no. crèches, 10 no. retail units and 1 no. gym, all of which will be provided as follows:

Block 6 containing a total of 270 no. build to rent apartments comprising of 123 no. one beds and 147 no. two beds in 5 no. buildings ranging from 4-7 storeys in height surrounding 1 no. landscaped podium garden with all apartments provided with private balconies/terraces, and a total of 5 no. communal roof gardens at fourth, fifth and sixth floor level. Ancillary residential amenity facilities are also proposed including concierge, office, resident's amenity/meeting rooms; resident's gym, cinema room, function room, maintenance suite and stores. Block 6 also provides for 1 no. creche with associated outdoor play area at ground floor level with 1 no. pocket park to the south east of Block 6 (Grant Park), 119 no. car parking spaces at ground floor level accessed via a new vehicular access onto Lake Street, 65 no. on-street car parking spaces (8 no. spaces on Lake Street, 29 no. spaces on Belltree Avenue, 10 no. spaces on Park Street, 18 no. spaces on Dargan Street) and 572 no. bicycle spaces at ground floor level;

Block 8 containing a total of 114 no. apartments comprising of 39 no. one beds, 72 no. two beds, and 3 no. three beds, in 3 no. buildings ranging from 3-8 storeys in height, with 1 no. landscaped podium garden, and all apartments provided with private balconies/terraces. Ancillary residential facilities are also proposed including office suite, laundry room, resident's amenity rooms and bulk store with 1 no. pocket park proposed to the south (Railway Park); 72 no. car parking spaces at ground floor level accessed via a new vehicular access onto proposed Marrsfield Lane, 31 no. on-

street car parking spaces (16 no. spaces on proposed Marrsfield Lane, 8 no. spaces on proposed Station Street, and 7 no. spaces on proposed Railway Lane North) and 179 no. bicycle spaces at ground floor level;

Block 11 containing a total of 96 no. apartments comprising of 44 no. one beds, 12 no. two beds, and 40 no. three beds, in a building 4-6 storeys in height, and all apartments provided with private balconies/terraces; 36 no. car parking spaces at ground floor level accessed via a new vehicular access onto proposed Railway Lane North, 25 no. on-street car parking spaces (6 no. spaces on proposed Railway Lane North, 14 no. spaces on proposed Station Street, and 5 no. spaces on proposed Railway Lane South) and 144 no. bicycle spaces in external covered stores/sheds;

Block 17 containing a total of 210 no. build to rent apartments comprising of 90 no. one beds, 111 no. two beds, and 9 no. three beds, in a building 6-17 storeys over basement in height, and all apartments provided with private balconies/winter gardens/terraces. Ancillary residential facilities are also proposed including concierge office, resident's amenity rooms, conference room, resident's gym, laundry room and bulk store. Block 17 comprises 5 no. retail units (on ground, first and second floor levels); 2 no. communal roof gardens at sixth floor level and seventh floor level; 71 no. car parking spaces at basement level accessed via a new vehicular access onto Dargan Lane, 4 no. on-street car parking spaces (3 no. spaces on Station Street, 1 no. spaces at entrance to proposed basement access), and a total of 225 no. bicycle spaces at basement and ground floor level;

Block 25 containing a total of 63 no. build to rent apartments comprising of 25 no. one beds and 38 no. two beds in a building 6-7 storeys in height, and all apartments provided with private balconies/terraces and 1 no. communal roof terrace at sixth floor level. Ancillary residential amenity facilities are also proposed including function room, lounge and workspace room, concierge, plant rooms and stores all at ground floor level; 136 no. bicycle spaces at ground floor level; 6 no. on street car parking spaces on Marrsfield Avenue, 33 no. off street car parking spaces accessed via a new vehicular access onto Marrsfield Avenue;

Block 26 containing a total of 78 no. build to rent apartments comprising of 50 no. one beds and 28 no. two beds in a building ranging in height from 8-15 storeys and all apartments provided with private balconies/terraces and 2 no. communal roof terraces at eighth and thirteenth floor level. Ancillary residential facilities are also proposed including resident's function room, meeting room, concierge, office, resident's gym, steam room, resident's changing and shower rooms, residents lounge, and cinema/media room; 190 no. bicycle spaces at ground floor level; 14 no. on street car parking spaces (6 no. spaces on proposed Marrsfield Crescent East and 8 no. spaces on proposed Marrsfield Lane), 38 no. off street car parking spaces accessed via a new vehicular access onto proposed Marrsfield Lane;

Block 27 containing a total of 57 no. build to rent apartments comprising of 5 no. one beds, 47 no. two beds, and 5 no. three beds, in a building ranging from 5-6 storeys in height, and all apartments provided with private balconies/terraces and 1 no. communal roof terrace at fifth floor level. Ancillary residential facilities including concierge/office, resident's lounge and workspace room, and function room. Block 27 also provides for a creche at ground floor level with associated outdoor play area and a set down area on Marrsfield Avenue; 146 no. bicycle spaces at ground floor level; 9 no. on street car parking spaces on Marrsfield Crescent West, 18 no. off street car parking spaces accessed via a new vehicular access onto Lake Street;

Block 28 containing a total of 122 no. apartments comprising of 42 no. one beds, 71 no. two beds, and 9 no. three beds, in 4 no. buildings ranging from 6-7 storeys in height, with 1 no. landscaped podium garden, and all apartments provided with private balconies/terraces. Block 28 also provides 1 no. gym and 5 no. retail units at ground floor level; 242 no. bicycle spaces at ground and first floor level; 6 no. on street car parking spaces (4 no. on street car parking spaces on proposed Railway Lane South, and 2 no. on street car parking spaces on Station Street); 106 no. off street car parking spaces accessed via a new vehicular access onto proposed Railway Lane South);

Block 29 containing a total of 20 no. apartments comprising of 3 no. one beds, 15 no. two beds, and 2 no. three beds, in a building 3-4 storeys in height, all apartments provided with private balconies/terraces; 49 no. bicycle spaces in external covered stores; 11 no. on street car parking spaces on Grange Lodge Avenue; and 9 no. off street car parking spaces accessed via a new vehicular access onto Grange Lodge Avenue.

The development provides for a total of 673 no. car parking spaces across surface, under croft and basement levels, 1,883 no. bicycle spaces, motorcycle parking, esb sub-stations, plant room and bin stores at basement level within Block 17 and at ground/surface level within Blocks 6, 8, 11, 25, 26, 27, 28 and 29; associated elevational signage to retail/commercial units; landscaping including play equipment, 2 no. public parks (Railway Park and Grant Park); a Station Square Sculpture and 28 no. additional public bicycle stands (56 no. bicycle spaces) with associated new canopy at Station Square, roads, footpaths and all associated engineering and site works necessary to facilitate the development. An Environmental Impact Assessment Report has been prepared in respect of the proposed development.

Clongriffin SHD 2

The development will consist of the construction of a mixed-use development (within 3 no. blocks i.e. Blocks 4, 5 and 14) comprising of 500 no. apartment units (49 no. studios, 167 no. one beds, 259 no. two beds, and 25 no. three beds) of which 235 no. units are residential and 265 no. units are 'build to rent' residential units with ancillary residential amenity facilities; 1 no. crèche, 1 no. community centre, 1 no. men's shed, 3 no. cafés/restaurants, 6 no. retail/commercial units, all of which will be provided as follows:

Block 4 containing a total of 74 no. build to rent apartments and own door duplex units comprising of 9 no. one bed apartments, 46 no. two bed apartments, 9 no. two bed own door duplex units and 10 no. three bed apartments, in 2 no. buildings ranging from 2-6 storeys in height surrounding 1 no. landscaped podium garden with all apartments provided with private balconies/terraces, and a total of 5 no. communal roof gardens at fourth, fifth and sixth floor level. Ancillary residential amenity facilities are also proposed including concierge, office, guest suite, residents rooms, games room, store, etc. Block 4 also provides for 1 no. crèche at ground and first floor level with associated outdoor play area, 1 no. community centre, 1 no. men's shed with associated outdoor area, and 1 no. café/restaurant, all at ground floor level; 45 no. car parking spaces at ground floor level accessed via a new vehicular access onto Lake Street, 5 no. on-street car parking spaces (3 no. spaces on

Lake Street, and 2 no. spaces on Park Street) and 132 no. bicycle spaces (34 no. on street and 98 no. at ground floor level);

Block 5 containing a total of 138 no. apartments comprising of 52 no. one beds, 83 no. two beds and 3 no. three beds in 1 no. building ranging from 3-7 storeys in height surrounding 1 no. landscaped podium garden with all apartments provided with private balconies/terraces, and a total of 1 no. communal roof garden at fourth floor level. Ancillary residential amenity facilities are also proposed including concierge, laundry, and resident's amenity and meeting rooms. Block 5 also provides for 4 no. retail units at ground floor level; 54 no. car parking spaces at ground floor level accessed via a new vehicular access onto Park Street, 42 no. on-street car parking spaces (17 no. spaces on Dargan Street and 25 no. spaces on Lake Street) and 224 no. bicycle spaces (30 no. on street and 194 no. at ground floor level);

Block 14 containing a total of 288 no. apartments in 2 no. buildings ranging from 6-8 storeys over basement in height as follows: Block A comprising 97 no. residential units (4 no. studios, 43 no. one beds, 44 no. two beds and 6 no. three beds) and Block B comprising 191 no. build to rent units (45 no. studios, 63 no. one beds, 77 no. two beds, and 6 no. three beds) surrounding 1 no. landscaped courtyard, and all apartments provided with private balconies/terraces. Ancillary residential amenity facilities including concierge, laundry, bulk stores, resident's gym and resident's amenity room. Block 14 also provides for 2 no. retail/commercial units and 2 no. cafés/restaurants at ground floor level, 162 no. car parking spaces at basement level accessed via a new vehicular access onto Lake Street, 49 no. on-street car parking spaces (14 no. spaces on Lake Street, 24 no. spaces on Market Lane, and 11 no. spaces on Main Street) and 651 no. bicycle spaces (10 no. on street, 553 no. at basement level and 88 no. at ground floor level).

The development provides for a total of 357 no. car parking spaces across surface, undercroft and basement levels, 1007 no. bicycle spaces, motorcycle parking, esb sub-stations, plant room and bin stores at basement level within Block 14 and at ground/surface level within Blocks 4 and 5; associated elevational signage to retail/commercial units; landscaping including play equipment; roads, footpaths and all associated engineering and site works necessary to facilitate the development. An Environmental Impact Assessment Report has been prepared in respect of the proposed development.

and,

S.34 Planning Application

The development will consist of the construction of a mixed-use development (within 3 no. blocks i.e. Blocks 3, 13 and 15) comprising of 420 no. apartment units (127 no. one beds, 273 no. two beds, and 20 no. three beds) of which 233 no. units are residential and 187 no. units are 'build to rent' with ancillary residential amenity facilities; 14 no. retail units, 1 no. 8 screen cinema, 4 no. cafés/restaurants, and 10 no. floors of commercial office suites, all of which will be provided as follows:

Block 3 containing a total of 141 no. residential apartments comprising 31 no. 1 beds, 104 no. 2 beds, and 6 no. 3 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 3 no. buildings ranging from 5 to 6 storeys in height, with ancillary residential amenity facilities, 2 no. retail units at ground floor level, with 5 no. floors of commercial office suites at first to fifth floor level, 1 no. esb substation at ground floor level, all surrounding 1 no. landscaped podium garden with play equipment, off street car parking totalling 80 no. spaces accessed via new vehicular access on Park Street, 43 no. on-street car parking spaces (10 no. spaces on Park Street, 13 no. spaces on Friars' Street, 10 no. spaces on Main Street/Lake Street, and 10 no. spaces on proposed Park Lane), 200 no. bicycle parking spaces at ground floor level, and associated elevational signage to all retail/commercial units;

Block 13 containing a total of 187 no. residential build to rent apartments comprising 58 no. 1 beds, 115 no. 2 beds, and 14 no. 3 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 3 no. buildings ranging from 6 to 7 storeys in height, with ancillary residential amenity facilities as follows: games room, gym, conference room, amenity room, laundry, bulk store, and guest suites; 6 no. retail units and 1 no. café/restaurant all at ground floor level, 5 no. floors of commercial office suites at first to fifth floor level, 1 no. landscaped roof deck at fifth floor level to serve offices, 1 no. esb substation at ground floor level, surrounding 1 no. landscaped podium garden with play equipment, off street car parking totalling 97 no. spaces accessed via new vehicular access on Lake Street, 26 no. on-street car parking spaces (8 no. spaces on Dargan Street, 11 no. spaces on Clongriffin Road, and 7 no. spaces on Lake Street); 234 no. bicycle parking spaces (20 no. on street and 214 no. at ground floor level), and associated elevational signage to all retail/commercial units;

Block 15 containing a total of 92 no. residential apartments comprising 38 no. 1 beds and 54 no. 2 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 2 no. buildings ranging from 3 to 6 storeys in height, with ancillary residential amenity facilities; 1 no. 8 screen cinema, 5 no. retail units and 3 no. cafés/restaurants at ground floor level, 1 no. retail unit split over ground and first floor level, 1 no. esb substation at ground floor level, surrounding 1 no. landscaped podium garden, off street car parking totalling 50 no. spaces accessed via new vehicular access on Market Lane, 32 no. on-street car parking spaces (23 no. spaces on Market Lane, and 9 no. spaces on Main Street); 201 no. bicycle parking spaces (20 no. on street and 181 no. at ground floor level), and associated elevational signage to all retail/commercial units.

The proposed development provides for a total of 328 no. car parking spaces and 635 no. bicycle spaces. Planning permission is also sought for landscaping including play equipment, roads, footpaths, boundary treatments and all associated engineering and site works necessary to facilitate the development.

Alternatives Considered

The applicant has been actively involved in Clongriffin since the late 1990s; building the train station at Clongriffin in conjunction with Ballymore and helping to shape the North Fringe Area Action Plan. Roughly one third of the 2003 Masterplan Planning Permission for a mixed-use new town centre was constructed when the recession intervened and progress slowed considerably.

The original parent masterplan and associated masterplan layout for Clongriffin established the broad parameters and determining factors for this project. Clongriffin

has been a development site since the grant of permission in the early 2000s so much so that a significant proportion of infrastructure has been constructed on site to date. This infrastructure includes existing roads, public infrastructure, drainage, water services, public lighting, open space, train station, town square, quality bus corridors etc. In addition, existing development site boundaries including constructed blocks and internal roads constructed up to wearing course results in there being little scope in general to explore alternative layout designs which were significantly different to that granted and now proposed as part of this project. The final application design for the Clongriffin site proposes a legible, permeable and coherent extension to the earlier built phases. This layout allows for the development of the lands at an appropriate density and scale and in line with National, Regional and Local Planning policy.

A number of alternatives to the proposed design of the various blocks were considered during the course of the preparation of this EIAR. The design of the proposed project has evolved throughout the consultation process which is set out in full in Section 2.9 of this EIAR. The design of the various blocks was amended as a result of extensive consultation and feedback with the relevant departments of Dublin City Council and indeed An Bord Pleanála. For example, the designs of Block 6 and Block 14 was revisited.

In the case of Block 6 the massing and form of the block was broken down to provide cognisance of neighbouring development height and scale to the west. Further details of this can be found in the Block 6 Architects Design Statement by Wilson Architects. Block 14 was redesigned to maximise the optimal architectural solution for the focal junction at the corner of Lake Street and Main Street. Further details of this can be found in the Block 14 Architects Design Statement by Downey Planning and Architecture.

A 'Do Nothing' scenario would be detrimental to the future success of Clongriffin town. Given the subject sites locations within the town centre and current brownfield status, failure to develop and complete the original masterplan vision would significantly impair the quality of the urban landscape and viability for a mix of sustainable uses and amenities for existing and future residents. As such, it is considered that the 'Do Nothing' scenario is not a suitable alternative option for the subject lands as it would result in serviced lands becoming redundant whilst at the same time resulting in a significant reduction in residential and commercial units within the town centre of Clongriffin and as such would be contrary to planning policy.

Baseline Scenario

The baseline scenario including a description of the current receiving environment has been considered as part of this EIAR through the collection and collation of data through tests, site visits, desktop reviews, etc, including analytical data for traffic, noise levels, surface water quality, etc. A description of the existing environment is presented in each relevant section for the various environmental chapters.

An overview of the baseline scenario for the proposed Project is that the lands subject to this EIAR comprise infill brownfield lands and are the remaining blocks required to complete the development of Clongriffin Town. There are 15 no. blocks outstanding within the ownership of the applicant, that formed part of the parent masterplan Ref. 0132-02 (ABP Ref. PL29N.131058) and whose permission have now lapsed. There are 3 no. blocks (blocks 7, 9 and 10) that are outside the control

of the applicant and whose permission has expired. These lands are all infill lands that are serviced with road infrastructure, public transport, drainage etc. These 15 no. blocks are subject to a masterplan update and are all assessed as part of this EIAR. These blocks include Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 and 29. The masterplan aims to infill these outstanding blocks from the original masterplan which were not constructed within the lifetime of the permission due to the economic downturn but which are fully serviced and ready for development.

A significant quantum of infrastructure is already constructed in Clongriffin. Large numbers of residential dwellings have already been constructed with much of the necessary social and physical infrastructure provided including:

- Clongriffin Dart Station constructed and in operation;
- Clongriffin Main Street constructed including the extension of Malahide Road QBC;
- Dublin Bus services operational;
- Internal Road Network constructed up to wearing course;
- Multi-storey car park constructed;
- Park and Ride facility constructed;
- Station Square plaza completed;
- Class 1 Public Open Space (Fr. Collins Park) – Constructed and operational;
- Mayne River Linear Park complete up to attenuation pond;
- Landscaping of principal streets and public squares completed including Station Square;
- Internal drainage network for foul and surface water constructed including attenuation pond;
- Local shops and services.

These services/facilities were provided under the granted masterplan permission with c. 1,685 residential units constructed to date, with a further 503 units currently under construction and 62 units permitted and intended to be implemented. Furthermore 13,950 sq.m of commercial development has been constructed to date with a further 706 sq.m under construction with the units predominantly along Main Street and within the Town Centre adjoining the Train Station. In addition, a hotel commercial development of 8,080 sq.m. has been permitted at Block 19. There are a number of offices, health centres, shops, cafes/restaurants/takeaways and shops that currently operate within the centre of Clongriffin including Centra, Stacks Pharmacy, Clongriffin Medical Centre, Clothes Alterations, Body Transformation Studio, Revv Barbers, Romayos Diner etc. There are also a number of community and social facilities available within Clongriffin including two community centres at Clongriffin Hub and Clongriffin Junction which hold weekly events including Men Sheds, Yoga Classes, Dance Academy etc.

There are significant sports and leisure facilities within Clongriffin with Trinity Sports & Leisure Club which offer facilities including a 25m swimming pool, scuba diving, aqua aerobics classes, sporting hall accommodating indoor football, basketball, keep fit classes, lounge areas including a darts and pool lounge as well as accommodating parties, boxing clubs etc. The applicant has also developed a relationship with Trinity Sports & Leisure such that residents within Clongriffin avail of a free year's membership and ongoing discounted fees.

There are also additional services provided within Father Collins Park which is Ireland's first wholly sustainable park and extends to 26 hectares. The park comprises high quality playground facilities, circuit track, skate park, sports pitches

including all weather pitches and provides a high-quality amenity and open space park for residents in Clongriffin. The River Mayne Linear Park also provides high quality public open space for residents with the overall vision for the corridor to provide a walking route from Clongriffin to Belcamp to the west.

Land Use Planning Impacts

The lands are zoned 'Z14—Strategic Development and Regeneration Areas' under the Dublin City Development Plan 2016-2022. Zone 'Z14' aims *"to seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and 'Z6' would be the predominant uses"*. The subject lands are also partially zoned as a 'Key District Centre' (KDC), zoning 'Z4—District Centres' pertains to this designation. Zone 'Z4' seeks *"to provide for and improve mixed-services facilities"*. The use proposed in this development is permitted under the pertaining zoning objectives. The proposed development is in accordance with relevant national, regional and local planning policy documents as set out within Chapter 3 of this EIAR.

Population and Human Health

The subject site was examined in terms of its impact on the human environment in the general area. The proposed development will have a positive impact on population, in that they will cater for predicted future increase in population for the Dublin area.

The development will have a positive effect on employment during the construction phase, providing significant construction sector and related employment over the construction period of the development. The development will also have a positive impact on community and recreational facilities in that it will provide additional areas of green amenity space and will contribute to the critical mass needed to support community and recreational facilities in the wider Clongriffin area. The Project will also increase community facilities for existing residents as well as increasing employment opportunities during the operation phase of the development. However, the construction of any project has potential to give rise to an impact on health and safety of human beings if construction activities are not managed appropriately. Measures to address such health and safety considerations will be addressed in the Construction Management Plan for the development.

Biodiversity

A review of the biodiversity of the site was carried out by OPENFIELD Ecological Services and this included a study of existing information from the area. A site visit was also carried out on the 11th of October 2018. Because of the nature of the site, the timing of the survey was not an impediment to a full assessment. It was possible to classify all habitats on the site to Fossitt level 3. The site was surveyed in accordance with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt's Guide to Habitats in Ireland (Fossitt, 2000). A species list for each habitat was compiled and these are presented in Appendix 5.2 of this Chapter.

There are no alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011. There are no water courses or drainage ditches which could provide a direct pathway to the Mayne River.

The site survey included incidental sightings or proxy signs (prints, scats etc.) of faunal activity, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. No direct evidence of any mammal was recorded. Given that the site is securely fenced, and the level of construction activity underway, opportunities for larger mammals are severely limited. There are no features on the site for roosting Bats (Hundt, 2012) with no suitable buildings or veteran trees with holes, cracks etc. Vegetation on site may be of value to those Bat species which are tolerant of artificial light. No evidence of Badger activity was found in any area of the site and for reasons outlined above the site provides few opportunities for these large mammals. No setts are present and there are no records of Badger from this vicinity from the National Biodiversity Data Centre.

In summary it has been seen that the application site is not within, or adjacent to, any area that has been designated for nature conservation at a national or international level. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are no alien invasive plant species and no plants which are listed as rare or protected under law.

This report has identified no impacts that were assessed as significant and therefore mitigation is not required. All birds' nests and eggs are protected under the Wildlife Act, regardless of their location or the date, and so it is recommended that site workers be notified of the legal requirements in this regard. Should an active nest be encountered then works in that area should cease until chicks have fledged. A nest with eggs can only be destroyed under licence from the National Parks and Wildlife Services. No residual effects are predicted to occur arising from this development.

This proposed development can be viewed alongside the permitted construction of a series of project phases in Clongriffin and the likely future development of all the lands within the local area plan area. This will see the conversion of all these lands from open to a combination of built and amenity space. This process can impact upon species in a cumulative manner however, given the already urban environment in this location, this is not likely to impact negatively upon species already present.

The key environmental interaction with Biodiversity is water. A series of mitigation measures are proposed in the Water Chapter of this EIAR document to ensure the quality (pollution and sedimentation) and quantity (surface run-off and flooding) is of an appropriate standard. Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. Section 5.8 summaries the likely impacts arising from this project. In this instance, no further monitoring is required.

Land, Soils & Geology

This section of the EIAR has been prepared by Waterman Moylan Consulting Engineers and provides an assessment of the impact that the proposed infill development in Clongriffin will have on the surrounding soil and geology within the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring after the development is operational.

The existing soils and geology within the receiving environment study area were reviewed within this Section which then describes the potential impact of the proposed development and proposes mitigation measures to minimise the impact of

the development on soils during the construction and operational phase of the proposed development.

Geotechnical site investigations within and around the site were reviewed as part of the base line studies for the EIAR. These site investigations generally establish consistent sub surface conditions consistent with north county Dublin brown boulder clays. Typical trial pits indicate that the site generally consists of:

- Brown sandy slightly gravelly silty CLAY, over;
- Stiff brown sandy slightly gravelly silty CLAY with low cobble content, over;
- Very stiff dark grey sandy slightly gravelly silty CLAY with low cobble content.

A base line study of the Geological Survey of Ireland maps indicates that lands are underlain by the Malahide Formation, designated as a Locally Important (LI) aquifer. The aquifer is in an area of low vulnerability.

The proposed development works will consist of excavations for foundations, basements (x2), minor roads and local services which will expose underlying soil. This will result in a risk of erosion of soil and contamination of sub-soils and groundwater especially during construction.

The measures to reduce the impact the development will have on the soil and groundwater during the construction and operational phases of the development include good construction practices including provision of silt traps, stock piling guidance, pollutant control measures and replacing topsoil on site.

As a result of these remedial measures there are no significant adverse impacts envisaged on the surrounding soil environment resulting from the proposed infill development.

Water

This section of the EIAR has been prepared by Waterman Moylan Consulting Engineers, to assess the potential impact of the proposed infill development on the existing water supply, foul water and surface water environment within the proposed development and surrounding environment. The potential impacts of the proposed development are assessed and the mitigation measures to minimise the impact of the development on the water supply, foul water and surface water environment are outlined.

The existing receiving water environment includes:

- The existing Clongriffin watermain network which has been substantially constructed up to and around each of the subject Blocks.
- The existing Clongriffin foul water sewer network and Clongriffin Pumping Station which is fully constructed to service each of the subject Blocks.
- The existing Clongriffin surface water sewer network and regional surface water attenuation pond which is fully constructed to service each of the subject Blocks.

Potential impacts of the proposed infill development on the existing water supply during construction phase include some small water demand for construction works and facilities and more significant water demand during the operational phase. The existing watermain network is supplied by the north fringe watermain and the existing network has been constructed and designed to facilitate the subject infill development.

The trunk foul water sewers have already been constructed around the subject Blocks. Potential impacts of the proposed development during operational phase will add flow to the network. The existing foul water network drains by gravity to the Clongriffin Pumping Station and ultimately the North Fringe Sewer which have adequate capacity to facilitate the subject infill development.

The trunk surface water sewers have already been constructed around the subject Blocks. Potential impacts of the proposed development during operational phase will add surface water flow to the network. The existing surface water network and associated Clongriffin attenuation pond have been designed, sized and constructed to facilitate the subject infill development. Substantial SuDS devices have now been proposed at source within each block to significantly treat and slow down the surface water runoff from each block. This will further mitigate against the risk of pollution and flooding from the Clongriffin development.

Further mitigation measures proposed for the construction phases of the proposed development include implementing construction standards and best practices and supervision of construction works.

As a result of the design and remedial measures proposed, there are no significant adverse impacts envisaged on the surrounding water environment resulting from the proposed development.

Air Quality

This section of the EIAR has been prepared by DKPartnership (DKP) and assesses the air quality impacts associated with the proposed development at Clongriffin, Dublin 13.

The impact on air quality mainly by increased traffic are deemed a slight to moderate increase based on the DMRB screening air dispersion model predicting pollutant concentrations over a period of time to quantify the magnitude of change in pollutant concentrations and is in line with what would be expected from a modern residential development.

However, in actual terms when the new government's climate action plan is implemented phasing out petrol & diesel cars over the next 10 years in combination with the Clongriffin Travel Plan which aims to promote sustainability, enhance public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car for the journey to and from Clongriffin the impact would be significantly less than the outlined predictions.

Noise and Vibration

The baseline noise climate in the area of the development has been determined by means of a noise survey undertaken in the vicinity by DKP Partnership.

The impact or increase in noise levels, mainly by increased traffic noise in the main artery roads, are deemed slight to moderate based on the predicted calculation methodology of BS 5228-1:2009+A1: 2014 and are in line with general noise impacts of new developments.

However, in actual terms when the new government's climate action plan is implemented, the noise levels including the new proposed development will reduce over the current back ground noise levels due to the fact that petrol & diesel cars will be phased out and replaced by more quiet electrical cars over the next decade during which the development will be constructed.

It is anticipated that construction vibration levels will only have minor temporary increases and that any increase in operational vibration due to the new development is deemed not to have any noticeable impacts on the overall development.

Climate

Chapter 10 of this Environmental Impact Assessment has been prepared by DKPartnership and assesses the potential impacts and associated likely effects of the proposed development on the local climate.

The impact or increase in CO₂ levels mainly contributed to an increase in operational (heating/hot-water) use and road traffic use are deemed a moderate increase based on current construction standards and vehicle emissions and in line with a general increase in housing accommodation.

However if one was to apply the new Part L 2019 in combination with the proposed city district heating system and the new government's policy for climate change phasing out petrol & diesel cars in the next 10 years and promoting the use of public transport and non-motorised transport the actual CO₂ impact will be a marginal increase on the overall development in Clongriffin. This impact is not considered significant.

Landscape and Visual Impact

The visual impact of the proposed development on the landscape is considered in the context of the construction and operational stages. Generally, the development shall not reduce the amount of green space, as it has been developed previously with roads and services. The open spaces remaining from previous works shall be replaced with the proposed units, and associated walls, roads and planting. The space that is being removed were part of fields, however no field boundaries with hedgerows and trees exist on site at present.

The main visual changes shall be the height and the extent of the proposed residential development and associated building works to the landscape. The height and mass of the buildings shall be the main visual impact.

The design and organisation of the streetscapes shall ameliorate the impact of this development and of this decrease in spatial area. This shall be aided through provision of extensive semi-mature tree planting, native hedge planting in defensive planting zones. The hedge and tree planting shall be all from a pollinator plant list that shall encourage bee pollination.

The visual impact of the lines and the height of the buildings shall be mitigated by the proposed use of soft landscape materials shall further reduce the impact of the development.

Semi-mature trees and shrub planting shall give an immediate effect tying in with the surrounding landscape. The impact of the landscape intervention on the existing development shall be positive and long term.

The overall impact with the existing housing estates and encroaching town of Clongriffin shall be moderate in the short term.

A series of Photomontages and receptor views (18 no.) were prepared by Digital Designs in order to illustrate the physical and visual nature of the existing and proposed Project. The 18 visual receptors were originally presented to the team. Through a process of dialogue, Internal receptor views have been also included. They represent the most significant and sensitive location points. RMDA in conjunction with the Architects; Wilson, CCK and Downey Architecture, the CGI developers Digital Dimensions and the Planning Consultants Downey Planning provided locations for the visual receptors. They were based upon the sensitivity of the locations and typical criteria. View 1 is assessed as follows:

	View 1
Existing View	Looking East Along Marrsfield Avenue
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is shown as a CGI and can be seen from the Road over the existing development
Impact – Construction Stage	Neutral in the short term.
Impact – Operational Stage	Moderate impact – in the short term. Consistent with existing patterns.
Quality of Change	Neutral in the long term

An assessment of each receptor view is provided within Chapter 12 of this EIAR.

With regard to the cumulative impact of proposed development on landscape and visual amenity, the future development will take place on a partially developed site and will form part of the comprehensive redevelopment and rejuvenation of the existing development at Clongriffin. In this regard, the cumulative impact of the overall development is expected to be moderately positive. It is considered that there will be short to medium term moderate negative impacts associated with the construction phase of the project over all phases of development. Subsequent construction phases are likely to occur sequentially after the completion of the first Phase. It is considered that there will be a long term positive visual impact as a result of the proposed development, due to the modern residential facilities being provided, the improved visual amenity and outlook from the surrounding area, creation of an integrated streetscape and attractive, useable public realm, and the provision of

commercial, retail and community floorspace to serve the needs of the local community.

The principal mitigation measures have involved mitigation by avoidance in the planning design and the layout of the scheme. A comprehensive and cohesive landscape treatment has been proposed to ensure an overall quality external scheme shall be delivered.

Transportation

This section of the EIAR has been prepared by Waterman Moylan Consulting Engineers and presents the traffic and transportation assessment of the receiving environment for the construction and operation phases of the proposed infill development.

The proposed development consists of the completion of 15 No. blocks to be constructed over a 5-year period. Based on the typical construction period of 18 months, 4 No. blocks could be under construction at the same time. Access to the subject site during the construction phase will be from Main Street and Marrsfield Avenue via Hole in The Wall Road. The construction of the proposed development is predicted to result in an additional 4-6 HGV per block per day which will mainly occur outside of the traditional morning and evening peak hours. The impact of the construction traffic is therefore considered to be slight and will result in short-term and negligible impact on the surrounding road network.

In order to understand the traffic impacts during the operational phase of the proposed development, roads and junctions have been modelled using ARCADY, TRANSYT and PICADY traffic modelling software. In general, the trip generation expected to be generated by the proposed development will be dispersed among the surrounding road network and when added on the existing traffic flows it is envisaged that the overall traffic will not result in significant change on the junction's operation during the peak hours. However, the road network improvements proposed for the surrounding area have already seen to result in a significant positive impact, with further network improvements scheduled to be completed in the next 12-18 months.

The construction of the Town Centre will create a sustainable development within itself, with many amenities within walking and cycling distance. This will reduce the traffic impact on the local and primary traffic routes in the area. The Park & Ride facility, Bus Connects Project and DART Expansion Programme will encourage the use of public transport, and consequently reduce the overall private car usage not only within the development, but the area as a whole.

The proposed development will also result in a positive impact on pedestrian and cyclist environments through the extension of the proposed green route connecting Belmayne to the Clongriffin Train Station and the provision of safe and well located public and private bicycle stands.

Material Assets

This Chapter describes the material assets that are potentially impacted by the proposed Project at Clongriffin. Material assets are resources that are valued and intrinsic to the site of the proposed Project and surrounding environs. Material assets may be of either natural or human origin and the value may arise for economic or

cultural reasons. The study was informed review of the relevant statutory documents, by numerous site visits over the course of 2018/2019, topographical surveying of the application sites, the sourcing of utility information/records from the relevant service providers, an analysis of the resources consumed and an estimation of waste generated by the proposed Project at both the construction and operational phases, and consultation with relevant bodies.

The main interactions relating to Material Assets are water, air quality, and population and human health. During the construction phase, the availability of water supplies to the subject lands and during the connection of water supply and wastewater services has the potential to impact of the local surface water. There are also implications for the local population if these services are disrupted during the construction phase. The development and installation of the material assets (services) during construction has the potential to impact on the local air quality.

All waste generated must be managed in accordance with regional and national waste legislation and taken to suitably registered and licenced waste facilities for processing, segregation, reuse, recycling, recovery or disposal, as deemed appropriate. The potential effect of construction waste generated from the proposed Project is considered to be short-term, not significant and neutral.

During the operational phase, the water supply and wastewater services will have a potential interaction with the available water supply and the potential emissions to the water cycle. There will be similar existing commercial and residential developments in proximity to the proposed Project which will generate similar waste types. Authorised waste collectors will be required to collect segregated waste materials from multiple development which is likely to result in an improvement of efficiencies of waste collection and indeed is likely to result in an improvement in waste targets in line with national and local legislation. The potential effect of operational waste generated from the proposed Project is considered to be long-term and not significant.

The assessment has considered cumulative impacts of construction and operational phases of the proposed Project, in conjunction with surrounding developments. Considering the minimal use of material assets during the construction phase, there is no likely impact. Multiple sites under construction at the one time may result in cumulative impacts in terms of noise and vibration during the construction period. However, such impacts are short term and neutral.

Cultural, Archaeological and Architectural Heritage

An assessment of the archaeological, architectural, cultural and industrial heritage potential of the proposed development site was undertaken by Courtney Deery Heritage Consultancy Ltd. The assessment was based on a desk-study, with a detailed documentary and cartographical review.

There will be no impact on archaeological heritage as a result of the proposed development. The archaeological potential within the masterplan area and its immediate environs (including the proposed development site) has been realised and fully addressed through the extensive archaeological investigations that took place in 2003 / 2004. A total of 17 archaeological sites were uncovered, including burnt mounds, pits and hearths associated with domestic and craft / quasi industrial activities, ritual sites (a ring-ditch and an isolated cremation) and an early medieval

ringfort. Fifteen of these sites were fully excavated; the remaining two were only partly recorded, having been accidentally destroyed before excavation could take place. A further two sites initially identified during topsoil-stripping and testing were subsequently excavated and shown to be of no archaeological significance.

There are no built heritage assets in or adjacent to the proposed development lands and there will consequently be no impact on architectural heritage.

While the former course of the townland boundary and a footpath were noted in historical mapping within the proposed development site, these were not identified during the previous archaeological investigations and there are no existing remains of these features. In addition, any surviving former field boundaries were removed as part of the previous works. As such, there will be no impact on cultural heritage.

There are no further archaeological, architectural or cultural heritage considerations in relation to the proposed development site and masterplan lands.

Interaction of Impacts

The interaction of impacts, as considered in the EIAR, and their relationship to the information requirements outlined in the European Communities (Environmental Impacts Assessment) Regulations, are summarised as the following:

- Population and Human Health/Population and Human Health
- Population and Human Health/Biodiversity
- Population and Human Health/Land Soil & Geology
- Population and Human Health/Air Quality
- Population and Human Health/Noise and Vibration
- Population and Human Health/Landscape and Visual Amenity
- Population and Human Health/Traffic and Transport
- Population and Human Health/Material Assets
- Biodiversity/Water
- Land, Soils & Geology/Water
- Traffic and Transport/Air Quality
- Traffic and Transport/Noise and Vibration
- Traffic and Transport// Climate
- Material Assets/water
- Material Assets/Air Quality
- Material Assets/Population and Human Health
- Landscape and Visual Amenity/Biodiversity
- Landscape and Visual Amenity/Lands Soil and Geology
- Landscape and Visual Amenity/Water
- Landscape and Visual Amenity/Traffic and Transport

Overall Impact on the Environment

The EIAR has identified potential for interactions between a range of factors identified in Table 15.1. These interactions require the implementation of suitable mitigation measures to ameliorate the impact of the development on the environment. This EIAR has found that subject to the full implementation of the various mitigation measures specified by the EIAR team, the development will have no significant negative impact on the environment.

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Chapter 1 – Introduction

1.1 Purpose of this Report

Environmental Impact Assessment (EIA) is the process by which the anticipated effects on the environment of a proposed development or project are measured and assessed.

This Environmental Impact Assessment Report (EIAR) has been prepared for a proposed project which provides for a total of 1,950 residential units and c.22,727.5 sq.m. of commercial development at Clongriffin, Dublin 13. The masterplan lands are divided into three separate planning applications, in accordance with the legislative provisions of the Strategic Housing Development process. Thus, this EIAR has been prepared in parallel with the preparation and formulation of 2 no. Strategic Housing Development Applications being lodged to An Bord Pleanála (Clongriffin SHD 1 and Clongriffin SHD 2) and 1 no. Section 34 application being lodged to Dublin City Council.

This EIAR assesses the entire proposed development at Clongriffin of 1,950 residential units and c.22,727.5 sq.m of commercial development provided across 15 no. blocks (i.e. Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build To Sell/Social/Private Tenure units. The overall 3 no. applications also provide for c.22,727.5 sq.m of commercial development including c. 30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. creche facilities, 1 no. 8 screen cinema, 1 no. commercial gym, 7 no. cafés/ restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks and all associated works. For a full detailed description of the proposed development, please refer to Chapter 2 of this EIAR.

The lands subject to this EIAR form part of the wider Clongriffin area that has been under construction by Gerard Gannon Properties since the late 1990s. Construction to date has included the Train Station, Main Roads including a QBC, residential dwellings, commercial development in addition to Father Collins Park and additional amenity development. The construction to date of Clongriffin has been subject to a parent masterplan (Reg. Ref. 0132/02) which was granted in 2003 for a scheme of some 3,500 residential units with c.85,000 sq.m. of shops, services and employment. A further c.15,000 sq.m of commercial development was subsequently granted permission over the years through varying permissions such that c. 100,000 sq.m. of commercial development has been permitted at Clongriffin. To date 13,950 sq.m. of commercial development has been constructed along with 1,685 dwellings, duplexes and apartments, with a further 503 units under construction. In addition to the construction of residential units, Gerard Gannon Properties have constructed over 80% of the roads, drainage and landscaping and have heavily contributed to the financing of the Clongriffin Train Station. The permitted Masterplan informed the formulation of the Clongriffin-Belmayne LAP and there is a strong emphasis throughout Clongriffin on the delivery of quality homes, sustainable neighbourhoods to support successful communities, timely social infrastructure provision and a city-wide green network with links to the city region. An updated Masterplan being submitted as part of this application sets out how to date there has been some c. 1,685 homes constructed (predominantly private homes) in close proximity to public

infrastructure including the railway station and quality bus corridors, a mix of community and social infrastructure is in place with Father Collins Park and indeed community facilities in place, in conjunction with a mix of commercial and retail uses which supports the provision of sustainable neighbourhoods.

The current applications seek to complete the overall masterplan vision for the lands and provide for a higher density of development in close proximity to the town centre and the rail station. Clongriffin provides for a range of household types with dwellings, duplexes and apartments forming part of the overall masterplan for the lands. To date, a significant quantum of private dwellings and duplexes have been completed. The current applications provide for apartment units, which have previously been approved, and will complete the overall development. The proposed applicants provide for a mix of apartments for both Build to Rent (i.e. rental properties) and Build to Sell (i.e. can be privately owned). The overall development of Clongriffin provides for a mix of tenures, providing residential units that serve a range of age groups within walking distance of the centre of Clongriffin where retail/offices/commercial uses as well as community facilities are within close proximity to their home.

The proposed development represents the completion of Clongriffin Town centre.

The application sites are located in Clongriffin which is within the functional area of Dublin City Council and is approximately 9.5 kilometres to the north east of Dublin City Centre and 5km to the east of the main Dublin – Belfast road (M1/M50). The lands are easily accessible via the Hole in the Wall Road and the R139 which connects to the M1 and the M50 Motorway which is a major arterial route around the city centre, and indeed connects to the Malahide Road which provides access directly into Dublin City Centre. Main Street provides direct vehicular access from the Hole in the Wall Road into Clongriffin and comprises dedicated bus lanes and cycle lanes that connect to Clongriffin Train Station.

This EIAR has been prepared to comply with the requirements of the 2014 Directive 2014/52/EU. This Environmental Impact Assessment Report has been formulated within an overall design process. The purpose of this EIAR is to assist and inform An Bord Pleanála and Dublin City Council, as the competent authorities, in undertaking an environmental assessment of this project.

1.2 Nature and Extent of Proposed Development

Gerard Gannon Properties, the applicant, is applying to An Bord Pleanála and Dublin City Council for planning permission for the following developments:

Clongriffin SHD 1

The development will consist of the construction of a mixed-use development (within 9 no. blocks i.e. Blocks 6, 8, 11, 17, 25, 26, 27, 28 and 29) comprising of 1,030 no. apartment units (421 no. one beds, 541 no. two beds, and 68 no. three beds) of which 352 no. units are residential and 678 no. units are 'build to rent' residential units with ancillary residential amenity facilities; 2 no. crèches, 10 no. retail units and 1 no. gym, all of which will be provided as follows:

Block 6 containing a total of 270 no. build to rent apartments comprising of 123 no. one beds and 147 no. two beds in 5 no. buildings ranging from 4-7 storeys in height surrounding 1 no. landscaped podium garden with all apartments provided with private balconies/terraces, and a total of 5 no. communal roof gardens at fourth, fifth

and sixth floor level. Ancillary residential amenity facilities are also proposed including concierge, office, resident's amenity/meeting rooms; resident's gym, cinema room, function room, maintenance suite and stores. Block 6 also provides for 1 no. creche with associated outdoor play area at ground floor level with 1 no. pocket park to the south east of Block 6 (Grant Park), 119 no. car parking spaces at ground floor level accessed via a new vehicular access onto Lake Street, 65 no. on-street car parking spaces (8 no. spaces on Lake Street, 29 no. spaces on Belltree Avenue, 10 no. spaces on Park Street, 18 no. spaces on Dargan Street) and 572 no. bicycle spaces at ground floor level;

Block 8 containing a total of 114 no. apartments comprising of 39 no. one beds, 72 no. two beds, and 3 no. three beds, in 3 no. buildings ranging from 3-8 storeys in height, with 1 no. landscaped podium garden, and all apartments provided with private balconies/terraces. Ancillary residential facilities are also proposed including office suite, laundry room, resident's amenity rooms and bulk store with 1 no. pocket park proposed to the south (Railway Park); 72 no. car parking spaces at ground floor level accessed via a new vehicular access onto proposed Marrsfield Lane, 31 no. on-street car parking spaces (16 no. spaces on proposed Marrsfield Lane, 8 no. spaces on proposed Station Street, and 7 no. spaces on proposed Railway Lane North) and 179 no. bicycle spaces at ground floor level;

Block 11 containing a total of 96 no. apartments comprising of 44 no. one beds, 12 no. two beds, and 40 no. three beds, in a building 4-6 storeys in height, and all apartments provided with private balconies/terraces; 36 no. car parking spaces at ground floor level accessed via a new vehicular access onto proposed Railway Lane North, 25 no. on-street car parking spaces (6 no. spaces on proposed Railway Lane North, 14 no. spaces on proposed Station Street, and 5 no. spaces on proposed Railway Lane South) and 144 no. bicycle spaces in external covered stores/sheds;

Block 17 containing a total of 210 no. build to rent apartments comprising of 90 no. one beds, 111 no. two beds, and 9 no. three beds, in a building 6-17 storeys over basement in height, and all apartments provided with private balconies/winter gardens/terraces. Ancillary residential facilities are also proposed including concierge office, resident's amenity rooms, conference room, resident's gym, laundry room and bulk store. Block 17 comprises 5 no. retail units (on ground, first and second floor levels); 2 no. communal roof gardens at sixth floor level and seventh floor level; 71 no. car parking spaces at basement level accessed via a new vehicular access onto Dargan Lane, 4 no. on-street car parking spaces (3 no. spaces on Station Street, 1 no. spaces at entrance to proposed basement access), and a total of 225 no. bicycle spaces at basement and ground floor level;

Block 25 containing a total of 63 no. build to rent apartments comprising of 25 no. one beds and 38 no. two beds in a building 6-7 storeys in height, and all apartments provided with private balconies/terraces and 1 no. communal roof terrace at sixth floor level. Ancillary residential amenity facilities are also proposed including function room, lounge and workspace room, concierge, plant rooms and stores all at ground floor level; 136 no. bicycle spaces at ground floor level; 6 no. on street car parking spaces on Marrsfield Avenue, 33 no. off street car parking spaces accessed via a new vehicular access onto Marrsfield Avenue;

Block 26 containing a total of 78 no. build to rent apartments comprising of 50 no. one beds and 28 no. two beds in a building ranging in height from 8-15 storeys and all apartments provided with private balconies/terraces and 2 no. communal roof terraces at eighth and thirteenth floor level. Ancillary residential facilities are also proposed including resident's function room, meeting room, concierge, office, resident's gym, steam room, resident's changing and shower rooms, residents lounge, and cinema/media room; 190 no. bicycle spaces at ground floor level; 14 no.

on street car parking spaces (6 no. spaces on proposed Marrsfield Crescent East and 8 no. spaces on proposed Marrsfield Lane), 38 no. off street car parking spaces accessed via a new vehicular access onto proposed Marrsfield Lane;

Block 27 containing a total of 57 no. build to rent apartments comprising of 5 no. one beds, 47 no. two beds, and 5 no. three beds, in a building ranging from 5-6 storeys in height, and all apartments provided with private balconies/terraces and 1 no. communal roof terrace at fifth floor level. Ancillary residential facilities including concierge/office, resident's lounge and workspace room, and function room. Block 27 also provides for a creche at ground floor level with associated outdoor play area and a set down area on Marrsfield Avenue; 146 no. bicycle spaces at ground floor level; 9 no. on street car parking spaces on Marrsfield Crescent West, 18 no. off street car parking spaces accessed via a new vehicular access onto Lake Street;

Block 28 containing a total of 122 no. apartments comprising of 42 no. one beds, 71 no. two beds, and 9 no. three beds, in 4 no. buildings ranging from 6-7 storeys in height, with 1 no. landscaped podium garden, and all apartments provided with private balconies/terraces. Block 28 also provides 1 no. gym and 5 no. retail units at ground floor level; 242 no. bicycle spaces at ground and first floor level; 6 no. on street car parking spaces (4 no. on street car parking spaces on proposed Railway Lane South, and 2 no. on street car parking spaces on Station Street); 106 no. off street car parking spaces accessed via a new vehicular access onto proposed Railway Lane South);

Block 29 containing a total of 20 no. apartments comprising of 3 no. one beds, 15 no. two beds, and 2 no. three beds, in a building 3-4 storeys in height, all apartments provided with private balconies/terraces; 49 no. bicycle spaces in external covered stores; 11 no. on street car parking spaces on Grange Lodge Avenue; and 9 no. off street car parking spaces accessed via a new vehicular access onto Grange Lodge Avenue.

The development provides for a total of 673 no. car parking spaces across surface, under croft and basement levels, 1,883 no. bicycle spaces, motorcycle parking, esb sub-stations, plant room and bin stores at basement level within Block 17 and at ground/surface level within Blocks 6, 8, 11, 25, 26, 27, 28 and 29; associated elevational signage to retail/commercial units; landscaping including play equipment, 2 no. public parks (Railway Park and Grant Park); a Station Square Sculpture and 28 no. additional public bicycle stands (56 no. bicycle spaces) with associated new canopy at Station Square, roads, footpaths and all associated engineering and site works necessary to facilitate the development. An Environmental Impact Assessment Report has been prepared in respect of the proposed development.

Clongriffin SHD 2

The development will consist of the construction of a mixed-use development (within 3 no. blocks i.e. Blocks 4, 5 and 14) comprising of 500 no. apartment units (49 no. studios, 167 no. one beds, 259 no. two beds, and 25 no. three beds) of which 235 no. units are residential and 265 no. units are 'build to rent' residential units with ancillary residential amenity facilities; 1 no. crèche, 1 no. community centre, 1 no. men's shed, 3 no. cafés/restaurants, 6 no. retail/commercial units, all of which will be provided as follows:

Block 4 containing a total of 74 no. build to rent apartments and own door duplex units comprising of 9 no. one bed apartments, 46 no. two bed apartments, 9 no. two bed own door duplex units and 10 no. three bed apartments, in 2 no. buildings ranging from 2-6 storeys in height surrounding 1 no. landscaped podium garden with

all apartments provided with private balconies/terraces, and a total of 5 no. communal roof gardens at fourth, fifth and sixth floor level. Ancillary residential amenity facilities are also proposed including concierge, office, guest suite, residents rooms, games room, store, etc. Block 4 also provides for 1 no. crèche at ground and first floor level with associated outdoor play area, 1 no. community centre, 1 no. men's shed with associated outdoor area, and 1 no. café/restaurant, all at ground floor level; 45 no. car parking spaces at ground floor level accessed via a new vehicular access onto Lake Street, 5 no. on-street car parking spaces (3 no. spaces on Lake Street, and 2 no. spaces on Park Street) and 132 no. bicycle spaces (34 no. on street and 98 no. at ground floor level);

Block 5 containing a total of 138 no. apartments comprising of 52 no. one beds, 83 no. two beds and 3 no. three beds in 1 no. building ranging from 3-7 storeys in height surrounding 1 no. landscaped podium garden with all apartments provided with private balconies/terraces, and a total of 1 no. communal roof garden at fourth floor level. Ancillary residential amenity facilities are also proposed including concierge, laundry, and resident's amenity and meeting rooms. Block 5 also provides for 4 no. retail units at ground floor level; 54 no. car parking spaces at ground floor level accessed via a new vehicular access onto Park Street, 42 no. on-street car parking spaces (17 no. spaces on Dargan Street and 25 no. spaces on Lake Street) and 224 no. bicycle spaces (30 no. on street and 194 no. at ground floor level);

Block 14 containing a total of 288 no. apartments in 2 no. buildings ranging from 6-8 storeys over basement in height as follows: Block A comprising 97 no. residential units (4 no. studios, 43 no. one beds, 44 no. two beds and 6 no. three beds) and Block B comprising 191 no. build to rent units (45 no. studios, 63 no. one beds, 77 no. two beds, and 6 no. three beds) surrounding 1 no. landscaped courtyard, and all apartments provided with private balconies/terraces. Ancillary residential amenity facilities including concierge, laundry, bulk stores, resident's gym and resident's amenity room. Block 14 also provides for 2 no. retail/commercial units and 2 no. cafés/restaurants at ground floor level, 162 no. car parking spaces at basement level accessed via a new vehicular access onto Lake Street, 49 no. on-street car parking spaces (14 no. spaces on Lake Street, 24 no. spaces on Market Lane, and 11 no. spaces on Main Street) and 651 no. bicycle spaces (10 no. on street, 553 no. at basement level and 88 no. at ground floor level).

The development provides for a total of 357 no. car parking spaces across surface, undercroft and basement levels, 1007 no. bicycle spaces, motorcycle parking, esb sub-stations, plant room and bin stores at basement level within Block 14 and at ground/surface level within Blocks 4 and 5; associated elevational signage to retail/commercial units; landscaping including play equipment; roads, footpaths and all associated engineering and site works necessary to facilitate the development. An Environmental Impact Assessment Report has been prepared in respect of the proposed development.

and,

S.34 Planning Application

The development will consist of the construction of a mixed-use development (within 3 no. blocks i.e. Blocks 3, 13 and 15) comprising of 420 no. apartment units (127 no. one beds, 273 no. two beds, and 20 no. three beds) of which 233 no. units are residential and 187 no. units are 'build to rent' with ancillary residential amenity facilities; 14 no. retail units, 1 no. 8 screen cinema, 4 no. cafés/restaurants, and 10 no. floors of commercial office suites, all of which will be provided as follows:

Block 3 containing a total of 141 no. residential apartments comprising 31 no. 1 beds, 104 no. 2 beds, and 6 no. 3 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 3 no. buildings ranging from 5 to 6 storeys in height, with ancillary residential amenity facilities, 2 no. retail units at ground floor level, with 5 no. floors of commercial office suites at first to fifth floor level, 1 no. esb substation at ground floor level, all surrounding 1 no. landscaped podium garden with play equipment, off street car parking totalling 80 no. spaces accessed via new vehicular access on Park Street, 43 no. on-street car parking spaces (10 no. spaces on Park Street, 13 no. spaces on Friars' Street, 10 no. spaces on Main Street/Lake Street, and 10 no. spaces on proposed Park Lane), 200 no. bicycle parking spaces at ground floor level, and associated elevational signage to all retail/commercial units;

Block 13 containing a total of 187 no. residential build to rent apartments comprising 58 no. 1 beds, 115 no. 2 beds, and 14 no. 3 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 3 no. buildings ranging from 6 to 7 storeys in height, with ancillary residential amenity facilities as follows: games room, gym, conference room, amenity room, laundry, bulk store, and guest suites; 6 no. retail units and 1 no. café/restaurant all at ground floor level, 5 no. floors of commercial office suites at first to fifth floor level, 1 no. landscaped roof deck at fifth floor level to serve offices, 1 no. esb substation at ground floor level, surrounding 1 no. landscaped podium garden with play equipment, off street car parking totalling 97 no. spaces accessed via new vehicular access on Lake Street, 26 no. on-street car parking spaces (8 no. spaces on Dargan Street, 11 no. spaces on Clongriffin Road, and 7 no. spaces on Lake Street); 234 no. bicycle parking spaces (20 no. on street and 214 no. at ground floor level), and associated elevational signage to all retail/commercial units;

Block 15 containing a total of 92 no. residential apartments comprising 38 no. 1 beds and 54 no. 2 beds, all apartments with private balconies/terraces to north, south, east and west elevations, in 2 no. buildings ranging from 3 to 6 storeys in height, with ancillary residential amenity facilities; 1 no. 8 screen cinema, 5 no. retail units and 3 no. cafés/restaurants at ground floor level, 1 no. retail unit split over ground and first floor level, 1 no. esb substation at ground floor level, surrounding 1 no. landscaped podium garden, off street car parking totalling 50 no. spaces accessed via new vehicular access on Market Lane, 32 no. on-street car parking spaces (23 no. spaces on Market Lane, and 9 no. spaces on Main Street); 201 no. bicycle parking spaces (20 no. on street and 181 no. at ground floor level), and associated elevational signage to all retail/commercial units.

The proposed development provides for a total of 328 no. car parking spaces and 635 no. bicycle spaces. Planning permission is also sought for landscaping including play equipment, roads, footpaths, boundary treatments and all associated engineering and site works necessary to facilitate the development.

The proposed development is discussed in further detail in Chapter Two of this Environmental Impact Assessment Report.

1.3 Legislative Requirement

Section 172 of the Planning and Development Act 2000 (as amended) states that –

- “(1) An environmental impact assessment shall be carried out by the planning authority of the Board, as the case may be, in respect of an application for consent for proposed development where either—*
- (a) the proposed development would be of a class specified in—*
 - (ii) Part 2 of Schedule 5 of the Planning and Development Regulations 2001, and either—*
 - (I) such development would exceed any relevant quantity, area or other limit specified in that Part.”*

Part 2 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) sets out the prescribed classes of development for the purposes of Section 172(1)(a) of the Act and states the following in relation to infrastructure projects:

- “10. Infrastructure projects*
- (b) (i) Construction of more than 500 dwelling units.*
 - (iv) urban development which would involve an area greater than 2ha in the case of a business district, 10ha in the case of other parts of a built-up area and 20ha elsewhere.”*

Therefore, as stated within Part 2 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) and noting the threshold pertaining to the proposed development, the provision of 1,950 no. residential units on lands at Clongriffin falls within the meaning of Section 172(a)(ii)(I) of the Planning and Development Act 2000 (as amended).

Accordingly, permission is now being sought under Section 172 of the Planning and Development Act 2000 (as amended).

1.4 The Need for an Environmental Impact Assessment Report

Under Section 172(a)(ii)(I) of the Planning and Development Act 2000 (as amended), the Act states:

- “(1) An environmental impact assessment shall be carried out by the planning authority of the Board, as the case may be, in respect of an application for consent for proposed development where either—*
- (c) the proposed development would be of a class specified in—*
 - (iii) Part 2 of Schedule 5 of the Planning and Development Regulations 2001, and either—*
 - (II) such development would exceed any relevant quantity, area or other limit specified in that Part.”*

Therefore, in accordance with the above, this Environmental Impact Assessment Report (EIAR) has been prepared. It should be noted, that this EIAR has been prepared due to the fact that the proposed development provides for a total of 1,950 no. residential units and c.22,727.5sq.m. of commercial development and noting the mandatory requirements for an EIA, the proposed development exceeds the

thresholds rather than there being any particular concerns regarding potential significant environmental impacts.

This EIAR has been prepared in accordance with the requirements of the following statutory documents:

- The European Community Directive on Environmental Impact Assessment (No 85/337/EEC);
- The European Community Directive (97/11/EC) amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment;
- The Planning and Development Act, 2000 (as amended) and the Planning and Development Regulations 2000-2018;
- European Commission, Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (May 1999);
- European Commission, Guidance on EIA Screening (2017);
- European Commission, Guidance on EIA Scoping (2017);
- Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002);
- EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003);
- EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017);
- EPA, Advice notes for preparing Environmental Impact Statements (September 2015);
- European Commission, Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (April 2013)
- Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive)
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018); and,
- The Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment (2018)

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) transpose the requirements of the 2014 EIA Directive into Irish Planning Law. On 1st September 2018, the provisions of the Regulations came into effect. This EIAR has been prepared in light of these EIAR Regulations and has also had regard to the '*Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment*' which were published in August 2018.

In terms of development projects requiring an EIAR, such projects are set out in Schedule Five of the Planning and Development Regulations 2001-2018. Part 1 of this schedule lists those projects that require a mandatory EIAR irrespective of size in any EU Member State whereas Part II identifies the threshold limits for projects that require a mandatory EIAR in Ireland. Article 10(b) (i) of Part II '*Infrastructure Projects*' indicates that an EIAR is required for the construction of more than 500 dwellings and 10(b) (iv) urban development which would involve an area greater than 2ha in the case of a business district, 10ha in the case of other parts of a built-up area and 20ha elsewhere.

Thus, EIA is required and an EIAR (this report) has been prepared and will be submitted with the aforementioned applications to An Bord Pleanála or Dublin City Council.

1.5 Scope of Environmental Impact Assessment Report

The scope of this EIAR has had regard to the following:

- Guidelines on the recommended information to be contained in EIAR, which have been published by the EPA;
- The requirements of Part X of the Planning and Development Act, 2000 (as amended) and also Part 10 of the Planning and Development Regulations, 2001-2019;
- The requirements of the Dublin City Development Plan 2016-2022 and the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022);
- The location, scale and nature of the proposed development;
- The receiving environment and any vulnerable or sensitive local features and current uses;
- Previous planning applications that have been submitted on adjoining lands;
- The likely and significant impacts of the proposed development on the environment; and,
- Available mitigation measures for reducing or eliminating any potential undesirable impacts.

1.6 Structure of Environmental Impact Assessment Report

An EIA is a process of examining and assessing the environment in tandem with a proposed development in a series of loops and flow systems to ensure that all potential environmental impacts are documented and taken into the consideration of the overall formulation of the proposed development inter alia through the design process.

This process allows for the creation of a series of steps in the assessment of potential impacts on various elements of the environment.

The overall structuring of this EIAR has regard to the information requirements of the Directives and Irish Statutory Regulations. In accordance with the statutory regulations, a Non-Technical Summary has been prepared and is included as part of this EIAR. The structure used in this report is a grouped format structure in the form of chapters which examine the broadened scope of environmental considerations introduced by the 2014 Directive.

The structure of this EIAR is based on the requirement to provide a detailed and systematic analysis of the environment at the subject lands at Clongriffin, Dublin 13; potential impacts of the development; proposed mitigation measures and future monitoring of environmental indicators.

1.7 The EIAR study team

This EIAR has been prepared by a team of consultants led by Downey Planning. The table below provides information on the members of the EIAR study team and their respective inputs:

Name	Role
<p>Downey Planning</p> <p>Anne McElligott, Planning Consultant, BA (Hons), MPLAN, MIPI</p> <p>&</p> <p>Eva Bridgeman, Planning Consultant, BA (Hons), MRUP, MIPI</p>	<p>EIAR Project Managers, Planning Consultants</p> <p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> • Introduction • Planning and Development Context • Population & Human Health • Material Assets (with input from the relevant EIA team members) • Interactions • Mitigation Measures
<p>Conroy Crowe Kelly Architects (CCK) (Michael Crowe, MRIAI, Maire Gray, MRIAI), Wilson Architects (Marcus Reid, Senior Architect, MRIAI) and Downey Architecture (Justin Halpin and Zubi Efobi, MRIAI)</p>	<p>Architects and Masterplanners</p> <p>Preparation of following EIAR chapter:</p> <ul style="list-style-type: none"> • Description of Development
<p>Waterman Moylan Consulting Engineers (Mark Duignan, Associate Engineer, MA BAI CEng MIEI)</p>	<p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> • Transportation • Water • Land, Soils & Geology
<p>Ronan MacDiarmada & Associates Ltd. (Ronan MacDiarmada MILI)</p>	<p>Preparation of following EIAR chapter:</p> <ul style="list-style-type: none"> • Landscape and Visual Impact
<p>Courtney Deery Heritage Consultancy Ltd. (Dr. Clare Crowley, Cultural Heritage Consultant, BA Hons, PhD)</p>	<p>Preparation of following EIAR chapter:</p> <ul style="list-style-type: none"> • Cultural, Archaeology and Architectural Heritage
<p>Openfield Ecological Services (Pádraic Fogarty, Ecologist, MSc in EclA)</p>	<p>Preparation of following EIAR chapter:</p> <ul style="list-style-type: none"> • Biodiversity
<p>DKP International (Craig Van Deventer, C.ENG., BE.(Mech)., H.Dip. CIOB., MCIBSE.)</p>	<p>Preparation of following EIAR chapters:</p> <ul style="list-style-type: none"> • Air Quality • Noise and Vibration • Climate

1.8 Impartiality

This EIAR has been prepared in reference to a standardised methodology that is accepted and acknowledged universally. Competently qualified and experienced

specialists have been used throughout the EIA process in order to ensure that this document is robust, subjective and impartial.

1.9 Statement of Difficulties Encountered

No exceptional difficulties were experienced in compiling this EIAR. However, where difficulties may have been encountered by the study team, this shall be stated within the relevant section of the EIAR.

1.10 Errors

Every effort has been made to ensure that the EIAR is error free and accurate. However, there may be instances within the document where typographical errors or minor errors may occur. Any such cases are unlikely to have any material impact on the overall and final findings contained in the EIAR.

1.11 References

A reference list detailing the sources used for the descriptions and assessment has been included with each chapter, where and if necessary.

Chapter 2 – Description of Proposed Development and Alternatives Considered

2.1 Site Location

The application sites are located in Clongriffin which is within the functional area of Dublin City Council and is approximately 9.5 kilometres to the north east of Dublin City Centre and 5km to the east of the main Dublin – Belfast road (M1/M50). The lands are easily accessible via the Hole in the Wall Road and the R139 which connects to the M1 and the M50 Motorway which is a major arterial route around the city centre, and indeed connects to the Malahide Road which provides access directly into Dublin City Centre. Main Street provides direct vehicular access from the Hole in the Wall Road into Clongriffin and comprises dedicated bus lanes and cycle lanes that connect to Clongriffin Train Station.

The lands are also easily accessible by a variety of public transport modes with Clongriffin Train Station and Dublin Bus providing frequent reliable transport modes directly into the centre of Dublin. There are c. 48 no. trains directly into Dublin Connolly Train Station on a weekday with similar return services. Dublin Bus also provides frequent bus services with Bus Stops 6318, 6317, 7245, 7236, 7246 and 6316 providing services directly into Dublin City Centre via the Malahide Road QBC. There are also pedestrian footpaths and cycle lanes along Main Street with pedestrian paths also provided on all existing streets. Thus, the subject lands are easily accessible to both public transport users and pedestrians.

Clongriffin is a large urban area in north Dublin which has experienced significant growth in the last number of years. The subject lands form part of an overall masterplan development on c.53.56 hectares of land that was approved under Reg. Ref. 0132-02 (ABP Ref. PL29N.131058). Large numbers of residential dwellings have already been constructed with much of the necessary social and physical infrastructure provided including:

- Clongriffin Dart Station constructed and in operation;
- Clongriffin Main Street constructed including the extension of Malahide Road QBC;
- Dublin Bus services operational;
- Internal Road Network constructed up to wearing course;
- Multi-storey car park constructed;
- Park and Ride facility constructed;
- Station Square plaza completed;
- Class 1 Public Open Space (Fr. Collins Park) – Constructed and operational;
- Mayne River Linear Park complete up to attenuation pond;
- Landscaping of principal streets and public squares completed including Station Square;
- Internal drainage network for foul and surface water constructed including attenuation pond;
- Local shops and services.

These services/facilities were provided under the granted masterplan permission with c. 1,685 residential units constructed to date at Belltree, Belltree Green, Belltree Park, Marrsfield, Park Terrace and Park Edge, with a further 503 units currently under construction and 62 units permitted and intended to be implemented. The residential units constructed to date are located to the south of Main Street and to the

east of Father Collins Park and are predominantly 2-3 storey residential dwellings gradually increasing in height to 6 storey apartment developments in close proximity to Clongriffin Train Station.



Figure 2.1: Site Context Map (Clongriffin in red)

Furthermore 13,950 sq.m of commercial development has been constructed to date with a further 706 sq.m under construction with the units predominantly along Main Street and within the Town Centre adjoining the Train Station. In addition, a hotel commercial development of 8,080 sq.m. has been permitted at Block 19. There are a number of offices, health centres, shops, cafes/restaurants/takeaways and shops that currently operate within the centre of Clongriffin including Centra, Stacks Pharmacy, Clongriffin Medical Centre, Clothes Alterations, Body Transformation Studio, Revv Barbers, Romayos Diner etc. There are also a number of community and social facilities available within Clongriffin including two community centres at Clongriffin Hub and Clongriffin Junction which hold weekly events including Men Sheds, Yoga Classes, Dance Academy etc.

There are significant sports and leisure facilities within Clongriffin with Trinity Sports & Leisure Club which offer facilities including a 25m swimming pool, scuba diving, aqua aerobics classes, sporting hall accommodating indoor football, basketball, keep fit classes, lounge areas including a darts and pool lounge as well as accommodating parties, boxing clubs etc. The applicant has also developed a relationship with Trinity Sports & Leisure such that residents within Clongriffin avail of a free year's membership and ongoing discounted fees.

There are also additional services provided within Father Collins Park which is Ireland's first wholly sustainable park and extends to 26 hectares. The park comprises high quality playground facilities, circuit track, skate park, sports pitches including all weather pitches and provides a high-quality amenity and open space

park for residents in Clongriffin. The River Mayne Linear Park also provides high quality public open space for residents with the overall vision for the corridor to provide a walking route from Clongriffin to Belcamp to the west.



Figure 2.2: Site Location Map (subject lands outlined in red)



Figure 2.3: Aerial Photo of Clongriffin illustrating existing infrastructure

There are 15 no. blocks outstanding within the ownership of the applicant, that formed part of the parent masterplan Ref. 0132-02 (ABP Ref. PL29N.131058) and whose permission have now lapsed. There are 3 no. blocks (blocks 7, 9 and 10) that are outside the control of the applicant and whose permission has expired. 5 of the 15 infill blocks have current live planning permissions which are not intended to be implemented and will be superseded by these applications. These lands are all infill lands that are serviced with road infrastructure, public transport, drainage etc. These 15 no. blocks are subject to a masterplan update and are all assessed as part of this EIAR. These blocks include Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 and 29. The masterplan aims to infill these outstanding blocks from the original masterplan which were not constructed within the lifetime of the permission due to the economic downturn but which are fully serviced and ready for development. The 2001 Masterplan lands granted under Ref. 0132-02 (ABP Ref. PL29N.131058) are set out in Figure 2.4 below.



Figure 2.4: Masterplan Layout granted under Ref. 0132-02 (ABP Ref. PL29N.131058).

A masterplan update has been prepared in respect of the lands and the updated masterplan layout is illustrated in figure 2.5 below.



Figure 2.5 Masterplan Layout Update 2018

As previously stated, the current masterplan lands are divided into three separate planning applications, in accordance with the legislative provisions of the SHD process, such that two are SHD applications (Clongriffin SHD 1 and Clongriffin SHD 2) whilst the third application is being lodged to Dublin City Council. This EIAR assesses the 3 no. applications.

2.2 Site Description

The subject lands form part of an overall masterplan for Clongriffin approved under Reg. Ref. 0132-02 (ABP Ref. PL29N. 131058). Clongriffin is a large urban area located in north Dublin, the overall lands extend to c.53.56 hectares and are situated approximately 9.5 km to the north-east of Dublin. The concurrent applications combined comprise a total site area of 11.4 ha and are the remaining lands that form part of the 53.56 ha of Clongriffin. The proposed developments represent the completion of Clongriffin.

A significant quantum of the permitted development has already been constructed with much of the necessary social and physical infrastructure provided to date. The residential units constructed to date are located to the south of Main Street and to the east of Father Collins Park and are predominantly 2-3 storey residential dwellings gradually increasing in height to 6 storey apartment developments in close proximity

to Clongriffin Train Station. The provision of further commercial and retail offerings is being proposed as part of this project.

A substantial quantum of services and transport infrastructure is in place in Clongriffin including Main Street and Clongriffin Train Station. The Commuter Rail service through Clongriffin Station serves all stations from Dundalk through the City Centre to Gorey. The service operates at 2 – 3 services per hour in both directions on weekdays. The Dart service through Clongriffin Station serves all stations from Malahide through the City Centre to Bray and Greystones. On weekdays, this service operates at a 20-minute frequency in both directions. The Park and Ride facility is fully constructed and operational. Main Street is fully constructed with bus routes and bus stops located along Main Street and Station Square. The internal road network is constructed up to wearing course. Father Collins Park is constructed in full and comprises playgrounds, skate park etc. The River Mayne Corridor including landscaped pond with paths etc in place. The internal drainage network for foul and surface water is constructed including the attenuation pond and indeed existing mixed use blocks including retail have been constructed and shops are operational.

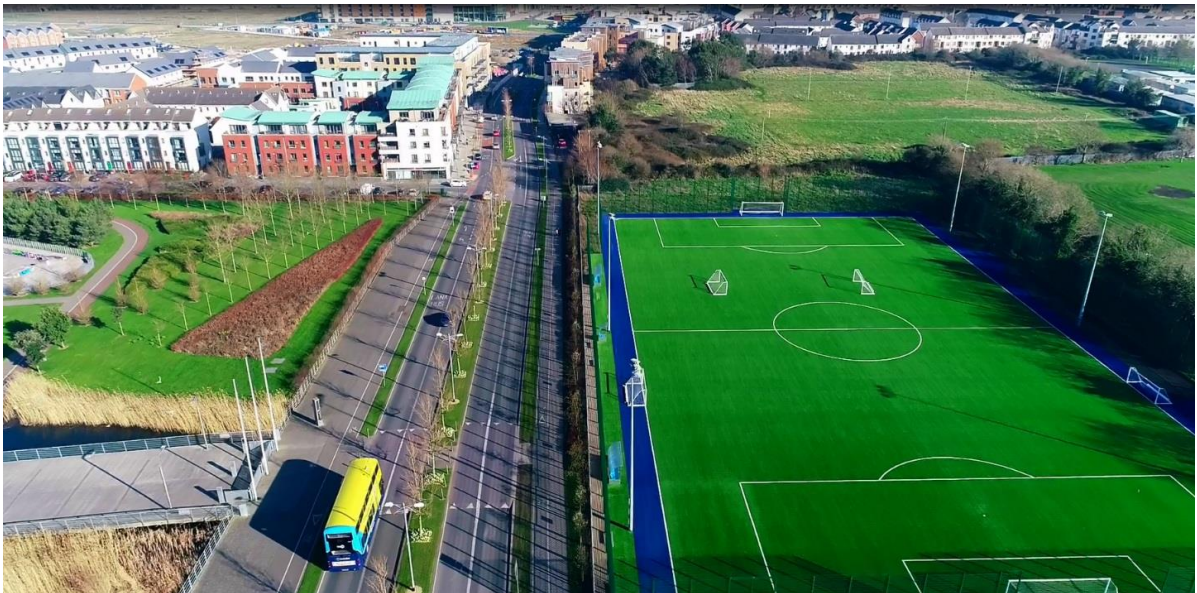


Figure 2.6: Existing Infrastructure in place at Clongriffin



Figure 2.7: Existing Infrastructure in place at Clongriffin



Figure 2.8: Existing Infrastructure in place at Clongriffin



Figure 2.9: Existing Infrastructure in place at Clongriffin

The Clongriffin lands represent an ideal location for residential development which is compatible with the residential character of the surrounding area. The surrounding built environment is characterised by mixed-use commercial and residential developments, and the wider area comprises of residential development with a mix of house types all of which have resulted in varying building heights and forms within the area.

Clongriffin SHD 1

Clongriffin SHD 1 relates to c. 6.332 ha of the overall masterplan lands and comprise blocks 6, 8, 11, 17, 25, 26, 27, 28 and 29. The lands are existing infill lands readily available and cleared for development, are surrounded by existing development including residential and commercial development and are served by existing infrastructure. The lands subject to this application are located on lands to the north, south and north east of Marrisfield Avenue (plots 25, 26 & 27), to the south of Belltree Avenue, north of Dargan Street, east of Park Street and west of Lake Street (plot 6), to the north and east of Station Street (plots 8, 11 & 28), to the south of Bridge Street and north of Dargan Lane (plot 17) and to the west of Grange Lodge Avenue and south of Main Street (plot 29), Clongriffin, Dublin 13. The Railway Line bounds the application site to the east with greenfield lands further to the east. The lands are bounded to the north by the River Mayne Corridor park and to the west by existing residential development at Belltree Park. To the south of the site there are mixed use commercial and residential units along Main Street that bound Block 29 to the north whilst the Clongriffin Train Station is located to the north of proposed Block 17.

To the north of the application site, the River Mayne Corridor has been provided as far as practical on the applicant lands with existing footpaths in place surrounding the landscaped pond feature. Station Square is fully constructed and operational.

The sites subject to this application are brownfield infill sites that formed part of the parent permission and whose infrastructure are predominantly in place.



Figure 2.10: SHD 1 Application

Clongriffin SHD 2

Clongriffin SHD 2 relates to c. 2.49 ha of the overall masterplan lands and comprises blocks 4, 5 and 14. The lands are existing infill lands readily available and cleared for development, are surrounded by existing development including residential and commercial development and are served by existing infrastructure. The lands subject to this application are located on lands to the south of Dargan Street, east of Park Street, north of Market Street and west of Lake Street (plot 5), south of Market Street, north east of Park Lane and west of Lake Street (plot 4) and east of Lake Street, north of Main Street, South of Market Street and west of Market Lane (plot 14), Clongriffin, Dublin 13. Further to the south of the site there are mixed use commercial and residential units along Main Street whilst the Clongriffin Train Station is located to the east of the proposed application site.



Figure 2.11: SHD 2 Application

DCC Planning Application

The Clongriffin Planning Application relates to c. 2.96 ha of the overall masterplan lands and comprises blocks 3, 13 and 15. The lands are existing infill lands readily available and cleared for development, are surrounded by existing development including residential and commercial development and are served by existing infrastructure. The lands subject to this application are located to the south of Park Street, to the east of Friars' Street, to the west of Park Lane, and north of Main Street (plot 3), to the north of Market Street, south of Dargan Street, east of Lake Street, and west of Clongriffin Road (plot 13), to the north of Main Street, south of Market Street, west of Station Square and east of Market Lane (plot 15); all of which are located to the north of Main Street, Clongriffin, Dublin 13.

Block 2 adjoining proposed Block 3 is currently under construction and nearing completion. Station Square is fully constructed and operational whilst Block 12 to the east of the lands is constructed.

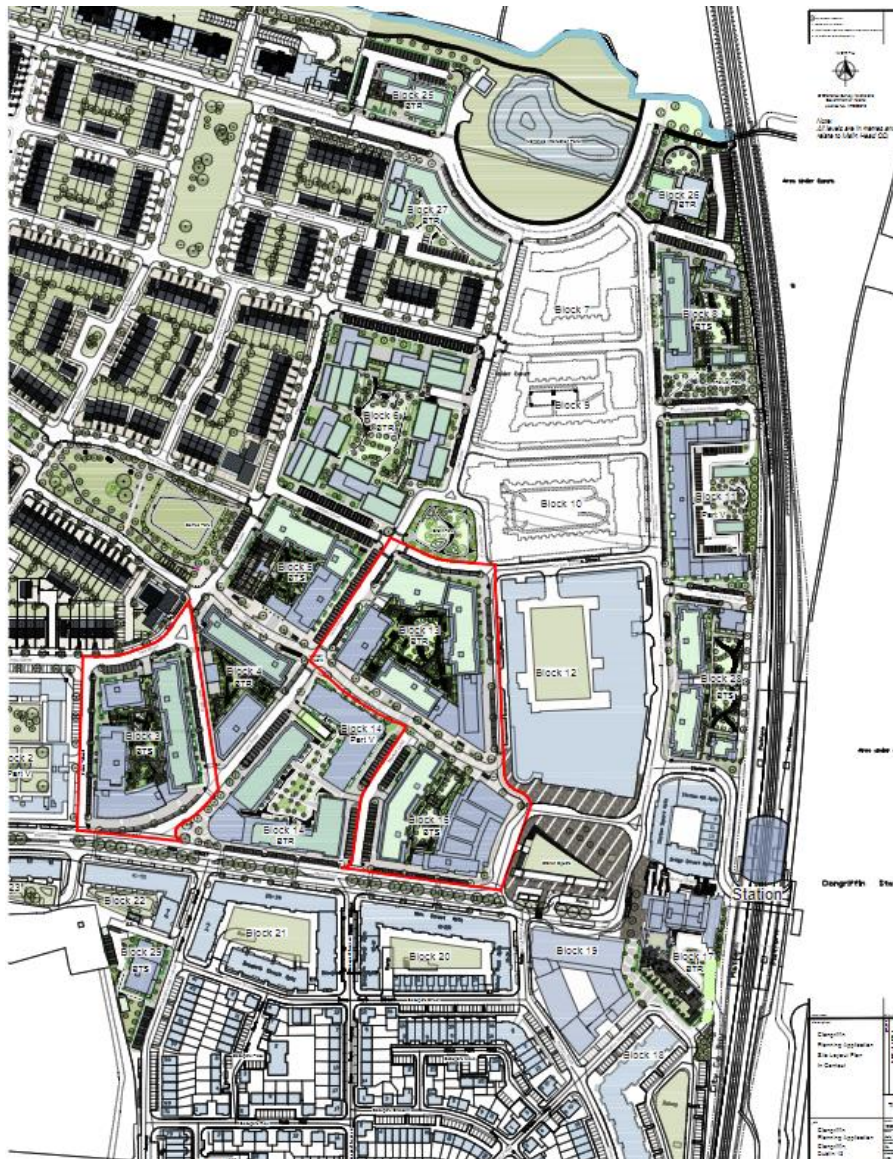


Figure 2.12: DCC Planning Application



Figure 2.13: Redline of 3 no. applications

2.3 Site Context

The subject site is situated within the Clongriffin-Belmayne Local Area Plan (LAP) lands, at the eastern development boundary of Clongriffin, as indicated in the map below (an extract of the Dublin City Development Plan 2016-2022, Clongriffin lands – Map C).

The surrounding environment is characterised by mostly residential developments. The Key Development Principles for the SDRA 1 North Fringe (Clongriffin-Belmayne) area pertaining to the subject lands is deemed for residential use, except for a small section of the southern boundary which would be categorised as Key District Centre (mixed-use). This can be seen in Fig. 2.14 below.

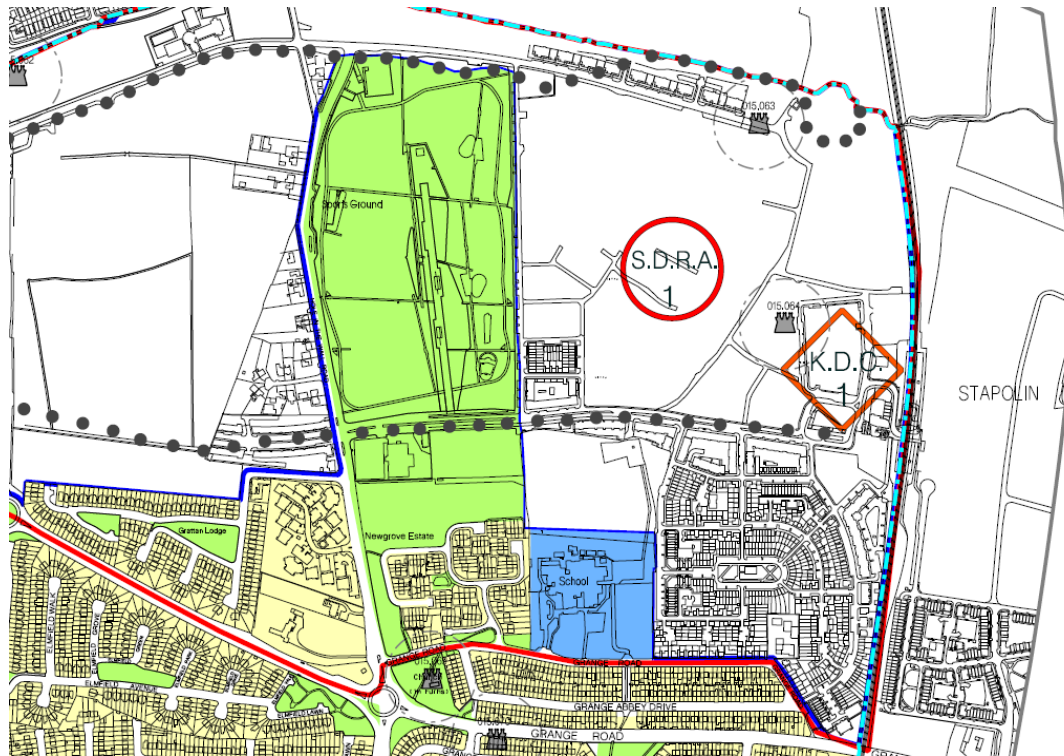


Figure 2.14: Extract from Dublin City Development Plan 2016-2022, Clongriffin lands (Map C) and associated zoning objectives Z14 (SDRA 1) and KDC 1

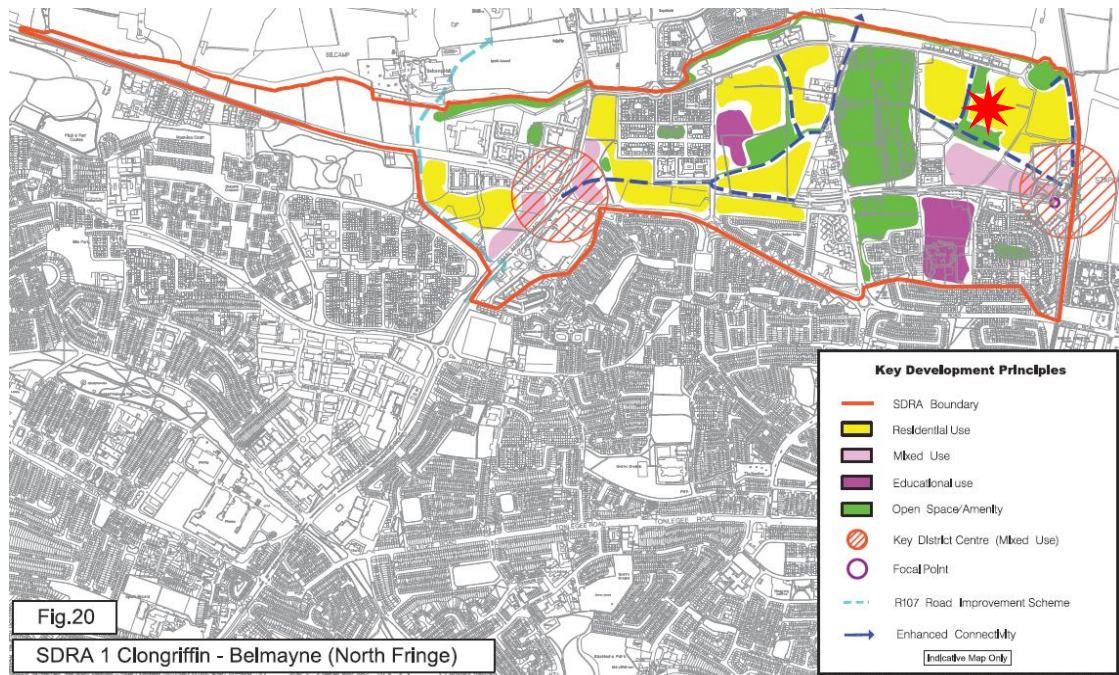


Figure 2.15: Development Principles for SDRA 1 (site location marked in red)

2.4 Description of Design

Clongriffin has been designed based on a masterplan led approach from its inception. The proposed design should be viewed in the context of the entire town centre including existing buildings, phases currently under construction and future phases. Clongriffin parent permission (Reg. Ref. 0132/02) was granted in 2003

based upon a masterplan design. This included a variety of housing types and densities for over 3,000 dwellings and circa 80,000 square metres of non-residential uses including commercial, retail, services and community facilities to create a new town.

To date, 1,685 dwellings and c.13,950sq.m. of commercial uses have been completed within the new town as well as the primary road infrastructure, landscaping and Clongriffin train station. The subject sites in the three proposed planning applications were all part of the parent permission and have either lapsed permissions or are applying for new permissions.

In accordance with the Clongriffin Belmayne Local Area Plan 2012-2018 (extended 2022), and in consultation with the Dublin City Council planning department, an updated masterplan for Clongriffin was prepared and submitted to Dublin City Council in June 2018. This was followed by a number of pre-application consultations with the planning authority. The Clongriffin Masterplan 2018 aims to fulfil the aims of the original master plan for Clongriffin while also realising the Clongriffin Belmayne LAP objectives. A copy of the current Clongriffin masterplan document is included with each application.

Both the Clongriffin Masterplan and the LAP adhere to the guiding principles of the Strategic Development and Regeneration Area 1 (SDRA1) Clongriffin Belmayne in the Dublin City Development Plan 2016-2022. The masterplan sets up a mixed-use new town based around Clongriffin Train Station, the Malahide Road QBC, high quality public realm and strong cycle links. Density increases closer to the station, encouraging residents to walk or take the train. Landmark buildings, active frontages and strong street edges help create a sense of enclosure and activity along streets whilst also aiding legibility and wayfinding. An interconnected and permeable street network is central to the design.

The subject sites in the proposed applications comprise 15 blocks in the ownership of the application which have not yet commenced construction and include Block 17 adjacent to the Clongriffin Train Station and Station Square; Blocks 28, 11 and 8 along Station Street; Blocks 3, 14 and 15 along Main Street boulevard; Block 29 to the south of Main Street; Blocks 4, 5 and 13 along Market Street linking Beltree Park with Station Square, Block 6 completing the Urban Living quarter of the town to the north of the new Grant Park and finally Blocks 25, 26 and 27 creating the Lakeside district at the north end of the town.

The proposed Project is divided into three separate planning applications, in accordance with the legislative provisions of the SHD process, such that two of which are SHD applications to An Bord Pleanála whilst the third application is being lodged to Dublin City Council. This is in accordance with the legislative requirements of the Planning and Development (Housing) and Residential Tenancies Act 2016 Planning and Development (Strategic Housing Development) Regulations 2017.

The three applications are set out as follows:

- SHD Application 1 comprises blocks 6, 8, 11, 17, 25, 26, 27, 28 & 29 (1,030 units, c. 2,421.3 sq.m. of ancillary residential amenity facilities and c.2,285.5 sq.m of commercial development).

- SHD Application 2 comprises blocks 4, 5 and 14 (500 units, c. 1,093.5 sq.m. of ancillary residential amenity facilities and c. 3,125 sq.m. of commercial development).
- The Planning Application to DCC comprises blocks 3, 13 and 15 (420 residential units, c. 820.3 sq.m of ancillary amenity facilities and c. 17,317 sq.m. of commercial development).

All of the proposed blocks aim to add high density residential accommodation in Clongriffin town centre along with a mix of other uses to create a sustainable and viable urban centre. Blocks 3 and 13 include 5 storeys each of commercial office accommodation. Block 15 fronting onto Station Square has a cinema with a mix of cafes, restaurants and retail units at street level. Blocks 4, 5, 13 and 15 have retail units and cafes at street level fronting onto the pedestrian and cycle priority Market Street. Blocks 3, 14 and 15 will have retail and restaurant uses along Main Street to complete the central spine in the town. Block 4 will be the community hub for Clongriffin with a new permanent community centre located at the junction of Lake Street and Priory Lane, a new Men's Shed with associated yard adjacent and a creche for 53 children fronting onto Priory Lane in close proximity to Beltree Park and the Market Street green route. The creation of a community hub at a central location in the town was a key aim in the design to ensure the existing and future community's needs are met. Blocks 6 and 27 also provide 2 additional creches so that the locations are spread throughout the development and accessible to the whole community. A gym and additional retail/commercial units are proposed at Block 28 on Station Street as well as 4 retail units at Block 17 fronting onto Station Square and the esplanade steps. 2 new public parks are proposed at Grant Park and Railway Park. Market Street will form the terminus of the green route between Fr. Collins Park and Station Square providing a key cycle and pedestrian route to aid permeability for existing and future residents. High quality landscape and public realm design has been and continues to be a key priority in Clongriffin.

A mix of tenure is proposed for the development to complete the variety of existing tenure types within Clongriffin. Blocks 3, 5, 8, 15 and 28 will be private apartments, Blocks 4, 6, 13, 14B 17, 25, 26 & 27 will be Build to Rent tenure and Blocks 11, 14A and 29 will be Part V social housing.

A summary of the accommodation schedule for each application is set out in the tables below as well as the schedule of commercial accommodation:

Table 2.1 SHD 1 Accommodation Schedule

Block	No. 1 bed units	No. 2 bed units	No. 3 bed units	No. Studio Units	Total No. of Units	Build to Rent (BTR)/ Build to Sell (BTS)/ Part V	Quantum of ancillary facilities for residents (sq.m)	Quantum of Commercial development (sq.m)	Total Floor Area sq.m	No. Car Parking Spaces	No. of Bicycle Parking
Block 6	123	147	0	0	270	BTR	794.7	418	25,470	184	572
Block 8	39	72	3	0	114	BTS	252	0	11983	103	179
Block 11	44	12	40	0	96	Part V	15.4	0	9316	61	144
Block 17	90	111	9	0	210	BTR	589.8	430.5	22789	75	225
Block 25	25	38	0	0	63	BTR	159.4	0	5,898	39	136
Block 26	50	28	0	0	78	BTR	325.9	0	7,396	52	190
Block 27	5	47	5	0	57	BTR	175.1	508	6,695	27	146
Block 28	42	71	9	0	122	BTS	109	929	14348	112	242
Block 29	3	15	2	0	20	BTS	0	0	2048.5	20	49
Total	421	541	68	0	1030		2421.3	2285.5	105,944	673	1883

Table 2.2 SHD 2 Accommodation Schedule

Block	No. 1 bed units	No. 2 bed units	No. 3 bed units	No. Studio Units	Total No. of Units	Build to Rent (BTR)/ Build to Sell (BTS) / Part V	Quantum of ancillary facilities for residents (Sq.m)	Quantum of Commercial development (sq.m)	Total Floor Area sq.m	No. Car Parking Spaces	No. of Bicycle Parking
Block 4	9	55	10	0	74	BTR	204.5	799	10438	50	132
Block 5	52	83	3	0	138	BTS	144	393	14942	96	224
Block 14	106	121	12	49	288	BTR & Part V	745	1,933	26460	211	651
Total	167	259	25	49	500		1093.5	3125	51,840	357	1007

Table 2.3 Clongriffin Planning Application Accommodation Schedule

Block	No. 1 bed units	No. 2 bed units	No. 3 bed units	No. Studio Units	Total No. of Units	Build to Rent (BTR) / Build to Sell (BTS) / Part V	Quantum of ancillary facilities for residents (Sq.m)	Quantum of Commercial development (sq.m)	Total Floor Area sq.m	No. Car Parking Spaces	No. of Bicycle Parking
Block 3	31	104	6	0	141	BTS	147.1	4523	20285	123	200
Block 13	58	115	14	0	187	BTR	540.2	6108	27751	123	234
Block 15	38	54	0	0	92	BTS	133	6686	17736	82	201
Total	127	273	20	0	420		820.3	17317	65,772	328	635

Table 2.4 Clongriffin Commercial Accommodation Schedule

	Gross Commercial Area	Retail	Office	Restaurant	Leisure	Community	Creche
Block 3	4523	791	3732				
Block 4	799			78		417	304
Block 5	393	393					
Block 6	418						418
Block 8	0						
Block 11	0						
Block 13	6108	1142	4736	230			
Block 14	1933	1127	0	806			
Block 15	6686	906		527	5253		
Block 17	430.5	430.5					
Block 25	0						
Block 26	0				0		
Block 27	508						508
Block 28	929	675			254		
Block 29	0						
Total	22727.5	5464.5	8468	1641	5507	417	1230

2.4.1 Building Form

The primary building form in keeping with the masterplan and LAP objectives are perimeter urban blocks of minimum 5 storeys to create strong street edges. This allows for communal open space in the centre of the block which provides amenity for the block's residents. Heights increase at localised nodes to aid wayfinding and create a varied streetscape. Penthouse level units are generally set back from the parapet edge. Brick is chosen in contrasting tones to provide a durable and attractive finish and is complimented by some stone and metal cladding also to create a high-quality palette of materials.

The proposed application sites lie within the Key District Centre as outlined in the Clongriffin-Belmayne LAP which proposes building heights of 5 storeys minimum. The proposed heights range from 4 storey at Block 29 adjacent to existing housing to 5-8 storeys generally within the key district centre with 2 landmark buildings – Block 17 at the end of Main Street boulevard adjacent to Station Square at 17 storeys and Block 26 marking the north edge of the town at the junction of Marrsfield Avenue and Station Street at 15 storeys. The existing built context within the town includes 2 and 3 storey houses to the north west and south of the town centre, 4-6 storey mixed use apartment blocks along Main Street, 4-6 storey apartment blocks along Marrsfield Avenue to the north and 6 storey mixed use commercial and residential buildings adjacent to Station Square.

2.4.2 Private Open Space and Parking

In general, balconies meet or exceed the minimum standards sizes outlined in 'Sustainable Urban Housing: Design Standards for New Apartments'. Where they do not they are within Build-to-Rent blocks where a higher quality and standard of

communal support facilities and communal outdoor space are provided instead for residents.

Clongriffin has a valuable existing amenity with Dublin City Council Fr. Collins Park to the west end of the town and in close walking proximity to all residents. The proposals are also in close proximity to the River Mayne linear park and open space around the attenuation pond. Public open space in the parent permission was at a minimum rate of 10% of the site area and has been provided in Beupark, Station Square, the 'Panhandle Park' (now Beltree Park), the Mayne River linear park and a number of other pocket parks throughout the site. The subject application will also provide a rate of over 10% communal open spaces with a total of 2,634m² open space being provided through 1,434m² at Grant Park and 1200m² at Railway Park.

The original masterplan lands comprised 53.56 hectares. The open space provided to date comprises 51,328 sq.m. The proposed additional public open space areas subject to the current applications is 2,634 sq.m. (i.e. pocket park to the south east of Block 6 and park to the south east of Block 8). Therefore, the overall public open space to be provided under the overall finished scheme is 53,962sq.m. which exceeds the minimum 10% requirement. There are four aspects to the landscape strategy for the developing lands in the LAP area which not only promote integration of parks and open space areas for amenity and bio diversity value, but also the unification of the urban design, visual coherence and community interaction across the developing lands. The elements include:

- The completion of the River Mayne Linear Park – the linear park has been partially completed with 350m completed to the new attenuation pond and the linear park between Father Collins Park and Station Street is under construction. It will link to Baldoyle Nature Park.
- Completion of Father Collins Park – Father Collins Park has been re-developed and enhanced and is completed and is fully operational.
- The Diagonal Green Route – a pedestrian/cyclist desire line connecting residents in Clongriffin to Father Collins park. The design of this route (i.e. Market Street) is proposed as part of the current applications. The link has been carefully designed to encourage pedestrian and cyclist priority with three public spaces connected by high quality public realm.
- Main Street Landscaping – Main Street is complete with landscaping that distinguishes the street as an important civic route through the town.

A significant quantum of the open space strategy for Clongriffin is in place and the current applications seek to complete the landscaping strategy for the overall lands.

A parking rate of 0.75 is proposed for Clongriffin after consultation with Dublin City Council traffic and roads departments given the proposed densities within the town and connectivity via DART and Malahide QBC to the city centre. Different approaches to car parking have been taken across the proposed blocks, depending on the nature of the street. A mixture of podium, basement and on-street car parking have been employed in order to develop a hierarchy of streets, from neighbourhood to town centre. Further details of parking and its management strategy can be found in Waterman Moylan's Car Parking Rationale report and Traffic Transport Assessment which are submitted as part of the applications.

2.5 Description of Baseline Scenario

The baseline scenario including a description of the current receiving environment has been considered as part of this EIAR through the collection and collation of data through tests, site visits, desktop reviews, etc. including analytical data for traffic, noise levels, surface water quality testing, etc. A description of the existing environment is presented in each relevant section for the various environmental chapters. The predicted change in the baseline scenario that could arise as a result of the proposed development in conjunction with developments in the vicinity has also been addressed and is set out within this EIAR.

2.6 Existing Condition of Lands

The phasing programme proposed is to ensure that supporting physical and social infrastructure is provided in tandem with residential development works. As part of the granted masterplan for Clongriffin, a large number of residential dwellings have been built to date alongside much of the social and physical infrastructure necessary for the development. As such, the 15 no. outstanding blocks are all infill lands which are subject to the masterplan update submitted with these applications and which are all serviced with road infrastructure, drainage, etc, and by a wide range of existing social and community facilities. The subject lands are also well connected to existing high-quality public transport and in close proximity to large retail centres. The lands are essentially infill brownfield lands whose parent permission for development has expired. The lands are serviced and readily available for development.

2.7 Construction & Phasing

The proposed phasing structure aims to support the ongoing physical and social infrastructure of the town. The development of the town in the subject applications shall occur in 3 phases. Phase 1 will include the completion of Main Street, the Market Street road and landscape infrastructure and the terminus of Marrsfield Avenue with Blocks 3, 14, 15, 17, 25, 26 and 27. Phase 2 will include the completion of Station Street with Blocks 8, 11 and 28, Railway Park as well as Block 4. Phase 3 will include Blocks 5, 6, 13, 29 and Grant Park. Social housing units (at Blocks 11, 14A and 29) will be part of the provision within each phase. A Preliminary Construction, Demolition and Waste Management Plan has been prepared by Waterman Moylan Consulting Engineers and submitted as part of the applications.

2.8 Emissions & Waste

Please refer to Chapter 7.0, 8.0 and Chapter 10.0 of this Environmental Impact Assessment Report for a full assessment of the impact of the proposed development on emissions and waste arising in relation to air and water quality, and climate. All spoil and waste material will be removed to an approved location and storage of construction materials in public areas will be minimised. Excavated material may be temporarily stored onsite, with excess material to be removed off-site. All oil/diesel stored on site will be in suitable containers which will be located in a purpose built bunded area, which will provide containment in the event of accidental spills. Such waste will be handled and/or off appropriately in line with Waste Legislation.

2.9 Consultations

As part of the application process, including the preparation of the EIAR, a number of consultation meetings were undertaken to identify key issues to be addressed as part

of the application. The applicant engaged in pre-planning consultations with both Dublin City Council, An Bord Pleanála, members of the public, with the Irish Aviation Authority, CIE, the Arts Council etc. There was no objection in principle during these consultations to the grant of planning permission for development on lands at Clongriffin, Dublin 13. The key points of the consultations are as follows:

Pre-Application Consultation with Dublin City Council

The formal Section 247 Pre-Application Consultations with the Planning Authority required under the Planning and Development (Housing) and Residential Tenancies Act 2016 took place on 13th September 2018, 18th September 2018 and 4th October 2018 in the offices of Dublin City Council. The meetings were also followed by consultations via email and telephone conversations with CCK Architects, Wilson Architects and Downey Planning & Architecture on 31st October 2018 and 12th November 2018. Consultations were also had with the Transport Department, Water Services Department and Parks Department over a 6-month period.

Those in attendance from Dublin City Council at the formal meeting on 13th September 2018 consisted of Bryan Ward, Diarmuid Murphy, Jane O'Donoghue, Cait Ryan, Shane Healy (Planning); Maria Treacy, Niamh Fitzgerald (Drainage); Marie Down, Gareth Hyland, (Transport); Kieran O'Neill (Parks); John Downey (Downey Planning); Anne McElligott (Downey Planning); Michael Crowe, Maire Gray (CCK Architects); Marcus Reid, Peter Heffernan (Wilson Architects); Justin Halpin (Downey Architecture); Mark Duignan, Ian Worrell (Waterman Moylan Consulting Engineers); Ronan McDiarmada, Martin Redmond, (Ronan McDiarmada Landscape Architects); Craig Van Deventer (DKP International) and Jim Kenny (Representative of Applicant) attended on behalf of the design team and prospective applicant.

The initial consultation meeting set out the Masterplan vision for the overall lands at Clongriffin and the evolution of the lands from inception to the town centre constructed to date. The Masterplan also depicts the proposed infill development in the context of constructed and existing infrastructure, services etc. The pre-planning consultations related to the overall development of 15 no. blocks providing for 1961 residential units and c. 23,092 sq.m of commercial space. The subsequent meetings then focused on the design of the individual blocks.

At the subsequent meeting on 18th September 2018 those in attendance from Dublin City Council consisted of Bryan Ward, Diarmuid Murphy, Brendan Coyne (Planning) and the design team representatives included Maire Gray (CCK Architects), Marcus Reid (Wilson Architects), Justin Halpin (Downey Architecture), Anne McElligott (Downey Planning) and Jim Kenny (Representative of Applicant).

At the third pre-planning meeting on 4th October 2018 those in attendance from Dublin City Council consisted of Bryan Ward, Diarmuid Murphy, Brendan Coyne and Shane Healy and the design team representatives included Michael Crowe, Maire Gray (CCK Architects), Marcus Reid, Peter Heffernan (Wilson Architects), Justin Halpin (Downey Architecture), John Downey and Eva Bridgeman (Downey Planning) and Jim Kenny (Representative of Applicant).

The consultations resulted in the design team giving further due consideration to residential block designs, pedestrian/cycling links, streetscape finishes, screening, drainage, roads, quality of taller buildings, etc. Revisions in light of the comments were submitted to Dublin City Council by email and further comments were received

from Brendan Coyne via telephone conversation and email correspondence. This ultimately helped to inform the final design of the proposed development.

The proposed development was subject to separate pre-planning consultation meetings with the various departments of Dublin City Council including Housing, Water Services, Transportation Department, Parks Department etc. which took place over a six-month period and informed the design approach for the current applications. Waterman Moylan Consulting Engineers also engaged with Irish Water with regards to water and wastewater connections at Clongriffin who confirmed that the proposed connection to the Irish Water network(s) can be facilitated. This confirmation is enclosed within the accompanying documentation prepared by Waterman Moylan Consulting Engineers.

Consultation with the Public

The design team and representatives of the prospective applicant, held a public consultation evening on 10th December 2018 at The Junction, Station Square, Clongriffin. The proposed Site Layout Plan, Masterplan and a selection of the photomontages was tabled at the event including an information presentation of the site and overall proposal.

This consultation evening took place from the hours of 16.00 until 20.00hrs and was advertised within the local community and on www.clongriffin.ie. This consultation evening provided a good platform to present the proposed development to the community and for the public to voice their views and opinions on the proposals.

Part V Engagement

Part V of the Planning and Development Act, 2000 (as amended) applies to the proposed development. In order to reach an agreement regarding compliance with Section 96 of Part V of the Planning and Development Act, 2000 (as amended), John Downey and Eva Bridgeman of Downey Planning liaised with Lorraine Gaughran of the Housing Department of Dublin City Council on 31st October 2018 regarding the proposed development.

Following the pre-application meeting with An Bord Pleanála, Downey Planning had further consultation with the Housing Department of Dublin City Council noting that the design changes resulted in a reduction of the total number of units from 1,961 no. to 1,950 no. units.

The Housing Department were informed of the overall development encompassed in 3 no. applications such that 1,950 residential units are proposed as part of the overall development which would generate a requirement for 195 residential units for Part V Social and Affordable Housing. Downey Planning set out the approach for the development of the lands stating that the design team are proceeding on the basis of lodging 3 planning applications (2 SHD applications, 1 DCC application) in order to deliver the proposed development of approximately 1,950 residential units and c.22,731sq.m. of commercial at Clongriffin.

The 195 no. units designated for Part V i.e. 10% of the overall units proposed have been identified on the architectural drawings and detailed schedule of accommodation (Housing Quality Assessment) prepared by CCK Architects and Downey Planning & Architecture. The units proposed for Part V include:

- Block 11 - 96 no. apartment units (44 no. one beds, 12 no. two beds, and 40 no. three beds);
- Block 14 – 97 no. apartment units (4 no. studios, 43 no. 1 bed units, 44 no. two bed units and 6 no. 3 bed units); and,
- Block 29 – 2 no. apartment units (1 no. one bed and 1 no. two bed unit).

These units are identified on the enclosed Proposed Part V Units Drawing No. '1637 P 108' prepared by CCK Architects. In accordance with the Council's requirements, indicative costings are enclosed as part of this planning application. A validation letter from Dublin City Council's Housing Department is also enclosed with this planning application. Thus, it is considered that the proposal meets the requirements of Part V of the Planning and Development Act, 2000 (as amended).

Pre-Application Consultation with An Bord Pleanála

Following consultation with Dublin City Council under Section 247 of Planning and Development Act, 2000 (as amended), a request to enter into pre-application consultation with An Bord Pleanála was submitted in December 2018, with An Bord Pleanála subsequently accepting the Section 5 pre-application consultation requests in January 2019. The pre-application consultation meeting was then held at the offices of An Bord Pleanála on 5th February 2019 and this meeting discussed the overall Clongriffin Masterplan and the 2 no. SHD applications. This meeting included representatives from An Bord Pleanála, Dublin City Council, the applicant and their design team.

On 21st February 2019, An Bord Pleanála issued the notice of pre-application consultation opinions for the proposed developments, under case reference numbers ABP-303260-18 and ABP-303262-18

Having regard to the above, the opinions states that An Bord Pleanála “has considered the issues raised in the pre-application consultation process and, having regard to the consultation meeting and the submission to the Planning Authority, is of the opinion that the documents submitted with the request to enter into consultations constitute a reasonable basis for an application for strategic housing development.”

The Board also requested the following specific information for SHD 1:

1. A report which examines and provides a justification for the scale of the proposed build to rent tenure provision within the proposed development having regard to the creation of sustainable neighbourhoods within the context of the Clongriffin area. The report should also examine the provision, both qualitative and quantitative, of residential support amenity areas, within the overall scheme and on a block by block basis, having regard to both Section 5 (section 5.1-5.12) and SPPR 7 and SPPR8 of the Sustainable Urban Housing Design Standards for New Apartments, Guidelines for Planning Authorities, March 2018;
2. A report that specifically addresses the proposed materials and finishes of the proposed structures including specific detailing of finishes, openings and privacy screening, the treatment of balconies/privacy screening, shopfronts, landscaped areas, pathways, entrances and boundary treatments. The treatments/screening of exposed areas of basement ramps and podiums should also be addressed. Particular regard should be had to the

- requirements to provide high quality and sustainable finishes and details which seek to create a distinctive character for the overall development within the proposed character areas and having particular cognisance of the requirement to avoid blank facades. The documents should also have regard to the long-term management and maintenance of the proposed development;
3. A traffic and transport assessment and mobility management framework including the provision for shared mobility, for the proposed development which should have regard to existing public transport which serves the area;
 4. A detailed car parking strategy and rationale which outlines in particular measures to direct car users within the scheme to available parking spaces;
 5. A Public Realm and permeability strategy which addresses in particular the treatment of Market Street with particular regard to segregating vulnerable users from vehicular traffic where feasible and if justification exists for crossing points that pedestrians and cyclists are prioritised;
 6. Details regarding the impact on the communal open spaces from the requirement to provide ventilation for car park areas located below ground level;
 7. A report that addresses residential amenity, specifically how the development will limit the potential for overlooking and overshadowing within the proposed development and of adjoining properties. This report should detail screening proposals for proposed units and measures to address units which adjoin the public realm or communal spaces in particular;
 8. A comprehensive daylight and sunlight analysis addressing existing units, proposed units and open spaces. A comprehensive justification is required for any north facing single aspect units.
 9. Full and complete drawings including levels and cross sections showing the relationship between the proposed development blocks and adjacent existing residential units and adjoining public pathways/spaces;
 10. A Microclimate study of the overall development site (to address matters including down draft and wind tunnelling effects);
 11. Details to be provided of boundary treatment along the rail line, details of proposed underpass and any consultation undertaken with relevant stakeholders in respect of same;
 12. Provision of additional CGI's within the proposed development;
 13. A site layout that details any areas to be taken in charge by the planning authority;
 14. A phasing plan for the proposed development which includes the delivery of the town centre and in particular the blocks in the vicinity of Main Street in an early phase of the proposed development.

Similar information was requested for SHD 2 with Item 1 of SHD 2 requiring:

1. Notwithstanding that the proposal constitutes a reasonable basis for an application, the prospective applicant should satisfy themselves that the proposed design of Block 14 provides the optimal architectural solution for this focal junction along Main Street and in this regard, the proposed development shall be accompanied by an Architectural report and accompanying drawings which outlines the design rationale for the proposed design strategy having regard to inter alia, National and Local planning policy, the sites context and locational attributes.

In light of the aforementioned requests, the design of the proposed project has evolved and is set out within this EIAR and the proposed applications.

Irish Rail

Ronan McDiarmada & Associates Landscape Architects (RMDA) liaised with Irish Rail via both email and at an on-site meeting on 21st March 2019. The main outcomes of this consultation meeting were as follows:

- RMDA noted current boundary treatment, concrete retaining wall and railing - Irish Rail stated that the boundary is holding up an embankment which may not be interfered with. Therefore, the retaining wall and railing shall remain.
- RMDA asks if treatment may be attached to existing boundary - Irish Rail state that they have no issue as long as it is secure and not climbable and does not impact upon rail line.
- A portion of embankment has no boundary. Irish Rail requests a 2.4m concrete block wall along this portion of track down to a wing wall by the underpass. A railing shall be fixed to wing wall at the under pass. The railing shall be fixed to the edge of plinth to prevent a step. The finish of wall is up to design team.
- Currently there is a ditch at the base of the embankment - RMDA enquires who owns this and can it be culverted. Irish Rail states that they own this ditch and it is to be left open. The wall is to be on the proposed development side.
- The vegetation on the embankment shall not be interfered with and is to be left alone.
- Irish Rail noted that that the rail line operates 20 hrs a day - 7 days a week 365 days a year and therefore future residents should be made aware of the noise and that works occur at night.
- Irish Rail stated that they would request that an enduring authority prepare a proposal for access to the underpass. They have issues on vandalism and access and request that an authority (of the state) ie Dublin City Council engage and inform them how this area shall be completed and managed. They wish to deal with an entity of a local authority rather a private firm.
- Irish Rail inquired about the building of the units and noted that any works that would affect the embankment - they would have to be notified as their fear is that the embankment could slip. Therefore, the method of building has to be made known to Irish rail - digging and piling may have an effect in the rail line. RMDA acknowledges same and shall write note on meeting for the review of Irish rail.

Arts Office, Dublin City Council

Ronan McDiarmada & Associates Landscape Architects (RMDA) liaised with the Arts Officer (AO) of Dublin City Council at a meeting on 16th April 2019. The main outcomes of this consultation meeting were as follows:

- RMDA noted proposed location of sculptural piece to AO on the drawing, masterplan - in station square.

- AO to assemble list of 5 - 10 artists for consideration, RMDA to suggest artist to this group. RMDA noted David Lambert & Avril Wayte as possible inclusions.
- AO to provide brief - not too prescriptive as to leave artists to their own design - concepts. RMDA suggested that it would be good to have a piece that is of the place - distinctive of Clongriffin, locality and recognisable as Irish.
- AO noted that the number of artists should be reduced to 3 - 5 and a fee for each artist to produce a maquette. The figure of €650 per artist was suggested by AO.
- AO shall provide a brief for the artists – AO asked RMDA were there items to be included - RMDA noted as per 2 above, also about habitat renewal, create a piece that provides a sense of place, a piece that is recognisable as part of Clongriffin.
- RMDA to provide images of Clongriffin, map of the location, architectural type, planting and landscape proposals as part of the brief.
- AO noted that €40k as an outline budget for the piece.
- AO requested site visit with the select number of artist to site to be arranged when they are identified. All the artists should visit on one day, together.
- Speaking with RMDA, DCC Parks at a later meeting noted that it should be a large piece to be considered and that it would inform further work to the Station Square and vice versa.

The items that arose throughout the consultations are addressed within the planning applications and this EIAR.

Irish Aviation Authority

Downey Planning liaised with the Aerodromes Inspector of the Irish Aviation Authority via email who confirmed that the IAA's Safety Regulation Division did not require any further engagement at this time. It was noted that a condition may be recommended being attached to any permission but that the Aerodromes section had no further comments. It was noted that other domains may furnish other observations in due course.

Prescribed Bodies

An Opinion was received from An Bord Pleanála following the pre-application consultation meetings. This provided details of the prescribed bodies to be notified about this SHD planning application, which are as follows:

- Irish Water
- Transport Infrastructure Ireland (TII)
- National Transport Authority (NTA)
- Dublin City Childcare Committee
- Commission for Railway Regulation
- Irish Rail

- IAA
- DAA
- An Taisce
- Department of Education
- Fingal County Council
- The Heritage Council
- Minister for Culture, Heritage and the Gaeltacht.

The proposed project has 2 no. dedicated websites as follows: www.clongriffinshd1.ie and www.clongriffinshd2.ie. The Planning Application lodged to Dublin City Council will be available on Dublin City Councils online planning application viewer and available for viewing in their offices during public opening hours.

2.10 Description of Alternative Designs

This section of the EIAR focuses on reasonable alternatives that were considered during the preparation of this EIAR and planning application.

It must be noted that given the extensive ownership of the applicant of the entire landholding subject to this Project, the established history of the site, the existing infrastructure in place including the internal road network, open spaces, underground services including wastewater etc., the zoning of the lands and the existing on site construction, there were no major alternative uses and layouts that were considered reasonable. In addition, given the significant investment by the applicant to provide infrastructure such as roads, public transport, public open space and services and that these are already in place, there were no other alternative sites considered given the significant investment and the nature of the Project lands.

It must also be noted that development on the lands has already been permitted and indeed was subject to a parent Environmental Impact Assessment Report and as such the principle of a mixed use development in the layout and form proposed has already been approved and permitted.

2.10.1 Background

The applicant has been actively involved in Clongriffin since the late 1990s; building the train station at Clongriffin in conjunction with Ballymore and helping to shape the North Fringe Area Action Plan. Roughly one third of the 2003 Masterplan Planning Permission for a mixed-use new town centre was constructed when the recession intervened and progress slowed considerably.

The applicant applied for planning permission for the lands in Clongriffin in 2001 based on the guiding principles which had been established by Urban Initiatives and the North Fringe Area Action Plan and planning was granted in 2003 for a scheme of some 3,600 dwellings in a mixed use context with 100,000sq.m. (as amended by subsequent permissions) shops, services and employment all integrated to form a sustainable Town Centre. This scheme formed the masterplan for Clongriffin and construction commenced in 2003. (Reg Ref. 0132-02).

Approximately 85% of the lands in Gannon ownership have been developed, are under construction or have planning permission with construction due to commence in 2018. All development has taken place in accordance with LAP objectives and as

such this proposed project represents the completion of the remaining infill sites in the ownership of the applicant at Clongriffin Town Centre.

The original parent permission (DCC Reg. Ref. 0132/02), the Clongriffin-Belmayne LAP and updated Clongriffin Masterplan 2018 set out the broad parameters and determining factors for this planning application. With constraints such as density, height, existing road infrastructure in place and existing development boundaries there was little scope in general to explore designs which were significantly different to what is proposed in this planning application.

2.10.2 Application Layout

As previously mentioned, the original parent masterplan and associated masterplan layout (see figure 2.4 above) for Clongriffin established the broad parameters and determining factors for this project. Clongriffin has been a development site since the grant of permission in the early 2000s so much so that a significant proportion of infrastructure has been constructed on site to date. This infrastructure includes existing roads, public infrastructure, drainage, water services, public lighting, open space, train station, town square, quality bus corridors etc. In addition, existing development site boundaries including constructed blocks and internal roads constructed up to wearing course results in there being little scope in general to explore alternative layout designs which were significantly different to that granted and now proposed as part of this project. The final application design for the Clongriffin site proposes a legible, permeable and coherent extension to the earlier built phases. This layout allows for the development of the lands at an appropriate density and scale and in line with National, Regional and Local Planning policy.

2.10.3 Alternative Designs

A number of alternatives to the proposed design of the various blocks were considered during the course of the preparation of this EIAR. The design of the proposed project has evolved throughout the consultation process which is set out in full in Section 2.9 above.

The design of the various blocks was amended as a result of extensive consultation and feedback with the relevant departments of Dublin City Council and indeed An Bord Pleanála. For example, the designs of Block 6 and Block 14 was revisited.

In the case of Block 6 the massing and form of the block was broken down to provide cognisance of neighbouring development height and scale to the west. Further details of this can be found in the Block 6 Architects Design Statement by Wilson Architects.

Block 14 was redesigned to maximise the optimal architectural solution for the focal junction at the corner of Lake Street and Main Street. Further details of this can be found in the Block 14 Architects Design Statement by Downey Planning and Architecture.

2.10.4 Parent Permission

One such alternative that was considered by the design team was the preparation of a Project that was previously submitted and approved at Clongriffin (i.e. a re-lodge of the parent permission). However, since the granting of the parent permission in 2002 under 0132/02 (PL 29N. 131058) there have been significant amendments to

development standards and indeed policies and objectives at both local, regional and national levels which mitigates against constructing the permitted development. The previously permitted development does not represent the most appropriate form of design and would provide for units that don't meet the requirements for every day living which have changed over the last 17 years. Indeed method of construction, servicing of the units, form etc. have also significantly changed such that the design of the previously permitted development would not appropriately accord with updated standards and layouts. Therefore, it was considered that the lodgement of the previously permitted layout was not appropriate design solution and not a suitable alternative for the proposed Project.

2.10.5 “Do nothing” scenario

A ‘Do Nothing’ scenario would be detrimental to the future success of Clongriffin town. Given the subject sites locations within the town centre and current brownfield status, failure to develop and complete the original masterplan vision would significantly impair the quality of the urban landscape and viability for a mix of sustainable uses and amenities for existing and future residents. As such, it is considered that the ‘Do Nothing’ scenario is not a suitable alternative option for the subject lands as it would result in serviced lands becoming redundant whilst at the same time resulting in a significant reduction in residential and commercial units within the town centre of Clongriffin and as such would be contrary to planning policy.

2.11 Consideration of Cumulative Effects with Other Projects

The overall lands at Clongriffin have been subject to numerous planning applications over the years. These applications have informed the progression and development of Clongriffin and they are set out in full in Chapter 3 of this EIAR and Appendix 3 of this EIAR. The assessment in each EIAR Chapter has considered the cumulative impacts of construction and operational phases of the proposed Project, in conjunction with surrounding developments completed, under construction and indeed to be commenced.

Immediately adjoining the Clongriffin Masterplan Area is Balgriffin which was subject to a similar parent permission Reg. Ref. 0354/02 of c.630 residential units, 2 no. creche facilities, retail and commercial units. This has been subsequently amended by various permissions over the years. The provision of an extensive housing estate has been considered as part of the cumulative effects with the current proposed project.

To the east of the rail line, on lands within Fingal County Council's functional area, planning permission was granted and has now expired under Reg. Ref. F07A/1723 for 489 no. residential units, a crèche, underground and surface car parking, a civic park and all associated landscape and infrastructural works as the final phase in the development of the Baldoyle/Portmarnock Action Plan lands at Stapolin Village. The residential element shall consist of 6 no. multi-storey urban. This permission was never implemented and has expired.

Planning permission has also expired for under Reg. Ref. F06A/0671 for a mixed-use urban centre development, to be developed as Phase 3 of the Baldoyle Action Plan, containing civic squares, commercial and retail uses, residential accommodation (482 units) and civic centre. The urban centre, with buildings ranging from 2 - 8 storeys in height, is located adjacent to a permitted train station on the Dublin/Belfast

line. The principal elements of the proposed development are: 482 residential units; 10,078 sq.m. of office space; 636 sq.m. Medical Centre; 1,962 sq.m. Supermarket; 4,619 sq.m. Retail Shops and Department Store; 2,366 sq.m. Restaurants/Cafes; 1,171 sq.m. Public House with Function Room; 1,052 sq.m. Crèche; 567 sq.m. Leisure Centre; and 75 sq.m. Management Office.

To the south of the Project lands, Grange Community College were granted planning permission under Ref. Ref. 3048/17 for a new two storey primary school accommodating 38 no. classrooms, hall, outdoor facilities etc. This development has not yet commenced construction.

To the north of Clongriffin along Marrsfield Avenue there are blocks currently under construction. A recent permission sought to change the number of units at Block 33 from 15 to 161 units under Reg. Ref. 2719/19. Block 31 was also subject to an amendment permission under 2717/19 which

Additional planning applications in the wider vicinity of the lands include revisions and alterations to existing buildings or proposals or have since expired. Such applications have no material consideration to the proposed development noting the minor nature of same. The aforementioned applications have been taken into consideration as part of this EIAR.

2.12 Risk of Major Accidents and/or Disasters

The surrounding environments of the proposed project consists of a mix of residential, recreational and commercial development. There are no SEVESO II Directive sites (96/82/EC & 2003/105/EC) within 1km of the proposed project and therefore there is no risk of a major accident or disaster in relation to a major chemical accident.

The lands are in close proximity to Dublin Airport but are not located within the Public Safety Zones as set out in the ERM Public Safety Report 2005. The Public Safety Report identifies public safety zones and states that the principal purpose of the outer PSZ is to minimise the possibility of a multiple fatality accident. Given the location of the proposed Project, the vulnerability of the project to the risk of a major accident and disaster is considered to be low.

Therefore, the potential risk posed by a major accident and or disaster have been considered based on a low vulnerability of such a risk and the overall risk is considered to be low.

Chapter 3 – Planning and Development Context

3.1 Introduction

This Chapter sets out the planning and development context within which the proposed development should be considered and assessed. This includes an overview of the development context and planning history on site to date, and a review of planning policy at a national, regional and local level and other relevant statutory and non-statutory planning documents, with reference to the following planning policy documents:

- Project Ireland 2040: National Planning Framework (2018)
- Project Ireland 2040: National Development Plan 2018-2027
- Rebuilding Ireland, An Action Plan for Housing and Homelessness (2016)
- Sustainable Residential Development in Urban Areas and Best Practice Urban Design Manual Guidelines (2009)
- Delivering Homes, Sustaining Communities: Statement on Housing Policy (2007)
- Sustainable Urban Housing: Design Standards for New Apartments (March 2018)
- Retail Planning Guidelines for Planning Authorities 2012
- Retail Design Manual 2012
- Childcare Facilities: Guidelines for Planning Authorities (2001)
- Design Manual for Urban Roads and Streets (DMURS)
- Urban Development and Building Heights: Guidelines for Planning Authorities (December 2018)
- Smarter Travel: A Sustainable Transport Future
- EIA Directive
- Birds and Habitats Directive – Appropriate Assessment
- The Planning System and Flood Risk Guidelines (2009)
- Climate Action Plan 2019
- Regional Spatial and Economic Strategy 2019-2031
- Transport Strategy for the Greater Dublin Area 2016-2035
- Dublin City Development Plan 2016-2022
- Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022)
- Economic and Retail Study 2018 – Belmayne & Clongriffin

National and regional plans and policies inform the policies and objectives of the Local Authority Development Plan and the plans at a local level including Local Area Plans, both of which set out the local statutory planning context. In this regard, the subject site is located within the administrative area of Dublin City Council, for which the statutory Development Plan is the Dublin City Development Plan 2016-2022, with the pertaining Local Area Plan being the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022).

The proposed Project's consistency with planning policy is also set out within the '*Statement of Consistency with Planning Policy*' report submitted as part of the overall application packs.

3.1.1 Development Constraints

The development of the lands is not subject to any principal constraints.

3.1.2 Proposed Development

Gerard Gannon Properties, the applicant, is applying to An Bord Pleanála and Dublin City Council for planning permission for the following development:

The proposed development consists of the construction of a mixed-use development comprising 1,950 residential units and c.22,727.5 sq.m. of commercial development provided across 15 no. Blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build To Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m. of commercial development including c. 30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. creche facilities, 1 no. 8 screen cinema, 1 no. commercial gym, 7 no. cafes/ restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks, utilisation of existing infrastructure and all associated works necessary to facilitate the development. The proposed development will be provided on the 3 no. application sites which extend to a total of c.11.4 hectares.

The proposed development is discussed in further detail in Chapter Two of this Environmental Impact Assessment Report.

3.1.3 Development Context

The lands at Clongriffin form part of a large-scale masterplan that was granted planning permission in 2003 under Reg. Ref. 0132/02 (ABP Ref. PL29N. 131058).

The applicant applied for planning permission for the lands based on the guiding principles which had been established by Urban Initiatives and the North Fringe Area Action Plan and planning was granted for a scheme of some 3,600 dwellings in a mixed-use context with 80,000sq.m shops, services and employment all integrated to form a sustainable Town Centre. Subsequent applications lodged increased the overall quantum of commercial development at Clongriffin to 100,000sq.m. of permitted commercial uses. This scheme formed the masterplan for Clongriffin and construction commenced in 2003 (Reg. Ref. 0132/02). Therefore, the layout and form of the lands at Clongriffin were subject to a plan led masterplan development within which a significant quantum of existing infrastructure has been completed including:

- 1,685 houses, duplexes and apartments built;
- 13,950 sq.m. of commercial and retail development completed;
- Clongriffin Dart Station constructed and in operation;
- Clongriffin Main Street constructed including the extension of Malahide Road QBC;
- Dublin Bus services operational;
- Internal Road Network constructed up to wearing course;
- Multi-storey car park constructed;
- Park and Ride facility constructed;

- Station Square plaza completed;
- Class 1 Public Open Space (Fr. Collins Park) – constructed and operational;
- Mayne River Linear Park complete up to attenuation pond;
- Landscaping of principal streets and public squares completed including Station Square;
- Internal Drainage network for foul and surface water constructed including attenuation pond.

Roughly one third of the 2003 Masterplan Planning Permission for a mixed-use new town centre was constructed when the recession intervened and progress slowed considerably. However, construction restarted nearly four years ago and approximately 85% of the lands in Gannon's ownership have now been developed, are under construction or are due to be developed as per the permitted masterplan.

Several of the original planning permissions have expired, or have been amended and accordingly a new planning permission is being sought for the development of the remaining infill lands at Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28, and 29, which provides for a total of 1,950 no. residential units and c.22,727.5 sq.m of commercial development. The aforementioned infill blocks are proposed in the context of the existing constructed residential and town centre developments already constructed at Clongriffin.

In light of discussions with Dublin City Council, a Masterplan Update (Review June 2018) was prepared by CCK Architects and submitted to the Council as part of the Stage 1 request and forms part of the documentation being submitted to the competent authority. This Masterplan update sets out the development of the remaining infill lands in the context of the permitted development. The Masterplan notes that since the majority of the road infrastructure and services are already in place to service the blocks, no deviation from the original infrastructure network is proposed. Therefore, the layout and form of the blocks are generally in accordance with the overall masterplan vision granted in 2003.

The Masterplan sets out the proposed development of the remaining infill blocks in the context of the policies and objectives of the Dublin City Development Plan 2016-2022 and the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022) including urban design, urban structure, movement, open space, heights etc. Please refer to the enclosed Masterplan prepared by CCK Architects for further detail on the proposed development's compliance with the requirements of both the Clongriffin-Belmayne LAP and Dublin City Development Plan 2016-2022.

The Masterplan sets out the overall vision for the development of the infill lands. However, the masterplan lands are divided into three separate planning applications, in accordance with the legislative provisions of the SHD process, such that two of which are SHD applications to An Bord Pleanála whilst the third application is being lodged to Dublin City Council. This is in accordance with the legislative requirements of the Planning and Development (Housing) and Residential Tenancies Act 2016 Planning and Development (Strategic Housing Development) Regulations 2017.

The three applications are set out as follows:

- SHD Application 1 comprises blocks 6, 8, 11, 17, 25, 26, 27, 28 & 29 (1,030 units, c. 2,421.3 sq.m. of ancillary residential amenity facilities and c.2,285.5 sq.m of commercial development).

- SHD Application 2 comprises blocks 4, 5 and 14 (500 units, c. 1,093.5 sq.m. of ancillary residential amenity facilities and c. 3,125 sq.m. of commercial development).
- The Planning Application to DCC comprises blocks 3, 13 and 15 (420 residential units, c. 820.3 sq.m of ancillary amenity facilities and c. 17,317 sq.m. of commercial development).

It must be noted that whilst there are three applications proposed for the overall masterplan lands as set out above, the overall applications are being assessed as part of one overall Environmental Impact Assessment and have been screened for Appropriate Assessment as one overall development.

3.2 National Planning Context

3.2.1 Project Ireland 2040: National Planning Framework

The National Planning Framework is “*the Government’s high-level strategic plan for shaping the future growth and development of our country out to the year 2040*”. It is a Framework to guide public and private investment, to create and promote opportunities for our people, and to protect and enhance our environment—from our villages to our cities and everything in between.

The NPF is designed to improve the effectiveness of public investment in infrastructure and other relevant services around the county, including the enhancement of regional and international connectivity.

It is stated within the National Planning Framework that there will be an ongoing shift in population and jobs to the east, and to the counties around Dublin in particular. The NPF will support the future growth and success of Dublin as Ireland’s leading global city of scale, by better managing Dublin’s growth to ensure that more of it can be accommodated within and close to the city.

Sustainable development is “*development which meets the needs of the present without compromising the ability of future generations to meet their own needs,*” and as such it is aimed at promoting wellbeing of citizens now and in the future. For this vision to be achieved, it is required to create a sustainable and efficient economy respecting the main pillars of sustainability which relate to the environment, the economy, and society.

The NPF has recognised that in order to develop sustainable communities it is important to improve its residents’ quality of life. This complex challenge involves taking into consideration spatial planning and the quality in the built environment including measures that would promote social inclusion. Therefore, it is considered that the proposed development is in accordance with this framework.

3.2.2 Project Ireland 2040: National Development Plan 2018-2027

The National Development Plan 2018-2027 (NDP) is an integrated policy document as part of the National Planning Framework (NPF). The NPF outlines the national strategic objectives to be achieved with the NDP illustrating the committed investment in implementing the NPF’s objectives. This will guide national, regional and local planning and investment decisions in Ireland over the next two decades to cater for an expected population increase of over 1 million people.

It is at the heart of the NPF to resolve the systemic factors underlying the current housing crisis, it highlights “*the urgent requirement for a major uplift of the delivery of housing within the existing built-up areas of cities and other urban areas*”, and has a “*particular focus on brownfield development, targeting derelict and vacant sites that may have been developed before but have fallen into disuse*”; reflecting all of the above, housing and sustainable urban development is a priority for the National Development Plan.

The proposed development will provide for the completion of a high density, sustainable residential development, alongside the delivery of commercial units, thus promoting compact urban growth and good quality of life. The attractiveness of Clongriffin for people to live and work in, is further supported by the provision of high quality physical and social infrastructure, as well as recreational amenities such as Fr. Collins Park, Mayne River Linear Park and the various sports clubs and centres within the area.

There is already a well-established living space within Clongriffin, which includes a network of streets, public spaces and natural open spaces both for active and passive recreation for the general public. The proposed development is located within close proximity of several schools, health services and childcare facilities, with a quantum of additional facilities proposed as part of this application. It is submitted that the level of services and amenities provided within the proposed development and the existing surrounding area which will ensure that Clongriffin is an attractive place to live and work.

3.2.3 Rebuilding Ireland, An Action Plan for Housing and Homelessness (2016)

Rebuilding Ireland, an Action Plan for Housing and Homelessness, provides a multi-stranded, action-oriented approach to achieving many of the Government’s key housing objectives. The overarching aim of this Action Plan is to ramp up delivery of housing from its current undersupply across all tenures to help individuals and families meet their housing needs, and to help those who are currently housed to remain in their homes or be provided with appropriate options of alternative accommodation, especially those families in emergency accommodation.

The Action Plan comprises five pillars of concerted actions right across Government – addressing homelessness, accelerating social housing, building more homes, improving the rental sector and utilising existing housing. This Plan sets ambitious targets to double the annual level of residential construction to 25,000 homes and deliver 47,000 units of social housing in the period to 2021, while at the same time making the best use of the existing housing stock and laying the foundations for a more vibrant and responsive private rented sector.

Achieving the aim of accelerated delivery will contribute to the following core objectives:

- Addressing the unacceptable level of households, particularly families, in emergency accommodation;
- Moderating rental and purchase price inflation, particularly in urban areas;
- Addressing a growing affordability gap for many households wishing to purchase their own homes;

- Maturing the rental sector so that tenants see it as one that offers security, quality and choice of tenure in the right locations and providers see it as one they can invest in with certainty;
- Ensuring housing's contribution to the national economy is steady and supportive of sustainable economic growth; and
- Delivering housing in a way that meets current needs while contributing to wider objectives such as the need to support sustainable urban and rural development and communities and maximise the contribution of the built environment to addressing climate change.

The provision of 1,950 no. apartments at this site, as part of the overall masterplan, will help the Government achieve the objectives of this Housing Action Plan. There are 10% of the total units within the overall masterplan scheme proposed for social housing.

3.2.4 Sustainable Residential Development in Urban Areas and Best Practice Urban Design Guidelines (2009)

The aim of the Sustainable Residential Development in Urban Areas document, which reviews and updates the Residential Density Guidelines (1999), is to assist both planning authorities and developers in meeting certain standards in the design of residential development. The main objective of the Sustainable Residential Development in Urban Areas Guidelines is to produce high-quality sustainable development through providing: quality homes and neighbourhoods; places where people actually want to live, to work and to raise families; and, places that work—and will continue to work—not just for us, but for our children and our children's children.

The Guidelines state that sustainability is about the integration of schools, community facilities, employment, transport and amenities with the housing development process in a timely, cost-effective way.

It is important to mention that the community facilities in place within Clongriffin include the community centre 'Clongriffin Junction' open to all members of the community, which was a joint initiative between Gerard Gannon Properties and Dublin City Council. As well, there is a second community centre 'The Hub' located on Main Street, which supports the local community and holds weekly events (including men's sheds, yoga and dancing classes, and the Newman Dance Company). Furthermore, the positive relationship between Gerard Gannon Properties and the Trinity Sports and Leisure Club located off The Hole in the Wall Road further allows for our client's involvement in improving the club's facilities. The club aims to provide sporting and leisure amenities for the local catchment area, including Clongriffin.

The proposed development part of this application includes c.22,727.5 sq.m of commercial space and plans to provide more community facilities for the people of Clongriffin. Included in such proposals are a new community centre; gyms; childcare facilities; community spaces; and a cinema; therefore, it will ensure that the existing and new residents of the community will have access to a significant amount of important and required amenities for the development of a sustainable community.

The design of the proposed development has placed considerable emphasis on the context of the site and location as well as the surrounding built environment. The proposed development successfully incorporates the criteria of the 'Urban Design Manual – A Best Practice Guide' and its 12 criteria, including Context; Connections;

Inclusivity; Variety; Efficiency; Distinctiveness; Layout; Public Realm; Adaptability; Privacy/Amenity; Parking; and Detailed Design, of which Planning Authorities are recommended to assess planning applications. It is evident that the form, layout, architectural and landscaping design of the proposed development have been informed by the development's place and time. Well-designed high-quality housing supply in the right locations are fundamental to building strong, sustainable communities, thus ensuring the country's continued success in attracting and generating investment and improving the quality of life for residents.

The proposed development has had regard to the surrounding environment and positively contributes to the character and identity of the surrounding neighbourhood. The aim of the proposal is to provide for completion of the wider masterplan for Clongriffin with high quality residential and mixed used amenities, as well as to promote the sustainable use of land in close proximity to a major public transport corridor within a town centre in the Dublin area. It is worth to mention that the proposed scheme is considered to be of an appropriate density which will help to support efficient public transport. In light of the above, the proposed development supports and promotes the urban design criteria mentioned above.

3.2.5 Delivering Homes, Sustaining Communities: Statement on Housing Policy (2007)

The Department's policy statement 'Delivering Homes, Sustaining Communities' provides the overarching policy framework for an integrated approach to housing and planning. The statement notes that demographic factors will continue to underpin strong demand for housing, which in turn will present considerable challenges for the physical planning of new housing and the provision of associated services. The quality of the housing environment is recognised as being central to creating a sustainable community. Sustainable neighbourhoods are areas where an efficient use of land, high quality design and effective integration in the provision of physical and social infrastructure combine to create places people want to live in.

This 'Delivering Homes, Sustaining Communities' policy statement is accompanied by Best Practice Guidelines entitled 'Quality Housing for Sustainable Communities'. The aim of these Guidelines is to promote high standards in the design and construction and provision of residential and services in new housing developments. Best use of land is encouraged and optimal utilisation of services and infrastructure in the provision of new housing; point the way to cost effective options for housing design that go beyond minimum codes and standards; promote higher standards of environmental performance and durability in housing construction; seek to ensure that residents of a new housing scheme enjoy the benefits of first-rate living conditions in a healthy, accessible and visually attractive environment; and provide homes and communities that may be easily managed and maintained.

Each planning application is accompanied by Housing Quality Assessments (HQAs) prepared by CCK Architects, Wilson Architecture and Downey Architecture, which demonstrate the proposed development is compliant with the relevant standards in the Quality Housing for Sustainable Communities document and the Dublin City Development Plan 2016-2022.

3.2.6 Sustainable Urban Housing: Design Standards for New Apartments (March 2018)

The recently adopted 'Sustainable Urban Housing: Design Standards for New Apartments' build on the content of the 2015 apartment guidance, much of which remains valid, particularly with regard to design quality safeguards such as internal space standards for apartments, internal storage and amenity space. The Guidelines state that *"in the longer term to 2040, the Housing Agency has identified a need for at least 45,000 new homes in Ireland's five cities (Dublin, Cork, Limerick, Galway and Waterford), more than 30,000 of which are required in Dublin City and suburbs, which does not include additional pent-up demand arising from under-supply of new housing in recent years."* It is also stated that it is *"critical to ensure that apartment living is an increasingly attractive and desirable housing option for a range of household types and tenures."*

In relation to Build-to-Rent (BTR) apartments, the Guidelines define these as *"purpose-built residential accommodation and associated amenities built specifically for long-term rental that is managed and serviced in an institutional manner by an institutional landlord"*. A key point outlined in the Guidelines states that *"the provision of dedicated amenities and facilities specifically for residents is usually a characteristic element. The provision of such facilities contributes to the creation of a shared environment where individual renters become more integrated and develop a sense of belonging with their neighbours in the scheme. This provides the opportunity for renters to be part of a community and seek to remain a tenant in the longer term, rather than a more transient development characterised by shorter duration tenancies that are less compatible with a long term investment model. There are jurisdictions such as dedicated laundry facilities, communal leisure areas, gym, workspaces/hotdesks, concierge services, etc. Facilities may also include private dining rooms, kitchen areas, office spaces, TV/lounge rooms, etc. that can be booked on occasion by individual residents for their own use."*

Downey Planning are of the professional opinion that the proposed development complies with the requirements of the 'Sustainable Urban Housing: Design Standards for New Apartments'. The application includes Housing Quality Assessments, a detailed daylight, sunlight and internal light analysis report, and Building Lifecycle Report in accordance with Chapter 6 of the Guidelines. The proposed development will help to meet the current demand for apartment type developments in Dublin.

3.2.7 Retail Planning Guidelines for Planning Authorities 2012

The Retail Planning Guidelines, which were first issued in 2000 and subsequently revised in 2005 and 2012, provide the strategic policy framework for the spatial distribution of new retail development. In addition, the Guidelines provide a comprehensive framework to guide both local authorities in preparing development plans and assessing applications for planning permission, and retailers and developers in formulating development proposals. The guidelines specifically state that retailing should generally be directed into existing settlements, while having regard to the sequential approach in relation to the appropriate location for new retail development that is not capable of or suitable for town centre locations.

Apart from direct and indirect employment, retailing plays a major role in attracting people to the centre of cities, towns and villages, thus contributing to the overall economic vitality of those centres and supporting their role as centres of social and business interaction in the community. Retailing also supports the considerable investment by the public and private sectors in urban renewal, by providing shopping

facilities to residents and by adding to the vitality and attractiveness of inner areas of cities and towns.

The Guidelines identify five key objectives, of equal weight, which are as follows:

- To ensure that in future all Development Plans incorporate clear policies and proposals for retail development,
- To facilitate a competitive and healthy environment for the retail industry of the future,
- To promote forms of development which are easily accessible, particularly by public transport and in a location which encourages multi-purpose shopping, business and leisure trips,
- To support the continuing role of town and district centres, with
- A presumption against large retail centres located adjacent or close to existing, new or planned national roads/motorways.

The proposed development's strategic location adjacent to Clongriffin Train station and a wide range of high frequency public transport networks aims to promote sustainable modes of transport (particularly public transport, cycling and walking) and to encourage multi-purpose shopping, business and leisure trips without the use of a car.

The provision of c.22,727.5 sq.m of commercial development in addition to the 13,950 sq.m of commercial development completed to date, the 813 sq.m that is currently under construction and the 8,080 sq.m. permitted hotel —will encourage job growth within the commercial, retail, recreational, leisure, etc, industries within Clongriffin. The overall commercial development in Clongriffin will be over 45,463.5 sq.m. when completed which will serve the overall population of Clongriffin.

3.2.8 Retail Design Manual 2012

The Retail Design Manual, as a companion to the Retail Planning Guidelines 2012, is *“intended to provide a planning framework for future development of the retail sector in a way which meets the needs of modern shopping formats while contributing to protecting, supporting and promoting the attractiveness and competitiveness of city and town centres as places to live, work, shop and visit”*. It is a further step in the provision of guidance on design principles within the planning policy guidance framework outlined under Action 21 of the Government Policy on Architecture 2009-2015, and sets out to provide planning authorities, developers and designers with evidence-based quality principles to ensure that future planning for the retail sector is focused on the creation of vibrant, quality places.

The key principles of urban design as outlined in the manual are: Design Quality, Site and Location, Context and Character, Vitality and Viability, Access and Connectivity, Density and Mixed-Use, Public Realm, Built Form, Environmental Responsibility, and Sustainable Construction. The proposed development is a well-designed, high density residential and commercial town centre development with excellent public transport links, the potential for significant levels of pedestrian/cycling ways and with a focus on strong urban form and environmental sustainability. As such, Downey Planning are of the considered opinion that the proposed development at Clongriffin complies with the Retail Design Manual.

3.2.9 Childcare Facilities: Guidelines for Planning Authorities (2001)

These Guidelines for Planning Authorities on Childcare Facilities provide a framework to guide both local authorities in preparing development plans and assessing applications for planning permission, and developers and childcare providers in formulating development proposals; the Guidelines are also intended to ensure a consistency of approach throughout the country to the treatment of applications for planning permission for childcare facilities.

With the growing demand for childcare provision, there is a recognition that such provision must be of suitably high quality. Quality childcare can benefit children, their parent, employers and communities in general. Access to quality childcare services contributes to the social, emotional and educational development of children. Government policy on childcare is to increase the number of childcare places and facilities available and to improve the quality of childcare services for the community. In this regard, it is important to note that there are already sufficient facilities to cater for the proposed development, and that creches have been provided within Clongriffin to date, with two currently operating in the town. The proposed development intends to provide an additional three childcare facilities as part of Blocks 4, 6, and 27, thus providing for a further c.180 children.

In light of the above, the current provision of childcare facilities, in conjunction with the ones being put forward by the proposed development, is in compliance with the Guidelines.

3.2.10 Design Manual for Urban Roads and Streets (DMURS)

The Design Manual for Urban Roads and Streets (DMURS) 2013 sets out design guidance and standards for constructing new and reconfigured existing urban roads and streets. It also sets out practical design measures to encourage more sustainable travel patterns in urban areas. The Transport drawings and documentation prepared by Waterman Moylan Engineers provide further details in respect of the compliance of the proposed development with the provision of DMURS.

3.2.11 Urban Development and Building Heights: Guidelines for Planning Authorities (December 2018)

The '*Urban Development and Building Heights: Guidelines for Planning Authorities*' are intended to set out national planning policy guidelines on building heights in relation to urban areas, building from the strategic policy framework set out in the National Planning Framework (NPF). It is a key objective of the NPF to see that greatly increased levels of residential development in our urban centres and significant increases in the building heights and overall density of development is not only facilitated but actively sought out and brought forward by our planning processes and particularly so at local authority and An Bord Pleanála levels.

Therefore, increasing prevailing building heights has a critical role to play in addressing the delivery of more compact growth in our urban areas, particularly our cities and large towns through enhancing both the scale and density of development.

The proposed development at Clongriffin ranges in height from 3 to 17 storeys, with the majority of the blocks at 6 storeys in height, and is in accordance with the heights set out in the Development Plan (up to 24m beside rail stations) and the Clongriffin–Belmayne Local Area Plan which notes that a minimum of 5 storeys is required within

Clongriffin (as a KDC). Furthermore, the LAP aims to increase density along the public transport corridor.

The principle of taller buildings is supported by these Guidelines as they state that local area plans must become more proactive and more flexible in securing compact urban growth through a combination of both facilitating increased densities and building heights, while also being mindful of the quality of development and balancing amenity and environmental considerations.

The proposed development at Clongriffin is in accordance with national and regional policy which supports increased building height and increased density of development, and it is worth to mention that the physical and social infrastructure already in place can easily accommodate taller buildings.

3.2.12 Smarter Travel: A Sustainable Transport Future

This document sets out the transport policy for Ireland for the period 2009-2020 which, in addition to prudent investment in new infrastructure, sets out necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport. This key national policy has sustainability at its core and clearly indicates that future population and economic growth will have to take place predominantly in sustainable, compact urban and rural areas which discourage dispersed development and long commuting.

The five key goals of this transport policy are as follows:

- Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport.
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks.
- Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- Reduce overall travel demand and commuting distances travelled by the private car.
- Improve security of energy supply by reducing dependency on imported fossil fuels.

The proposed development provides housing and town centre uses within Clongriffin town centre and the strategic location of the subject site immediately adjacent to the Clongriffin DART station and the Malahide Road QBC will promote a modal shift to sustainable transportation. The proposal also provides for secure, covered bicycle parking for future residents and visitors to encourage use of sustainable modes of transportation. As such, it is considered that the proposed development complies with '*Smarter Travel: A Sustainable Transport Future*'.

3.2.13 EIA Directive

The EIA Directive 85/337 EEC, as amended, is the key legislation in EU Environmental Policy. The EIA Directive aims to determine the likely significant effects of a project on the environment. Screening is the first stage in the EIA process required by Article 4 of the EIA Directive and this process determines whether an EIA is required for a specific project. The Directive outlines in Article 4(1) 24 Annex 1 projects that require a mandatory EIA. Article 4(2) outlines Annex 2 projects that

require consideration for EIA further to a case by case examination or through thresholds and criteria set out by Member States. In an Irish context, projects requiring a mandatory EIA or consideration for EIA further to a case by case examination or thresholds are listed in Schedule 5 of the Planning and Development Regulations.

The proposed development provides for a total of 1,950 no. residential units and c.22,727.5 sq.m commercial development. Noting the mandatory requirements for an EIA, the proposed development exceeds the thresholds and as such an Environmental Impact Assessment has been prepared to accompany this application. This EIAR has been prepared to comply with the requirements of the 2014 Directive 2014/52/EU.

3.2.14 Birds and Habitats Directive – Appropriate Assessment

The proposed development has been screened for Appropriate Assessment in accordance with the requirements of Article 6(3) of the EU Habitats Directive (92/32/EEC). OPENFIELD Ecological Services has prepared a report for Screening for Appropriate Assessment for the proposed development. This screening report has evaluated the proposed development at Clongriffin to determine whether or not significant negative impacts on Natura 2000 sites are likely to arise by virtue of its construction and use.

The screening report concludes that this proposed development is not located within or directly adjacent to any SAC or SPA but pathways do exist to a number of these areas. An assessment of the aspects of this project has shown that significant negative effects are not likely to occur to these areas either alone or in combination with other plans and projects. The Appropriate Assessment procedure is therefore concluded at the Screening Stage and a detailed Appropriate Assessment is not required. For further information in this regard, please refer to the Appropriate Assessment Screening Report prepared by OPENFIELD Ecological Services.

3.2.15 The Planning System and Flood Risk Guidelines (2009)

These Guidelines require the planning system at all levels to avoid developments in areas at risk of flooding, particularly floodplains, except where there are no suitable alternative sites available in areas at lower risk that are consistent with the objectives of proper planning and sustainable development. Where such development has to take place, in the case of urban regeneration for example, the type of development has to be carefully considered and the risks should be mitigated and managed through location, layout and design of the development to reduce flood risk to an acceptable level. Applicants are advised to carefully examine their development proposals to ensure consistency with the requirements of these Guidelines including carefully researching whether there have been instances of flooding or there is the potential for flooding on specific sites and to carry out a site-specific flood risk assessment.

In accordance with these Guidelines, Waterman Moylan Consulting Engineers have carried out a flood risk assessment of the subject site. The site has been assessed in accordance with the Flood Risk Management Guidelines, with appropriate mitigation measures proposed such as SuDs design, overland flood routing, appropriate floor levels, and regular inspections. Therefore, it is considered that the proposed development is in accordance with the requirements of this national flood risk management policy and the appropriate mitigation measures ensures the proposed development will not adversely impact the surrounding area. For further information

in this regard, please refer to the Flood Risk Assessment report prepared by Waterman Moylan Consulting Engineers which accompanies the applications.

3.2.16 Climate Action Plan 2019

Climate disruption is already having diverse and wide-ranging impacts on Ireland's environment, society, economic and natural resources. The Climate Action Plan 2019 sets out an ambitious course of action over the coming years to address this issue. The Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption.

Our buildings are 70% reliant on fossil fuels, including oil fired boilers; over 80% of our homes and other buildings assessed for their BER have a rating of C or worse; and the current annual retrofit activity for existing stock is far too limited (approximately 23,000, mainly shallow, retrofits). A hierarchy of the most cost-effective investments underpin this, including:

- Improving the fabric of buildings;
- District heating in commercial buildings;
- Switching from oil burners to heat pumps;
- Setting new building standards.

As such, Project has taken into consideration the Climate Action Plan and measures have been included within the design of the blocks to reduce carbon emissions in line with the requirements of the Action Plan. The Clongriffin District Heating Network will also serve the proposed Project in line with the Climate Action Plan.

3.3 Regional Planning Context

3.3.1 Regional Spatial and Economic Strategy

The *Regional Spatial and Economic Strategy* (RSES), published by the Eastern and Midland Regional Authority, outlines the long-term regional level strategic planning and economic framework in support of the National Planning Framework for the period 2019-2031. The RSES identifies regional assets, opportunities and pressures and provides a framework for investment to better manage spatial planning and economic development throughout the Region. The RSES replaced the Regional Planning Guidelines (RPGs).

The RSES is tasked with the development of planning policy for future housing needs in the region upon consideration of the availability of land, resources, environment and infrastructure capacity, and as such the document states that:

“In preparing Core Strategies for Development Plans, Local Authorities shall determine the hierarchy of settlements in accordance with the hierarchy, guiding principles and typology of settlements in the RSES, within the population projections set out in the National Planning Framework to ensure that towns grow at a sustainable and appropriate level, by setting out a rationale for land proposed to be zoned for residential, employment and mixed-use development across the Region.”

It is submitted that the proposed development on existing zoned and serviced lands will adhere with the policies and objectives of the RSES for the Eastern and Midland Regional Assembly Area. Furthermore, the proposed development will contribute to

the provision of additional housing units and employment opportunities within the Dublin City and Suburbs area.

3.3.2 Transport Strategy for the Greater Dublin Area 2016-2035

This National Transport Authority Strategy document provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) up to 2035. The Strategy presents the transport requirements for the GDA based on principles of efficient, effective and sustainable movement of people and goods.

The Core Strategy has a focus on providing a better integration of land use planning and transport planning, which can be achieved through the consolidation of development into higher order centres. In terms of the provision of housing, the strategy seeks to directly enable the sustainable development of strategically important residential sites, particularly in Metropolitan Dublin, where demand is highest. The proposed development at Clongriffin which seeks to redevelop infill sites within walking distance of a DART Station/QBC, will facilitate the current demands and future growth of the area and is considered an appropriate form of development in the context of supporting the vision and objectives of the Transport Strategy for the Greater Dublin Area 2016-2035.

3.4 County Planning Context

3.4.1 Dublin City Development Plan 2016-2022

3.4.1.1 Introduction

The subject site is located within the administrative area of Dublin City Council, and thus the statutory Development Plan is the Dublin City Development Plan 2016-2022. The Development Plan's policies and objectives provide the direction for the future development of the City and have been taken into consideration in the preparation of this application. The Development Plan seeks to secure the development and improvement in a sustainable manner of the economic, environmental, cultural and social assets of the City, with the following overarching vision for the City and overall region:

“Within the next 25 to 30 years, Dublin will have an established international reputation as one of Europe’s most sustainable, dynamic and resourceful city regions. Dublin, through the shared vision of its citizens and civic leaders, will be a beautiful, compact city, with a distinct character, a vibrant culture and a diverse, smart, green, innovation-based economy. It will be a socially inclusive city of urban neighbourhoods, all connected by an exemplary public transport, cycling and walking system and interwoven with a quality bio-diverse green space network. In short, the vision is for a capital city where people will seek to live, work, experience, invest and socialise, as a matter of choice.”

3.4.1.2 Development Plan Strategy

One of the key aims of the Development Plan is to plan for and support the sustainable development of the City as a quality, connected and resilient city. The Development Plan, through a series of policies and objectives, aims to create a city that will facilitate economic growth, enterprise and employment generation, socially

inclusive neighbourhoods in a coherent, sustainable manner for the benefit of the Dublin City Region and the country.

3.4.1.3 Core Strategy

The vision of the Dublin City Development Plan is to grow Dublin in a sustainable fashion as it enters a period of sustained economic and population growth. “*Dublin city in its entirety lies within the metropolitan area and the RPGs give direction to Dublin city as the ‘gateway core’ for high-intensity clusters, brownfield development, urban renewal and regeneration*”. Significant housing demand exists in the Dublin city area and several Strategic Development and Regeneration Areas (SDRAs) have been identified to try and meet this demand; the area of Clongriffin/Belmayne is one of these locations.

As stated above, the subject site is part of a SDRA and is designated as a Key District Centre (KDC). The Development Plan provides an estimation of 7,100 residential units which can be produced within the SDRA1. The proposed development provides for an overall total of c.1,950 no. of these units, in accordance with the objectives of the Development Plan. This is in addition to the housing units already delivered or under construction within Clongriffin.

In this regard, it is noted that the proposed development will provide for a high-quality mixed use development on what is an infill site in a highly accessible location which is well served by public transport (DART and QBC) and within the M50 ring, thus further supporting the housing units targets for the area on lands that are appropriately zoned for residential purposes and already have significant infrastructure to cater for future and existing residents.

	Estimated Capacity – Number of Residential Units
Inner City Area (excluding SDRA 7, SDRA 18, and SDRAs 10–16 inclusive)	8,900
SDRA 1 North Fringe (including Clongriffin/Belmayne)	7,100
SDRA 2 Ballymun	3,000
SDRA 3 Ashtown/Pelletstown	1,000
SDRA 4 Park West/Cherry Orchard	2,000
SDRA 5 Naas Road lands	2,100
SDRA 6 Docklands (including SDZ area and Poolbeg West)	4,600
SDRA 7 Heuston Station and Environs	1,200
SDRA 8 Grangegorman and Environs	800
SDRA 9 St Michael's Estate	500
SDRA 10 Dominick Street	200
SDRA 11 O'Devaney Gardens	1,000
SDRA 12 St Teresa's Gardens	800–1,000
SDRA 13 Dolphin House	600
SDRA 14 Croke Villas and Environs	100
SDRA 15 St James's Medical Campus and Environs	500
SDRA 16 Liberties (including Newmarket and Digital Hub)	2,500
SDRA 17 Oscar Traynor Road	650–700
SDRA 18 National Concert Hall	350–400
Rest of City	14,400
Total	52,300–52,600

Fig. 3.1 – Capacity of Sub-areas of the City for Residential Development

3.4.1.4 Land-Use Zoning

The subject site is zoned Objective 'Z14—Strategic Development and Regeneration Areas' under the current Dublin City Development Plan 2016-2022. This zoning objective aims:

“To seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and ‘Z6’ would be the predominant uses.”

The lands at Clongriffin are also partially zoned as a 'Key District Centre' (KDC), 'Z4—District Centres' pertains to this designation. As such this zoning objective seeks *“to provide for and improve mixed-services facilities.”*

The key district centres (KDCs) represent the top-tier of urban centres outside the city centre and each of them will act *“as a strong spatial hub which provides a comprehensive range of commercial and community services to the surrounding population”*. The key district centres are located near public transport rail corridors and carry an important regeneration role for the local communities and surrounding areas. It is an objective of the Development Plan to reinforce the KDCs as main urban centres and also as sustainable anchors for the suburbs.

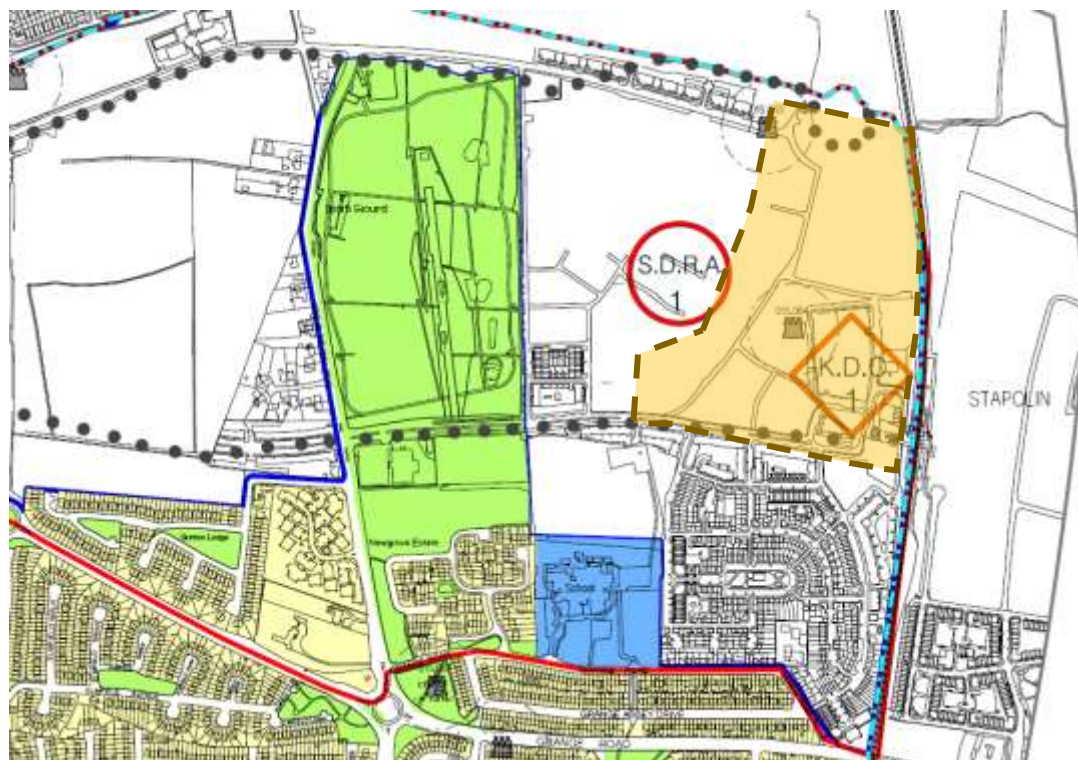


Fig. 3.2 – Dublin City Development Plan 2016-2022 zoning map, with the associated SDRA and KDC zoning objectives (site highlighted in yellow).

The following relevant use classes are related to this zoning objective:

Zoning Objective Z4	Zoning Objective Z14
<p>Permissible Uses</p> <p>Amusement/leisure complex, bed and breakfast, betting office, buildings for the health, safety and welfare of the public; car park, car trading, childcare facility, civic offices, community facility, cultural/recreational building and uses, delicatessen¹, education, embassy office, enterprise centre, garden centre, guest house, halting site, home-based economic activity, hostel, hotel, industry (light), live work units, media-associated uses, medical and related consultants, motor sales showroom, office (max. 600 sq m.), off-licence, open space, park and ride facility, part off-licence, petrol station, place of public worship, public house, residential, restaurant, science and technology-based industry, shop (district), shop (neighbourhood), take-away, training centre.</p>	<p>Permissible Uses</p> <p>Betting office, buildings for the health, safety and welfare of the public; childcare facility, community facility, conference centre, cultural/recreational building and uses, education, embassy office, embassy residential, enterprise centre, green/clean industries, halting site, home-based economic activity, hotel, industry (light), live-work units, media-associated uses, medical and related consultants, offices, open space, park and ride facility, part off-licence, place of public worship, public service installation, residential, restaurant, science and technology-based industry, shop (neighbourhood), training centre.</p>
<p>Open for Consideration Uses</p> <p>Advertisement and advertising structures, civic and amenity/recycling centre, conference centre, embassy residential, factory shop, financial institution, funeral home, garage (motor repair/service), household fuel depot, internet café, nightclub, office (max. 1200 sq m) outdoor poster advertising, shop (major comparison), warehousing (retail/non-food)/retail park.</p>	<p>Open for Consideration Uses</p> <p>Advertisement and advertising structures, bed and breakfast, car park, car trading, civic and amenity/recycling centre, factory shop, financial institution, funeral home, garage (motor repair/service), garden centre, golf course and clubhouse, hostel, internet café, nightclub, off-licence, outdoor poster advertising, petrol station, pigeon lofts, public house, take-away, veterinary surgery, warehousing (retail/non-food)/retail park, warehousing.</p>

The proposed residential use and commercial space are permitted in principle. Furthermore, the proposed development will create a new, sustainable community and town centre which will integrate with Clongriffin through the introduction of 1,950 no. high-quality designed residential units with commercial town centre uses for the convenience of the Clongriffin community. As such, the proposed scheme is in accordance with the objectives of the pertaining zoning designations.

3.4.1.5 Residential Development

It is an objective of the Development Plan to provide for housing in accordance with the Housing Strategy for the City, there are several policies and objectives for the delivery of this strategy, however three core principles inform and guide the overall core strategy as follows:

1. *To ensure the provision of good quality housing across owner-occupied and rental housing tenures in sustainable communities,*
2. *To ensure the planning and building of housing and residential space in the city contributes to sustainable and balanced development, and*
3. *To ensure adequate provision of social rental housing for households unable to afford housing from their own resources.*

In this regard the proposed development is located in an existing urban area of North Dublin which has experienced significant growth in recent years. The overall area is to be developed into a new residential area, in accordance with the adopted Clongriffin-Belmayne LAP and will be supported by the provision of schools and

associated commercial and community uses. The proposed development will support the housing strategy with the delivery of housing, of sustainable density, within the city, and providing a variety of apartment types and sizes, as well as a mix of tenures to meet the diverse needs of residents, in a high-quality, vibrant community setting.

3.4.2 Clongriffin-Belmayne Local Area Plan 2012-2018

The Clongriffin-Belmayne Local Area Plan 2012-2018 (LAP) published in December 2012 “*provides a framework for proper planning and sustainable development of Clongriffin-Belmayne (the North Fringe) area in accordance with the policies and objectives of the Dublin City Development Plan*”. The lands around the North Fringe area were first proposed for development in 1999 and in 2000 with the publication of the North Fringe Action Area Plan to guide the development. There are two main objectives of the LAP with an aim to provide a coherent urban structure with a distinct identity and to successfully integrate new and existing communities.

The LAP discusses the different opportunities within developments across the area,

“to adapt to the current economic climate, enhance the quality of life for existing and future residents, ensure optimal connection with the adjacent communities and deliver a coherent set of interim responses and a longer term strategy to develop a vibrant, high quality and sustainable urban neighbourhood.”

It is recognised within the Clongriffin-Belmayne LAP that the North-Fringe is a growing area and that considerable progress has been made on the provision of infrastructure in the area, including:

- the completion of approximately 3,400 homes to date
- the provision of approximately 41,000 sq.m of commercial space
- the construction of the Clongriffin DART Station and the no. 15 Bus service, which uses the Malahide QBC and terminates in Clongriffin
- the North Fringe Sewer and North Fringe Watermain projects
- the completion of Main Street and distributor road networks
- the establishment of two primary schools
- the completion of Fr. Collins Park
- the completion of the Park and Ride facility and town centre plaza

The LAP has been designed to provide a strategy on how best to develop the area in keeping with best practice in sustainable urban planning in order to meet the needs of all existing and future residents. The zoning on the site for the LAP is focused on the area zoned Z14 under the Dublin City Development Plan 2011-2017 which is,

“to seek the social, economic and physical development and/or rejuvenation of an area with mixed use of which residential and “Z6” (enterprise and employment) would be the predominant uses”.

The development of these lands will contribute to and augment the existing road networks within the area, provide additional residential accommodation, and retail and commercial development for the area, whilst also supplying the community with additional recreational infrastructures.

The Local Area Plan outlines a phasing and implementation strategy for the Clongriffin Strategic Development and Regeneration Area (SDRA). It is submitted

that a significant percentage of Clongriffin has already been constructed to date and/or is currently under construction. The proposed scheme represents some of the last remaining infill development sites within Clongriffin town centre, and the indicative phasing plan for the delivery of this proposed development is being submitted acknowledging the current on-site construction activity and status of infrastructure, thus ensuring a streamlined and timely delivery of the scheme.

Downey Planning are of the considered opinion that the proposed development will meet the zoning requirements of the LAP and that it will meet the standards as set out in the LAP.

3.4.3 Economic and Retail Study 2018 – Belmayne & Clongriffin

In April - July 2018, AECOM Ltd. completed an economic and retail study on the Belmayne-Clongriffin area on behalf of Dublin City Council. The report states:

“This Economic and Retail Study for the Clongriffin-Belmayne area of north Dublin has been prepared by AECOM Ltd, in conjunction with Braniff Associates. It was commissioned by Dublin City Council in order to obtain an independent, evidence-based understanding of the economic and retail potential of the area.”

The intention of the report was to act as an advisory on retail provision in the area for Dublin City Council. A number of statements are made in the conclusion, including: *“Despite the high level of vacant units in evidence, as well as extant permission for more, there is scope to develop further economic and retail space in the LAP area. This is due principally to the significant population growth envisaged for this location”*. Furthermore, the report also states that *“while it is recognised that economic conditions and market interest will ultimately determine how much economic and retail floorspace will be built in this area in the coming years this Study is intended to assist the Council in planning for such development. Finally, it must be emphasized that the floorspace findings in this Study are advisory in nature and are not intended to serve as prescriptive floorspace caps on future economic and retail development in the LAP area”*.

The parent permission for the subject lands at Clongriffin (Reg. Ref. 0132/02) comprised of a commercial element which amounted to c.85,000 sq.m of commercial floorspace with an overall total of 100,000 sq.m. of commercial development permitted in total as a result of subsequent amendment permissions. It is important to note that this figure has been reduced to c.22,727.5 sq.m in the current application. The existing c.13,950 sq.m, under construction 706 sq.m. and the permission 8,080 sq.m. to be constructed alongside the proposed area in the current application allows for a total of c.45,463.5 sq.m. of commercial space. It is acknowledged that this shows a significant reduction in the quantum of commercial space, however Downey Planning are of the considered opinion that this level of commercial floorspace is required to meet the future needs of the Clongriffin community and that much of the current vacant floorspace will be taken up once development of the proposed residential element commences. This is further acknowledged in the Economic and Retail Study advisory report for the Clongriffin-Belmayne area.

3.5 Planning History Context

Downey Planning have carried out an examination of the planning history of the subject site, via a search of Dublin City Council’s planning portal, which determined that there have been a considerable number of planning applications made on the

subject lands. A full detailed breakdown of the planning history of Clongriffin is included within Appendix Chapter 3 of this EIAR.

The parent permission for the overall development at Clongriffin is as follows:

- **Reg. Ref. 0132/02 – PL29N. 131058** – Planning permission was granted by An Bord Pleanála on 27th June 2003 for a 10 year planning permission for a residential mixed use town development on lands North of Grange Road, Donaghmede, Dublin 13, bounded by the Dublin-Belfast railway, Mayne River and Father Collins Park providing for a total of 3576 dwellings and 80600sqm of mixed retail, commercial, leisure and community uses, associated car parking and engineering works and with provision for a new railway station. Consequent upon the request for additional information the proposed development now provides 783 one, 1900 two, 311 three, 82 four bedroom dwellings comprising 838 houses (including one special needs house for St Mary's Hospital and school, Baldoyle) 428 Duplex units and 2310 apartments ranging from 2 to 6 storeys, plus penthouse. The mixed use town development includes 73 retail units, (8719sqm.), Supermarket (1,692sqm), offices (44,036sqm) and media-associated uses,(8,386sqm), 2 banks (471sqm), 2 restaurants (2576sqm), 3 public Houses (993sqm), a 25 bed day hospital with 2 operating theatres, associated facilities and consulting rooms (2198sqm), doctors/ dentists surgery, (222sqm) veterinary Surgery (271sqm), 4 child care facilities (875sqm), community centre (566sqm), provision for Garda Services unit(66sqm), public stairway and lift and escalator enclosure (204sqm) for proposed over-track railway station, 70 units Aparthotel (3694sqm), 2 Hot food-take-aways, (228sqm), Cinemaplex (5700sqm), Gym- fitness centre (893sqm) Pharmacy (166sqm), 2 off licences (235 sqm), betting office (95sqm), 2 ATM'S, Motor showrooms(935sqm), 3 motor service units (985sqm), 19 enterprise units (1542sqm), with caretakers unit (50sqm) and 3 no. recycling kerbside centres. It also includes underground town carpark and park and ride carpark (420 spaces), taxi rank, drop off points, and a bus interchange associated with a new railway station. Commercial uses will range from street level of residential buildings to office buildings ranging from 4 to 6 storeys with 2 land mark office buildings at 8 and 12 storeys each. The development shall include civic town squares, and spaces a linear park along the South side of the Mayne River with attenuation pond and for new boundary treatment to the North, South, and East sides of Father Collins Park. The Application also provides for site development works for reserved sites for future uses which include a 50 bed Nursing home, Community building, offices, Restaurants, Cafe, Hot food , Take away, and 106 Apartments. Access to the development is provided from the hole in the wall Road via a new road through Father Collins Park and a new east-west Road parallel to the Mayne River and with pedestrian and cycle access only from Grange Road. Provision is made for a future road link to lands east of the railway no vehicular access is provided to Grange Road other than to 17 houses which front on to it. This application also makes provision for a new railway station, to be constructed by or on behalf of Coras Iompair Éireann in phase with the development and to which Gannon Homes LTD will provide funding.

This application is the parent permission for the overall c. 53.56 hectares at Clongriffin. As of January 2019, there has been c. 2,270 units that have been constructed, permitted or approved for planning permission and these are set out below and set out in Appendix B attached to this report-

Granted Developments that are constructed and complete:

To date there has been 1,685 units constructed along with 13,950 sq.m. of commercial development in accordance with the following permissions:

- **Reg. Ref. 0132/02 – PL29N. 131058** – Under the parent permission 911 residential units were constructed and 3,157 sq.m of commercial development including creche, retail, pharmacy unit, doctor surgery, café/takeaway and solicitor units were constructed in Block 1, Beaupark, Block 20, Block 21, Grange Road, Site B1, Plot A, Block 22, Block 23 and Parkedge Plot B.
- **Reg. Ref. 5847/03** – Planning permission was granted on 31st March 2004 for the construction of 98 apartments in a single block 4 storeys high with a set-back at the third floor, patios to the ground floor on the northwest and west elevations, balconies to the first and second floors on the northwest and west elevations and private roof terraces at the third floor to all elevations. The accommodation comprises 43 one bedroom units and 55 two bedroom units, and 102 related car parking spaces on lands north of Grange Road, Donaghmede, Dublin 13, within approved development Reg. Ref. 0132/02 (02PL. 29N. 131085) and access via the approved road network from Hole in the Wall Road. 98 residential units have been constructed.
- **Reg. Ref. 5945/04** – Planning permission was granted on 9th June 2005 for revisions to Blocks 12, 16, roads, carparks, town square and associated site works in the previously approved development (Ref. 0132/02 & PL 29N131058) for a large mixed-use residential development on lands north of Grange Road, Donaghmede, Dublin 13, bounded by the Dublin-Belfast Railway, Mayne River and Father Collins Park. Permission was sought for a 6 storey over basement block comprising: A 708 space 4-storey public car park accessed from road 19. Supermarket (2575 sq.m.) 1 no. 1st floor retail (2815 sq. m.), 4 no. retail units (388 sq.m.), 1 no. off licence (80 sq.m.), kiosk (26 sq.m.), juice bar/cafe (137 sq.m.), cafe (139 sq.m.) 67 bedroom hotel with bar, restaurant and outdoor terrace at first floor (5049 sq.m.), Outdoor pavement seating with canopies on south elevation (105 sq.m.), Associated signage, Offices (1823 sq.m.), 2 no. sub-stations, 4 no. one bed apartments, 4 no. two bedroom apartments with private balconies on north and west elevations. 25 no. three bed. duplex units with private terraces at third floor podium garden level above carpark and plantroom (500 sq.m.) 91 space underground private car park for private and commercial use under Block 12 accessed from road 18 and a 464 space Park and Ride car park (16,053 sq.m.), which extends under the town square, public roads, civic pedestrian route, Block 12 and Block 16. The approved development is to be omitted and

replaced by: 6-7 stories over 2 storey basement comprising: 5 no. retail units (1,725 sq.m.), 1 no. cafe (190 sq.m.) with outdoor pavement seating on south elevation (80 sq.m.), associated signage, substation, 14 no. one bed., 55 no. two bed. and 2 no. three bed. apartments and 16 no. two bed. duplex units. All with balconies or roof terraces on the south, east and west elevations accessed from 1st floor podium garden level. Residential car parking accessed by 2 no. car lifts from new vehicular road. 120 units and 10,425 sq.m. of commercial development within Blocks 12 and 16 have been constructed.

- **Reg. Ref. 3195/05** – Planning permission was granted on 20th April 2006 for 179 residential units and a creche (368 m²) in three blocks ranging in height from two to five and six storeys, comprising 29 one-bedroom, 100 two-bedroom and 50 three-bedroom apartments, 10 of which are two-bedroom duplex units with private roof terraces at Blocks 34, 35 and 36 (to the north of Marrsfield Avenue. 179 residential units and 368 sq.m. of commercial development have been constructed.
- **Reg. Ref. 1691/06** – Planning permission was granted on 18th May 2006 for an amendment to previously permitted development Reg Ref. 0132/02 (02PL.29N.131058) for an increase from the permitted 31 units to provide for 41 no. units. The lands subject to this application are located at Grange Abbey (to the north of the N32) on Railway Road. 41 residential units have been constructed.
- **Reg. Ref. 2405/12** – Planning permission was granted on 20th December 2012 for the construction of 147 dwellings on lands at Marrsfield Avenue and Panhandle Park, Clongriffin, Dublin 13. The proposed development is a revision to approved planning permission Reg. Ref. 0132/02 (PL29N. 131058) for a large mixed-use development at Clongriffin, Dublin 13, and proposes to omit 213 dwellings (21 no. 2 bedroom houses, 71 no. 3 bedroom houses, 1 no. 4 bedroom house, 24 no. 1 bedroom duplex units, 78 no. 2 bedroom duplex units, 6 no. 3 bedroom duplex units and 12 no. 3 bedroom triplex units) originally permitted for this site and to replace with 147 dwellings comprising 47 no. 3 bedroom houses and 36 no. 4 bedroom houses ranging in height from 2 to 3 storeys, 56 no. 2 bedroom and 3 no. 1 bedroom apartments comprised within 6 no. 3 storey blocks and 2 no. 4 storey blocks, and 1 no. 1 bedroom duplex, 2 no. 2 bedroom duplex units and 2 no. 3 bedroom triplex units in 2 no. blocks of 2 and 3 storeys. Private balconies and/or terraces are provided for all apartments and duplex units. The development sites are accessed from Main Street, Park Avenue and Marrsfield Avenue and the development includes 246 parking spaces and all associated and ancillary site works. 8 no. units of this permission have been constructed to date.
- **Reg. Ref. 3653/13** – Planning permission was granted on 21st March 2014 for the construction of 20 no. residential dwellings including 9 no. 3-storey 3-bedroom houses & 11 no. 2-storey 3-bedroom houses, each with its own car

parking space in its front or side garden, and all associated site works on lands adjacent Park Avenue. 20 no. units of this permission have been constructed.

- **Reg. Ref. 3154/13** – Planning permission was granted on 3rd February 2014 for the change of use of part of the permitted hotel (Reg Ref 5945/04) to 32 residential apartments - 7 no. one bedroom, 23 no. two bedroom and 2 no. three bedroom. Permission was granted for 30 no. units (condition attached) within Block 12, Clongriffin and 30 units have been constructed to date.
- **Reg. Ref. 3802/14** – Planning permission was granted on 20th May 2015 for the construction of 13 no. 4-bedroom 3-storey houses, 28 no. 3-bedroom 3-storey houses, 62 no. 3-bedroom 2-storey houses and 8 no. 2-bedroom 2-storey houses, 233 car spaces both on-curtilage and on-street, and associated site works, all on a site bounded by Park Avenue, Park Terrace North, Belltree Walk, Beltree Place and Marrsfield Avenue, Clongriffin, Dublin 13. 99 units have been constructed and completed to date.
- **Reg. Ref. 3199/16** - Planning permission was granted on 18th November 2016 for revisions to the permitted development Reg. Ref. 3802/14 to omit 4 no. 2-bedroom apartments, 8 no. 3-bedroom duplex units and 3 no. 3-bedroom triplex units (15 dwellings in total) to now provide 13 no. 4-bedroom 3-storey houses (13 dwellings in total) at Marrsfield Avenue which have since been constructed and completed.
- **Reg. Ref. 2610/16** - Planning permission was granted on 8th July 2016 for the construction of 113 residential units comprising 19 no. 3-bedroom 3-storey houses, 58 no. 3-bedroom 2-storey houses, 21 no. 3-bedroom 2.5-storey houses, 4 no. 1-bedroom apartments and 11 no. 2-bedroom apartments in a 4-storey block with windows to all elevations, and balconies to the east and south elevations (113 dwellings in total). The development includes 152 car spaces both on-curtilage and on-street, associated and ancillary site works. 98 units have been constructed and complete to date.
- **Reg. Ref. 3117/16** - Planning permission was granted on 12th December 2016 for revisions to permitted development Reg. Ref. 2405/12 to omit 23 no. 3-bedroom 2-storey houses, 3 no. 3-bedroom 2.5 storey houses, 7 no. 4-bedroom 2-storey houses, 6 no. 4-bedroom 2.5 storey houses and 36 no. 2-bedroom apartments (75 dwellings in total) and to now provide 33 no. 3-bedroom 2-storey houses, 17 no. 3-bedroom 2.5 storey houses and 25 no. 3-bedroom 3-storey houses (75 dwellings in total). The development includes 106 car spaces both on-curtilage and on-street, associated and ancillary site works. 51 units have been constructed and completed to date.
- **Reg. Ref. 4037/15** - Planning permission was granted on 11th April 2016 for revisions to permitted development Reg. Ref. 2405/12 to omit 7 no. 3-bedroom 2.5 storey houses, 6 no. 4-bedroom 2 storey houses and 4 no. 4-bedroom 2.5 storey houses and now to provide 17 no. 3-bedroom 2 storey

houses with 22 on-curtilage residential car parking spaces, 8 on-street visitor car parking spaces, and all ancillary and associated site works. The 17 units have been constructed and complete.

A summary of the constructed and complete units today as set out in the above permissions is depicted in table 1 below.

Development	No. of Units Permitted	Commercial Area Permitted (Gross)	Reg. Ref.	Developer	Status
Beau Park	411	223	0132/02	Kilboe Developments/Menolly Homes	Complete
Block 1	69	548	0132/02	Menolly Homes	Complete
Block 20	124	1005	0132/02	Kilboe Developments	Complete
Block 21	128	852	0132/02	Menolly Homes	Complete
Grange Road	18	0	0132/02	Gannon Homes Ltd	Complete
B18	98	0	5647/03	Gannon Homes Ltd	Complete
Site B1	36	0	0132/02	Gannon Homes Ltd	Complete
Block 16	87	1811	5645/04	Gannon Homes Ltd	Complete
Plot A	26	0	0132/02	Pierce Homes	Complete
Block 34, 35	140	0	3195/05	Pierce Homes	Complete
Block 36	39	368	3195/05	Gannon Homes Ltd	Complete
Block 12	35	8614	5645/04	Gannon Homes Ltd	Complete
Site C	41	0	1691/06	Pierce Homes	Complete
Block 22	31	638	0132/02	Banina Construction Ltd	Complete
Block 23	34	0	0132/02	Banina Construction Ltd	Complete
Parkedge Plot B	12	0	0132/02	Gannon Homes Ltd	Complete
Parkedge Plot C	20	0	3655/13	Gannon Homes Ltd	Complete
Block 12 (Apartments)	30	0	3154/13	Gannon Homes Ltd	Complete
Parkedge Plot D	8	0	2405/12	Gannon Homes Ltd	Complete
Beltree	99	0	3802/14	Gannon Homes Ltd	Complete
Marrsfield Avenue	13	0	3199/16	Gannon Homes Ltd	Complete
Beltree Park	98	0	2610/16	Gannon Homes Ltd	Complete (96 of 113)
Beltree Green	51	0	5117/16	Gannon Homes Ltd	Complete (51 of 76)
Plot E Park Terrace South	17	0	4037/15	Gannon Homes Ltd	Complete
Sub Total	1685	13950			
Under Construction					
Park Terrace South/Park Street	45	0	2903/16	Gannon Homes Ltd	Granted
Block 2 Main Street	84	395	3776/15	Gannon Homes Ltd	Under construction
Blocks 32, 33 Marrsfield Avenue	242	340	2478/17	Hollybrook New Homes	Planning granted
Block 31 Marrsfield Avenue	132	0	4266/16	Hollybrook New Homes	Planning granted
Sub Total	563	706			

Table 1 – Summary of Units Constructed to Date with associated reference numbers

Granted Developments that are under construction:

- **Reg. Ref. 2903/16** - Planning permission was granted on 19th December 2016 for revisions to permitted development Reg. Ref. 2405/12 to omit 6 no. 3-bedroom 2-storey houses, 13 no. 4-bedroom 3-storey houses, 1 no. 1-bedroom duplex unit, 2 no. 2-bedroom duplex units, 2 no. 3-bedroom triplex units, 3 no. 1-bedroom apartments and 20 no. 2-bedroom apartments (47 dwellings in total) and to now provide 13 no. 3-bedroom 2 storey houses, 3 No 3 bedroom 2.5 storey houses, 15 no. 3-bedroom 3-storey houses, 4 no. 1-bedroom apartments and 11 no. 2-bedroom apartments in a 4-storey block with windows to all elevations, and balconies to the northeast and southeast elevations (46 dwellings in total). This was revised to 45 units by way of additional information and these units are currently under construction.
- **Reg. Ref. 3776/15** - Planning permission was granted on 13th April 2016 for revisions to Block 2 Main Street for 84 no. dwellings, 1 no. shop and 1 no. coffee shop on lands bounded by Main Street, Dermot Street, Park Street and Friars' Street, Clongriffin, Dublin 13. The proposed development comprises 19 one bedroom apartments, 30 two bedroom apartments, 12 three bedroom apartments, 6 two bedroom duplexes and 17 three bedroom duplexes, together with a ground floor coffee shop (183sqm) and shop (183sqm). The 84 units are currently under construction.

- Reg. Ref. 2478/17** - Planning permission was granted on 11th August 2017 for amendments to Blocks 32 and 33 Marrsfield Avenue of the previously permitted scheme Reg. Ref. 4016/16. The amendments consist of the change of use and revisions/ alterations to Block A located at the Eastern and a change of use on the ground/ first floor from retail/ office use to residential use, thereby increasing the apartment units from 234 to 246, providing 2 no. 1 bed units and 10 no. 2 bed additional units. Block A building height will be reduced accordingly to take account of the retail/ office omission, minor internal basement layout changes are also proposed. Permission was granted for 242 units. This site is outside the control of the applicant to the north of Marrsfield Avenue and is currently under construction.
- Reg. Ref. 4266/16** - Planning permission was granted on 24th March 2017 for amendments to Blocks 31 Marrsfield Avenue of the previously permitted scheme Reg. Ref. 3380/15. The changes consist of revision/ alterations of Block A to include floor plan and elevational changes with the increase in apartment units from 34 to 42, (12 No. 1 bed units, 26 No. 2 bed units, 4 No. 3 bed units) ranging in height from 5 storeys and 6 storeys with a setback penthouse & minor revision/ alterations of Block B to include floor plan and elevational (East) changes with no change in apartment numbers/ bedspaces to this block (total increase in apartment numbers from 124 to 132). This site is outside the control of the applicant to the north of Marrsfield Avenue and is currently under construction.

Under Construction									
Park Terrace SouthPark Street	45			0			2903/16	Gannon Homes Ltd	Granted
Block 2 Main Street	94			366			3776/15	Gannon Homes Ltd	Under construction
Blocks 32_33 Marrsfield Avenue	242			340			2478/17	Hollybrook New Homes	Planning granted
Block 31 Marrsfield Avenue	132			0			4266/16	Hollybrook New Homes	Planning granted
Sub Total	593			796					

Table 2 – Summary of Units currently under construction with associated reference numbers

Developments that are permitted and intended to be implemented

- Reg. Ref. 2610/16** - Planning permission was granted on 8th July 2016 for the construction of 113 residential units comprising 19 no. 3-bedroom 3-storey houses, 58 no. 3-bedroom 2-storey houses, 21 no. 3-bedroom 2.5-storey houses, 4 no. 1-bedroom apartments and 11 no. 2-bedroom apartments in a 4-storey block with windows to all elevations, and balconies to the east and south elevations (113 dwellings in total). The development includes 152 car spaces both on-curtilage and on-street, associated and ancillary site works. 98 units have been constructed and complete to date and the remaining 15 units are intended to be implemented and constructed.
- Reg. Ref. 3117/16** - Planning permission was granted on 12th December 2016 for revisions to permitted development Reg. Ref. 2405/12 to omit 23 no. 3-bedroom 2-storey houses, 3 no. 3-bedroom 2.5 storey houses, 7 no. 4-bedroom 2-storey houses, 6 no. 4-bedroom 2.5 storey houses and 36 no. 2-bedroom apartments (75 dwellings in total) and to now provide 33 no. 3-bedroom 2-storey houses, 17 no. 3-bedroom 2.5 storey houses and 25 no. 3-

bedroom 3-storey houses (75 dwellings in total). The development includes 106 car spaces both on-curtilage and on-street, associated and ancillary site works. 51 units have been constructed and completed to date. 24 units are intended to be implemented and constructed.

- **Reg. Ref. 4101/16** - Planning permission was granted on 27th February 2017 for the construction of 23 new dwellings (5 no. 3 bed, 2 storey dwellings and 18 no. 3 bed 3 storey dwellings) at Marrsfield Avenue and Beltree Avenue. The 23 permitted units are intended to be constructed.
- **Reg. Ref. 2569/17** - Planning permission was granted on 28th June 2017 for the construction of a hotel development of 209 bedrooms at Block 19 and 20 apartments (with balconies) for short term letting for holiday and business use, (4 x 3 bed, 8 x 2 bed, 4 x2 bed + study, 4 x 1 bed). This permission is intended to be implemented.

Permitted – not yet implemented							
Beltree Park (Block A)	15		0		2610/16	Gannon Homes Ltd	Granted (15 of 113 not yet built)
Beltree Green	24		0		3117/16	Gannon Homes Ltd	Granted (24 of 75 not yet built)
Beltree Avenue	23		0		4101/16	Gannon Homes Ltd	Granted
Block 19 (Hotel)	20		0000		2569/17	Gannon Homes Ltd	Granted – 209 hotel beds
Sub Total	82		0000				

Table 3 – Summary of Units permitted and intended to be implemented

Developments that are permitted and not currently intended to be implemented in current form

- **Reg. Ref. 3634/16** - Planning permission was granted on 23rd November 2017 for a development consisting of 28 one bedroom, 97 two bedroom and 14 three bedroom apartments with ancillary common facilities including meeting rooms, gym, cycle park, concierge, entrance courtyard and roof gardens; 5 retail units (c.427 sqm total); and with 139 car spaces and ancillary engineering facilities at basement level; ESB substation and provision for antennae at top roof level. All comprised in a building ranging in height from 6 to 16 floors at Block 17, Clongriffin. This block is now subject to the current SHD applications.
- **Reg. Ref. 2016/15** - Planning permission was granted on 13th April 2015 for the construction of a 3-storey block of 16 dwellings (4 no. 1-bed apartments, 4 no. 2-bed apartments, 5 no. 2-bed duplex units and 3 no. 3-bed duplex units), with doors and windows on the west, east and north facades, and private terraces and balconies on the west and east sides; and a single 3-bed, 2 storey detached house with windows and doors on the west, east and south facades, and terraces on the west and south sides at Grange Lodge Avenue. 17 units were permitted and this is now subject to the current SHD applications (Block 29).
- **Reg. Ref. 2648/17** – Planning permission was granted on 5th January 2018 for the construction of 3 no. residential blocks: Block 25 (B25), Block 26 (B26) and Block 27 (B27) and all associated works required, including 181 car

parking spaces over the 3 sites at Marsfield Crescent, Clongriffin, Dublin 13. Block 25 consists of 48 units over 7 stories at a height of 31.5 m. Block 26 consists of 71 units over 14 stories and is 56.4 m at its highest point. Block 27 consists of 48 units over 6 stories with a height of 27.85 m. Block 27 also consists of a single storey underground basement car park and a crèche facility incorporated to part of Ground Floor Level. The 167 apartment units are made up of 42 one bedroom units, 99 two bedroom units, and 26 three bedroom units. The 3 residential blocks form part of the overall development plan for the Clongriffin development. This is now subject to the current SHD applications.

- Reg. Ref. 5470/08** - Planning permission was granted on 28th October 2009 for a 4-7 storey building over single basement level at Block 28 with commercial at ground floor and residential on upper floors, The commercial comprises: Unit 1-shop (140sqm); Unit 2-supermarket (1490sqm gross of which 1170sqm is net sales area) plus supermarket lobby (110sqm) with lifts accessing a new covered pedestrian bridge over Station Street linking in at first floor level to the approved multi-storey public car park in 'Block 12' of approved permission 5945/04; Unit 3-fitness centre (2960sqm gross) of which is 25m swimming pool hall (525sqm), changing facilities (320sqm), gym (250sqm), aerobics room (150sqm), sauna & steam rooms (30sqm), reception area with hot beverage servery and spectator seating (175sqm), associated staff & ancillary rooms, toilets and stores (210sqm), and associated plant rooms at basement level (1300sqm). The residential is 75no. dwelling units comprising 8no. 3-bed units, 63no. 2-bed units and 4no. 1-bed units with landscaped podium at first floor. Direct podium access is from Station Street and Station Hill. 75 no. car parking spaces and bicycle and bin storage are provided at basement level. Gated vehicular access is from the northeast corner for supermarket delivery and basement car parking. Windows, balconies and terraces are proposed to all street and podium elevations. Associated works include an ESB substation at ground floor and 11no. on-street car parking spaces on Station Street and the road to the north. This permission has expired and Block 28 is now subject to the current SHD applications.

Permitted - Not Being Implemented					
Block 17	139	0	3634/16	Gannon Homes Ltd	Granted
Grange Lodge Avenue	17	0	2016/15	Gannon Homes Ltd	Granted
Block 25	47	0	2648/17	Gannon Homes Ltd	Granted
Block 26	81	300	2648/17	Gannon Homes Ltd	Granted
Block 27	50	504	2648/17	Gannon Homes Ltd	Granted
Block 28	75	4700	5470/08	Gannon Homes Ltd	Granted
Sub Total	409	5504			

Table 4 – Summary of Units permitted and not being implemented that are now subject to current SHD proposals

There have been a number of additional applications lodged in relation to the overall lands at Clongriffin and these permissions are set out in Appendix Chapter 3 of this EIAR. This Appendix provides for a full overview of the planning applications lodged

in relation to the lands and to our knowledge provides a comprehensive overview of the planning applications lodged in relation to Clongriffin.

Chapter 4 – Population and Human Health

4.1 Introduction

This section of the Environmental Impact Assessment Report assesses the impact of the proposed development on the population, human health and human environment in the general area of the proposed Project at Clongriffin, Dublin 13. Specific aspects that will be examined include population levels, human health, residential amenity, impact on employment, commercial activity, land-use, community infrastructure and social facilities. Insofar as possible, this assessment has also considered impacts on the future residents, workers and visitors to the subject lands at Clongriffin.

4.2 Research Methodology

The following assessment of the predicted impacts on population and human health was undertaken based on local population information from the Central Statistics Office's Census of Population reports, the Regional Spatial and Economic Strategy 2019-2031, Dublin City Development Plan 2016-2022, and the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022).

A site visit and a community and social audit was also undertaken to appraise the location, the existing infrastructure and services in the area and any likely and significant potential impact upon human receptors.

The employment context was set out drawing principally on the most recently available statistics for the total number of persons at work, unemployment levels and employment categorised according to social group. Therefore, information on the economic performance of the area and the wider Dublin region is derived primarily from the 2016 Census results and statistics obtained from the ESRI.

The following assessment of land-use was undertaken based on a site visit appraisal and a review of the zoning objectives from the Dublin City Development Plan 2016-2022 and the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022).

4.3 Baseline Environment

The subject lands are located at Clongriffin, Dublin 13, and form part of the Clongriffin-Belmayne Local Area Plan (LAP). The subject lands are within the North Fringe (Clongriffin-Belmayne) Strategic Development and Regeneration Area (SDRA1), much of which is currently under construction. The lands are in close proximity to the Clongriffin DART Station and to the Malahide Quality Bus Corridor (QBC), thus providing great accessibility for the proposed development. The Hole in the Wall Road and the R139 provide direct access to the M1/M50 motorways. The surrounding built environment is characterised by mixed-use commercial and residential development with a mix of house types which have resulted in varying building heights and forms within the area.

4.4 Characteristics of the Proposed Development

The proposed Project consists of the construction of a mixed-use development comprising 1,950 residential units and c.22,727.5 sq.m. of commercial development provided across 15 no. blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build to

Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m. of commercial development including c.30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. childcare facilities, 1 no. 8-screen cinema, 1 no. commercial gym, 7 no. cafés/restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks, utilisation of existing infrastructure and all associated works necessary to facilitate the development. The proposed development will be provided on the 3 no. application sites which extend to a total of c.11.4 hectares.

4.5 Population

The population of the State experienced rapid growth in the period between 1996 and 2011. The latest Census results (i.e. 2016) show that Ireland's population stood at 4,761,865 in April 2016, an increase of 173,613 (3.8%) since April 2011.

This trend has been represented in the Leinster region, which has experienced a population increase of 5.2% in the last five years. In particular, the population growth of Dublin has been strong with a 6% rise on 2011 levels, almost twice that of the state overall.

Table 4.1 Population Trends 2006-2016

					Percentage Change %			
	2002	2006	2011	2016	2002-2006	2006-2011	2011-2016	2002-2016
Fingal County	196,413	239,992	273,051	296,020	+22.1	+13.8	+8.4	+50.7
Dublin City	495,781	506,211	525,383	554,554	+2.1	+3.8	+5.6	+11.9
Dun Laoghaire-Rathdown	191,792	194,038	206,995	218,018	+1.1	+6.6	+5.3	+13.7
South Dublin	238,835	246,935	265,174	278,767	+3.3	+7.3	+5.1	+16.7
Dublin	1,122,821	1,187,176	1,270,603	1,347,359	+5.7	+7.0	+6.04	+20.0
Co. Kildare	163,944	186,335	209,995	222,504	+13.6	+12.6	+6.0	+35.7
Co. Wicklow	114,676	126,194	136,448	142,425	+10.0	+8.1	+4.4	+24.2
Co. Meath	134,005	162,831	184,034	195,044	+21.5	+13.0	+6.0	+45.6
Leinster	2,105,579	2,295,123	2,501,208	2,633,311	+9.0	+9.0	+5.3	+25.1
State	3,917,203	4,239,848	4,581,269	4,761,865	+8.2	+8.1	+3.9	+21.6

The constituency of Dublin Bay North, within which the proposed Project is located, covering the areas of Darndale, Donaghmede, Edenmore, Coolock, Kilmore, Beaumont, Donnycarney, Killester, Clontarf, Baldoyle, Kilbarrick, Dollymount, Raheny, Sutton and Howth showed a strong population increase within the area at 16.9 percent between 2006 and 2011, and approximately 42.3 percent in the 2006-2016 period. Two neighbouring constituencies, Dublin North-West (7.7%) and Dublin Central (8.7%) also showed significant increases between 2006 and 2011, a trend which remained for the period of 2011-2016 which shows an increase in population levels of 7.1% for Dublin North-West and 8.1% for Dublin Central.

On a regional level, the Dublin Local Authorities experienced a slower rate of growth when compared with the other counties in the Greater Dublin Area. This mirrors an identifiable trend that emerged during the last two intercensal periods (1996-2002 and 2002-2006) where population in some of Dublin's traditional residential areas declined, whereas areas in the hinterland of Dublin experienced exponential growth.

The proposed development is located within the Grange B ED. Table 4.2 below shows the population growth within the District Electoral Divisions (DEDs) within the catchment area. Some of the DEDs within the area have experienced significant growth over the past decade; however minor fluctuations are noted for two EDs with some decreases in population recorded over intercensal periods since 2002 for Grange C, Grange D and Grange E. The subject lands are situated within the Grange B ED, an area that has seen major growth over the past decade with an increase of 149.1% recorded in the period between 2002 and 2016. The most densely populated areas in the vicinity continue to exhibit strong growth, with a rise of 26.9% recorded between 2006-2011 for the Grange A ED, and a further 8.3% increase between 2011-2016 (CSO Results: July 2016). This ED lies to the west of the subject lands.

Table 4.2 shows the population growth within the Electoral Divisions (EDs) within the catchment

					Percentage Change %			
	2002	2006	2011	2016	2002-2006	2006-2011	2011-2016	2002-2016
Grange A	7,301	7,050	8,948	9,696	-3.4	+26.9	+8.3	+32.8
Grange B	2,138	2,870	4,565	5,326	+34.2	+59	+16.6	+149.1
Grange C	3,673	3,305	3,048	3,082	-10	-7.7	+1	-16
Grange D	4,330	4,214	4,105	4,005	-2.6	-2.5	-2.4	-7.5
Grange E	2,930	2,662	2,580	2,680	-9.1	-3	+3.8	-8.5
<i>Grange Total</i>	<i>20,372</i>	<i>20,101</i>	<i>23,246</i>	<i>24,789</i>	<i>-1.3</i>	<i>+15.6</i>	<i>+6.6</i>	<i>+17.8</i>

CSO 2016 statistics indicate that Dublin City has one of the oldest populations, with an average age of just 37.9 years, which is similar to the national average of 37.4. In addition, household sizes within Dublin City are lower than that of the State, at 2.48 and 2.75 respectively. This can be attributed to an older population and single persons / working professionals within Dublin City and environs.

The factors outlined above have a knock-on implication on the provision of housing and its associated required facilities to cater for this increase in population within the local area.

4.5.1 Potential Impact of the Proposed Development

4.5.1.1 Construction Phase

The construction phase of the proposed development should not have any direct impact on the population of the area or the subject lands. It is expected that the work force will generally commute to the lands rather than take up residence in the immediate vicinity. However, the construction of any project has potential to give rise to an impact on health and safety of human beings if construction activities are not managed appropriately. Measures to address such health and safety considerations will be addressed in the Construction Management Plan for the development for implementation during the construction phase, in accordance with best practice.

4.5.1.2 Operational Phase

The operational phase of the proposed development will result in the provision of 1,950 no. residential units. The average household size in Dublin is currently 2.48 persons, which is based on the 2016 census of population. Based on this figure, it is anticipated that the proposed development could accommodate approximately 4,836 persons. However, it must be noted that the residential units provided on site range from 49 no. studios / 715 no. one bed units / 1,073 no. two bed units and 113 no. three bed units. Thus, this figure, when applying recent household size analysis and Dublin City Development Plan household size projections (Section 2.6.2 and Table 22 of the Housing Strategy of the Dublin City Development Plan 2016-2022), this could be estimated at a lower 3,900 persons.

4.5.2 Remedial and Reductive Measures

No remedial or reductive measures are proposed with reference to population.

4.5.3 Predicted Impact of the Proposed Development

4.5.3.1 Construction Phase

The construction phase of the development will have a negligible or neutral impact on population.

4.5.3.2 Operational Phase

The population analysis above suggests that the population of the area will continue to rise in the medium term. The subject lands form part of the Clongriffin-Belmayne LAP lands, which are zoned Z14 under the Dublin City Development Plan 2016-2022 for mixed-use development (of which residential and Z6 would be the predominant use) to cater for the predicted increase in population and rejuvenation of the area. The population increase predicted as a result of the operational stage of the proposed development ties in with broader trends in the area and the development will provide for this increase, therefore resulting in a positive impact on population.

4.5.4 Monitoring

There is no requirement for population monitoring.

4.6 Employment

CSO 2016 Statistics noted a State employment level of 2,006,641 and an unemployment level of 297,396. The employment level is up 199,281 since 2011 and the unemployment level is down significantly from the previous figure of 424,843 people, this was mainly due to the impact of the recession on employment levels during the census period. Dublin City, Dublin and Leinster as a whole experienced an increase in unemployment levels across the period 2006 and 2011, however all of these levels have experienced an increase between the period of 2011-2016, as per Census 2016 data seen below (Table 4.3).

Table 4.3 – Total Number of Persons 15+ at work in Dublin City, Dublin, Leinster and the State 2006—2016 (Source: Census 2016)

Change in Employment Between 2006-2016			
Area	2006	2011	2016
Dublin City	245,007	227,429	265,670

Dublin	572,896	540,729	614,776
Leinster	1,077,710	1,009,942	1,138,817
State	1,903,042	1,807,360	2,006,641

The 2019 Labour Force Survey Q1, which was published by the CSO in May 2019, states that the national employment level increased by 1.5% or 35,200 in the first quarter of 2019. This reduced the total number of persons unemployed in the State down to a total of 114,400, a significant decrease on 2016 census figures.

Table 4.4 – Summary of Quarterly National Household Survey (Q2) (Source: CSO)

Indicator	Quarter 2 2017	Annual Change
Employed	2,281,300	+50,500
Unemployed	128,800	-15,200
In labour force	2,410,100	+35,300
Not in labour force	1,467,000	+23,600

The long-term unemployment rate and the seasonally adjusted unemployment rates have also declined. This represents the eleventh quarter in succession where unemployment has declined indicating the recent growth in the economy following the recession. This is evident in the Census 2016 Employment statistics, which shows a rise in the number of persons at work—up 11% since 2011.

4.6.1 Potential Impact of the Proposed Development

4.6.1.1 Construction Phase

The proposed development will provide significant construction sector and related employment over the construction period of the development. It can be difficult to determine the exact numbers that may be employed directly on site during the construction phase as a number of workers may only be employed on a temporary basis as sub-contractors and may also work on other sites during the period. Should An Bord Pleanála and Dublin City Council grant planning permission for this proposed development, then it will be constructed over a phased basis, in accordance with the indicative proposed construction phasing plan for the proposed Project and in agreement with the Planning Authority. This adds to the complexity of determining the exact numbers that would be employed on the construction of the proposed development. Aside from the benefits of direct employment, it is anticipated that builder suppliers and other related services will benefit greatly from the construction phase of the proposed development.

The construction phase will be beneficial to the local economy due to the additional income and expenditure that will arise. This is considered to be a positive impact arising from the development.

4.6.1.2 Operational Phase

The proposed development will attract visitors to the area on a temporary basis, possibly sustaining and increasing the demand for local services, including shops, public houses, restaurants, etc.

In addition to the residential component, the proposed development comprises c.22,727.5 sq.m of commercial development across 15 no. blocks which will deliver new local employment opportunities, both full time and part time positions which will

become available, for the resident population, with an overall positive impact on employment.

4.6.2 Remedial and Reductive Measures

No adverse impacts on employment are predicted during the construction or operational phase of the development. No remedial or mitigation measures are considered necessary.

4.6.3 Predicted Impact of the Proposed Development

The predicted impact of the proposed development will be the same as that set out for potential impacts.

4.6.4 Monitoring

There is no requirement for economic monitoring.

4.7 Land-Use

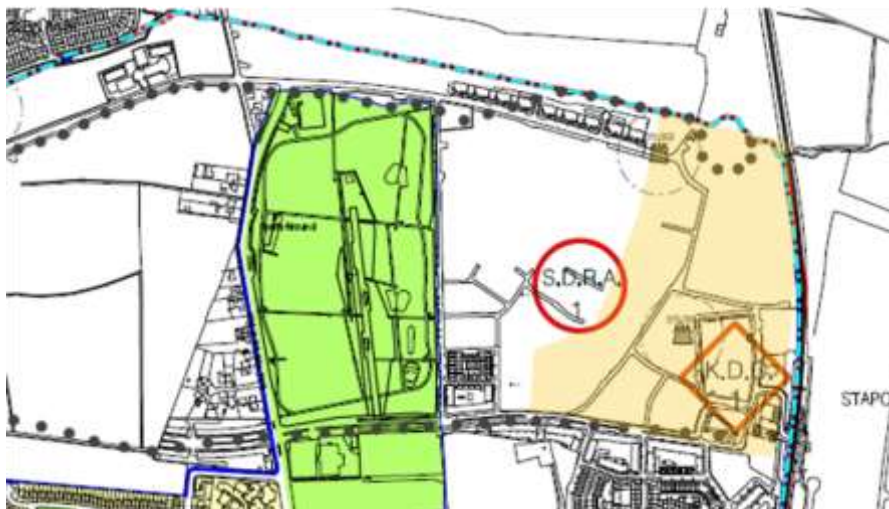
The subject lands are located in Clongriffin which is within the functional area of Dublin City Council. The subject site is located under the land use zoning for Z14 (SDRA), the main objective for this land use zoning is *“to seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and Z6 would be the predominant use.”*

Clongriffin has been identified as a Key District Centre (KDC) 1 ‘Clongriffin and Belmayne (North Fringe East and West)’ and belongs to the North Fringe (Clongriffin-Belmayne) Strategic Development and Regeneration Area (SDRA1), much of which is currently under construction.

As such, these areas are capable of accommodating significant mixed-use development, *“either through the development of greenfield sites or through the regeneration of the existing built city”*. The designation of the subject lands as a Key District Centre—KDC1 Clongriffin and Belmayne (North Fringe East and West), allows for it to act as a *“strong spatial hub providing a comprehensive range of commercial and community services to the surrounding populations.”*

The surrounding built environment is characterised by mixed-use commercial and residential developments, and the wider area comprises of residential development with a mix of house types all of which have resulted in varying building heights and forms within the area.

Fig. 4.1 – DCC Zoning for the Clongriffin area (SDRA1 and KDC1), site location highlighted in yellow



The proposed new buildings will provide much needed services for Clongriffin, most notably the provision of residential space. The subject lands are serviced by sufficient public transport and road capacity to accommodate the new community, which is in keeping with the Development Plan objective where the aim is “to create a highly sustainable, mixed-use urban district, based around high-quality public transport nodes, with a strong sense of place”. Therefore, it is submitted that the proposed Project would be appropriate for its context, ensuring there is sufficient population to sustain community and social infrastructure in the area.

4.7.1 Potential Impact of the Proposed Development

4.7.1.1 Construction Phase

The construction phase of the development involves a change in land-use of the site from a previous brownfield site, which has no current activity, to use as a temporary active construction site. As part of the completion of the masterplan lands, the site is considered suitable for construction activities to provide a development that will cater for a portion of the town’s planned population growth through the provision of new homes and new employment opportunities as a result of the proposed commercial development of the proposed Project.

With recommended construction mitigation measures in place as set out within this EIAR, the subject lands and surrounding area have the capacity to accommodate the construction of the proposed development without any significant risk of impact upon existing land-uses.

4.7.1.2 Operational Phase

The proposed development will result in a permanent change in land-use from a brownfield site to one of mixed-use (i.e. amenity, residential and commercial uses). The total proposed area to be developed comprises c.11.4 ha. This is considered to be a permanent positive impact on an area of land that has no current use.

The surrounding land-uses (i.e. educational, commercial and residential uses) will continue during the operational phase of the proposed development. The impact of

the proposed site is negligible as the site will have a positive impact on the surrounding area, on a site that previously had no use.

Therefore, while the proposed development will result in a permanent change in land-use from undeveloped land to mixed-use, this change is consistent with the zoning objectives for the lands as per the Dublin City Development Plan 2016-2022 and the Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022).

4.7.2 Remedial and Reductive Measures

No remedial or reductive measures are proposed with reference to land-use.

4.7.3 Predicted Impact of the Proposed Development

4.7.3.1 Construction Phase

The predicted impacts of the construction phase of the development is the same as that set out under the potential impacts of the construction phase of the development and are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.7.3.2 Operational Phase

The predicted impact is the same as that set out under the potential impacts of the operational phase of the development.

4.7.4 Monitoring

There is no requirement for land-use monitoring.

4.8 Community Infrastructure and Social Facilities

The Dublin City Development Plan 2016-2022 defines the term 'community infrastructure' as including infrastructure and facilities such as education facilities, facilities associated with social service provision, public health facilities, childcare facilities including private nurseries, community facilities, libraries and arts centres, religious buildings, and cemeteries. The current situation in relation to these facilities in the subject area is set out in the following sections.

Community

There is a full range of community infrastructure in Clongriffin and surrounding environs including schools, churches, library services and health services. The application site is situated approximately 9.5 km to the northeast of Dublin City Centre and within the Clongriffin town centre. The surrounding urban environment to the west and south of the lands is characterised by low to medium density housing developments. Existing residential estates in the vicinity include Grange Abbey, Belltree, Marrsfield, Park Terrace, Park Edge, and Beau Park, which adjoin the lands; and Newgrove Estate, Grattan Wood, Parkside, Castlemoyne, situated adjacent or within close proximity to the Clongriffin lands.

Education

A large number of schools, including several national schools are situated within the catchment area of the Clongriffin lands. Two primary schools are situated in close

proximity to the subject lands, to the north-west of the subject site, Belmayne Educate Together National School and St. Francis of Assisi Primary School. Each of these schools have over 400 students currently enrolled.

Other primary level schools in the area include Holy Trinity Senior National School, St. Joseph's National School, Darndale National School, Scoil Bhríde Junior National School, St. Francis Senior National School, St. Francis Junior National School, Scoil Eoin National School, St. Benedict's and St. Mary's National School, among others, reaching a total of twenty-three primary schools within the area. There are seven secondary schools in the Clongriffin area including Pobailscoil Neasain, St. Mary's Secondary School, Gaelcholaiste Reachrainn, Grange Community College, The Donahies Community School, Colaiste Dhulaigh, and Ardscoil La Salle. Furthermore, there are currently two schools under construction for the Belmayne/Clongriffin area.

Recreation

The area is well provided for in terms of active community recreation facilities including playing fields, parks and sports facilities. There is a great range of indoor recreational facilities within the area surrounding the site, including gyms, a cinema, multiple libraries and a mobile library stop, leisure and community centres.

Open space provision in the area includes Father Collins Park, which is a modern 26-hectare facility that has recently been developed at a cost of €25 million, is located to the west of the site. It consists of natural woodland and is Ireland's first wholly sustainable park, featuring wind turbines and waterways. As well, there is the Mayne River Linear Park north of the site which comprises leisure walks and a pond, and it is partially completed to date.

There are multiple recreational facilities being developed as part of the overall proposed scheme, both indoor and outdoor amenities, that will cater for the influx of future population on the site. These include the completion of open space areas and pocket parks within the subject lands, 1 no. 8-screen cinema within Block 15, 1 no. gym within Block 28, 1 no. men's shed within Block 4 and 1 no. community centre also within Block 4.

The total public open space to be provided under the finished scheme reaches an approximate of 53,962 sq.m. of which 51,328 sq.m. has been provided to date.

4.8.1 Potential Impact of the Proposed Development

4.8.1.1 Construction Phase

Construction impacts are expected to be short term, but some potential adverse local impacts can be expected due to the actual construction of the development. This is likely to be associated with construction traffic and any possible nuisance with such movements, for example an increase in daytime noise levels. The resident community in adjoining housing estates are most likely to be affected by these short term temporary impacts. Corresponding mitigation measures are set out in Chapter 9.0 which will reduce these impacts to an insignificant level.

The development may also have some positive impacts on passive recreational facilities within the area with additional revenue being derived from the use of these facilities by the construction workers. Impacts to the local population are considered to be neutral, imperceptible, temporary in nature and therefore not considered significant.

4.8.1.2 Operational Phase

The proposed development could have the following potential operational impacts:

1. An increase in traffic levels
2. Additional demand on local community services
3. An impact on the landscape and appearance in the area
4. Increased demands on services infrastructure

The predicted population increase arising from the proposed development will generate additional traffic loads in the Clongriffin area. The impacts in this regard are set out in detail in Chapter 13.0 Transportation.

The resident community will benefit from the additional passive amenity areas, to be provided as part of the proposed development. Father Collins Park is currently an important resource for the resident community in the Clongriffin area. The community will now benefit from improved access to Mayne River Linear Park and the overall proposed scheme and community facilities. In addition, there are several pocket parks and open space areas being put forward as part of the proposed development, in particular areas of public open space containing play equipment for children that will be available for future residents and the wider community, which will add to recreational amenity of the area.

4.8.2 Remedial and Reductive Measures

4.8.2.1 Construction Phase

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise are set out in relevant chapters of this EIAR.

4.8.2.2 Operational Phase

The proposed development, in conjunction with the full implementation of the overall Clongriffin-Belmayne LAP and masterplan vision for the lands will have a positive impact on the local community and will positively contribute to the vitality and viability of the local area, as well as passive amenity and open space provision.

4.8.3 Predicted Impact of the Proposed Development

4.8.3.1 Construction Phase

Through the implementation of remedial and reductive measures that have been set out above, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.8.3.2 Operational Phase

The predicted impact is the same as that set out under the potential impacts of the operational phase of the development.

4.8.4 Monitoring

There is no requirement for community monitoring.

4.9 Human Health

The subject lands are located at Clongriffin, Dublin 13, and form part of the Clongriffin-Belmayne Local Area Plan (LAP). The surrounding built environment is characterised by mixed-use commercial and residential development with a mix of house types which have resulted in varying building heights and forms within the area. 1,685 residential units have been constructed to date, with a further 503 units under construction. In terms of commercial development, 13,950 sq.m. of mixed-uses have been constructed within the town, with c.700 sq.m. of additional commercial development under construction. As a result, there is both a resident and working population in the immediate vicinity of the proposed Project. Human health is therefore a key consideration for assessment.

4.9.1 Potential Impact of the Proposed Development

4.9.1.1 Construction Phase

Construction impacts are expected to be short term, but some potential adverse local impacts can be expected due to the actual construction of the development. These impacts are likely to be associated with construction traffic movements and any possible nuisance with such movements, for example an increase in daytime noise levels, migration of surface contaminants and dust. The resident community in adjoining housing estates are most likely to be affected by these short term temporary impacts. Corresponding mitigation measures are set out in Chapter 13.0 which will reduce these impacts to an insignificant level.

The development may also have some positive impacts on passive recreational facilities within the area with additional revenue being derived from the use of these facilities by the construction workers.

4.9.1.2 Operational Phase

The proposed development could have the following potential operational impacts as a result of an increase in population levels:

1. An increase in traffic levels
2. Additional demand on local community services
3. An impact on the landscape and appearance in the area
4. Increased demands on services infrastructure

The impacts in regard to additional traffic loads in the Clongriffin area generated by the predicted population increase are set out in detail in Chapter 13.0 Transportation.

In relation to potential impacts on human health and safety during the operational phase are unlikely to result in any significant adverse impacts once the development is completed and operational. Environmental impacts of the proposed development and their relationship to human health is dealt with under the relevant noise and vibration, air and climate and traffic sections of the EIAR. There will not be significant impacts on human health as a result of the operation of the proposed development.

4.9.2 Remedial and Reductive Measures

4.9.2.1 Construction Phase

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise, traffic and air quality are set out in relevant chapters of this EIAR.

4.9.2.2 Operational Phase

No mitigation measures are required in respect of human health during the operational phase of the development.

4.9.3 Predicted Impact of the Proposed Development

4.9.3.1 Construction Phase

Through the implementation of remedial and reductive measures that have been set out above, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

4.9.3.2 Operational Phase

The proposed development will provide for the completion of the Clongriffin town centre and provide a mixed-use development that will be integrated with the surrounding area. The proposed development will make a positive contribution to the existing community by creating new places and spaces that are accessible not only to the residents of the scheme, but also to members of the public.

It is submitted that the completion of the masterplan lands at Clongriffin will not have an adverse impact on human health including mental health or wellbeing. Furthermore, there will be no adverse impacts on social, economic or environmental living conditions as a result of the completion of the Clongriffin town centre.

4.10 Monitoring

In terms of population and human health, measures to avoid negative impacts have been a key consideration in the design evolution of the buildings and overall layout of the proposed Project. Conditions will be attached to any grant of planning permission to ensure compliance in this regard. Building Regulations will also be adhered to during the construction phase to ensure a fully compliant development is constructed.

Health & Safety requirements, which are site specific to the proposed Project, will be carried out by the Project Manager on site.

Impacts from Air Quality, Noise and Vibration, Climate, and Traffic and Transport and monitoring measures in this regard will be addressed in the relevant chapters of this EIAR.

4.11 Reinstatement

No reinstatement will be required specifically for population and human health.

4.12 Interactions

The main interactions relating to population and human health are water, air quality, noise and traffic during the construction phase.

Construction activities will have a temporary impact the landscape of the area by way of visual disturbance. These impacts are not considered to be significant.

During the operational phase, the main interactions relating to population and human health are water, air quality, noise, and traffic. These impacts are not considered to be significant. Please refer to the associated chapters for further information on these interactions.

4.13 Difficulties Encountered in Compiling

Overall, no difficulties were encountered in compiling this chapter.

4.14 Cumulative Impacts

The assessment has considered cumulative impacts of construction and operational phases of the proposed Project, in conjunction with surrounding developments.

Multiple sites under construction at the one time may result in cumulative impacts in terms of noise and vibration during the construction period for human beings. However, such impacts are short term and considered neutral.

During the operational phase of the development, there will be commercial and residential developments in proximity to the proposed Project which will generate a synergy of uses in the area as a result of the proposed completion of the town centre lands. This will increase population, increase employment opportunities and increase community facilities such as medical and health services, childcare facilities, community centres, etc. and as such the long-term effect will be a positive and permanent impact for Clongriffin.

4.15 'Do-Nothing' Impact

A 'do-nothing' scenario is not considered valid as the lands are currently zoned for development under the City Development Plan. However, if a do-nothing scenario were to occur, the lands would not be developed and therefore would be no adverse impacts to population and human health. In the event that the proposed Project does not proceed, the lands would remain in its current condition in the short-term or until alternative development proposals are granted planning permission.

4.16 References

Central Statistics Office [CSO] (Census data results and analysis)

Economic and Social Research Institute [ESRI] (data results and analysis)

Regional Spatial and Economic Strategy 2019-2031

Dublin City Development Plan 2016-2022

Clongriffin-Belmayne Local Area Plan 2012-2018 (extended until 2022)

Chapter 5 - Biodiversity

5.1 Introduction

This biodiversity chapter has been prepared by Padraic Fogarty of OPENFIELD Ecological Services. Pádraic Fogarty has worked for over 20 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. OPENFIELD is a full member of the Institute of Environmental Management and Assessment (IEMA).

Under the EIA Directive as well as best practice methodology from the EPA, the analysis of impacts to biodiversity is an essential component of the EIA process, and so is a required chapter in any EIAR.

Under Article 6(3) of the Habitats Directive an ‘appropriate assessment’ of projects must be carried out to determine if significant effects are likely to arise to the integrity of Natura 2000 sites. An Appropriate Assessment Screening Report has been prepared as a separate stand-alone report.

5.2 Research Methodology

The assessment was carried out in accordance with the following best practice methodology: ‘Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland’ by the Institute of Ecology and Environmental Management (IEEM, 2016) and ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ by the Environmental Protection Agency (EPA, 2017).

A site visit was carried out on the 11th of October 2018. The site was surveyed in accordance with the Heritage Council’s Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt’s Guide to Habitats in Ireland (Fossitt, 2000). A species list for each habitat was compiled and these are presented in Appendix 5.2 of this Chapter. Species abundance was determined using the DAFOR scale (D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare). This is a subjective form of habitat description commonly used in conjunction with habitat classifications.

The nomenclature for vascular plants is taken from *The New Flora of the British Isles* (Stace, 2010) and for mosses and liverworts *A Checklist and Census Catalogue of British and Irish Bryophytes* (Hill et al., 2009).

Because of the highly modified/artificial nature of the site, the timing of the survey was not an impediment to a full assessment. It was possible to classify all habitats on the site to Fossitt level 3. A full species list is presented as an appendix to this chapter (see Appendix 5.1).

5.3 Receiving Environment

Best practice guidance suggests that an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). However, some impacts are not limited to this distance and so sensitive receptors further from the project footprint may need to be considered as this assessment progresses. This is shown in figure 5.1.

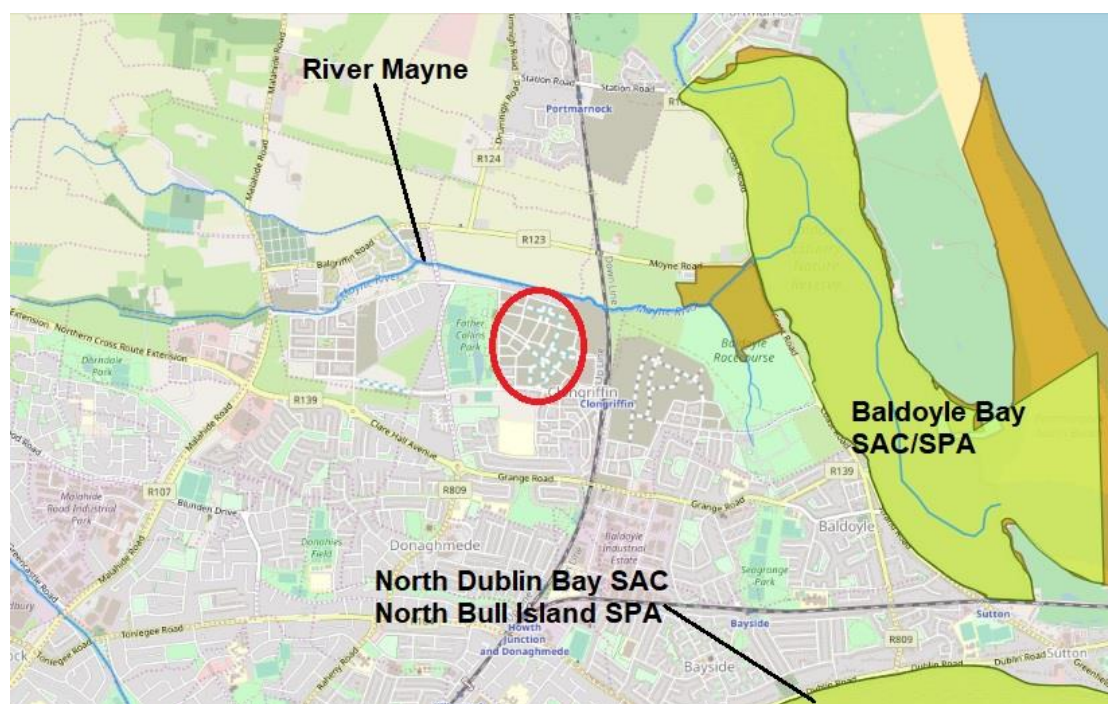


Figure 5.1 – Approximate 2km radius of proposed site. SACs are shown in tan while SPAs are shown in lime green (from www.epa.ie)

5.3.1 Literature Review

There are a number of designations for nature conservation in Ireland including National Park, National Nature Reserve, RAMSAR site, UNESCO Biosphere reserves, Special Protection Areas (SPA – Birds Directive), Special Areas of Conservation (SAC – Habitats Directive); and Natural Heritage Areas. The mechanism for these designations is through national or international legislation. Proposed NHAs (pNHA) are areas that have yet to gain full legislative protection. They are generally protected through the relevant County Development Plan. There is no system in Ireland for the designation of sites at a local, or county level. Within 2km of the site there is one area, the Baldoyle Bay, which is designated as a SPA, SAC and a pNHA. Baldoyle Bay is also internationally recognised as a Ramsar wetland site. The development is also connected to protected areas in Dublin Bay via the discharge of treated effluent from the Ringsend Wastewater Treatment Plant.

The SAC and SPA in Baldoyle are connected to the project via the Mayne River. Wastewater from the development will pass to the municipal sewer for Dublin City at Ringsend, and the point of discharge from this facility is also within a number of SACs and SPAs in Dublin Bay.

Baldoyle Bay SAC (code: 0199)

This SAC is the estuary of the Sluice and the Mayne Rivers that is largely enclosed by a sand spit that stretches from Portmarnock to Howth. At low tide it has large areas of exposed mud and sediment that support rich invertebrate communities. There are a number of habitats here that are listed in the EU's Habitats Directive Annex I while there are two plants recorded from the Bay that are protected under the Flora Protection Order: Borrer's Saltmarsh-grass *Puccinellia fasciculata* and Meadow Barley *Hordeum secalinum*.

The reasons why the bay falls under the SAC designation are set out in the qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 5.1 below. In this case the SAC is designated only for protected habitat types.

Table 5.1 – Qualifying interests for the Baldoyle Bay SAC (from NPWS)

Code	Habitats
1140	Mudflats and sandflats not covered by seawater at low tide
1310	Salicornia and other annuals colonizing mud and sand
1330	Atlantic salt meadows
1410	Mediterranean salt meadows

- **Tidal mudflats (1140).** This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- **Salicornia mudflats (1310):** This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependant upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.
- **Atlantic and Mediterranean salt meadows (1330 & 1410):** these are intertidal habitats that differ somewhat in their vegetation composition. They are dynamic habitats that depend upon processes of erosion, sedimentation and colonisation by a typical suite of salt-tolerant organisms. The main pressures are invasion by the non-native *Spartina anglica* and overgrazing by cattle and sheep.

Baldoyle Bay SPA (site codes: 4016)

Estuarine habitats are some of the most productive in the world and the nutrients that are deposited here fuel primary and secondary production (levels in the food chain) that in turn provide food for internationally significant numbers of wintering birds (Little, 2000). It had a mean of 5,780 birds between the winters of 2006/07 and 2010/11 (Crowe et al., 2012). Specifically it has a number of species which are ‘features of interest’ of the SPA, along with ‘wetlands and waterbirds’. Table 5.2 details these.

Table 5.2 – Features of Interest for the Baldoyle Bay SPA (from NPWS)

Species	Status ¹
<i>Branta bernicula hrota</i> Light-bellied brent goose	Amber
<i>Charadrius hiaticula</i> Ringed plover	Green
<i>Limosa lapponica</i> Bar-tailed godwit	Amber
<i>Pluvialis apricaria</i> Golden plover	Red

¹ Birds of Conservation Concern in Ireland. Colhoun & Cummins, 2013

<i>Pluvialis squatarola</i>	Grey plover	Amber
<i>Tadorna tadorna</i>	Shelduck	Amber
Wetlands & Waterbirds		

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range is considered stable.

Natura areas in Dublin Bay

The South Dublin Bay and River Tolka Estuary SPA (site code: 4024); and the South Dublin Bay SAC (0210) are considered to fall within the zone of influence as they are within the hydrological catchment of the site.

Table 5.3 – Features of interest for the South Dublin Bay & River Tolka Estuary SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]
Grey Plover (<i>Pluvialis squatarola</i>) [A140]
Knot (<i>Calidris canutus</i>) [A143]
Sanderling (<i>Calidris alba</i>) [A144]

Dunlin (<i>Calidris alpina</i>) [A149]
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]
Redshank (<i>Tringa totanus</i>) [A162]
Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Wetlands & Waterbirds [A999]

The **South Dublin Bay and Tolka Estuary SPA** (side code: 4024) is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. These designations encompass all of the intertidal areas in Dublin Bay from south of Bull Island to the pier in Dun Laoghaire. Wintering birds in particular are attracted to these areas in great number as they shelter from harsh conditions further north and avail of the available food supply within sands and soft sediments. Table 1 lists the features of interest for both of the SPAs.

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.

- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not specific to any particular portion of the Bay. Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 5.4 shows the most recent count data available².

Table 5.4 – Annual count data for Dublin Bay from the Irish Wetland Birds Survey (IWeBS)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Count	27,931	30,725	30,021	35,878	33,486	31,608

There were also internationally important populations of particular birds recorded in Dublin Bay (i.e. over 1% of the world population): Light-bellied brent geese *Branta bernicula hrota*; Black-tailed godwit *Limosa limosa*; Knot *Calidris canutus* and Bar-tailed godwit *L. lapponica*.

² <https://fl.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

The **South Dublin Bay SAC** (side code: 0210) is concentrated on the intertidal area of Sandymount Strand. It has one qualifying interest which is mudflats and sandflats not covered by seawater at low tide. Tidal mudflats (habitat code: 1140) is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas. At a national scale, it is assessed as of 'intermediate' status (NPWS, 2013).

The **North Dublin Bay SAC** (site code: 0206) is focussed on the sand spit on the North Bull island. The qualifying interests for it are shown in table 5.5. The status of the habitat is also given and this is an assessment of its range, area, structure and function, and future prospects on a national level and not within the SAC itself.

Table 5.5 – Qualifying interests for the North Dublin Bay SAC

Habitat/Species	Status ³
Mudflats and sandflats not covered by seawater at low tide	Intermediate
Salicornia and other annuals colonizing mud and sand	Intermediate
Atlantic salt meadows	Intermediate
Mediterranean salt meadows	Intermediate
Annual vegetation of drift lines	Intermediate
Embryonic shifting dunes	Intermediate
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Intermediate
Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
Humid dune slacks	Intermediate
<i>Petalophyllum ralfsii</i> Petalwort	Good

- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.

³ NPWS. 2013. *The Status of EU Protected Habitats and Species in Ireland*. Habitat Assessments Volume 2. Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.
- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

The NPWS web site (www.npws.ie) contains a mapping tool that indicates historic records of legally protected species within a selected Ordnance Survey (OS) 10km grid square. The Clongriffin site is located within the square O24 and a number protected plant species are recorded. These are detailed in table 5.6. It must be noted that this list cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

Table 5.6 – Known records of protected species from the O24 square (from www.npws.ie)

Species	Habitat ^{4 5}	Current status ⁶
<i>Centaurium pulchellum</i> Lesser Centaury	Sandhills, dune-slacks and margins of brackish lakes	Current
<i>Clinopodium acinos</i> Basil Thyme	Field margins and sandy or gravelly places	Non-native; Record pre-1970
<i>Galeopsis angustifolia</i> Red Hemp-nettle	Calcareous gravels	Records pre-1986

⁴ Parnell et al., 2012

⁵ Hayden & Harrington, 2001

⁶ Preston et al., 2002

Species	Habitat ⁴ 5	Current status ⁶
<i>Hordeum secalinum</i> Meadow Barley	Upper parts of brackish marshes, chiefly near the sea	Current (O24)
<i>Mertensia maritima</i> Oysterplant	Shingle shores	Record pre-1970
<i>Papaver hybridum</i> Rough Poppy	Sandy fields	Non-native; Record pre-1986
<i>Puccinellia fasciculata</i> Borrer's Salt-marsh grass	Muddy inlets on the coast	Current
<i>Saxifraga granulata</i> Meadow saxifrage	Sandhills and pastures near the east coast	Record pre-1970
<i>Scleranthus annuus</i> Annual Knawel	Waste places and roadsides on dry, sandy soils	Record pre-1970
<i>Viola hirta</i> Hairy Violet	Sand dunes, grasslands, limestone rocks	Current, records from Feltrim Hill

As can be seen there are two current records of protected plants from this 10km square. The record of Hairy St. John's-wort is noted as the "east side of Santry woods" in the *Flora of County Dublin* while this reference gives the location of the Hairy Violet as coastal locations near Donabate and Portrane (Doogue et al., 1998).

The site is within the Clongriffin-Belmayne Local Area Plan 2012 area and as part of the production of this plan the lands were subjected to a Strategic Environmental Assessment (SEA) and an Appropriate Assessment (AA). These assessments confirmed that there were no areas designated for nature conservation within, or directly adjacent to the subject lands. It concluded: "The Natura Impact Report has determined that, assuming the successful implementation of the Policies and Objectives contained within the Local Area Plan, there will be no adverse effects on the integrity of Natura 2000 sites arising from the plan in isolation or in combination with other plans and projects acting in the same area."

Water quality in rivers is monitored on an on-going basis by the Environmental Protection Agency (EPA). It assesses the pollution status of a stretch of water by analysing the invertebrates living in the substrate as different species show varying sensitivities to pollution. They arrive at a 'Q-Value' where Q1 = grossly polluted and

Q5 = pristine quality (Toner et al., 2005). The site is situated within the catchment of the Mayne River, which flows approximately 280m to the north of the boundary.

The River Mayne is a relatively short water course that rises to the east of Dublin airport and enters the Irish Sea at Baldoyle. The Environmental Protection Agency maintains one monitoring station, at the Wellfield Bridge, and here ecological conditions were most recently (2016) assessed as 'poor'. Under the Water Framework Directive the overall status of the Mayne catchment has been assessed as of 'poor' status. This indicates point or diffuse pollution sources, or other ecological problems such as obstructions. The ecological quality of the transitional water body at Baldoyle Bay has been assessed as 'eutrophic', indicating 'bad' status. Dublin Bay is currently assessed as 'good status'.

5.3.2 Stakeholder Consultation

Because of the low ecological sensitivity of this site, third party observations were not sought.

5.3.3 Site Survey

Aerial photography and historic mapping from the OSI shows that this region was in agricultural use until relatively recent times. Nevertheless, since 2000 land use has increasingly changed from open agricultural land to urban uses and built development.

5.3.4.1 Flora

All areas are composed of a combination of **spoil and bare ground – ED2** and **recolonising bare ground – ED3**. This is characteristic of highly disturbed ground and is not of high ecological value. Typical species include Butterfly-bush *Buddleja davidii*, Clovers *Trifolium sp.*, Thistles *Cirsium sp.*, Rushes *Juncus sp.*, and Docks *Rumex sp.* Saplings of Grey Willows *Salix cinerea* are found throughout.

There are no alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011. There are no water courses or drainage ditches which could provide a direct pathway to the Mayne River.

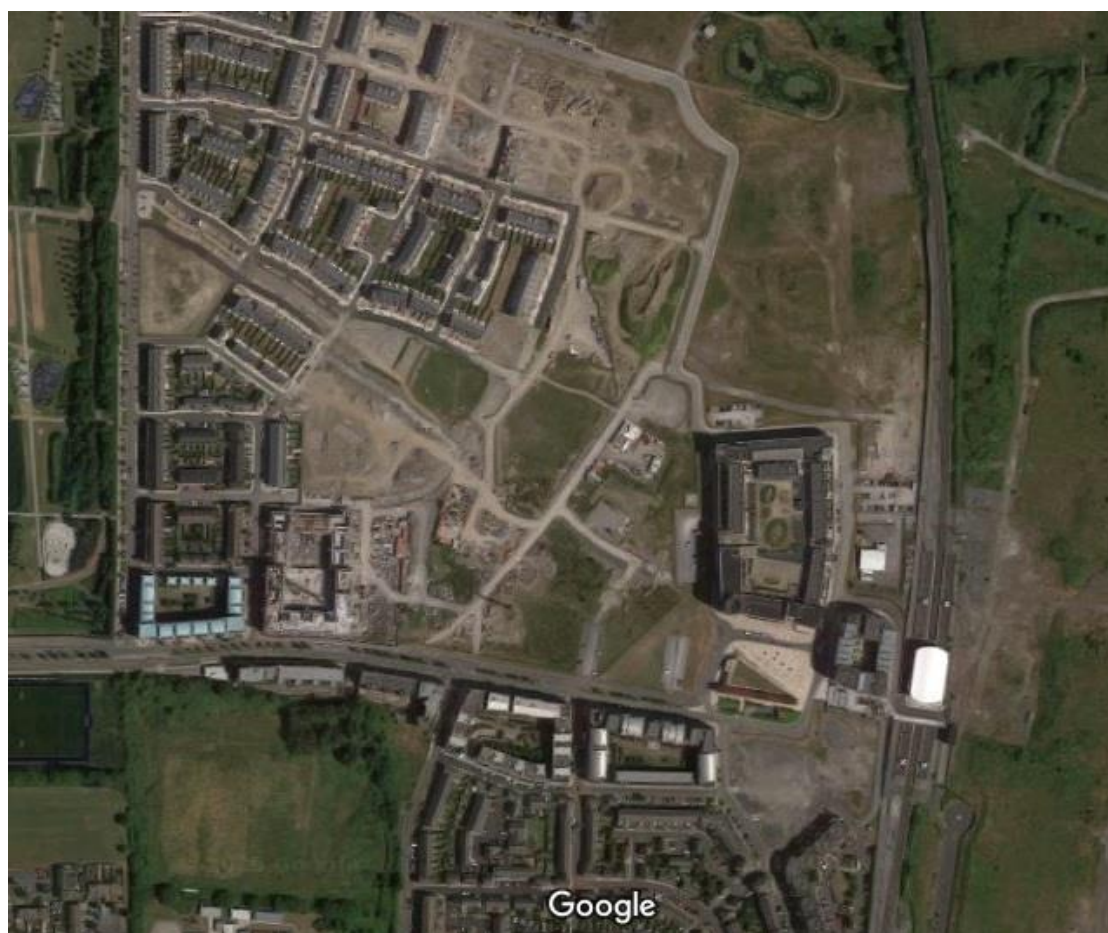


Figure 5.2 – Aerial view of the Clongriffin lands. All habitats are a mosaic of bare soil or re-colonising bare ground.

5.3.4.2 Fauna

The site survey included incidental sightings or proxy signs (prints, scats etc.) of faunal activity, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. Table 5.2 details those mammals that are protected under national or international legislation in Ireland.

Table 5.7 – Protected mammals in Ireland and their known status within the zone of influence (Harris & Yalden, 2008)⁷ Those that are greyed out indicate either that suitable habitat is not present or that there are no records of the species from the National Biodiversity Data Centre.

Species	Level of Protection	Habitat ⁸	Red List Status ⁹
Otter <i>Lutra lutra</i>	Annex II & IV Habitats Directive; Wildlife (Amendment) Act, 2000	Rivers and wetlands	Near Threatened
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>		Disused, undisturbed old buildings, caves and mines	Least Concern
Grey seal <i>Halichoerus grypus</i>	Annex II & V Habitats Directive; Wildlife (Amendment) Act, 2000	Coastal habitats	-
Common seal <i>Phocaena phocaena</i>			-
Whiskered bat <i>Myotis mystacinus</i>	Annex IV Habitats Directive; Wildlife (Amendment) Act, 2000	Gardens, parks and riparian habitats	Least Concern
Natterer's bat <i>Myotis nattereri</i>		Woodland	Least Concern
Leisler's bat <i>Nyctalus leisleri</i>		Open areas roosting in attics	Near Threatened
Brown long-eared bat <i>Plecotus auritus</i>		Woodland	Least Concern
Common pipistrelle <i>Pipistrellus pipistrellus</i>		Farmland, woodland and urban areas	Least Concern
Soprano pipistrelle		Rivers, lakes & riparian woodland	Least Concern

⁷ Excludes marine mammals

⁸ Harris & Yalden, 2008

⁹ Marnell et al., 2009

<i>Pipistrellus pygmaeus</i>			
Daubenton's bat <i>Myotis daubentonii</i>		Woodlands and bridges associated with open water	Least Concern
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>		Parkland, mixed and pine forests, riparian habitats	Least Concern
Irish hare <i>Lepus timidus hibernicus</i>	Annex V Habitats Directive; Wildlife (Amendment) Act, 2000	Wide range of habitats	Least Concern
Pine Marten <i>Martes martes</i>		Broad-leaved and coniferous forest	Least Concern
Hedgehog <i>Erinaceus europaeus</i>	Wildlife (Amendment) Act, 2000	Woodlands and hedgerows	Least Concern
Pygmy shrew <i>Sorex minutus</i>		Woodlands, heathland, and wetlands	Least Concern
Red squirrel <i>Sciurus vulgaris</i>		Woodlands	Near Threatened
Irish stoat <i>Mustela erminea hibernica</i>		Wide range of habitats	Least Concern
Badger <i>Meles meles</i>		Farmland, woodland and urban areas	Least Concern
Red deer <i>Cervus elaphus</i>		Woodland and open moorland	Least Concern
Fallow deer <i>Dama dama</i>		Mixed woodland but feeding in open habitat	Least Concern
Sika deer <i>Cervus nippon</i>		Coniferous woodland and adjacent heaths	-

No direct evidence of any mammal was recorded. Given that the site is securely fenced, and the level of construction activity underway, opportunities for larger mammals are severely limited.

While limited data are available on the distribution of Hedgehog, Pygmy Shrew and Irish Stoat, they are considered ubiquitous in the Irish countryside and suitable habitat is available for them (Hayden & Harrington, 2001).

There are no features on the site for roosting Bats (Hundt, 2012) with no suitable buildings or veteran trees with holes, cracks etc. Vegetation on site may be of value to those Bat species which are tolerant of artificial light.

No evidence of Badger activity was found in any area of the site and for reasons outlined above the site provides few opportunities for these large mammals. No setts are present and there are no records of Badger from this vicinity from the National Biodiversity Data Centre.

There are no recent records of Otter from along the River Mayne from the National Biodiversity Data Centre (i.e. since the 1980s). There are no water courses or wetlands which could provide suitable habitat for Otter.

Suitable habitat for breeding birds is confined to ground level or low patches of Bramble *Rubus fruticosus agg.* A Snipe *Gallinago gallinago* was flushed during the survey while a Wren *Troglodytes troglodytes* was also noted. Wintering Snipe frequently avail of rough ground while Wren is among the most common birds in Ireland.

Of those species listed by BirdWatch Ireland as being of high conservation concern (Colhoun & Cummins, 2013) Grey Partridge *Perdix perdix*, Corncrake *Crex crex*, Barn Owl *Tyto alba*, and Yellowhammer *Emberiza citrinella* were recorded as breeding in North Dublin during the 2007-11 Bird Atlas project (Balmer et al., 2013). There is no suitable breeding habitat for Barn Owl or Yellowhammer on the subject lands while records for Corncrake and Grey Partridge date from pre-1972.

Common Frog *Rana temporaria* and Common Lizard *Lacerta vivipara* are protected under the Wildlife Act 1976 and may be present on this site. There is no suitable habitat for spawning Frogs. Smooth Newts *Lissotriton vulgaris* are to be found in Dublin but there are no permanent ponds on this site in which they are likely to be breeding.

Monitoring by Inland Fisheries Ireland, from 2011, indicated that the River Mayne holds populations of European Eel *Anguilla anguilla* and Three-spined Stickleback

*Gasterosteus aculaetus*¹⁰. The river is not believed to be of salmonid status (i.e. holding a population of Brown Trout *Salmo trutta* or Atlantic Salmon *S. salar*).

Most habitats, even highly altered ones, are likely to harbour a wide diversity of invertebrates. In Ireland only one insect is protected by law, the Marsh Fritillary butterfly *Euphydryas aurinia*, and this is not to be found on farmland. Other protected invertebrates are confined to freshwater and wetland habitats and so are not present on this site.

5.3.4.3 Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site

In summary it has been seen that the application site is not within, or adjacent to, any area that has been designated for nature conservation at a national or international level. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are no alien invasive plant species and no plants which are listed as rare or protected under law.

Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). These are reproduced in table 5.8. From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 5.9.

Table 5.8 Site evaluation scheme taken from NRA guidance 2009

Site Rating	Qualifying criteria
A - International importance	<p>SAC, SPA or site qualifying as such.</p> <p>Sites containing 'best examples' of Annex I priority habitats (Habitats Directive).</p> <p>Resident or regularly occurring populations of species listed under Annex II (Habitats Directive); Annex I (Birds Directive); the Bonn or Berne Conventions.</p> <p>RAMSAR site; UNESCO biosphere reserve;</p> <p>Designated Salmonid water</p>

¹⁰ From www.wfdfish.ie

B - National importance	<p>NHA. Statutory Nature Reserves. Refuge for Flora and Fauna. National Park.</p> <p>Resident or regularly occurring populations of species listed in the Wildlife Act or Red Data List</p> <p>'Viable' examples of habitats listed in Annex I of the Habitats Directive</p>
C - County importance	<p>Area of Special Amenity, Tree Protection Orders, high amenity (designated under a County Development Plan)</p> <p>Resident or regularly occurring populations (important at a county level, defined as >1% of the county population) of European, Wildlife Act or Red Data Book species</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the county</p>
D - Local importance, higher value	<p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the locality</p> <p>Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.</p>
E - Local importance, lower value	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links.</p>

Table 5.9 Evaluation of the importance of habitats and species on the Clongriffin site

<p>Recolonising Bare Ground – ED3/Bare soil – ED2</p>	<p>Local Importance (Lower Value). Small areas of semi-natural habitat that are of some local importance for wildlife</p>
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5.4 Characteristics of the Proposed Development

The current application is for development of residential development on lands at Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29.

5.5 Potential Impact of the Proposed Development

This section provides a description of the potential impacts that the proposed development may have on biodiversity in the absence of mitigation. Methodology for determining the significance of an impact has been published by the EPA. This is based on the valuation of the ecological feature in question (table 5.9) and the scale of the predicted impact.

5.5.1 Construction Phase

The following potential impacts are likely to occur during the construction phase in the absence of mitigation:

1. The removal of habitats of low local value. The effect of this impact on biodiversity is imperceptible.
2. The direct mortality of species during land clearance. This impact is most acute during the bird breeding season which can be assumed to last from March to August inclusive. In this instance there are no areas of suitable vegetation generally used by breeding birds. While all nests and eggs are protected under the Wildlife Act (regardless of the date) this effect is considered to be imperceptible.
3. Pollution of water courses through the ingress of silt, oils and other toxic substances. There are no direct pathways to water courses from this site. Rainwater generally percolates to ground although in heavy rain or flood conditions this flows to surface water gullies in the vicinity. The subject lands are served by an existing storm water drainage system approved and constructed under the Clongriffin parent planning Reg. Ref. 0132/02. The surface water sewers constructed under the parent planning permission discharge to the attenuation pond at the northeast of the Clongriffin scheme before discharging to the Mayne River at a controlled rate of 249 l/s, as permitted under the parent planning permission. The effect to water quality and aquatic biodiversity from this aspect of the project is therefore imperceptible.

5.5.2 Operation Phase

The following potential impacts are likely to occur during the operation phase in the absence of mitigation:

4. Impacts to species through the disruption of ecological corridors. No ecological corridors are to be fragmented as a result of this development. This impact is neutral.

5. Pollution of water from foul wastewater arising from the development. Wastewater from the proposed development will be sent to the wastewater treatment plant at Ringsend in Dublin. Emissions from the plant are currently not in compliance with the Urban Wastewater Treatment Directive. Irish Water, the authority in charge of the wastewater treatment network, has prioritised the enhancement of the Ringsend plant in its Proposed Capital Investment Programme 2014-2016. In February 2018 Irish Water announced proposals to upgrade the Ringsend plant and apply for planning permission for a new plant in north County Dublin. This will see improved treatment standards and will increase network capacity by 50%, with a target completion date of 2023. The effect of the increased loading to the plant is not significant.

6. Pollution of water from surface water run-off. The Greater Dublin Strategic Drainage Study (2005) identified issues of urban expansion leading to an increased risk of flooding in the city and a deterioration of water quality. This arises where soil and natural vegetation, which is permeable to rainwater and slows its flow, is replaced with impermeable hard surfaces. Various SUDS features have been incorporated into the development as part of the sustainable urban drainage design for Clongriffin. These include attenuation storage, green roofs, filter drains, permeable paving bio-retention tree pits,

7. Disturbance to species from increased human activity (including vehicle traffic, noise, artificial light, pets etc.). This effect must be considered in the context of the existing environment, which is already within a high-density residential area with transport infrastructure. This brings with it noise and light pollution which will both increase with this development. Artificial lighting is known to have impacts on animal activity through both attractive and repellent forces. The effects are species and location specific, for instance some Bats are attracted to lights as prey items become concentrated around light sources (Rich & Longcore, 2006 eds). However other species may be deterred. Impacts are also related to the type of lighting used and so

the ultimate impact is dependent on the species of Bat that may be present within the zone of influence and the final design of lighting for the project. Brown Long-eared Bat, Whiskered bat, Natterer's bat, Daubenton's bat and Lesser Horseshoe Bat are considered by Bat Conservation Ireland as being most susceptible to lighting effects. This area is of low value for bats given the already heavily built-up environment and so this effect is not significant.

There has been little study meanwhile on the effects of noise on terrestrial animals however it is believed that many species can adapt to elevated ambient noise levels.

The introduction of household pets, particularly cats, has been a cause of concern given the degree to which they prey on wild mammals and birds. There is no known research on this issue from Ireland. However the UK's Royal Society for the Protection of Birds states on its website that "despite the large numbers of birds killed [estimated at up to 55 million per annum in the UK], there is no scientific evidence that predation by cats in gardens is having any impact on bird populations UK-wide."¹¹

8. No impacts to protected areas are predicted to occur. A separate Screening Report for Appropriate Assessment has been prepared and this concludes that significant effects to Natura 2000 areas are not predicted either alone or in combination with other plans and projects.

Table 5.10 – Nature of predicted impacts in the absence of mitigation

	Impact	Direct/ Indirect	Cumulative	Duration ¹²	Reversible?	Positive/ Negative
Construction Phase						
1	Habitat loss	Direct	Yes	Permanent	No	Negative
2	Species Mortality	Direct	No	Permanent	No	Negative
3	Pollution of water courses	Indirect	Yes	Temporary	Yes	Negative
Operation Phase						
4	Disruption to ecological corridors	Indirect	Yes	N/A	N/A	N/A
5	Wastewater	Indirect	Yes	Permanent	Yes	Negative

¹¹ <http://www.rspb.org.uk/advice/gardening/unwantedvisitors/cats/birddeclines.aspx>

¹² Temporary: up to 1 year; Short-term: 1-7 years; Medium-term: 7-15 years; Long-term: 15-60 years; Permanent: >60 years (NRA, 2006)

6	Surface water run-off	Indirect	Yes	Permanent	Yes	Neutral
7	Disturbance to species during operation	Indirect	Yes	Permanent	Yes	Negative
8	Protected areas	Indirect	Yes	Neutral	No	Neutral

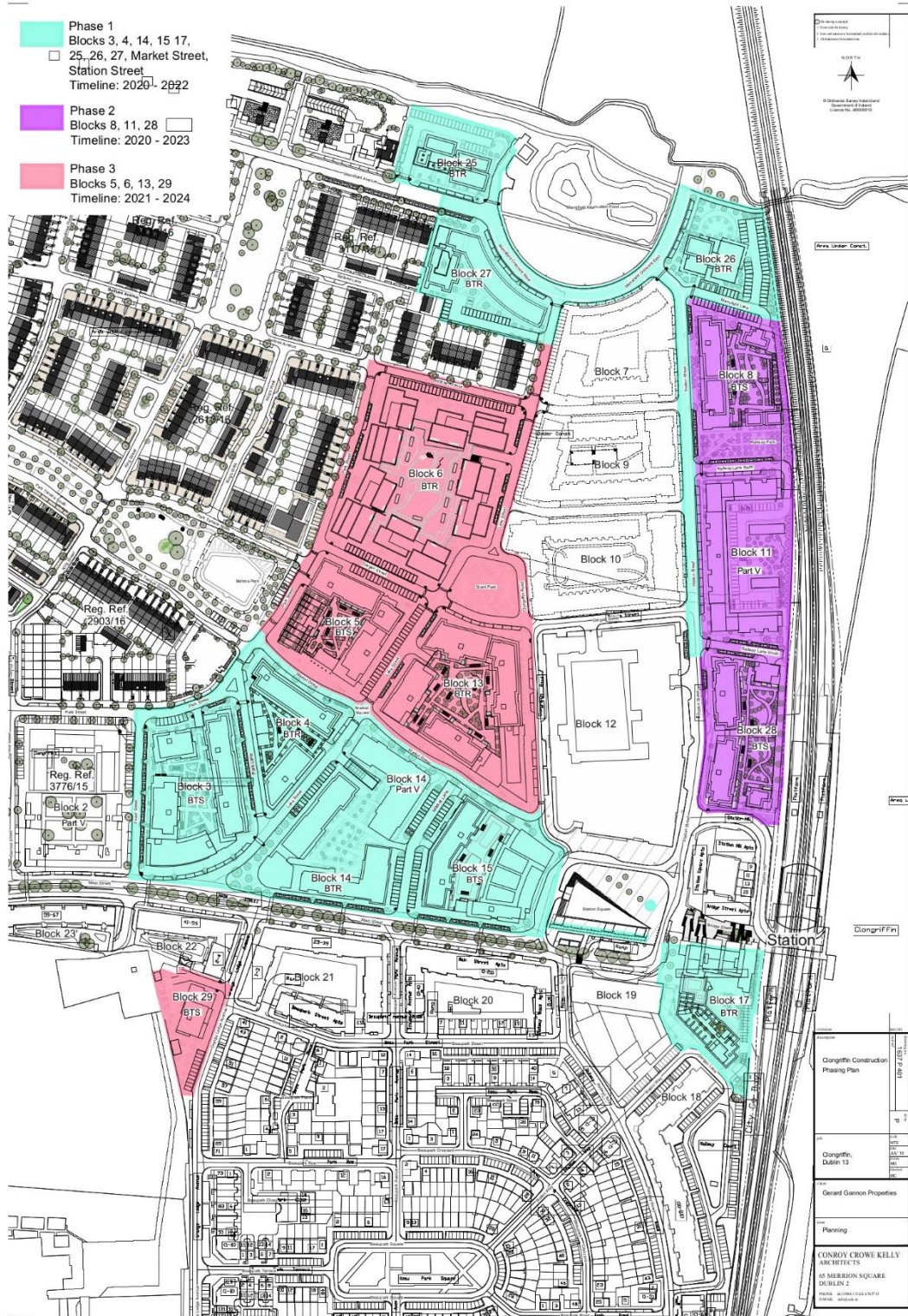


Figure 5.5 – Site layout

Table 5.11 below assesses the scale and likelihood of the predicted impacts of the proposed development in the absence of mitigation.

Table 5.11 – Scale and likelihood of predicted impacts in the absence of mitigation.

Impact		Magnitude	As proportion of resource	Likelihood
Construction Phase				
1	Habitat loss	~33,000m ² of bare soil and recolonising bare ground	100%	Certain
2	Mortality to animals during construction	Not possible to quantify	N/A	Unlikely given lack of little suitable habitat
3	Pollution of water	Not possible to quantify but no works to water courses will occur	Could impact on entire downstream stretch of this river system	Unlikely due to presence of existing attenuation measures
Operation Phase				
4	Disruption to ecological corridors	N/A	N/A	No impacts
5	Wastewater pollution	Not possible to quantify	N/A	Unlikely
6	Surface water pollution	Not possible to quantify	N/A	Positive impact likely given the attenuation measures to be included
7	Disturbance to species from increased human activity (incl. noise/ lighting/ pets)	Not possible to quantify	N/A	Unlikely given nature to species remaining
8	Impacts to protected areas	No likely to occur	N/A	Unlikely

Tables 5.9 to 5.11 are combined to determine the level of significance of any given impact. This is shown in table 5.12.

Table 5.12: Significance level of likely impacts in the absence of mitigation

Impact		Significance
Construction phase		
1	Habitat loss of features of low local value	Imperceptible
2	Mortality to animals during construction	Not significant
3	Pollution of water during construction phase	Imperceptible
4	Disruption to ecological corridors	Neutral
5	Wastewater pollution	Not significant
6	Surface water pollution	Neutral
7	Disturbance to species from human disturbance	Imperceptible
8	Impacts to protected areas	Neutral

Overall it can be seen that no potential significant impacts are predicted to occur as a result of this project in the absence of mitigation.

5.5.3 Do Nothing Impact

The subject lands are currently highly modified in preparation for construction works. Should this project not go ahead it would likely revert to scrub and woodland.

The first River Basin Management Plan (RBMP) was published under the EU's Water Framework Directive in 2010. This set out to attain 'good ecological status' of all water bodies by 2027 at the latest. It included a 'programme of measures' that was to address point or diffuse pressures on water quality. The Mayne River is currently assessed as 'poor' while Baldoyle Bay is 'eutrophic'. Under the second RBMP 2018-2021 the Mayne River is identified as one of 190 'priority areas for action'.

5.6 Remedial and Reductive Measures

These measures include avoidance, reduction and constructive mitigation measures as set out in Section 4.7 of the Development Management Guidelines. Under the EIA Directive, where significant negative effects are predicted to arise from a project then mitigation measures are required.

This report has identified no impacts that were assessed as significant and therefore mitigation is not required. All birds' nests and eggs are protected under the Wildlife Act, regardless of their location or the date, and so it is recommended that site workers be notified of the legal requirements in this regard. Should an active nest be encountered then works in that area should cease until chicks have fledged. A nest with eggs can only be destroyed under licence from the National Parks and Wildlife Services although this is an unlikely scenario given the lack of bird nest habitat.

5.7 Predicted Impact of the Proposed Development

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied.

No residual effects are predicted to occur arising from this development.

5.8 Interactions and Cumulative Impacts

A number of the identified impacts can also act cumulatively with other impacts from similar developments in this area of Dublin. These primarily arise through the urbanisation of the city's hinterland as provided for by land use zoning and include: loss of habitats and species, particularly hedgerows; pollution from surface water run-off and pollution from wastewater generation.

This proposed development can be viewed alongside the permitted construction of a series of project phases in Clongriffin and the likely future development of all the lands within the local area plan area. This will see the conversion of all these lands from open to a combination of built and amenity space. This process can impact upon species in a cumulative manner however, given the already urban environment in this location, this is not likely to impact negatively upon species already present.

The key environmental interaction with Biodiversity is water. A series of mitigation measures are proposed in the Water Chapter of this EIAR document to ensure the quality (pollution and sedimentation) and quantity (surface run-off and flooding) is of an appropriate standard.

5.9 Monitoring

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. Section 5.8 summaries the likely impacts arising from this project. In this instance, no further monitoring is required.

5.10 References

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Appendix 5.1 – Species list for habitats identified from the Mooretown site

The nomenclature for vascular plants is taken from the *New Flora of the British Isles* (Stace, 2010). Scientific names for mosses comes from *A Checklist and Census Catalogue of British and Irish Bryophytes* (Hill et al., 2008) while common names are taken from *Mosses and Liverworts of Britain and Ireland* (Atherton et al. eds., 2010). Species indicated with an asterisk ‘*’ are known to have been introduced to Ireland by humans.

Treeline - WL2		DAFOR
<i>Acer pseudoplatanus</i> *	Sycamore	O
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Brachypodium sylvaticum</i>	False Brome	O
<i>Crataegus monogyna</i>	Hawthorn	A
<i>Galium aparine</i>	Cleavers	O
<i>Fraxinus excelsior</i>	Ash	F
<i>Hedera helix</i>	Common Ivy	F
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Polystichum setiferum</i>	Soft Shield-fern	O
<i>Prunus spinosa</i>	Blackthorn	O
<i>Rosa sp.</i>	Roses	R
<i>Rubus fruticosus agg.</i>	Brambles	A
<i>Rumex sanguineus</i>	Wood Dock	O
<i>Salix cinerea</i>	Grey Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Urtica dioica</i>	Common Nettle	F

Drainage ditch - FW4		DAFOR
<i>Lemna sp.</i>	Duckweeds	F
<i>Veronica beccabunga</i>	Brooklime	O

Scrub - WS1		DAFOR
<i>Rubus fruticosus agg.</i>	Brambles	A

Dry Meadow - GS1		DAFOR
<i>Agrostis stolonifera</i>	Creeping Bent	A
<i>Arrhenatherum elatius</i>	False Oat-grass	A
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Equisetum arvense</i>	Field Horsetail	O
<i>Medicago lupulina</i>	Black Medick	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Taraxacum sp.</i>	Dandelions	O
<i>Trifolium repens</i>	White Clover	O
<i>Urtica dioica</i>	Common Nettle	O
<i>Vicia sepium</i>	Bush Vetch	O
<i>Vicia sativa</i>	Common Vetch	O

Arable Crops - BC1		DAFOR
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Anagallis arvensis</i>	Scarlet Pimpernel	O
<i>Avena fatua</i> *	Wild-oat	O
<i>Brassica nigra</i>	Black Mustard	O
<i>Capsella bursa-pastoris</i>	Shepard's-purse	O
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Epilobium parviflorum</i>	Hoary Willowherb	O
<i>Fumaria officinalis</i>	Common Fumitory	O
<i>Lamium purpureum</i>	Red Dead-nettle	O
<i>Poa annua</i>	Annual Meadow-grass	F
<i>Senecio jacobaea</i>	Common Ragwort	O
<i>Senecio vulgaris</i>	Groundsel	O
<i>Sonchus asper</i>	Prickly Sowthistle	R
<i>Veronica persica</i>	Common Field- speedwell*	O

Chapter 6 – Land, Soils and Geology

6.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) has been prepared by Waterman Moylan and provides an assessment of the impact that the proposed mixed-use infill development in Clongriffin will have on the surrounding soil and geology within the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring after the development is operational.

6.2 Research Methodology

A desktop study to classify the geological features related to the site was undertaken. The Geological Survey of Ireland (GSI) was reviewed and the following maps reviewed:

- Bedrock Geology Map
- Bedrock Aquifer Map
- Ground Water Vulnerability Map

This information was supplemented by a review of several geotechnical Site Investigations carried out within the Clongriffin site.

6.3 Receiving Environment

The subject sites fall within the Clongriffin development which has been mostly constructed. The Clongriffin site is bounded to the north by the Mayne River, to the east by the Dublin-Belfast railway line, to the west by Fr. Collins Park and to the south by Grange Road. The site generally slopes gently northeast towards the Mayne River.

Prior to commencement of construction at the Clongriffin site, the site was mostly grassland with some local ditches / hedgerows and cultivated soils.

Clongriffin development now comprises of four neighbourhoods at different stages of development. They are supported by Station Square, a Town Centre, a public park and a railway station with an intensive commuter service.

The four neighbourhoods illustrated in Figure 6.1 are: -

- Marrsfield to the north of Marrsfield Avenue with 553 residential apartments including Blocks 34, 35 and 36 (occupied) and Blocks 31, 32 and 33 (partly developed).
- Belltree in the west with 366 low rise residential housing units (completed).
- The Town Centre Including Station Square, Main Street and Station Street. This neighbourhood which is partly developed comprises multi-storey residential apartments and non-residential floorspace in Blocks 1 –17 and 19 – 27. The Town Square also includes a multi-storey car park with a Park & Ride section.
- Beau Park to the southeast with 604 low rise residential housing units and Block 18 (completed).

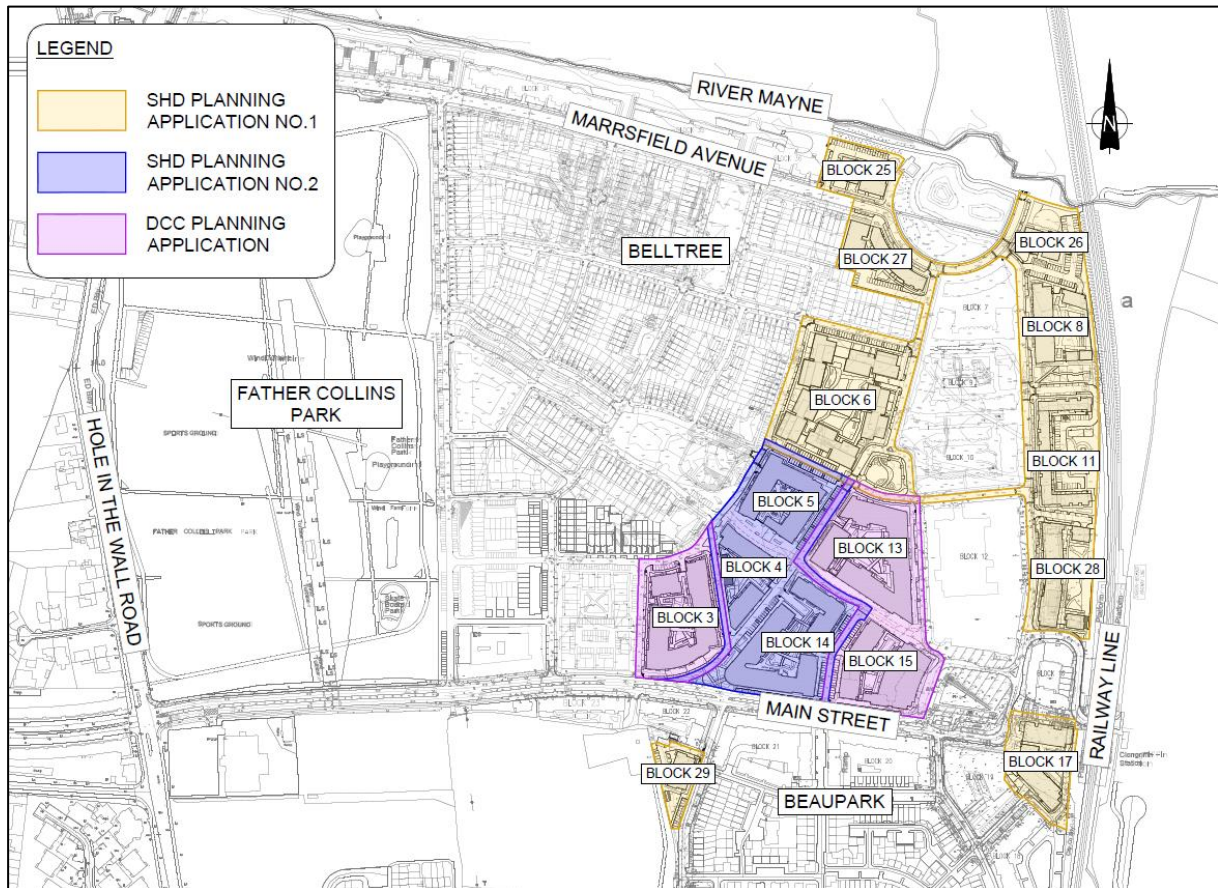


Figure 6.1 | Existing Clongriffin Development

The subject application sites are infill blocks remaining to complete the Clongriffin development with surrounded by existing roads, drainage and residential developments.

Geological Survey Ireland:

Geological Survey Ireland (GSI) produces a wide range of datasets, including bedrock geology mapping, extracted below in Figure 6.2. The maps indicate good ground conditions consisting of stiff to hard glacial till which is between 3m and 12m thick, overlying generally shallow bedrock of the Malahide formation, which consists of argillaceous bioclastic limestone and shale. The glacial till on the subject lands is of generally low permeability. The Malahide formation is a fossiliferous limestone and is interbedded with thin shale beds.

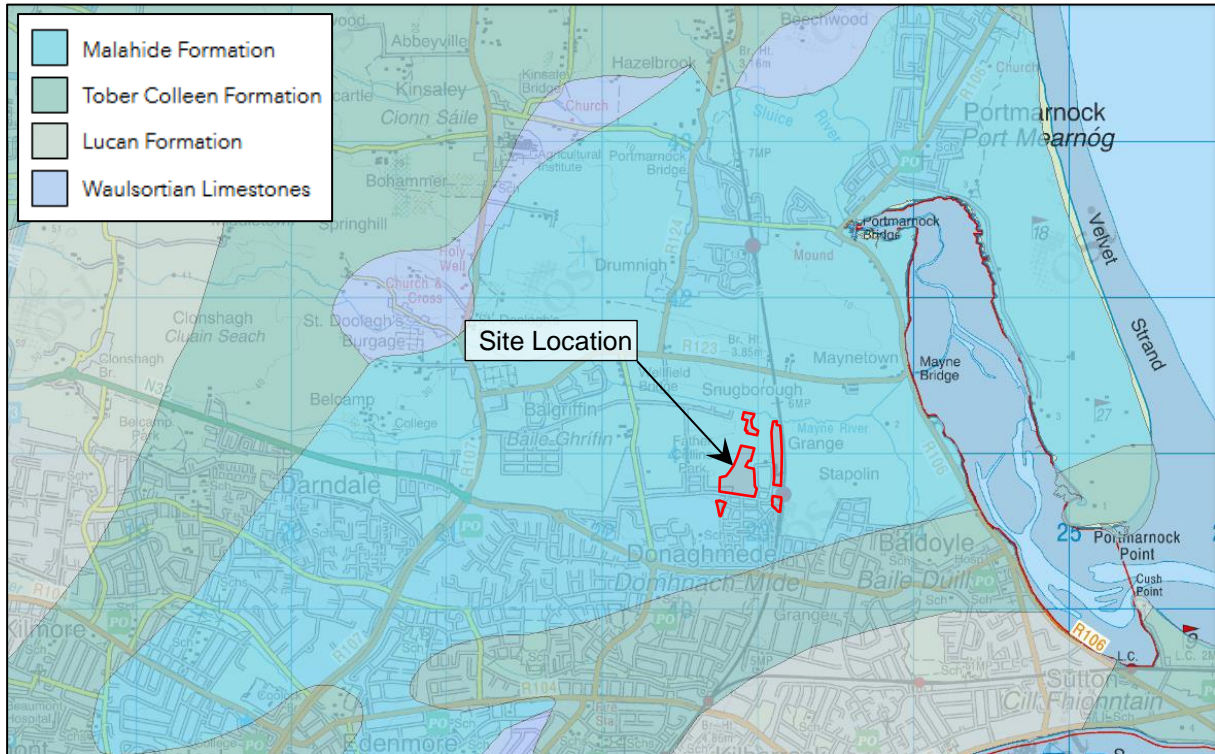


Figure 6.2 | Extract from GSI Bedrock Geology Map

The National Aquifer Bedrock Map prepared by the Geological Survey of Ireland was consulted and is extracted below. From this map, it was established that the entirety of the site is within the designation LI, which represents locally important moderately productive aquifer.

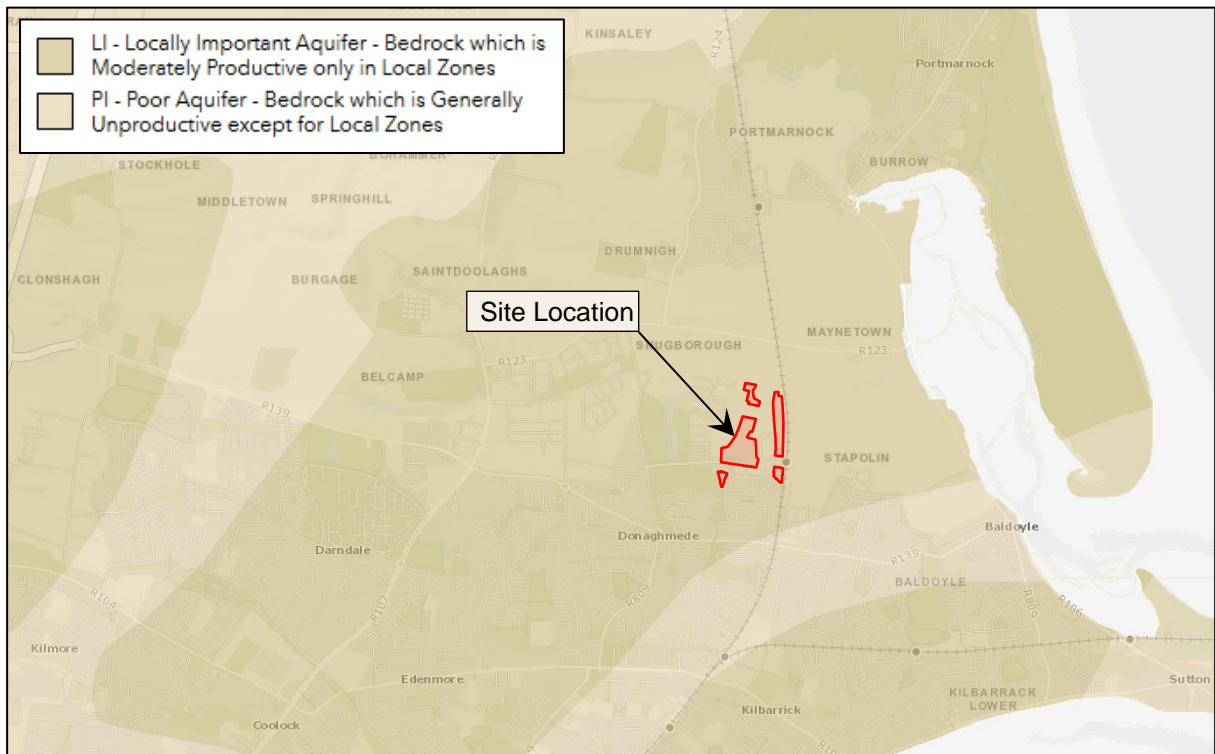


Figure 6.3 | Extract from GSI Groundwater Aquifer Map

The vulnerability of the aquifer in the vicinity of the proposed site was also examined by referencing the Geological Survey of Ireland, and it was established that the vulnerability of the aquifer is low.

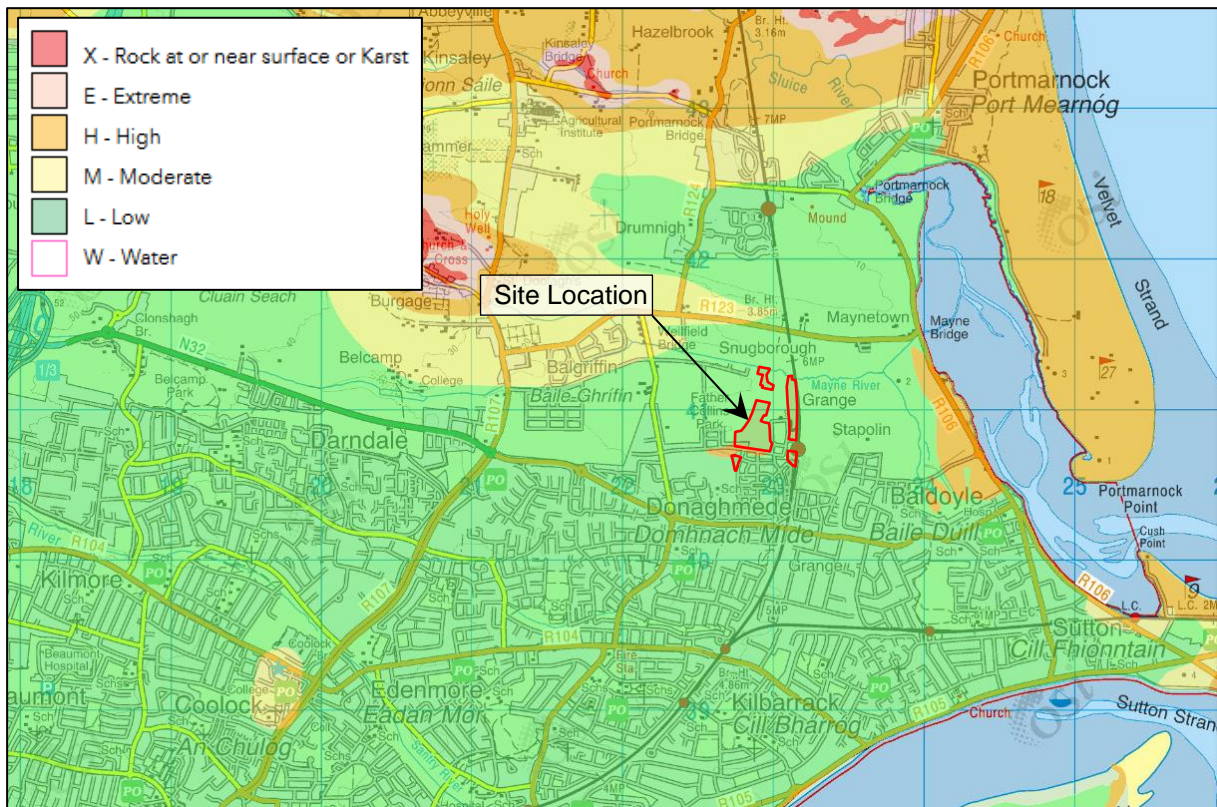


Figure 6.4 | Extract from GSI Groundwater Vulnerability Map

Site Investigations:

Extensive site investigations have been conducted throughout Clongriffin and have been used as a general indicator of the soil conditions for the purposes of this assessment.

Site investigations for the following Blocks have been assessed for this proposed completion of Clongriffin and are provided in Appendix 6:

- S.I. (2004) for Main Square, Block 1, Block 2, Block 18, Block 20 and Block 21
- S.I. (2016) for Belltree Park
- S.I. (2016) for Belltree Green
- S.I. (2014) for Plot C and Plot D
- S.I. (2016) for Plot E
- S.I. (2016) for Block 17
- S.I. (2016) for Block 29

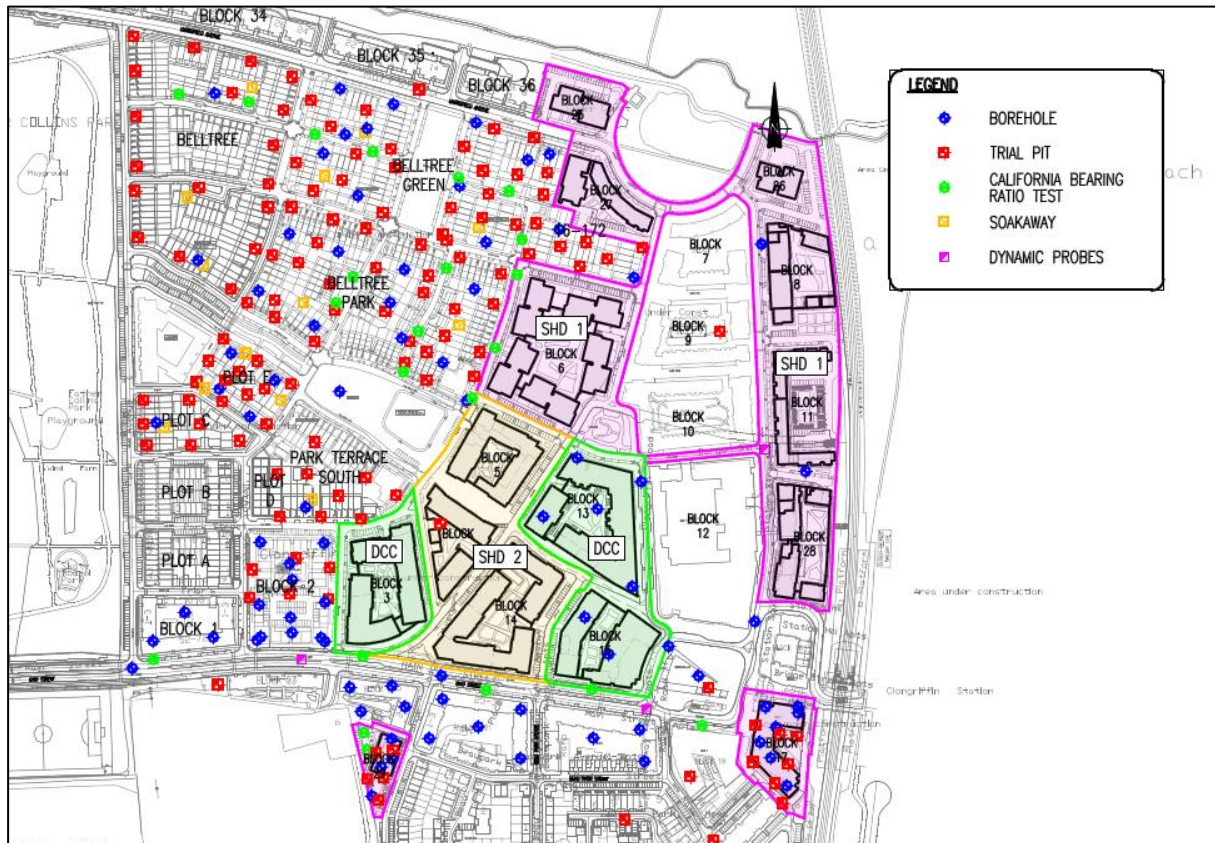


Figure 6.5 | Clongriffin Site Investigations Carried Out to Date

These site investigations reports varied slightly but are generally very consistent and can be summarised as follows:

Trial Pits:

- Trial pits logged were clayey soil consistent with north county Dublin brown boulder clays.
- Typical trial pits indicate that the site generally consists of:
 - Brown sandy slightly gravelly silty CLAY, over;
 - Stiff brown sandy slightly gravelly silty CLAY with low cobble content, over;
 - Very stiff dark grey sandy slightly gravelly silty CLAY with low cobble content.
- The overburden deposits are of glacial origin and the particle size gradings of the cohesive soils display characteristic poorly-graded profiles for the glacial material. Fines content (i.e. silt & clay) from the gradings show the cohesive soils with 40% and 64% silt/clay and the Atterberg Limits tests show that silty CLAY dominates the site.

Soakaway Tests:

- Infiltration rates from soakaway tests were generally unsuitable for full soakaway SuDS measures. The unsuitability of the site for soakaways is further suggested by the soil descriptions of silty clay soils. Infiltration SuDS devices are to be provided with overflow pipes into the positive drainage system.

Ground Water:

- Ground water was generally encountered below 2m, if at all. The majority of trial pits and boreholes did not encounter ground water ingress.

- There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Due to the presence of granular soils at shallow depths, any excavation that is opened will have the possibility for water to ingress. Therefore, it should be anticipated that any excavation will have an ingress into it and although the rate of the ingress into the pits was relatively slow, this could increase during periods of wet weather.
- If groundwater is encountered during excavations, then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

Environmental Testing:

- Environmental testing was carried out at each test site. For material to be removed from site, landfill acceptability testing (WAC) was carried out to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill. The results were compared with the published waste acceptance limits of BS EN 12457-2. The disposal suite results indicate that the material would generally be able to be treated as Inert Waste.
- Chemical testing was carried out to identify unfavourable ground conditions. The tests indicated a general pH value between 7.67 and 8.96. These results are all close to neutral and below 9, which if exceeded could cause possible concern, and therefore no special precautions are required.
- The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground*' guidelines require SO₄ values, and after conversion (SO₄ = SO₃ x 1.2), the maximum value of 138mg/l shows Class 1 conditions and no special precautions are required.

6.4 Characteristics of the Proposal

The subject development comprises of three concurrent applications; two Strategic Housing Development applications and one planning application to be submitted to Dublin City Council. Together, these consist of 15 mixed-use residential and commercial blocks, including ancillary infrastructure, with provision made for 1,950 apartment units and 22,728m² of commercial floor space. A breakdown of the schedule of accommodation is shown in Table 6.1, below:

Application	Block Numbers	Total No. of Residential Units	Ancillary Facilities (m ²)	Commercial Floor Area (m ²)	Total Floor Area (m ²)
Strategic Housing Development: Application No.1	6, 8, 11, 17, 25, 26, 27, 28 and 29	1,030	2,421m ²	2,286m ²	105,944m ²
Strategic Housing Development: Application No.2	4, 5 and 14	500	1,094m ²	3,125m ²	51,840m ²
Planning Application to Dublin City Council	3, 13 and 15	420	820m ²	17,317m ²	65,772m ²
Total	15 Blocks	1,950	4,335m²	22,728m²	223,556m²

Table 6.1 | Schedule of Accommodation by Application

These subject 15 Blocks form the majority of the remaining infill blocks within the Clongriffin development.

The blocks which form the three concurrent applications are highly interconnected, and as such a holistic approach has been taken in preparing this EIAR. The subject blocks cover approximately 6.4Ha of the overall site.

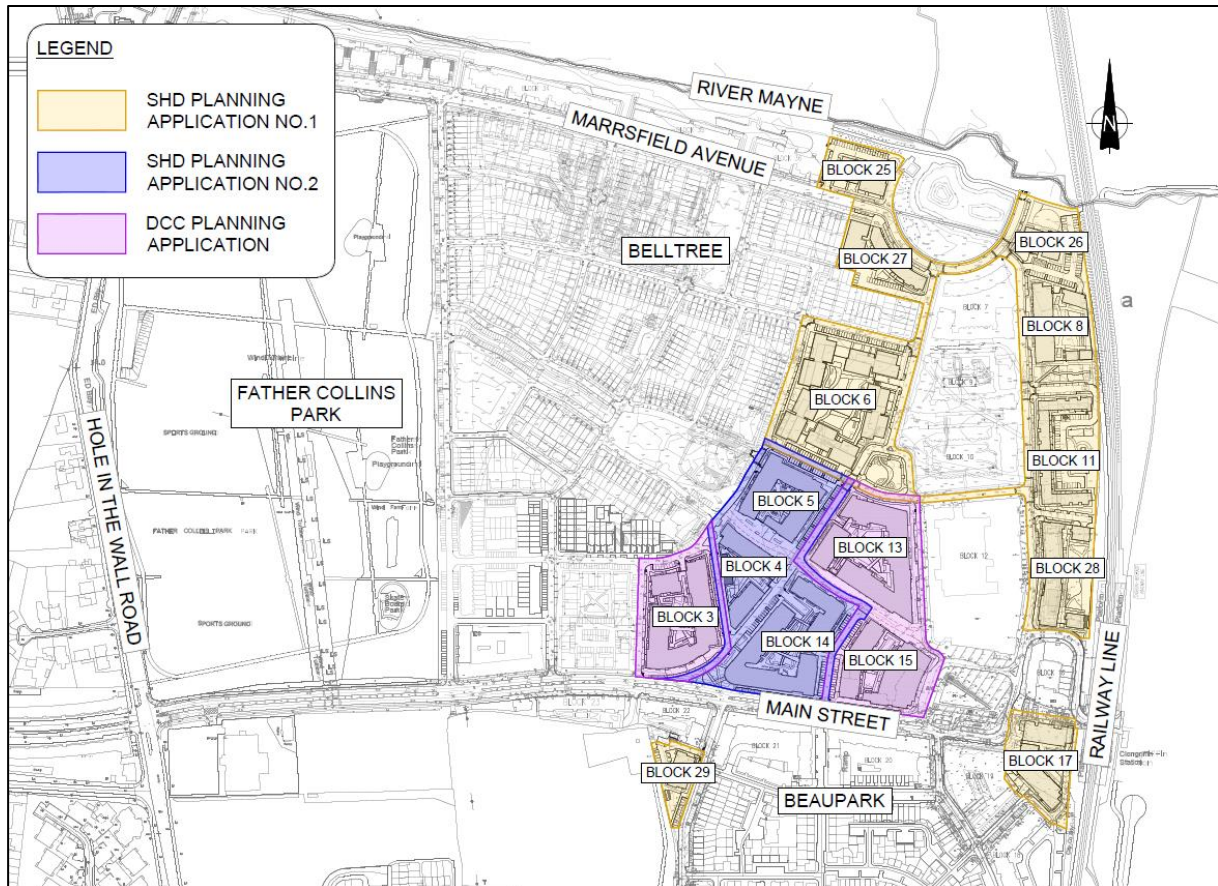


Figure 6.6 | Subject Development Blocks

The proposed development, with respect to soils and geology, includes the following characteristics:

- Stripping of topsoil
- Excavation of basements (Blocks 14 and 17) and foundations
- Excavation of drainage sewers and utilities (main deep trunk sewer already constructed under parent planning permission)
- Minor regrading and landscaping
- Disposal of any surplus excavated soils including any contaminated material

6.5 Potential Impact of the Proposal

Construction Phase:

The removal of topsoil during earthworks and the construction of roads, services and buildings, in particular basements (Blocks 14 and 17) and foundations, will expose subsoil to weathering and may result in the erosion of soils during adverse weather conditions. Surface water runoff from the surface of the excavated areas may result in silt discharges to the Mayne River. It is noted that the roads and

deep trunk drainage surrounding each of the subject Blocks have already been constructed as part of the parent planning permission.

Excavations for foundations, remaining roadworks and services will result in a surplus of subsoil. Surplus subsoil will be used in fill areas where applicable.

It is proposed to pile each of the subject Blocks within Clongriffin. A table has been produced below showing the estimated topsoil (generally 300mm) and subsoil generated from each Block. The estimate is based on a ground bearing slab substructure build-up of 650mm thick (225mm slab on top of 150mm insulation on 50mm T3 blinding on top of 225mm T2 Perm stone) multiplied by the area of each Block. In addition to this, we estimate pile caps at 7m x 7m grids which will generate a further 2.2m x 2.2m x 1.050 deep excavations below the ground bearing slab (allowing for under-slab drainage).

Application	Block Numbers	Block Area (m ²)	Topsoil Excavated (m ²)	Subsoil Excavated (m ²)
Strategic Housing Development: Application No.1	Block 6	8,177	2,453	3,710
	Block 8	3,474	1,042	1,576
	Block 11	1,754	526	796
	Block 17	3,012	904	6,191*
	Block 25	1,020	306	463
	Block 26	803	241	364
	Block 27	1,702	511	772
	Block 28	4,443	1,333	2,016
	Block 29	586	176	266
	Subtotal	24,971	7,492	16,154
Strategic Housing Development: Application No.2	Block 4	3,040	912	1,379
	Block 5	3,759	1,128	1,706
	Block 14	6,734	2,020	16,523
	Subtotal	13,533	4,060	19,608
Planning Application to Dublin City Council	Block 3	5,183	1,555	2,352
	Block 13	6,732	2,020	3,054
	Block 15	4,711	1,413	2,137
	Subtotal	16,626	4,988	7,543
Total	15 Blocks	55,130	16,540	43,305

* Includes basement car park which is approx. 1.6m below existing ground Level.

Table 6.2 | Excavated Material Generated

The total topsoil generated is 16,540m³ and the total sub soil generated is 43,305m³.

Dust from the site and from soil spillages on the existing road network around the site may be problematic, especially during dry conditions.

Accidental oil or diesel spillages from construction plant and equipment, in particular at refuelling areas, may result in oil contamination of the soils and underlying geological structures.

Operational Phase:

During the operational phase of the development it is not envisaged that there will be any ongoing impacts on the underlying soil as a result of the proposed development. Any hydro-geological impacts are temporary and associated with the construction of the proposed development.

6.6 Remedial or Reductive Measures

Construction Phase:

To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels and minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation. Surplus subsoil and rock that may be required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. This is outlined in Waterman Moylan's Preliminary Construction Management Plan, which accompanies this submission, and which will need to be updated and implemented by the development's main contractor during the construction phase.

In the case of topsoil careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly.

It is important that topsoil is kept completely separate from all other construction waste as any cross-contamination of the topsoil can render it useless for reuse.

It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

Silt traps, silt fences and tailing ponds will also need to be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the construction phase.

Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders' waste materials, etc., and so as to preserve the materials for future use as clean fill.

The provision of wheel wash areas at the exit to the development as necessary will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis. All trucks on the public roads will carry up to a maximum of ten cubic metres of material to prevent spillage and damage to the surrounding road network.

Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

Appropriate storage and bunding measures will be implemented throughout the construction stage to prevent contamination of the soil and groundwater from oil and petrol leakage from site plant. Refuelling will be restricted to allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

Soil samples taken from the site during the site investigations in March and April 2016 showed no evidence of contamination. However, any contaminated soil that may be uncovered on the site will be identified and disposed of to an appropriate waste disposal facility.

On foot of Waterman Moylan's accompanying Preliminary Construction Management Plan, a Construction Management Plan, Traffic Management Plan and Waste Management Plan will be implemented by the contractor during the construction phase to control the above remedial measures.

Operational Phase:

On completion of the construction phase and following replacement of topsoil, a planting programme will commence to prevent soil erosion.

SuDS and filtration devices are proposed to be provided as part of the development. These will help to remove pollutants from rainwater runoff.

Part of the SuDS proposal for this site is also to encourage infiltration of surface water to the ground. This infiltration will assist with natural ground water replenishment which is currently occurring on the lands.

6.7 Predicted Impact of the Proposal

Construction Phase:

The depth and permeability of the underlying clay within the subject site will reduce the risk of accidental spillages that may occur during the construction works from penetrating the ground and damaging deeper subsoils and the water table.

With the protective measures noted above in place during excavation works, any potential impacts on soils and geology in the area will not have significant adverse impacts.

No significant adverse impacts on the soils and geology of the subject lands are envisaged.

Operational Phase:

On completion of the construction phase and following replacement of topsoil and implementation of a planting programme, no further impacts on the soil are envisaged.

SuDS measurements, including permeable paving and infiltration drains, will assist with cleaning surface water runoff while replenishing the natural ground water table.

6.8 Monitoring

Monitoring during the construction phase is recommended, in particular in relation to the following:

- Adequate protection of topsoil stockpiled for reuse.
- Adequate protection from contamination of soils for removal.
- Monitoring of surface water discharging to existing watercourses, ditches and the existing surface water drainage system.
- Monitoring cleanliness of the adjoining road network.
- Monitoring measures for prevention of oil and petrol spillages.
- Dust control by dampening down measures close to the boundaries of the site, when required due to unusually dry weather conditions.

During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning should be incorporated into the safety file/maintenance manual for the development.

Chapter 7 – Water

7.1 Water Supply

7.1.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) has been prepared by Waterman Moylan and provides an assessment of the impact that a proposed mixed-use infill development in Clongriffin will have on the water supply network in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational.

The subject development comprises three concurrent applications; two Strategic Housing Development applications and one planning application to be submitted to Dublin City Council. Together, these consist of 15 mixed-use residential and commercial blocks, including ancillary infrastructure, with provision made for 1,950 apartment units and 22,728m² of commercial floor space. A breakdown of the schedule of accommodation is shown in Table 7.1, below:

Application	Block Numbers	Total No. of Residential Units	Ancillary Facilities (m ²)	Commercial Floor Area (m ²)	Total Floor Area (m ²)
Strategic Housing Development: Application No.1	6, 8, 11, 17, 25, 26, 27, 28 and 29	1,030	2,421m ²	2,286m ²	105,944m ²
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Planning Application to Dublin City Council	3, 13 and 15	420	820m ²	17,317m ²	65,772m ²
Total	15 Blocks	1,950	4,335m²	22,728m²	223,556m²

Table 7.1 | Schedule of Accommodation by Application

These three concurrent applications form part of a parent planning permission which was previously granted by Dublin City Council as part of the overall Clongriffin residential and commercial development, Reg. Ref. 0132/02, PL29N.131058.

The blocks which form the three concurrent applications are highly interconnected, and as such a holistic approach has been taken in preparing this EIAR.

Most of the overall Clongriffin development has been constructed and is served by an existing watermain network constructed under the parent planning permission Reg. Ref. 0132/02. The network has been designed and constructed to accommodate the subject blocks, with capped ends provided to enable future connection.

The existing water network and proposed network layout is shown on Waterman Moylan drawings 18-059-P1300 to P1305 (SHD1), 18-059-P2300 (SHD2) and 18-059-P3300 (DCC), which accompany this report.

7.1.2 Research Methodology

Research for this section included the review of the existing watermain layout from Irish Water / Dublin City Council records and the review of design and as-built drawings of the watermain and valves constructed under the parent planning application.

7.1.3 Receiving Environment

The overall Clongriffin site is bounded to the north by the Mayne River, to the east by the Dublin-Belfast railway line, to the west by Fr. Collins Park and to the south by Grange Road. The site generally slopes gently to the northeast.

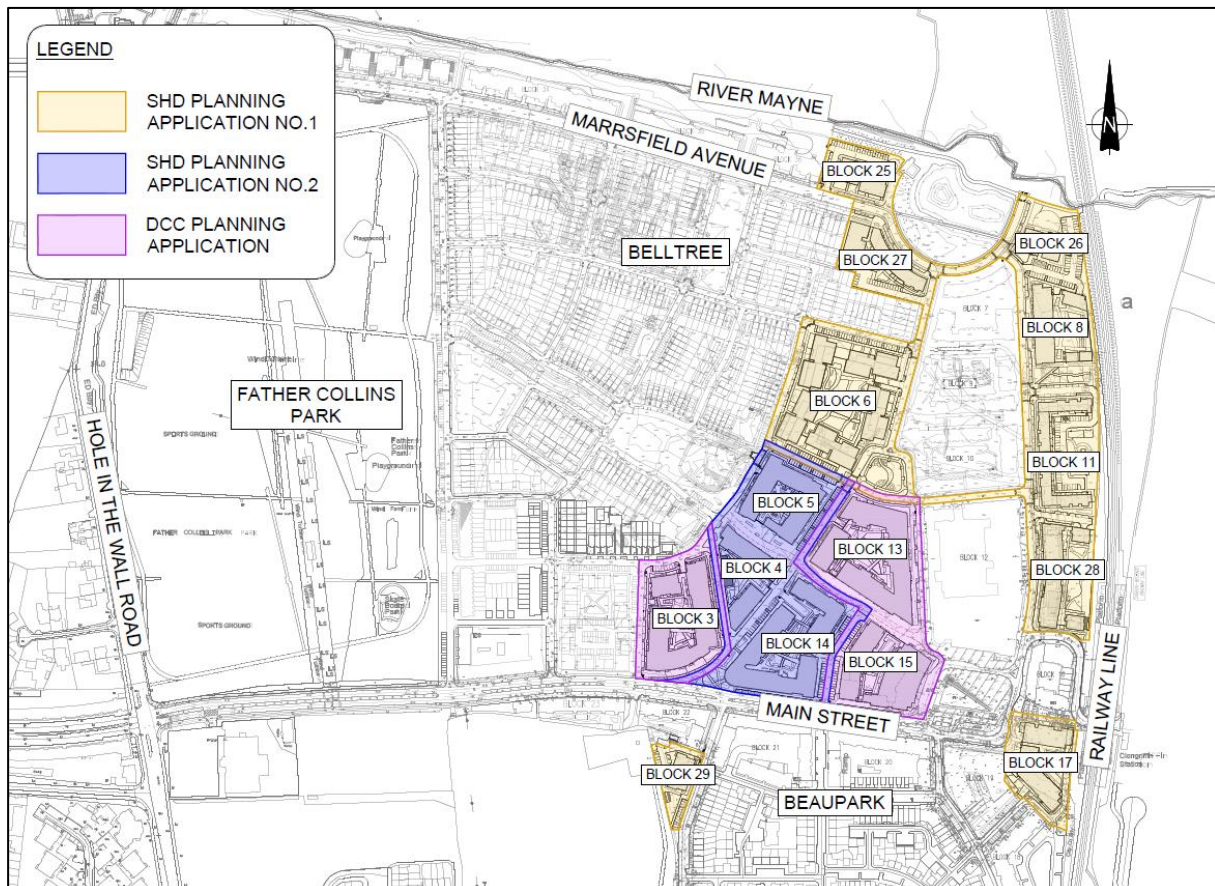


Figure 7.1 | Subject Development Blocks

The water supply for this area is part of the North Fringe Water Supply Scheme, which commenced construction in 2004.

The existing 450mm / 560mm HPPE North Fringe Watermain runs along Marrisfield Avenue to the north of the site; there is also an existing 200mm watermain pipe running along Park Avenue to the west and an existing 250mm watermain pipe running along Main Street to the south of the site. As each Block has been constructed throughout Clongriffin, a series of 100mm and 150mm watermains have been constructed around each block. This hierarchy of watermains for Clongriffin was designed and approved under the Clongriffin Masterplan, Reg. Ref. 0132/02, PL29N.131058.

7.1.4 Characteristics of the Proposed Development

It is proposed to supply water to the subject blocks via connections to the existing watermain network, as indicated on the watermain layout drawings 18-059-P1300 to P1305 (SHD1), 18-059-P2300 (SHD2) and 18-059-P3300 (DCC), which accompany this report. This watermain network design follows the original approved Clongriffin watermain masterplan. As part of this subject application it is proposed to complete the loop of the 250mm trunk main from Station Street to the Marrisfield Avenue, which is the primary connection from the North Fringe Watermain.

An estimate of the water demand from the public water supply system for the subject development is shown in Table 7.2, below:

Description	Quantity	Total Population	Per Capita Water Demand	Water Demand	Average Demand	Average Peak Demand	Peak Demand
		No. People	l/hd/day	l/day	l/s	l/s	l/s
Residential	1,950 No.	5,265 Residents	150	868,725	10.055	12.568	62.842
Retail	5,465m ²	260 Staff	45	12,870	0.149	0.186	0.931
		1,040 Customers	15	17,160	0.199	0.248	1.241
Office	8,468m ²	125 Staff	100	13,750	0.159	0.199	0.995
Restaurant	1,641m ²	60 Staff	45	2,970	0.034	0.043	0.215
		550 Customers	30	18,150	0.210	0.263	1.313
Leisure	5,507m ²	50 Staff	45	2,475	0.029	0.036	0.179
		335 Customers	15	5,528	0.064	0.080	0.400
Community	417m ²	10 Staff	45	495	0.006	0.007	0.036
		150 Customers	15	2,475	0.029	0.036	0.179
Crèche	1,230m ²	35 Staff	45	1,733	0.020	0.025	0.125
		171 Children	50	9,405	0.109	0.136	0.680
Total Domestic					10.055	12.568	62.842
Total Commercial					1.007	1.259	6.294
TOTAL					11.062	13.827	69.136

Table 7.2 | Estimate of the Water Demand

Based on Table 7.2, the water demand that will be generated by the development is approximately 11.062l/s, or 955.76m³ per day.

There is adequate capacity in the Clongriffin public water supply to accommodate the proposed development. A pre-connection enquiry was submitted to Irish Water in May 2018, and a confirmation of feasibility letter for the proposed network was received from Irish Water on 13 July 2018. A Statement

of Design Acceptance was also received from Irish Water on 10 April 2019 for SHD 1 and on 9 April 2019 for SHD 2.

Refer to Figure 7.2 below for the existing and proposed Watermain layout.

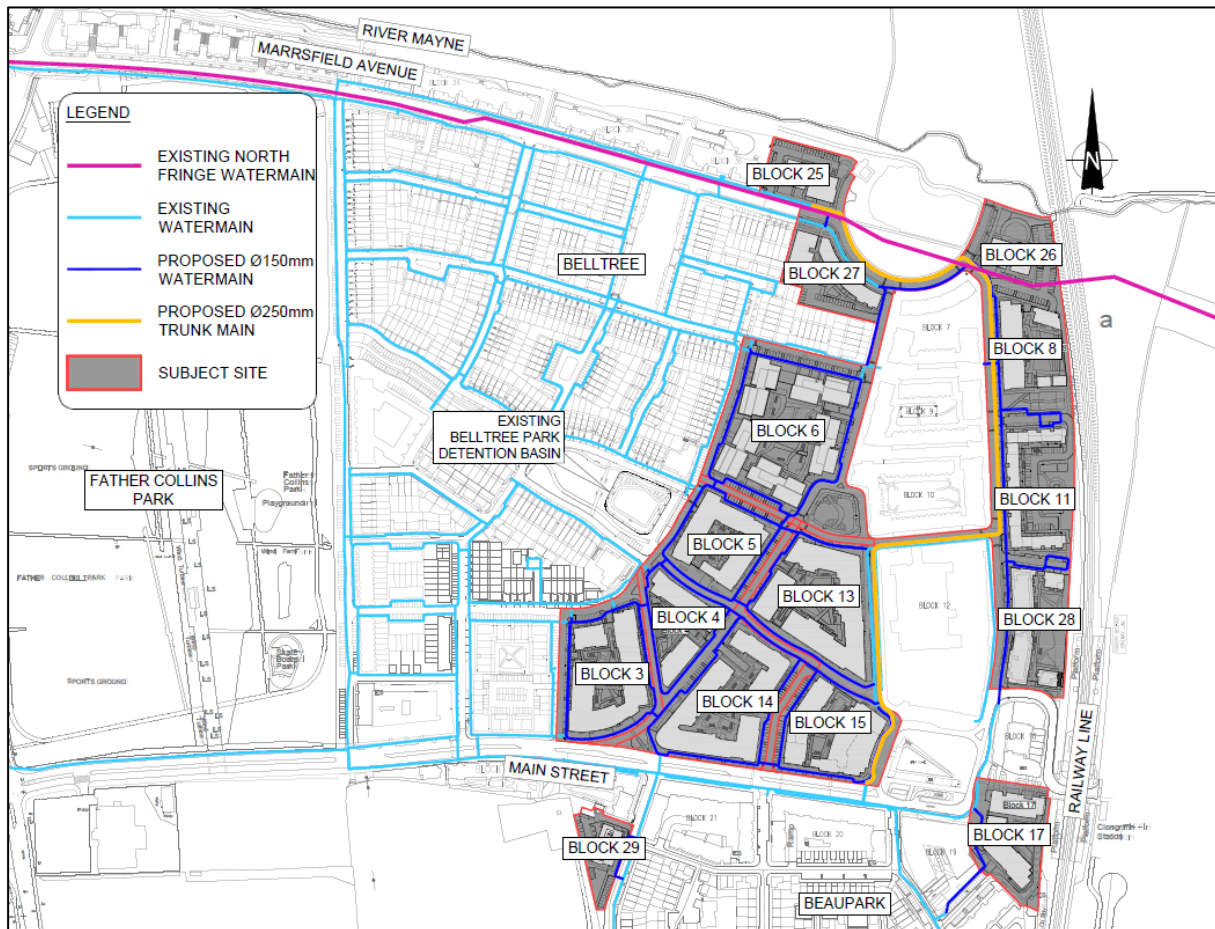


Figure 7.2 | Existing and Proposed Watermain Layout

7.1.5 Potential Impact of the Proposed Development

Construction Phase:

No significant impact to the existing watermains is anticipated during the construction phase of the development, though there will be some minor water demand for site offices. There is a risk of contamination to the existing water supply during connection of the development's watermains to the public water supply.

Operational Phase:

During the operational phase of the development, there will be an increase in demand for water from the public water supply.

7.1.6 Remedial or Reductive Measures

Construction Phase:

A method statement setting out in detail the procedures to be used when working in the vicinity of existing watermains will be produced by the contractor for any construction works within the vicinity of watermains and for roads and / or services crossing watermains.

All watermains will be cleaned and tested in accordance with Irish Water guidelines prior to connection to the public watermain.

All connections to the public watermain will be carried out by or under the supervision of Irish Water

Potential negative impacts during construction phase will be short term only.

Operational Phase:

Water meters will be installed at key locations in agreement with Irish Water, and these meters will be linked to Irish Water's monitoring system by telemetry. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system.

All plumbing fixtures and fittings and sanitary wear to be installed within the development should be to the current best practice for water consumption to minimise future water usage.

It is not envisaged that any further remedial or reductive measures will be necessary on completion.

7.1.7 Predicted Impact of the Proposed Development

Construction Phase:

Due to the proposed remedial measures outlined above no significant adverse impacts are expected to arise during the construction phase of the proposed development on the water supply network.

Operational Phase:

There will be a water demand for the proposed development of approximately 955.76m³ per day. This water demand was accounted during the design and construction of the Clongriffin watermain network from the north fringe watermain which had adequate capacity.

7.1.8 Monitoring

Water usage and potential leakage will be monitored by Irish Water using the water meters which will be installed on the supply pipes so that the development can be monitored in sections. The location of these meters will be agreed with Irish Water and the meters will be linked to Irish Water's monitoring system via telemetry.

7.2 Foul Water Drainage

7.2.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) has been prepared by Waterman Moylan and provides an assessment of the impact that the subject Strategic Housing Development in Clongriffin will have on the foul water drainage network in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational.

7.2.2 Research Methodology

Research for this section included the review of the existing foul water layout from Irish Water / Dublin City Council records for the area and the review of design and as-built drawings of the foul water network constructed under the parent planning application.

7.2.3 Receiving Environment

The entire Clongriffin development drains by gravity to the Clongriffin Pumping Station through a series of existing 225mm, 300mm and 450mm diameter foul sewers within the road network.

The pumping station pumps wastewater for approximately 70m, discharging to the 1,600mm diameter North Fringe Northern Interceptor Sewer (NFNIS) which is located within the reservation of Marrisfield Avenue, running west-east through the site. The NFNIS has been designed to accommodate the Clongriffin Development and discharges eastwards to Sutton Pumping Station and ultimately to the Ringsend Waste Water Treatment Works.

The Clongriffin foul water network and pumping station were designed and constructed to accommodate the full Clongriffin development. The schedule of accommodation for the entire Clongriffin development now provides for 4,518 dwellings and 45,464m² of commercial space, as outlined in Table 7.3, below:

Stage of Completion	Residential Units (No.)		Gross Commercial Area (m ²)	
Subject Application	SHD1	1,030 No.		2,286 m ²
	SHD2	500 No.	1,950 No.	3,125 m ²
	DCC	420 No.		17,317 m ²
Completed	1,685 No.		13,950 m ²	
Under Construction	503 No.		706 m ²	
Permitted (yet to be constructed by subject applicant)	82 No.		8,080 m ²	
Under Third Party Ownership	298 No.		0 m ²	
Total as per Revised Schedule	4,518 No.		45,464m ²	
Planning Permission Total	3,520 No.		100,000m ²	
Difference	998 No.		-54,537m²	

Table 7.3 | Schedule of Accommodation

7.2.4 Characteristics of the Proposed Development

An estimate of the foul water discharge rate from the subject development to the public drainage network is shown in Table 7.4, below.

Domestic wastewater loads have been calculated based on 2.7 persons per residential unit with a per capita wastewater flow of 150 litres per head per day along with a 10% unit consumption allowance, in line with Section 3.6 of the Irish Water Code of Practice for Wastewater Infrastructure. A peak flow multiplier of 3 has been used, as per Section 1.2.5 of Appendix C of the Code of Practice, with commercial flow rates taken from Appendix D of the Code of Practice.

Description	Quantity	Total Population	Load per Capita	Daily Load	Total DWF	Peak Flow
		No. People	l/hd/day	l/day	l/s	l/s
Residential	1,950 No.	5,265 Residents	150	868,725	10.055	30.164
Retail	5,465m ²	260 Staff	45	12,870	0.149	0.447
		1,040 Customers	15	17,160	0.199	0.596
Office	8,468m ²	125 Staff	100	13,750	0.159	0.477
Restaurant	1,641m ²	60 Staff	45	2,970	0.034	0.103
		550 Customers	30	18,150	0.210	0.630
Leisure	5,507m ²	50 Staff	45	2,475	0.029	0.086
		335 Customers	15	5,528	0.064	0.192
Community	417m ²	10 Staff	45	495	0.006	0.017
		150 Customers	15	2,475	0.029	0.086
Crèche	1,230m ²	35 Staff	45	1,733	0.020	0.060
		171 Children	50	9,405	0.109	0.327
Total Domestic					10.055	30.164
Total Commercial					1.007	3.021
TOTAL					11.062	33.185

Table 7.4 | Foul Discharge Rate

Dry Weather Flow (DWF) from the Development = 11.062 l/s

Peak Flow (3 x DWF) = 33.185 l/s

The proposed foul water layout is shown on Waterman Moylan drawings 18-059-P1200 to P1204 (SHD1), 18-059-P2200 (SHD2) and 18-059-P3200 (DCC), which accompany this report.

There is adequate capacity in the Clongriffin foul water network to accommodate the proposed development. A pre-connection enquiry was submitted to Irish Water in May 2018, and a confirmation of feasibility letter for the proposed network was received from Irish Water on 13 July 2018. A Statement of Design Acceptance was also received from Irish Water on 10 April 2019 for SHD 1 and on 9 April 2019 for SHD 2.

Refer to Figure 7.3 below for the existing and proposed foul water layout.

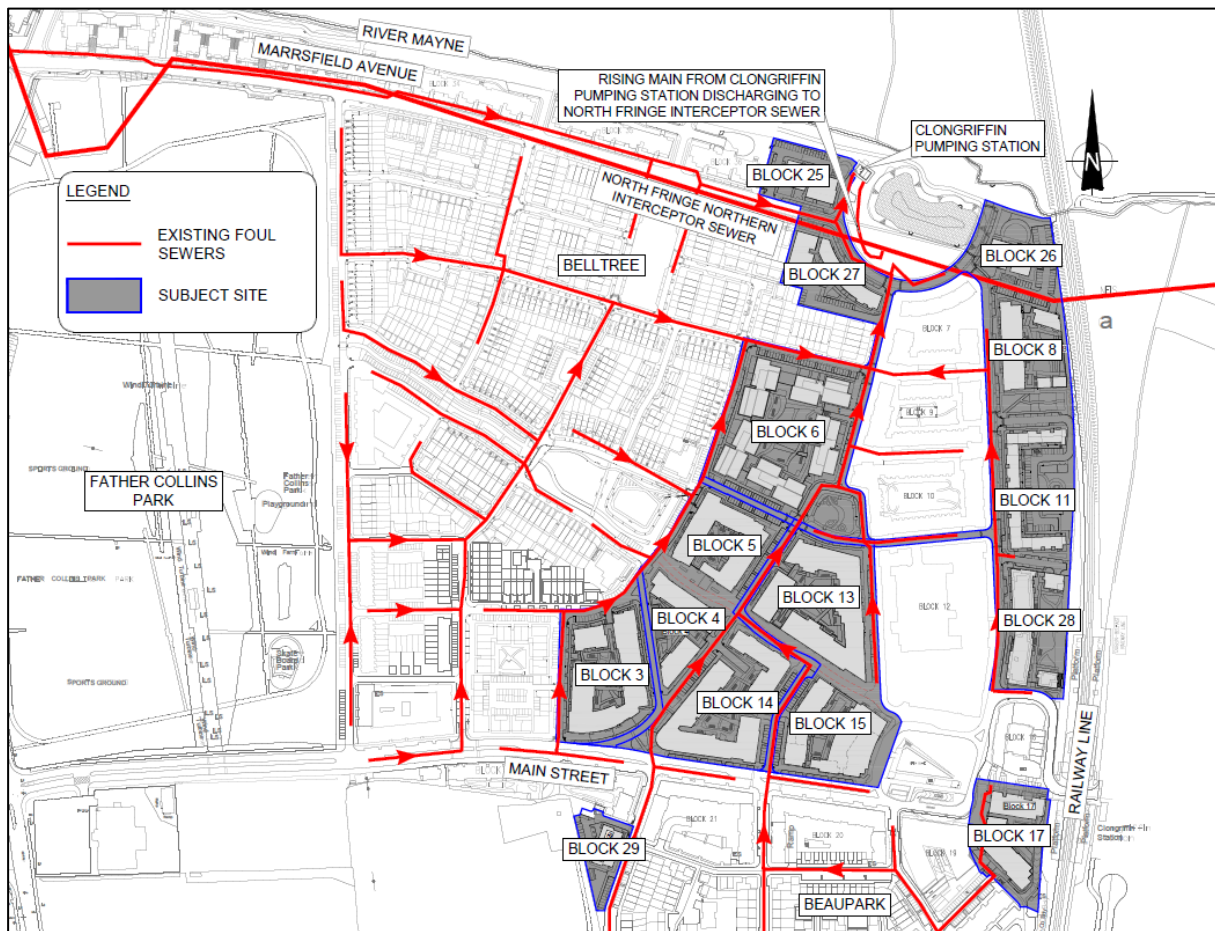


Figure 7.3 | Existing and Proposed Wastewater Drainage Layout

7.2.5 Potential Impact of Proposed Development

Construction Phase:

During the construction of the new foul sewers there is the potential for surface water to be discharged to the existing public foul sewer system due to pipes and manholes being left open.

There is a risk of pollution of groundwater and water courses by accidental spillage of foul effluent during connections being made to live sewers.

Operational Phase:

As shown in Table 7.4, above, there will be a net peak foul water flow of 33.239 l/s discharging to the foul water system serving the subject site and ultimately to the Clongriffin Foul Water Pumping Station.

There is a possibility of surface water ingress into the foul water drainage system due to poor workmanship, which would increase the load on the existing sewers. There is also a possibility of leakage from sewers and drains within the development and along the route to the outfall sewer. Any foul water leakage would result in local contamination of soil and ground waters in the area.

7.2.6 Remedial or Reductive Measure

Construction Phase:

In order to reduce the risk of defective or leaking foul sewers, the following remedial measures will be implemented:

- All new foul sewers will be tested by means of an approved air test during the construction phase in accordance with Irish Waters Code of Practice and Standard Details.
- All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements.
- All foul sewers will be surveyed by CCTV to identify possible physical defects.
- The connection of the new foul sewers to the public sewer will be carried out under the supervision of Irish Water and will be checked prior to commissioning.
- All spurs constructed for connection to future phases on the Clongriffin lands will be sealed securely to ensure no ingress of surface water in to the foul system.
- Prior to commencement of excavations in public areas, all utilities and public services will be identified and checked, to ensure that adequate protection measures are implemented during the construction phase.

Operational Phase:

All foul drains will be tested and surveyed prior to connection to the public sewers to minimise the risk of uncontrolled ground water penetration or leakage of the foul water to ground water on the site.

Otherwise, no remedial or reductive measures are deemed to be necessary after completion of the development, other than normal maintenance of the foul sewer system.

7.2.7 Predicted Impact of the Proposed Development

Construction Phase:

During the construction phase of this project some short term negative impacts as identified above may result. However, if the proposed remedial and reductive measures are implemented, the impact of the proposed development during the construction phase will be minimised and no significant long term impacts will result from the construction works.

Operational Phase:

The proposed development will result in an increase in the foul water flows in the existing drainage system. These increased flows will result in an additional peak flow of 35.722 l/s discharging to the Clongriffin Pumping Station. Both the foul water network and the pumping station have capacity to cater for the increased flow.

The predicted impacts on the foul water are minor and do not inter relate significantly with any other environmental topic in this EIAR. However, if the above mitigation measures are not implemented then there may be a possible impact on surface water, soil and flora and fauna.

7.2.8 Monitoring

Following completion of construction of the development there are no monitoring requirements envisaged other than normal monitoring and maintenance of the wastewater system by the sanitary authority.

7.3 Surface Water Drainage

7.3.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) has been prepared by Waterman Moylan and provides an assessment of the impact that the subject Strategic Housing Development in Clongriffin will have on the surface water drainage network in the vicinity of the site. It also sets out mitigation and remedial measures and methods of monitoring while the development is operational.

7.3.2 Research Methodology

Research for this section included the review of Ordinance Survey and Topographical surveys of the subject site and surrounding area, the review of the existing surface water layout from Dublin City Council records for the area and the review of design and as-built drawings of the surface water network constructed under the parent planning application.

7.3.3 Receiving Environment

The subject lands are served by an existing storm water drainage system approved and constructed under the Clongriffin parent planning permission. The surface water network has been designed and constructed to accommodate the Clongriffin Development and unrestricted flows from each Block.

The sizing and gradients of the surface water sewers were based on the rational Method for surface water design (Bilham's Formula), with a storm return period (N) of 5 years. Pipe capacities and velocities have been calculated using Colebrook-White formula with a roughness coefficient (Ks) of 0.6mm.

The surface water sewers constructed under the parent planning permission discharge to the attenuation pond (6,400m³ of attenuation storage on top of 2,500m³ permanent water body) at the northeast of the Clongriffin scheme before discharging to the Mayne River at a controlled green field runoff rate of 249 l/s, as permitted under the parent planning permission as part of the approved Clongriffin Stormwater Management Plan.

Refer to Figure 7.4 below for the existing and proposed surface water layout.

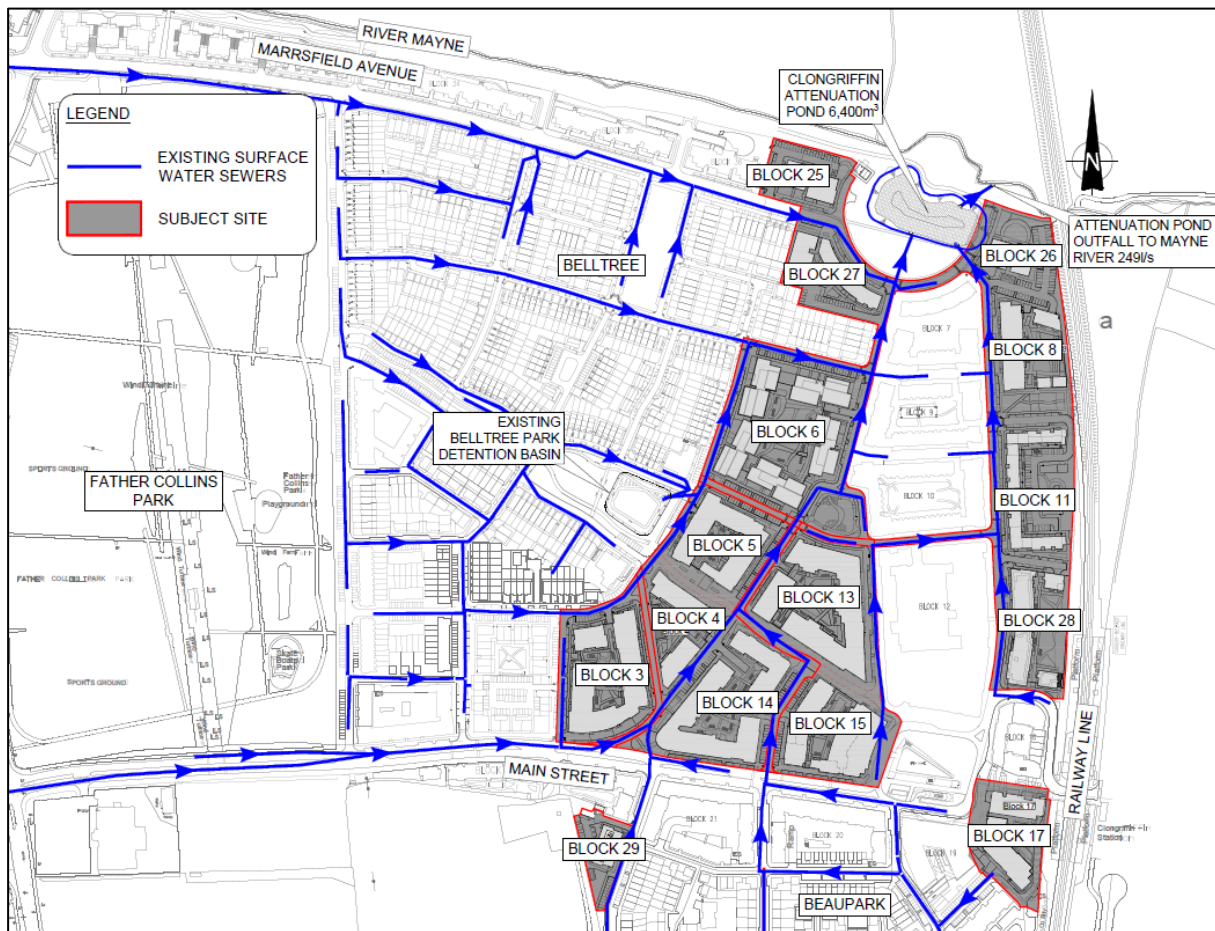


Figure 7.4 | Existing and Proposed Surface Water Drainage Layout

7.3.4 Characteristics of the Proposed Development

The proposed development incorporates a Storm Water Management Plan within each Block through the use of various SuDS techniques. Treatment and storage of surface water at source will intercept and slow down the rate of runoff from the site to the existing surface water sewer system.

Based on three key elements, Water Quantity, Water Quality and Amenity, the targets of the SuDS train concept have been implemented in the design. The SuDS train provides for SuDS devices for each of the following:

- Source Control - Individual blocks or private property
- Site Control – Public Roads within the development
- Regional Control – Clongriffin catchment and sub catchments

The SuDS devices proposed within and around the subject blocks consist of the following:

Source Control:

- It is proposed to provide open grassed areas with low level planting and permeable paving in the courtyards at the ground floor podium level. This will ensure that all podium levels will act as soft scape and will significantly slow down and reduce the amount of surface water runoff from the courtyard/podium level.

Planter boxes, planted areas and permeable paving areas will also take surface water runoff from the down pipes fronting onto the courtyard area. The ground floor podiums have been designed to allow for loading of 500mm of soil and 300mm of surface water.

- Green roofs are proposed for several blocks, consisting of 75mm substrate with a sedum blanket. The paved areas on these roofs will drain to the planted areas.
- Filter drains are proposed around the perimeter of each block. Rainwater pipes from the roofs of the surrounding buildings will be directed to the filter. The filter drains consist of stone trenches that provide for linear collection and treatment of surface water, allowing for some infiltration into the ground. The filter drains will discharge into collector drains before eventually discharging into the storm sewer network. These will act as the first layer of SuDS provided within the private realm.

Site Control:

- Permeable paving will be utilised at roadside parking spaces, with underlying perforated pipes connecting to the storm water sewer network within the roads.

Regional Control:

- Regional Attenuation Pond: The Clongriffin regional attenuation pond, located in the north-east of the Clongriffin development, was designed and constructed to accommodate attenuation for the Clongriffin development, including the subject Blocks. The pond has 6,400m³ of attenuation storage on top of a permanent volume of approximately 2,500m³ and acts as the final treatment to improve the quality of the surface water discharge from the site prior to discharging to the River Mayne.

7.3.5 Potential Impact of the Proposed Development

Construction Phase:

Pollution of groundwater / water courses and ultimately the Mayne River is possible by accidental spillage of oils / diesel from temporary storage areas or where maintaining construction equipment. During the construction works, rain could wash away silts to the river.

The initial runoff from newly laid bitumen surfaces will contain some soluble extracts from the bitumen binder. These extracts will mostly consist of phenolic and hydrocarbon substances in low concentrations (circa 10 to 50 mg/l).

There is a risk of rainfall washing silts and sediments into the surface water system and ultimately the Mayne River during construction works.

Operational Phase:

The development will result in the increase of hard standing areas, and therefore an increase in the runoff of surface water to the Mayne River which may result in downstream flooding.

The runoff from the roads and hardstanding areas will discharge contaminants, including oils and silts to the surface water system which might result in the further polluting of the Mayne River.

In 2014, evidence of foul water cross connections within the Clongriffin development was observed in the form of ragging, odours and subsequently algal bloom. Ragging was evident at the main inlet pipe and around the perimeter of the pond, foul water odours were present at the main inlet pipe and the pond showed signs of nutrient pollution which manifested itself in algal bloom (refer also to Section 7.3.6 below, which discusses the cross connections investigations and reinstatement works).

7.3.6 Remedial or Reductive Measures

Construction Phase:

The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.

The Construction Management Plan will also utilise sedimentation controls, including silt traps, tailings ponds and silt fences during the construction period.

All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements. This will reduce the possibility of any cross connections being constructed going forward in the proposed subject Blocks.

Operational Phase:

The increased runoff from the site will be attenuated within the Clongriffin regional attenuation pond (6,400m³ attenuation storage), with the discharge rate to the Mayne River limited to the greenfield runoff rate. In addition, the significant SuDS devices, outlined in Section 7.3.4, proposed with each block will significantly reduce and slow down the rate of surface water runoff from each. This will therefore reduce the peak flows in the downstream system during major storm events. Gullies and the hydrobrake shall be regularly maintained to avoid blockages.

The SuDS treatment train will also treat the surface water discharging to the Mayne River, removing pollutants and hydrocarbons from the surface water runoff. Maintenance of these SuDS devices will be required to ensure that they continue to treat the surface water as designed.

In relation to the foul water cross connections from the previously existing Clongriffin development, a significant investigation was undertaken by the Applicant to identify and reinstate all known cross-connections. Multiple cross connections were found and reinstated between 2015 and 2018, with the most recent investigation and reinstatement works completed in September 2018.

To date, cross connections that drained foul water from up to 100 residential units to the surface water system have been located and re-connected to the foul water system.

Recent laboratory testing of water samples taken from the attenuation pond in May 2019 show that indicators of foul water presence are now below the allowable European and EPA limits as set out in The EPA's "Parameters of Water Quality" (2001) for the highest quality A1 category. Waterman Moylan Consulting Engineers subsequently met with representatives from Dublin City Council's Drainage and Environmental departments on 14 August 2019 to inspect the improved pond, which had no odours or visual evidence of foul water contamination.

A report outlining the improved water sampling results was issued to Dublin City Council Drainage Division in July 2019.

7.3.7 Predicted Impact of the Proposed Development

Construction Phase:

During the construction phase of this project some short term negative impacts as identified above may result. However, due to the implementation of the proposed remedial and reductive measures, the impact of the proposed development during the construction stage will be minimised and no significant long term impacts will result from construction works.

Operational Phase:

With the implementation of the SuDS treatment train and attenuation pond outlined in section 7.3.4, the surface water quality and quantity discharging to the Mayne River will be treated and attenuated to the greenfield runoff rate, in accordance with the requirements set out in the GDSDS, and no significant adverse impacts are envisaged.

7.3.8 Interactions and Cumulative Impacts

If the above mitigation measures were not implemented then there may be a possible impact on the soil, flora and fauna. However, with the above mitigation measures in place the predicted impacts on the surface water are minor and do not interrelate significantly with any other environmental topic in this EIAR.

7.3.9 Monitoring

The surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning shall be incorporated into the safety file/maintenance manual for the development.

On-going monitoring is being undertaken by the Applicant within the entire Clongriffin development and a commitment has been made by the Applicant to Dublin City Council Drainage Division to continue to carry out water sampling within the attenuation pond every 4 months to ensure results remain under the allowable European and EPA limits.

Chapter 8 – Air Quality

8.1 Introduction

Chapter 8 of this Environmental Impact Assessment has been prepared by DKPartnership (DKP) and assesses the air quality impacts associated with the proposed development at Clongriffin, Dublin 13. This chapter will identify, describe and assess the impact of the development in terms of air quality during the construction and operational phases of the development. Attention will be focused on sensitive receptors during the operational phase of the development, in this case nearby residential housing neighbourhoods. Increased transport volumes and dust emissions associated with the development is likely to be the main source of impact to air quality.

This assessment was prepared in accordance with the EIA Directive 2014/52/EC and current Environmental Protection Agency (EPA) guidelines. This section should be read in conjunction with the site layout plans and project description sections of this EIAR.

8.2 Research Methodology

The EPA publish annual reports on air quality in Ireland that provide statistical summaries of monitoring data. These reports and data can be accessed via the EPA website at www.epa.ie. The most current EPA data has been examined in order to describe the existing air quality conditions and to provide information on background concentrations in order to determine compliance with relevant ambient air legislation. Likely air quality emissions for the main traffic-derived pollutants (nitrogen dioxide and particulate matter) have been predicted using (a) the screening air quality assessment from the U.K Highway Agency Design Manual for Roads and Bridges (DMRB) Volume 11 (2007) and (b) data from the Transport Assessment undertaken for the Clongriffin site.

8.2.1 Assessment Criteria

In 2008 the European Commission introduced a new Directive on ambient air quality and cleaner air for Europe (2008/50/EC) which has been transposed into Irish Legislation through the revised Air Quality Standards Regulations (S.I. 180 of 2011).

The Regulations set out limit values in ambient air for sulphur dioxide (SO₂), lead, benzene, particulate matter (PM₁₀ and PM_{2.5}), carbon monoxide (CO) and nitrogen dioxide (NO₂). These limits are for the protection of human health and are presented in Table 8.1.

Pollutant	Criteria	Value limit (µg/m ³)
Nitrogen Dioxide (NO ₂)	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	200
	Annual limit for protection of human health	40
Benzene	Annual limit for protection of human health	5
Carbon Monoxide (CO)	Maximum daily 8-hour running mean	10000
Lead	Annual limit for protection of human health	0.5

Sulphur Dioxide (SO ₂)	Hourly limit for protection of human health - not to be exceeded more than 24 times/year	350
	Daily limit for protection of human health - not to be exceeded more than 3 times/year	125
Particulate Matter (PM ₁₀)	24-hour limit for protection of human health - not to be exceeded more than 35 times/year	50
	Annual limit for protection of human health	40
Particulate Matter (PM _{2.5})	Annual target value for the protection of human health	25

Table 8.1: Air quality standards regulations.

8.3 Receiving Environment

Clongriffin is a new town on the north fringe of Dublin relatively close to the city, approximately 10km from the centre. The development site has agricultural lands to the north with the Mayne river further north. To the south it has previous phases of the Clongriffin residential development (Beaupark mews) to the east of the site is Baldoyle and to the west is previous phases of the Clongriffin development (Belltree Park, Park Terrace and Belltree Green) further west is Father Collins park.

The EPA provide air quality data available online from several monitoring networks across Ireland. Four air quality zones (A, B, C and D) have been defined for Ireland. The Clongriffin site is located within Zone A, the Dublin conurbation. From the most recent EPA report on ambient air quality in 2017, the nearest air quality monitoring station from Clongriffin is Swords Co. Dublin, however the Swords monitoring station does not record all ambient air quality parameters outlined in the Directive. Therefore air quality in the receiving environment was assessed using the average annual mean value concentrations from all measured monitoring stations in Zone A from 2017.

Table 8.2 shows the annual mean value concentrations measured in Zone A (Dublin conurbation) for 2017. The 2017 levels of pollutants are all below the air quality limit values.

Pollutant	Annual Mean Concentration in 2017 (µg/m ³)	Annual Limit for Protection of Human Health (µg/m ³)
Sulphur Dioxide (SO ₂)	2.2	20
Particulate Matter (PM ₁₀)	13.4	40
Nitrogen Dioxide (NO ₂)	14.2	40
Carbon Monoxide (CO)	0.43 (mg/m ³)	10 (mg/m ³)
Benzene	0.92	5

Table 8.2: Summary of data from the EPA ambient air monitoring report 2017.

8.4 Characteristics of the Proposed Development

The proposed development covers a mixed use development located in Clongriffin, Dublin 13 and represents most of the remaining sites to be “filled-in” within the Clongriffin development. The current existing site consists of approximately 16 apartment blocks and low level (2/3

storey) dwellings and commercial/social spaces. This particular proposed phase consists of 15 blocks with a total of 1950 residential units and 22,727m² of commercial space. The 15 blocks are applied for in 3 no. separate planning packages, SHD I , SDH II and DCC I. Approximate details of the 3 no. separate planning applications are shown below.

Planning reference	Qty blocks	Block ID	No dwellings	Commercial space m ²
SHD I	9	6, 8, 11, 17, 25, 26, 27, 28, 29	1030	2285
SHD II	3	4, 5, 14	500	3125
DCC I	3	3, 13, 15	420	17317

8.5 Potential Impact Of The Proposed Development

8.5.1 Construction Phase

The construction phase is likely to generate some short-term dust emissions and may have the potential to impact air quality. Dust emissions can lead to elevated PM₁₀ and PM_{2.5} concentrations and may also cause dust soiling. The potential for dust to be emitted depends on the type of construction activity being carried out in conjunction with ambient conditions, including rainfall, wind speed and the distance to potentially sensitive locations.

The majority of any dust produced during the construction phase will be deposited close to source and as such any impacts from dust deposition will typically be close to the source.

The significance of impacts due to vehicle emissions during the construction phase will be dependent on the quantity of HGVs and the number of additional vehicle movements where it may generate levels of exhaust emission compounds for example nitrogen oxides, carbon dioxide and hydrocarbons such as benzene.

8.5.2 Operational Phase

The pollutant emissions from traffic related air emissions may generate quantities of air pollutants during the operational phase and may cause impacts at both the local and national level. At the local scale the principal pollutants are NO₂ and PM₁₀.

Impacts at national level include climate change and acid deposition. Measures to reduce greenhouse gas emissions generally are subject to international and national policy. A range of these measures are provided in the National Climate Change Strategy (DoEHLG, 2007-2012). Measures to address acid deposition are provided in the National Programme for Ireland for the Progressive Reduction of National Emissions of Transboundary Air Pollutants by 2010 (DoEHLG, 2004).

8.6 Predicted Impact Of The Proposed Development

8.6.1 Construction Phase

There is a risk that dust may cause an impact at sensitive receptors in close proximity to the source of the dust generated. It is difficult to accurately quantify dust emissions arising from construction activities. It is thus not possible to easily predict changes to dust soiling rates or PM concentrations. A semiquantitative approach is recommended by the National Roads

Authority (NRA) Guidelines 2011 to determine the likelihood of a significant impact. Guidelines for assessing these impacts and these distances are provided in Table 8.3.

Source		Potential Distance for Significant Effects (Distance from source)		
Scale	Description	Soiling	PM ₁₀	Vegetation Effects
Major	Large Construction sites, with high use of haul routes.	100m	25m	25m
Moderate	Moderate Construction sites, with moderate use of haul routes.	50m	15m	15m
Minor	Minor Construction sites, with minor use of haul routes.	25m	10m	10m

Table 8.3: NRA assessment criteria for the impact of dust emissions from construction activities, (with standard mitigation in place).

Some of the constructed properties in the Beaupark square neighbourhood are located within 100m of the site. Likewise some properties in the Belltree neighbourhood are located within 100m of the site and potentially the proposed construction works. Construction related dust at these properties is likely to result in a 'Temporary Slight Adverse' impact. Where dust related impacts are anticipated, avoidance and mitigation measures will be put in place to reduce the impact levels such as, wind breaks, barriers and frequent cleaning and watering of the construction site roads.

8.6.2 Operational Phase

The DMRB screening air dispersion model from the U.K Highway Agency Design Manual for Roads and Bridges Volume 11 (2007) Air Quality Assessment, was used to assess the impact of traffic associated with the new development.

Projected transport figures from a recent traffic assessment provided data and were used to predict the concentrations of traffic-derived pollutants in future years. The model then combined background concentrations of pollutants, sourced from the EPA report on ambient air quality in 2017 with predicted concentrations. Results were generated using an average speed of 20 km/h assuming congested traffic conditions.

Using the DMRB screening air dispersion model, pollutant concentrations in 2025 were predicted at the sensitive receptors adjacent to the development site. The receptors Beaupark and Belltree residential neighbourhoods were chosen as the sensitive receptors. In order to quantify the magnitude of change in pollutant concentrations, the descriptors in Table 8.4 were used. To describe the significance of the impact, Table 8.5 was then used. These descriptor tables are from the NRA Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes 2011.

Magnitude of Change	Annual Mean NO ₂ (µg/m ³)	No. of Days with PM ₁₀ concentration greater than 50 µg/m ³	Annual Mean PM (µg/m ³)
Large	Increase/decrease ≥4	Increase/decrease >4 days	Increase/decrease ≥2.5
Medium	Increase/decrease 2 - <4	Increase/decrease 3 or 4 days	Increase/decrease 1.25 - <2.5
Small	Increase/decrease 0.4 - <2	Increase/decrease 1 or 2 days	Increase/decrease 0.25 - <1.25
Imperceptible	Increase/decrease <0.4	Increase/decrease <1 day	Increase/decrease <0.25

Table 8.4: Definition of impact magnitude for changes in ambient air pollutant concentrations.

Absolute Concentration in Relation to Objective /Limit Value	Changes in Concentration		
	Small	Medium	Large
Increase with Scheme			
Above Limit Value with Scheme ($\geq 40\mu\text{g}/\text{m}^3$ of NO_2 or PM_{10}) ($\geq 25\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$)	Slight Adverse	Moderate Adverse	Substantial Adverse
Just Below Limit Value with Scheme ($36 < 40\mu\text{g}/\text{m}^3$ of NO_2 or PM_{10}) ($22.5 < 25\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$)	Slight Adverse	Moderate Adverse	Moderate Adverse
Below Limit Value with Scheme ($30 < 36\mu\text{g}/\text{m}^3$ of NO_2 or PM_{10}) ($18.75 < 22.5\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$)	Negligible	Slight Adverse	Slight Adverse
Well Below Limit Value with Scheme ($< 30\mu\text{g}/\text{m}^3$ of NO_2 or PM_{10}) ($< 18.75\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$)	Negligible	Negligible	Slight Adverse

Table 8.5: Air quality impact descriptors for changes in annual mean NO_2 , PM_{10} and $\text{PM}_{2.5}$ concentrations at a receptor.

The results of the impact assessment at Beupark neighbourhood arising from increased transport are presented in Table 8.6. The results predict the 2025 air quality relative to the existing baseline.

Scenarios	Annual Average NO_2 ($\mu\text{g}/\text{m}^3$)	Annual Average PM_{10} ($\mu\text{g}/\text{m}^3$)	Days > $50\mu\text{g}/\text{m}^3$	Annual Average ($\mu\text{g}/\text{m}^3$) Benzene	Annual Average CO ($\mu\text{g}/\text{m}^3$)
Background	14.2	13.4	4.3	0.92	0.43
2025	20.1	14.69	4.3	0.07	0.48
Increase	+ 5.9	+ 1.29	0	+ 0.99	+ 0.05
Limits	40	40	35	5	10

Table 8.6: Modelled results for Beupark neighbourhood.

The impact equates to a “*large*” increase (based on the NRA criteria) in annual average NO_2 for this receptor. Using the NRA significance criteria in Table 8.5, it results in a “*slight adverse*” impact in terms of local impact as a result of cumulative traffic. The modelled PM_{10} impact equates to a “*medium*” increase in annual average PM_{10} . Using the NRA significance criteria a “*medium*” increase in annual average PM_{10} results in a “*negligible*” impact in terms of local impact as a result of cumulative traffic.

The modelled results do show an increase in annual NO_2 and PM_{10} but each remain well below the limit values for EU regulations. Levels of benzene and CO are also predicted to be well below the statutory limits.

At Belltree neighbourhood the modelled results see similar results arising from increased transport, presented in Table 8.7. The results predict the 2025 air quality relative to the existing baseline.

Scenarios	Annual Average NO_2 ($\mu\text{g}/\text{m}^3$)	Annual Average PM_{10} ($\mu\text{g}/\text{m}^3$)	Days > $50\mu\text{g}/\text{m}^3$	Annual Average ($\mu\text{g}/\text{m}^3$) Benzene	Annual Average CO ($\mu\text{g}/\text{m}^3$)
Background	14.2	13.4	4.3	0.92	0.43

2025	19.2	14.44	4.3	0.97	0.47
Increase	+ 5.0	+ 1.04	0	+ 0.05	+ 0.04
Limits	40	40	35	5	10

Table 8.7: Modelled results for Belltree neighbourhood.

The impact equates to a “*large*” increase (based on the NRA criteria) in annual average NO₂ for this receptor. Using the NRA significance criteria in Table 8.5, it results in a “*slight adverse*” impact in terms of local impact as a result of cumulative traffic. The modelled PM₁₀ impact equates to a “*small*” increase in annual average PM₁₀. Using the NRA significance criteria a “*small*” increase in annual average PM₁₀ results in a “*negligible*” impact in terms of local impact as a result of cumulative traffic. Levels of benzene and CO are also predicted to be well below the statutory limits.

Both sets of results show an expected increase in annual NO₂, PM₁₀, benzene and CO but each remain well below the limit values for EU regulations.

8.7 Remedial / Reductive Measures

8.7.1 Construction Phase

In order to mitigate dust emissions during the construction phase, a dust minimisation plan will be prepared as part of the Environmental Management Plan based upon the industry guidelines in the Building Research Establishment document entitled ‘Control of Dust from Construction and Demolition Activities’. This will include measures such as:

- Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud/aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- All vehicles exiting the site to make use of a wheel wash facility prior to entering onto public roads to ensure mud / other wastes are not tracked onto public roads. Wheel washes will be self-contained systems that do not require discharge to water bodies.
- Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind.
- Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage.
- The contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum.
- The construction Contractor will be required to monitor monthly dust deposition levels for the duration of construction for comparison with the guideline of 350mg/m²/day (for non-hazardous dusts). This monitoring should be carried out at a minimum of four locations at sensitive receptors. Where dust levels are measured to be above this guideline the mitigation measures in the area must be reviewed as part of the dust minimisation plan.

If the construction contractor adheres to good working practices and the dust mitigation measures, the levels of dust generated are assessed to be minimal and are unlikely to cause an environmental nuisance.

8.7.2 Operational Phase

As outlined in the DMRB assessment, with the scheme operational, compliance with all the relevant limit values is predicted to be achieved. Also a 'Travel Plan' will be implemented for the development by Waterman Moylan.

The Travel Plan aims to promote sustainability, enhance public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car for the journey to and from Clongriffin. The developer for the subject site will appoint a Co-ordinator to ensure it is managed in a comprehensive way.

8.8 Monitoring

No monitoring is deemed necessary due to the negligible impact of the development on annual average PM₁₀.

8.9 Summary.

The impact on air quality mainly by increased traffic are deemed a slight to moderate increase based on the DMRB screening air dispersion model predicting pollutant concentrations over a period of time to quantify the magnitude of change in pollutant concentrations and is in line with what would be expected from a modern residential development.

However, in actual terms when the new government's climate action plan is implemented phasing out petrol & diesel cars over the next 10 years in combination with the Clongriffin Travel Plan which aims to promote sustainability, enhance public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car for the journey to and from Clongriffin the impact would be significantly less than the outlined predictions.

Chapter 9 – Noise and Vibration

9.1 Introduction

Chapter 9 of this Environmental Impact Assessment has been prepared by DKPartnership (DKP) and assesses noise and vibration impacts associated with the proposed development at Clongriffin, Dublin 13. The proposed development is a mixed development consisting of residential apartment blocks with elements of commercial and social spaces.

This chapter will identify and assess the impact of the proposed mixed-use development in terms of noise and vibration during the construction phase and operational use with particular attention to the nearby residential units. Increased traffic volumes associated with the subject site is likely to be the main impact source. Traffic volumes for the proposed scheme have been projected by Waterman Moylan for the entire Clongriffin site therefore the noise impact assessment for the operational phase of the subject site will also consider the cumulative impact of the entire Clongriffin development project.

This assessment was prepared in accordance with the EIA Directive 2014/52/EC and current EPA guidelines. This section should be read in conjunction with any guidance documents for the site and project description sections of this EIAR.

9.2 Research Methodology

9.2.1 Construction Noise Criteria

The level of environmental noise generated during the construction phase of any development is determined primarily by the exact construction methods employed. The level of the noise impact of these methods will arise from the specific sound power levels generated by the plant and machinery used, the duration of each particular construction activity, as well as the time and location in which the equipment is used. The potential sources of environmental noise during the construction phase of the development will primarily arise from increased traffic on the surrounding roads (from construction workers and delivery of plant and materials) and actual on-site works where plant and machinery will be deployed.

As at this point of time we do not have an any actual specific construction plan to outline details of plant and machinery to be used, materials, construction phasing and working hours) it is not possible to accurately model construction noise levels using the recommended standard ISO 9613:1996 Acoustics - Attenuation of sound during propagation outdoors however a basic analysis of worst case noise levels has been calculated. This basic calculation was based on the current construction methods applied on site to complete the works and assessed noise impacts for the anticipated construction equipment.

As we do not have any published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project however local authorities normally control construction activities by imposing limits on the hours of operation with certain noise limits at their discretion. For this report we applied the British Standard BS 5228-1:2009+A1: 2014 - Code of practice for noise and vibration control on construction and open sites.

BS 5228-1:2009+A1: 2014 sets out a method of calculating the propagation of sound towards a receiver from the use of certain construction plant and machinery on a construction site. The standard describes single octave sound power level data for a range of standardised plant and machinery as would be expected to be the norm on construction sites.

9.2.2 Construction Vibration Criteria

During the construction phase of a development certain aspects of the site work may result in increased levels of vibration in the vicinity of the site. BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: - Part 2: Vibration, outlines a number of calculation methods for predicting peak particle velocity (PPV) resulting from construction works on open sites.

The prediction methods require specific information relating to the soil composition and compaction levels within the propagation path between the construction area and nearest receiver, as well as highly detailed information regarding the type and location of plant and machinery. As such specific data is not available a quantitative impact of vibration will not be undertaken as part of this assessment. Construction practices employed should have regard to best practice as recommended in the following standards and guidance:

- BS 6472-1 (2008) Guide to evaluation of Human Exposure to Vibration in Buildings - Vibration sources other than Blasting.
- BS 7385-1 (1990) Evaluation and Measurement for Vibration in Buildings - Guide for Measurement of Vibration and evaluation of their effects on buildings.
- BS 7385-2 (1993) Evaluation and Measurement for Vibration in Buildings - Guide to damage levels from Ground borne Vibration.
- BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

9.2.3 Operational Noise Criteria

As we do not have any statutory limits, it is therefore necessary to reference appropriate best practice guidance and standards in order to determine the impact of the subject site on the noise climate in the surrounding area during the operational phase. It is important to note that the primary potential source of noise arising during the operational phase is that of road traffic associated with the increased population of the area.

For the calculation and assessment of road it has generally been best practice to assess road traffic noise on the basis of the $L_{A10\ 18\text{hour}}$ parameter as outlined in the CRTN document. Transport Infrastructure Ireland (formerly the National Roads Authority (NRA)) have produced guidelines for national road schemes however in this development we do not have any national primary road hence this standard would not apply.

The World Health Organisation propose guideline values for the prevention of moderate and serious nuisance in outdoor areas as 50dB $L_{Aeq\ (16\ \text{hour})}$ and 55dB $L_{Aeq\ (16\ \text{hour})}$ respectively although a more appropriate criteria for assessing disturbance or annoyance from noise arising from the site would be related to the significance of changes in noise levels as perceptible to human beings.

The information in the table below (next page) is taken from the 'Guidelines for Noise Impact Assessment' produced by the Institute of Environmental Management and Assessment (IEMA). This document replaces the draft guidelines published by the Institute of Acoustics (IOA) and IEMA in April 2002 and shows an appropriate impact.

Change in Noise Level	Subjective Reaction	Impact Guidelines for Noise Impact assessment significance	Impact Guidelines on the Information to be contained in EIAR's (EPA)
0 dB	No change	None	Imperceptible
0.1 to 2.9 dB	Barely perceptible	Minor	Slight
3.0 to 4.9 dB	Noticeable	Moderate	Moderate
5.0 to 9.9 dB	Up to a doubling or halving of loudness	Substantial	Significant
10 dB or more	More than a doubling or halving of loudness	Major	Profound

The following tasks were carried out in order to assess the noise impacts of the subject site on identified NSRs, during the operational phase of the scheme:

- A survey has been conducted to establish baseline noise levels or back ground noise levels at the nearest noise sensitive receptor surrounding the site.
- A calculation of anticipated noise levels arising at the nearest noise sensitive receptors due to current and forecast increases in traffic arising from the subject site as per basis of the $LA_{10\ 18\text{hour}}$ parameter as outlined in the CRTN document.
- An assessment of the cumulative calculated anticipated noise levels and potential impact upon noise sensitive receptors was carried out with reference to best practice guidelines in the assessment of environmental noise.

9.2.4 Vibration Assessment Criteria:

There are generally accepted criteria for vibration levels that would be likely to lead to complaints and vibration levels that would be likely to lead to structural damage. These levels are outlined in the guidance documents BS6472: 1992 Guide to Evaluation of human exposure to vibration in buildings (1Hz to 80Hz), and BS7385: Part 2 1990: Evaluation and measurement for vibration in buildings - Guide to damage levels from ground-borne vibration.

9.2.5 Operational Vibration Criteria:

Traffic has been identified as the only likely source of vibration during the operational phase of the scheme. In the case of nominally continuous sources of vibration, such as traffic, vibration is perceptible at around 0.5 mm/s PPV and may become disturbing or annoying at higher magnitudes. Currently no major sources of vibration exist on the site. It would therefore be appropriate to assume that negligible vibration impacts will occur during the operation of the subject site and no further assessment is deemed to be required.

9.3 Receptor location Identification:

In this chapter an assessment was made on receptor location having due regard to several considerations including:

- Determining the most exposed or closest NSR to potential sources of environmental noise related to current and future increases in traffic volumes.
- Ensuring that the number of receptors assessed would allow for sufficient baseline data to be obtained in the allocated back ground measurement period but also that the spatial spread of receptor locations was such that all locations in and around the subject site were assessed.

The table below represents the background noise monitoring locations chosen.

Measurement Location	Location	Measurement Type	Justification
NSR1	Main street Block 1	Manual	To determine back ground noise levels
NSR2	Main street Block 20	Manual	To determine back ground noise levels
NSR3	Dargan street	Manual	To determine back ground noise levels
NSR4	Marrsfield Avenue	Manual	To determine back ground noise levels

9.3.1 Calculated noise levels

For the anticipated road traffic noise levels and cumulative noise levels the measured noise level data was applied and calculated on the basis of the $L_{A10\ 18\text{hour}}$ parameter as outlined in the CRTN document issued by Transport Infrastructure Ireland (formerly the National Roads Authority (NRA)). Using the Waterman-Moylan traffic report for the increased volume of traffic has been based on Main Street (block 1), Main Street (Block 2), Dargan Street and Marrsfield avenue being the current main artery roads into and through the development.

9.3.2 Receiving Environment

Clongriffin is a new town on the north fringe of Dublin it is relatively close to the city approximately 10km from the centre. The development site has agricultural lands to the north with the Mayne river further north. To the south it has previous phases of the Clongriffin residential development (Beau park mews) to the east of the site is Baldoyle and to the west is previous phases of the Clongriffin development (Bell tree Park, Park Terrace and Bell tree Green) further west is Father Collins park.

9.3.3 Back-ground Noise Survey

To assess the surrounding back ground noise levels, a daytime back ground noise survey was carried out on September 21st and 22nd 2018. During the survey the 4 attended stations were monitored and at each station three consecutive 15-minute measurements were recorded during the period from 08:00 to 13:00. The measurements taken are deemed to be representative of typical noise levels in the Clongriffin area. The measurements have been performed using a Bruel & Kjaer Type 2260 sound level meter and Bruel & Kjaer 4231 sound level calibrator.

All measurements were carried out in accordance with ISO 1996: 'Acoustics-Description and measurement of environmental noise'. Weather conditions during the survey were in line with the conditions described within ISO 1996, Acoustics 'Description and Measurements of Environmental Noise'. Weather conditions were dry, clear and cool with a slight wind.

The following environmental noise parameters were measured which are defined below:

L_{Aeq} is the A-weighted equivalent continuous steady sound level during the measurement period and effectively represents an average ambient noise value.

L_{Amax} is the maximum A-weighted sound level measured during the measurement period.

L_{Amin} is the minimum A-weighted sound level measured during the measurement period.
 L_{A10} is the A-weighted sound level that is exceeded for 10% of the sample period; this parameter is typically used to quantify traffic noise.

L_{A90} is the A-weighted sound level that is exceeded for 90% of the sample period; this parameter is typically used to quantify background noise.

Typical ranges of noise levels are presented in the table below comparing against the baseline noise levels measured:

Sound levels in decibels dB (A)	Description of Activity
0	Absolute silence
25	Very Quiet
35	Rural night time
55	Suburban roadway 0.5km away
70	Busy Restaurant
85	Very busy pub, voice is raised to be heard
100	Rock concert
120	Uncomfortably loud, conversation impossible
140	Noise causes pain in ears

9.3.4 Back-ground Noise Survey Data:

The following 4 no. tables are the measured and calculated (average) back ground noise levels from the 4 no monitoring locations.

NSR1						Main street block 1
Time	LAeq	LAmx	LAmin	LA10	LA90	Comments
8.00	58	67	42	59	42	Mainly general traffic noise with occasional lorry for construction site main artery road
9.00	57	65	42	58	44	
11.00	56	67	41	54	43	
13.00	61	68	44	62	45	
Avg	59			58	43	

NSR2						Main street block 2
Time	LAeq	LAmx	LAmin	LA10	LA90	Comments
8.00	56	88	46	61	46	General traffic noise and back ground noise from construction site
9.00	55	92	48	64	47	

11.00	56	74	47	58	47	
13.00	57	82	44	59	48	
Avg	56			60	47	
NSR3						Dargan street
Time	LAeq	LAm _{ax}	LA _{min}	LA ₁₀	LA ₉₀	Comments
8.00	56	67	44	55	44	General traffic as current through road for the development
9.00	57	69	44	56	45	
11.00	57	68	46	55	45	
13.00	58	68	47	56	46	
Avg	57			55	45	

NSR4						Marrsfield avenue
Time	LAeq	LAm _{ax}	LA _{min}	LA ₁₀	LA ₉₀	Comments
8.00	60	65	44	58	43	Mainly general traffic noise with occasional lorry for construction site main artery road
9.00	59	64	43	59	45	
11.00	58	65	44	56	43	
13.00	59	66	45	60	45	
Avg	60			59	44	

9.3.5 Basic Noise Measurement Overview:

During daytime periods average ambient noise levels were in the range 56 to 60dB LAeq. Average background noise levels were in the range 42 to 48dB LA90 and average LA10 values, typically used to describe traffic noise were in the range 54 to 62dB, indicating that most of the measured noise levels would have arisen from traffic noise.

9.3.6 Back-ground Vibration Survey:

Only minor vibration was observed during the noise measurements and therefore it has not been considered necessary to undertake baseline vibration monitoring as there is no evidence to suggest that existing receptors are currently affected by appreciable environmental vibration.

9.4 Characteristics of the Proposed Development

The proposed development covers multiple mixed apartment block applications located in Clongriffin, Dublin 13 and represents most of the remaining sites to be “filled-in” within the Clongriffin development. The current existing site consists of approximately 16 apartment blocks and low level (2/3 storey) dwellings and commercial/social spaces. This particular phase consists of 15 blocks with a total of 1950 residential units and 22,727m² of commercial space.

The 15 blocks are applied for in 3 no. separate planning packages, SHD I , SDH II and DCC I. Approximate details of the 3 no. separate planning applications are shown below.

Planning reference	Qty blocks	Block ID	No dwellings	Commercial space m ²
SHD I	9	6, 8, 11, 17, 25, 26, 27, 28, 29	1030	2285
SHD II	3	4, 5, 14	500	3125
DCC I	3	3, 13, 15	420	17317

9.5 Potential Impact of the Proposed Development

The anticipated noise impacts on the surrounding environment must be considered for both the short-term impact of the construction phase and the operational phase.

9.5.1 Construction Phase

Short-term noise impacts are only to occur during the construction phase of the development due to the requirement to use plant and machinery on and to the construction site(s). In the absence of specific construction information regarding the construction stage, construction noise impacts cannot be fully quantified at this point, therefore sample calculations have been provided. Minor short-term vibration impacts may occur during the construction phase as a result of the use of heavy plant and machinery; however these impacts will be unlikely to propagate beyond the construction site boundary.

9.5.2 Operational Phase

As per measured noise level data the main potential noise source that would be evident during the operational phase of the development would be that of increased road traffic noise associated with the subject site. In general, this can be categorised as:

- Residents small vehicular traffic in and out of the Clongriffin site.
- Delivery and service vehicles servicing the shops and commercial units.
- General activities, landscape maintenance, cleaning, energy producing equipment etc.

Vibration is not anticipated to be a contributing factor in the operational phase.

9.6 Predicted Impact of the Proposed Development

9.6.1 Construction Noise

Using the method outlined in BS5228, a worst case LAeq value at potential NSRs at distances of 100m, 150m, 200m and 250m have been calculated for a range of construction plant. The following plant has been applied to give an example of the potential construction noise levels:

- Heavy delivery trucks.
- Ground works excavators.
- Noisy construction plant (mixers, vibrators).

We have used BS 5228-1:2009+A1: 2014 to anticipate/calculate the construction noise levels in the proposed development. This methodology relates to the method for construction vehicles/plant in a defined construction area. The prediction of the LAeq from construction plant

operating over a small area or on site can be used for other activities when items of construction plant are operating in close proximity to the reception point, taking into account the adjustment of the predicted LAeq for standing and idling time of the plant. It is assumed that over a 1-hour period, all construction plant will be operational for 80% of the time. The results of these calculations are presented in the tables below.

Noise Source	Sound Power LWA dB
Heavy delivery truck	102
Ground works excavator	100
Noisy construction plant (mixers, vibrators)	106

Distance of Potential NSR from construction site	Predicted Noise levels at NSR LAeq dB	BS5228-1 (2009)	
		Monday-Friday (07.00-19.00)	Saturday (07.00-13.00)
100m	59	70	65
150m	56		
200m	53		
250m	51		

As most of the construction sites will generally be within 100m of an occupied building the results of the indicative construction calculations shows that the resultant LAeq (1 hour) values of using such construction plant and vehicles would be in the region of 59db LAeq and below the maximum allowable day time ambient level of 70dB LAeq. BS5228-1 (2009) +A1: 2014 specifies that a daytime limit of 70dB LAeq shall apply on weekdays and a daytime limit of 65dB LAeq shall apply on Saturday.

The ambient noise levels at the nearest noise measurement location with construction noise (NSR2) are comfortably below the BS5228-1 limits and also will be short-term in duration. The construction phase generally has no noticeable change on the noise environment in the longer term.

9.6.2 Construction Vibration

We only anticipate minor temporary ground borne vibration events during the construction phase but the exact impact of these vibration impacts cannot really be quantified.

9.6.3 Operational Noise

The anticipated noise impacts from the overall development including the proposed phase during its operational phase will mainly be as a result of increased small vehicle traffic flows along the incoming and outgoing routes into the Clongriffin site. It is anticipated that the additional road traffic noise attributable to the development (cumulatively with other developments) will result in an increase in the baseline noise environment by 3.5 to 5dB(A) at the main in/out going roads with the other locations experiencing a lower impact of between 2.0 and 3.5dB(A). The change in noise levels and the significance of such changes can be

categorised by the Guidelines for Noise Impact Assessment, Institute of Environmental Management and Assessment. The table below details the impact/category.

Change in Noise Level	Subjective Reaction	Impact Guidelines For Noise Impact assessment significance	Impact Guidelines on the Information to be contained in EIAR's (EPA)
0 dB	No change	None	Imperceptible
0.1 to 2.9 dB	Barely perceptible	Minor	Slight
3.0 to 4.9 dB	Noticeable	Moderate	Moderate
5.0 to 9.9 dB	Up to a doubling or halving of loudness	Substantial	Significant
10 dB or more	More than a doubling or halving of loudness	Major	Profound

Based on the table above and the anticipated increase in noise levels we deem the operational noise impact to be categorised as Slight or Moderate at the worst-case locations. The increase in traffic associated with the proposed development scheme is therefore not expected to give rise to any significant noise nuisance in the area. We note that as part of the Government Climate Change action plan that petrol and diesel passenger vehicles are being phased out and replaced by quieter electric vehicles leading to less operational noise.

9.6.4 Operational Vibration

Operational vibration is deemed not to have any noticeable impacts on the development.

9.7 Remedial and Reductive Measures

DKP do not anticipate the requirement of any remedial measures but list the following recommendations mainly for the construction sites;

- Ensure that the local authority guidelines or planning directives to noise levels and operational times are adhered to.
- Prepare an operational plan with regards to limiting noise nuisance.
- Ensure all construction vehicles and plant are regularly maintained including any noise control measures such as attenuators, filters etc.
- Limit any construction noise spreading to neighbouring site by erecting temporary noise barriers (site boundary hoarding).
- Schedule particular high-level noise activities for times when increased noise levels are less sensitive or notify neighbouring residents or any sensitive sites.

9.8 Monitoring

No noise monitoring is deemed necessary for the operational phase however noise monitoring will most likely be a requirement as directed by the local authority for the construction phase based on the local authorities imposed limits on the hours of operation and noise limits.

No vibration monitoring is deemed necessary for both the operational and construction phase.

9.9 Summary

The impact or increase in noise levels, mainly by increased traffic noise in the main artery roads, are deemed slight to moderate based on the predicted calculation methodology of BS 5228-1:2009+A1: 2014 and are in line with general noise impacts of new developments. However, in actual terms when the new government's climate action plan is implemented, the noise levels including the new proposed development will reduce over the current back ground noise levels due to the fact that petrol & diesel cars will be phased out and replaced by more quiet electrical cars over the next decade during which the development will be constructed.

It is anticipated that construction vibration levels will only have minor temporary increases and that any increase in operational vibration due to the new development is deemed not to have any noticeable impacts on the overall development.

Chapter 10 – Climate

10.1 Introduction

Chapter 10 of this Environmental Impact Assessment has been prepared by DKPartnership and assesses the effects of the proposed development on carbon dioxide (CO₂) emissions effecting the current climatic conditions. The proposed development at Clongriffin, Dublin 13 is a mixed development consisting of residential apartment blocks with elements of commercial and social spaces. This section will identify and assess the impact of the proposed development in terms of CO₂ emissions during the construction phase and when in full operational use.

We note that although the construction phase contributes to CO₂ emissions through the type of construction methods, choice of materials, transport / traffic requirements etc its impact compared with the operational use is minimal. This assessment was prepared in accordance with the EIA Directive 2014/52/EC and current EPA guidelines.

10.2 Research Methodology

It is near impossible to apportion any increase in CO₂ emissions as a result of the proposed development at Clongriffin to any specific climate impacts other than noting that any increase large or small will more than likely also effect the climate or climate change.

We have therefore concentrated the report on the proposed CO₂ emission impact and methods to reduce this to a minimum on both the construction and operational stages in line with Ireland's National Policy Position on climate action and low carbon development.

10.3 Receiving Environment

Clongriffin is a new town on the north fringe of Dublin it is relatively close to the city approximately 10km from the centre. The development site has agricultural lands to the north with the Mayne river further north. To the south it has previous phases of the Clongriffin residential development (Beau park mews) to the east of the site is Baldoyle and to the west is previous phases of the Clongriffin development (Bell tree Park, Park Terrace and Bell tree Green) further west is Father Collins park.

The proposed development covers a mixed use development located in Clongriffin, Dublin 13 and represents most of the remaining sites to be “filled-in” within the Clongriffin development. The current existing site consists of approximately 16 apartment blocks and low level (2/3 storey) dwellings and commercial/social spaces. This particular phase consists of 15 blocks with a total of 1950 residential units and 22,727m² of commercial space. The 15 blocks are applied for in 3 no. separate planning packages, SHD I , SDH II and DCC I. Approximate details of the 3 no. separate planning applications are shown below.

Planning reference	Qty blocks	Block ID	No dwellings	Commercial space m ²
SHD I	9	6, 8, 11, 17, 25, 26, 27, 28, 29	1030	2285
SHD II	3	4, 5, 14	500	3125
DCC I	3	3, 13, 15	420	17317

10.3.1 Climate Policy

The National Policy Position on climate action and low carbon development was published on in April 2014 but was updated with the governments latest plan published in July 2019. The policy sets a fundamental national objective to achieve transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050.

The National Policy Position envisages that development of National Mitigation Plans will be guided by a long-term vision of low carbon transition based on aggregate reduction in CO₂ emissions of at least 80% compared to 1990 levels by 2050 across the construction and transport section relative to this planning application.

10.3.2 Transport

Transport / road transport is currently the second largest contributor of greenhouse gas emissions (after agriculture) at +/- 20%. Between 1990 and 2015, the transport sector showed the greatest overall increase of +/- 130% and increases are linked to economic prosperity with year on year increases observed up to 2007 followed by six years of year on year decrease during the economic downturn. The latest EPA projections indicate that transport emissions are projected to increase by 16% in the period 2014 to 2020 with a proposed target of 10% renewable fuel use by means of electric vehicles or transport facilities able to operate on renewables.

10.3.3 Residential

Emissions from the residential sector have fluctuated in the period 1990 to 2015 but overall the 2015 emissions are +/- 20% lower than their 1990 level. Initially there was a sharp reduction in emissions in the early 1990's from residential fuel switching to cleaner fuels. The increase in housing stock drove a gradual upward trend in the emissions from the residential sector after 1998 to reach a peak in 2010.

For the residential sector under the various (energy reduction) schemes the CO₂ emissions are targeted to be reduced by 60% for new dwellings mainly through the implementation of the new Nearly Zero Energy Building (NZEB) regulations (Part L 2017 for non-residential units and Part L 2019 for residential units) and increased use of renewable energy.

10.4 Potential CO₂ Emission Effect

The CO₂ impact in this development is affected by the construction phase and operational residential phase with the latter dominating the emissions.

10.4.1 Construction Phase

The construction phase of the scheme only emits CO₂ and other possible greenhouse gasses in the relative short term. Emissions are from construction activities and from embodied carbon in construction materials. The principal sources are listed below:

- Quarried material, stone, aggregate, sand, etc.
- Concrete, mortars, cement
- Metals, including steel sub structure, reinforcement, cladding, piping, facades and finishes.
- Machinery, both mobile and fixed site construction equipment.
- Transport, materials inwards and wastes outwards and construction staff.

10.4.2 Operational phase

During the operational phase a mixed use residential development emits CO₂ through vehicular traffic into and out of the development and energy usage within the buildings. Vehicular impact is mainly addressed using a predicted traffic count based on a traffic study for the development taking in account any proposed central locations for schools, social / recreational spaces and the inclusion of options for pedestrian and bicycle movement with a view to encouraging public transport.

We note that the Governments new (2019) Climate Change policy issued in July sets out to phase out petrol and diesel cars by 2030 hence this will result in a significant CO₂ reduction.

Energy reduction measures from buildings also form a significant part of the overall operational development contribution with the impact being curtailed by the new NZEB building regulations enforcing energy reductions of 70% and CO₂ reduction of 60% within the statutory instrument.

10.5 Minimising CO₂ Emissions

10.5.1 Construction Machinery / Equipment and Materials

CO₂ reduction measures to minimise impacts from transport during the construction phase include the following:

- Local sourcing of construction materials such as the recycling of material from excavations for reuse on site.
- Implementation of the Traffic Management Plan to minimise congestion and queuing, reduce distances of deliveries and eliminate unnecessary loads.
- Reducing the idle times by providing an efficient material handling plan that minimises the waiting time for loads and unloads. Reducing idle times could save up to 10% of total emissions during construction phase.
- To turn off engines when machinery is not required to operate in the relative short term unless the this is an issue for security or functionality reasons.
- Periodic maintenance of plant and equipment.
- Technical inspection of vehicles to ensure they will perform the most efficiently.

10.5.2 Embodied Carbon Dioxide

Embodied carbon dioxide is the amount of carbon dioxide a material emits to the environment per unit (weight / volume) including its exploration, manufacturing process, transport to site, its 60 year use and end-of -life requirements also known as the Cradle-to-Grave impact. Embodied carbon dioxide is attributed to all materials to be used on site and by minimising or avoiding certain materials the impact on CO₂ emissions can be reduced by:

- Increasing the use of locally available recycled materials.
- Reducing the use of materials with a high embodied CO₂ element.
- Increasing the use of “green” concrete (Granulated Blast Furnace Slag to replace Portland cements as the latter has significant embodied CO₂).
- Reducing the use of metals. Metals generally contain the highest embodied CO₂ element of all materials mainly due to their exploration and manufacturing processes.

10.5.3 Energy Usage and CO₂ Emissions

Under the new building regulation requirements (NZEB), in not so many words, the electrical and thermal energy systems in buildings must be designed and constructed to deliver at least a 70% primary energy reduction and a 60% CO₂ reduction over the Part L reference dwelling and have at least 20% primary energy equivalent energy coming from on-site produced renewable energy.

To achieve these reductions to following outline specification can be applied:

- Ground floors: $U \leq 0.110 \text{ W/m}^2\text{K}$
- External walls: $U \leq 0.130 \text{ W/m}^2\text{K}$
- Curtain walling (commercial): $U \leq 1.20 \text{ W/m}^2\text{K}$
- Party walls: $U = 0.0 \text{ W/m}^2\text{K}$ (solid party wall)
- Roofs: $U \leq 0.08 \text{ W/m}^2\text{K}$
- Window & frame: $U \leq 0.80 \text{ W/m}^2\text{K}$, Solar transmittance ≤ 0.66
- External (unglazed) door & frame: $U \leq 1.0 \text{ W/m}^2\text{K}$
- Cold bridging: $U \leq 0.07 \text{ W/m}^2\text{K}$ special construction joints applied.
- Thermal mass: TP250
- Ventilation: Humidity controlled natural ventilation / intermittent extracts or full MVHR.
- Air tightness: Design assumption $\leq 3.0 \text{ m}^3/\text{m}^2\text{h}$
- Lighting: 100% LED
- Controls: Time clock/ thermostatic control for each separate heating/hot-water zone
- Circulation pumps: Class A variable speed pump
- Heating / hot-water system: Space heating systems with buffered hot-water (calorifiers)
- Heating / hot-water energy source: City District Heating Network (CDHN)
- Renewable energy: CHP renewable energy element of CDHN.
- Cooling system / source (commercial only): City District Heating Network (CDHN) absorbent cooling or refrigerant cooling with cop (EESER) ≥ 3.8

10.5.4 Transport

Transport emissions personal and delivery vehicles are being reduced through EU and national initiatives and regulation on a continuous basis. CO₂ emissions from cars are regulated through EU legislation which sets statutory maximum emission targets for new vehicles currently set to achieve an average of 95 grams of CO₂ per km in 2022. The following is applied to lower CO₂ emissions as a result of transport:

- Encourage the use of electric cars*.
- Encourage the use of new low CO₂ petrol cars.
- Utilise available fiscal measures for the use of electric vehicles or renewable fuels.
- Design and plan the overall project in such manner as to encourage walking and cycling.
- Design and plan certain required facilities like schools, medical centres, shopping areas recreational spaces, within the development to lower the need to use motorised vehicles.
- Design and plan public transport routes throughout the development to encourage the use of public transport.

10.6 CO₂ Reductions in Technical Terms

In transport terms any prediction of CO₂ emissions and/or reductions would be some form of a guess as the movement of residents to from work and any other places at this point is not known nor is a predictable in any accurate form at this point.

By applying the aforementioned measures and the EU new car CO₂ emission targets is best anticipated that we could achieve transport CO₂ reductions of +/- 15% to 20%.

CO₂ emissions as a result of energy usage in building is more predictable. Applying the centralised city district heating network fed mainly by combined heat and power and the other aforementioned energy reduction measures the overall CO₂ reduction of the development is estimated at 65% over the Part L reference building and approximately 38% better than conventional gas or electric heating.

For further information on this heating system see the separate report issued on the City District Heating Network.

Energy savings:

Equivalent energy for CHP thermal energy boiler @ 0.91	10,496,034	kWh/yr
Equivalent energy for CHP electrical energy CCGT @ 0.50	17,800,320	kWh/yr
Total equivalent energy for CHP	28,296,454	kWh/yr
Energy input for CHP	21,707,707	kWh/yr
Total energy saving (23.3%)	6,688,647	kWh/yr

Carbon savings:

Carbon emissions from CHP	4,406,665	kg/yr
Carbon emissions from local boilers	200,626	kg/yr
Carbon emissions from central boilers	162,846	kg/yr
Total system carbon emissions	4,770,137	kg/yr
Carbon emission avoided from electric generation	3,889,370	kg/yr
Nett carbon emissions from CDHN	880,767	kg/yr
Equivalent (gas boiler) carbon emissions	2,264,218	kg/yr
Total Carbon reduction (38.9%)	-1,383,450	kg/yr

Renewable energy requirement and CDHN / CHP contribution.

Applying both the Deap and Neap with part L 2017 (commercial) and Part L 2018 (residential) energy the following are the renewable energy requirements and the provided renewable energy:

Renewable energy requirement residential	1,887,900	kWh/yr
Renewable energy requirement commercial	634,500	kWh/yr
Total Deap/Neap renewable energy requirement	2,522,400	kWh/yr
Renewable energy provided by CHP	10,979,675	kWh/yr

10.7 Summary

The impact or increase in CO₂ levels mainly contributed to an increase in operational (heating/hot-water) use and road traffic use are deemed a moderate increase based on current construction standards and vehicle emissions and in line with a general increase in housing accommodation.

However if one was to apply the new Part L 2019 in combination with the proposed city district heating system and the new government's policy for climate change phasing out petrol & diesel cars in the next 10 years and promoting the use of public transport and non motorised transport the actual CO₂ impact will be a marginal increase on the overall development in Clongriffin.

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Chapter 11 – Material Assets

11.1 Introduction

This Chapter describes the material assets that are potentially impacted by the proposed Project at Clongriffin. Material assets are resources that are valued and intrinsic to the site of the proposed Project and surrounding environs. Material assets may be of either natural or human origin and the value may arise for economic or cultural reasons.

This Chapter considers and assesses the effects of the proposed Project on the material assets, including major utilities within and around the site during the construction and operational phases such as built services (i.e. water supply, wastewater services, gas, electricity, telecommunications, etc.), roads and traffic, and waste management.

The EPA Guidelines (Draft 2017) state that:

'The meaning of this factor is less clear than others. In Directive 2011/92/EU it included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.'

Given the importance of Architectural, Archaeological and Cultural Heritage and noting established EIA best practice within Ireland, the Architectural, Archaeological and Cultural Heritage has been comprehensively considered and assessed as a standalone chapter within this EIAR. For further information in this regard, please refer to Chapter 14. In addition, water and road infrastructure have been assessed in Chapter 7 and Chapter 13 respectively, whilst land/soils/geology have been assessed in Chapter 6.

A site-specific Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. Operational waste management will be managed on a block by block basis by the management companies on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards.

11.2 Study Methodology

11.2.1 Desk Study

This chapter has been prepared in accordance with the requirements of the following statutory documents which were consulted in the course of the study:

- Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002);
- EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003);
- EPA, Advice notes for preparing Environmental Impact Statements (September 2015);
- EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017)

- Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive)
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018)
- Waste Management Acts 1996 -2001 and associated Regulations
- Protection of the Environment Act 2003 (as amended)
- Litter Pollution Act 1997
- Eastern-Midlands Region (EMR) Waste Management Plan
- Dublin City Council Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste 2013
- Waste Management: Changing Our Ways (1998)
- Preventing and Recycling Waste: Delivering Change (2002)
- Taking Stock & Moving Forward (2004)
- National Strategy on Biodegradable Waste Management (2006)
- A Resource Opportunity Waste Management Policy in Ireland (2012)

The study was also informed by numerous site visits over the course of 2018/2019, topographical surveying of the application sites, the sourcing of utility information/records from the relevant service providers, and an analysis of the resources consumed and an estimation of waste generated by the proposed Project at both the construction and operational phases.

Consultation with Irish Water has taken place over the course of the preparation of this EIAR. In addition, Electricity Supply Board (ESB) were consulted in June 2018 which has informed the proposed Project. Gas supply is also available within Clongriffin through Gas Networks Ireland.

11.2.2 Rating of Impacts

Material assets are generally considered to be location sensitive. The likely significance of all impacts is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the material asset). Having assessed the magnitude of impact with respect to the sensitivity/value of the asset, the overall significance of the impact is then classified as imperceptible, slight, moderate, significant, or profound. The criteria for the assessment of impact significance is as per that set out in the relevant EPA Guidelines and in accordance with the EIA Directive.

11.3 Baseline Environment

11.3.1 Site Location and Context

The subject lands are located in the townland of Grange, and form part of a relatively new residential suburb known as Clongriffin. The site is located less than a kilometre from the coastline, with the River Mayne flowing along the north side of the site on its course to the Irish sea.

The application sites are currently characterised as infill, brownfield lands on which development was originally intended and granted as part of a wider Masterplan for Clongriffin in 2003. Clongriffin has been a development site since this grant of permission so much so that a significant proportion of infrastructure has been constructed on site to date. This infrastructure includes existing roads, public infrastructure, drainage, water services, public lighting, open space, train station, town square, quality bus corridors, etc. In addition,

existing development site boundaries including constructed blocks and internal roads are partially constructed.

The subject site is situated within the Clongriffin-Belmayne Local Area Plan (LAP) lands, at the eastern development boundary of Clongriffin. The surrounding environment is characterised by mostly residential developments. The Key Development Principles for the SDRA 1 North Fringe (Clongriffin-Belmayne) area pertaining to the subject lands is deemed for residential use, except for a small section of the southern boundary which would be categorised as Key District Centre (mixed use).

The proposed development consists of the construction of a mixed-use development comprising 1,950 residential units and c.22,727.5 sq.m. are provided across 15 no. Blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build to Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m. of commercial development including c.30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. childcare facilities, 1 no. 8-screen cinema, 1 no. commercial gym, 7 no. cafés/restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks, utilisation of existing infrastructure and all associated works necessary to facilitate the development. The proposed development will be provided on the 3 no. application sites which extend to a total of c.11.4 hectares.

11.3.2 Ownership and Access

Access to the subject development is from The Hole in the Wall Road via the R123 Balgriffin Road to the north and the Grange Road to the south. The Hole in the Wall Road links the R139 Grange Road to the south with Marrsfield Avenue to the north. Main Street is the main access to Clongriffin. It links Hole in the Wall Road to the west with Station Square in the Clongriffin Town Centre to the east. Marrsfield Avenue is the second access to Clongriffin from Hole in the Wall Road.

A Traffic and Transport Assessment has been prepared by Waterman Moylan Consulting Engineers and is submitted as part of the three planning applications for the proposed Project. The lands subject to the applications is within the ownership of the applicant, Gerard Gannon Properties.

11.3.3 Wastewater Services

The entire Clongriffin development drains by gravity to the Clongriffin Pumping Station through a series of existing 225mm, 300mm and 450mm diameter foul sewers within the road network. The pumping station pumps wastewater for approximately 70m, discharging to the 1,600mm diameter North Fringe Northern Interceptor Sewer (NFNIS) which is located within the reservation of Marrsfield Avenue, running west-east through the site.

The NFNIS has been designed to accommodate the Clongriffin Development and discharges eastwards to Sutton Pumping Station and ultimately to the Ringsend Waste Water Treatment Works. The Clongriffin foul water network and pumping station were designed and constructed to accommodate the full Clongriffin development.

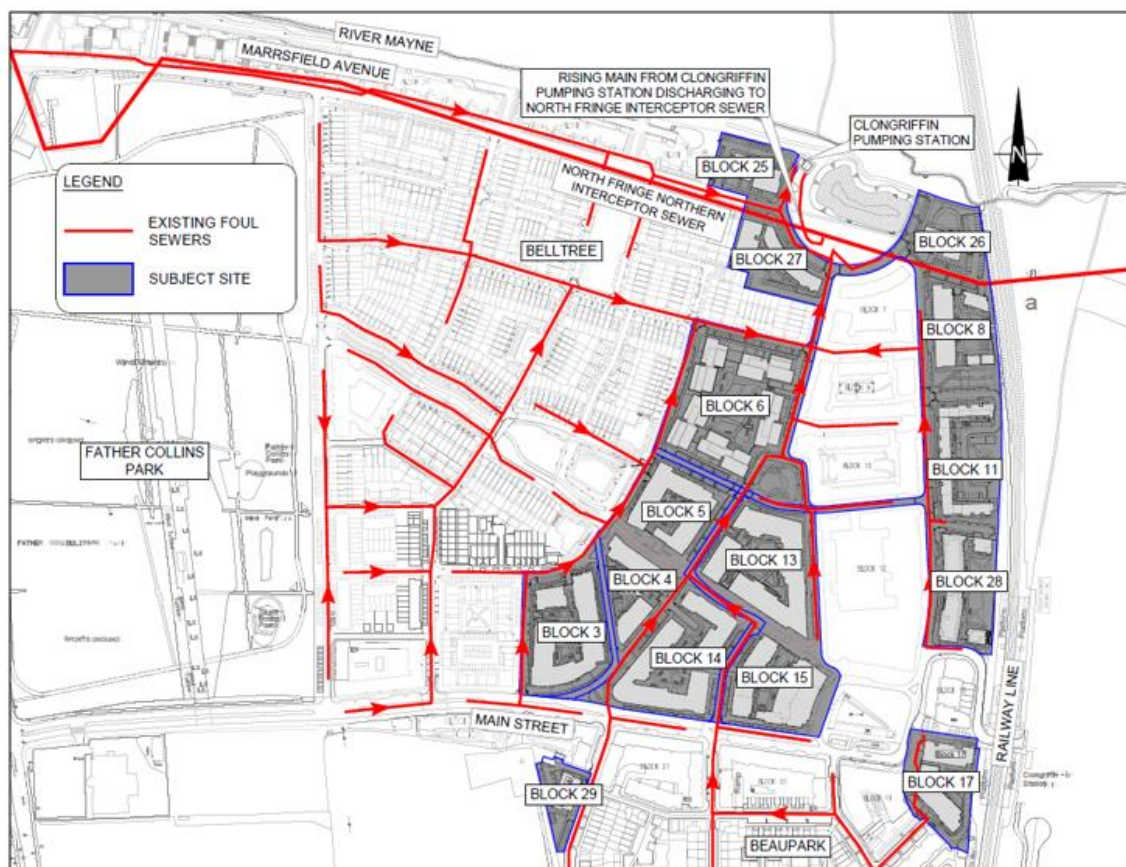


Fig. 11.1 – Existing and Proposed Wastewater Drainage Layout

11.3.4 Water Supply

The water supply for the area is part of the North Fringe Water Supply Scheme, which commenced construction in 2004.

The existing 450mm / 560mm HPPE North Fringe Watermain runs along Marrisfield Avenue to the north of the site; there is also an existing 200mm watermain pipe running along Park Avenue to the west and an existing 250mm watermain pipe running along Main Street to the south of the site. As each Block has been constructed throughout Clongriffin, a series of 100mm and 150mm watermains have been constructed around each block. This hierarchy of watermains for Clongriffin was designed and approved under the Clongriffin Masterplan, Reg. Ref. 0132/02, PL29N.131058.

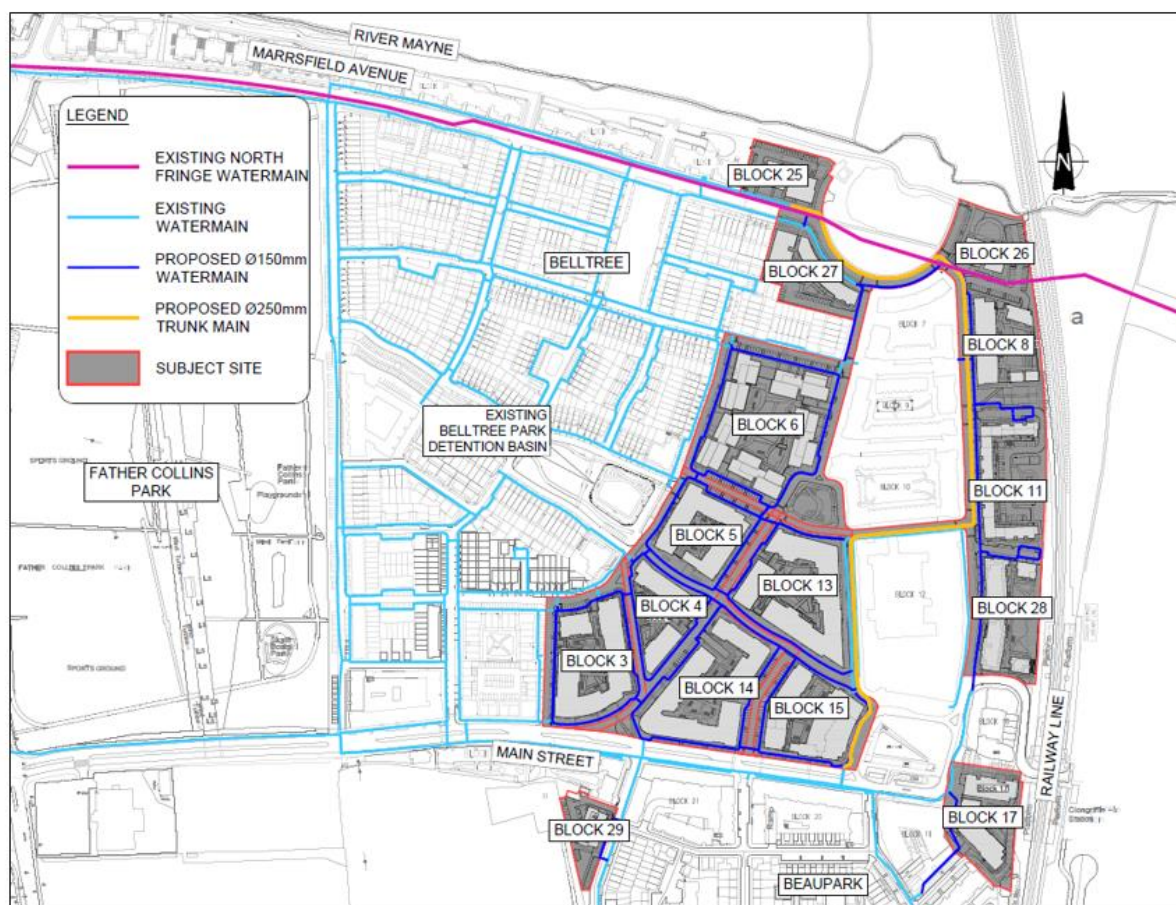


Fig. 11.2 – Existing and Proposed Watermain Layout

11.3.5 Electricity, Gas and Telecommunications

Gas is fed to the subject lands from a gas main running from Main Street. The gas main is within close proximity to the proposed development and as such gas metres can be easily installed to facilitate the future serving of the proposed Project during the construction phases.

Based on the information received from ESB Networks (ESBN), the subject lands are serviced by existing underground cables noting the existing development to date within Clongriffin. Thus, there are no supply issues envisaged.

Based on the information received from telecommunication providers, the area is also well serviced in this regard and there are no supply issues envisaged for the proposed Project.

11.3.6 Waste Management

In terms of waste management, the receiving environment is defined by Dublin City Council as the Local Authority with responsibility for setting standards and targets and for monitoring/regulating waste management activities in the area, as set out by the management plan for the region i.e. the EMRWMP 2015-2021. The Dublin City Development Plan 2016-2022 sets out these policies and objectives regarding waste management. In addition, waste operators already service the area as a significant quantum of residential units and commercial units exist within the immediate vicinity of the subject lands.

11.4 Potential Impact of the Proposed Project

This section provides a description of the potential impacts of the proposed Project may have during the Construction and Operational phases. The impact assessment addresses the *direct, indirect, cumulative, short, medium and long term, permanent, temporary, positive and negative effects*.

11.4.1 Construction Phase

Site Location and Context

The Construction phase will likely have a temporary impact on the existing settlement in the vicinity of the subject lands. There may also be some slight and temporary impacts to the existing population which may arise during the construction phase, refer to Chapter 4 (population and human health), Chapter 8 (air quality), Chapter 9 (noise and vibration) and Chapter 10 (climate) for further information.

Ownership and Access

During the construction phase, access will be affected by hoarding and security fencing required onto the public road network. Access gates will be provided at all site and compound access points. The main construction access will be from a site entrance located along Marrsfield Avenue for Blocks 25, 26 and 27, along Lake Street for Block 6, at the east end of Dargan Street for Blocks 8, 11 and 28, from Grange Lodge Avenue for Block 29 and from Main Street for Block 17. A detailed traffic management plan will be prepared and implemented by the Main Contractor and agreed with the Local Authority prior to commencing works. As a result, there will be a temporary disturbance to traffic in the surrounding area during construction.

The number of construction vehicle movements anticipated is low compared to the number of trips expected to be generated by the proposed development during the operational phase. It should be noted that the majority of such vehicle movements would be undertaken outside of the traditional peak hours, and it is not considered that this level of traffic would result in any operational problems.

It is estimated that 75% of construction traffic will come from M50 / Malahide and 25% from city centre / Baldoyle direction. Delivery trucks will be instructed to access the various Blocks via Marrsfield Avenue and not Main Street. Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, and temporary car parking is provided within the site for contractor's vehicles. It is likely that construction will have a negligible impact on pedestrian and cycle infrastructure. It is proposed that a Construction Management Plan (CMP) would be prepared by the appointed contractor in order to minimise the potential impact of the construction phase of the proposed development on the safety and amenity of other users of the public road.

Wastewater Services

The Construction phase will involve the construction of the new foul sewers and as such there is the potential for surface water to be discharged to the existing public foul sewer system due to pipes and manholes being left open. There is a risk of pollution of groundwater and water courses by accidental spillage of foul effluent during connections being made to live sewers.

During the construction phase of this project some short term temporary negative impacts as identified above may result. However, if the proposed remedial and reductive measures are implemented, the impact of the proposed development during the construction phase will be minimised/neutral and no significant long term impacts will result from the construction works. Please refer to Chapter 7 (water) for further information in this regard.

Water Supply

No significant impact to the existing watermains is anticipated during the construction phase of the development, though there will be some minor water demand for site offices. There is a risk of contamination to the existing water supply during connection of the development's watermains to the public water supply. A method statement setting out in detail the procedures to be used when working in the vicinity of existing watermains will be produced by the contractor for any construction works within the vicinity of watermains and for roads and / or services crossing watermains. All watermains will be cleaned and tested in accordance with Irish Water guidelines prior to connection to the public watermain. All connections to the public watermain will be carried out by or under the supervision of Irish Water. Potential negative impacts during construction phase will be short term only.

Electricity, Gas and Telecommunications

Electricity will be required during the construction phase. In conjunction with the ESB, the provision of a temporary builders' power supply will be provided. There is potential for temporary impacts to the local electricity supply network, by way of disruption in supply to the local area during electricity connection works for the proposed Project. However, this is a potential impact which is likely to be neutral, slight and temporary.

The supply of gas will not be operational during the construction phase of the proposed Project. There is potential for temporary impacts to the local gas supply network, by way of disruption in gas supply to the local area. However, this is a potential impact which is likely to be neutral.

Telecommunications will not be operational during the construction phase of the proposed Project. There is potential for temporary impacts to local supply, by way of disruption during connections works. However, this is a potential impact which is likely to be neutral, slight and temporary.

Waste Management

The proposed Project will generate a range of waste materials during the excavation and construction phase. Typical municipal waste will also be generated by construction works on sites such as food waste. Waste materials will be stored temporarily on site until such time as collection takes place by a licenced waste contractor. Dedicated, easily accessible locations for collection will be clearly identified across the construction sites.

If waste is not managed or stored appropriately, it is likely to give rise to litter and/or pollution issues on the construction sites and surrounding area. In addition, if unauthorised waste contractors were used, waste materials could be incorrectly managed and disposed of illegally and result in negative environmental impacts or pollution. Thus, all waste generated must be managed in accordance with regional and national waste legislation and taken to suitably registered and licenced waste facilities for processing, segregation, reuse, recycling, recovery or disposal, as deemed appropriate. There are numerous licensed waste facilities in the region which can accept waste generated. The potential effect of construction waste generated from the proposed Project is considered to be short-term, not significant and

neutral. For further information, please refer to the Construction and Demolition Waste Management Plan (C&DWMP) prepared by Waterman Moylan Consulting Engineers.

11.4.2 Operational Phase

Site Location and Context

The proposed development will provide 1,950 residential units and c.22,727.5 sq.m. of commercial development including c.30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. childcare facilities, 1 no. 8-screen cinema, 1 no. commercial gym, 7 no. cafés/restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, and public open space parks. The proposed Project will deliver this mixed-use development on appropriately zoned lands in accordance with the pertaining land-use zoning designations.

Ownership and Access

The operational phase of the proposed Project will result in increased traffic volumes to the local road network. A Traffic and Transport Assessment has been prepared by Waterman Moylan Consulting Engineers and is submitted as part of the three planning applications for the proposed Project. Please refer to Chapter 13 (transport) for further information in this regard.

Wastewater Services

The operational phase of the proposed Project will result in increased effluent volumes to the local foul network. These increased flows will result in an additional peak flow of 35.722 l/s discharging to the Clongriffin Pumping Station. Both the foul water network and the pumping station have capacity to cater for the increased flow. Irish Water have also confirmed, subject to valid connection agreement, that connections will be facilitated.

The predicted impacts on the foul water are minor and do not inter relate significantly with any other environmental topic in this EIAR. Please refer to Chapter 7 (water) for further information in this regard. The potential impact is likely to be moderate and long term.

Water Supply

The operational phase of the proposed Project will result in increased demand on the local water network. Irish Water have confirmed, subject to valid connection agreement, that connection to water supply can be facilitated.

Water meters will be installed at key locations in agreement with Irish Water, and these meters will be linked to Irish Water's monitoring system by telemetry. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system. All plumbing fixtures and fittings and sanitary wear to be installed within the development should be to the current best practice for water consumption to minimise future water usage. It is not envisaged that any further remedial or reductive measures will be necessary on completion. Thus, the potential impact is likely to be moderate and long term.

Electricity, Gas and Telecommunications

Electricity will be required during the operational phase. In conjunction with the ESB, the provision of supply will be facilitated. The proposed Project has been designed in accordance with capacity calculations and loadings to meet the requirements of the

development. This will result in increased demand for electricity in the area. The potential impact from the operational phase is likely to be moderate and long term.

The supply of gas will be required during the operational phase. In conjunction with Gas Networks Ireland, the provision of supply will be facilitated. The proposed Project will result in increased demand for gas in the area. The potential impact from the operational phase is likely to be moderate and long term.

Telecommunications will be required during the operational phase of the proposed Project. The proposed Project will result in increased demand for telecommunications in the area. The potential impact from the operational phase is likely to be neutral, imperceptible and long term.

Waste Management

Given the nature of the proposed Project i.e. a large mixed-use development comprising 1,950 residential units and c.22,727.5sq.m. of commercial development, waste materials during the operational phase will be generated. As Clongriffin is an established suburb of Dublin City, an existing network of waste collection, treatment and disposal contractors and facilities serve the area.

If waste is not managed or stored appropriately, it is likely to give rise to litter and/or pollution issues. The implications of such is that vermin may be attracted to the immediate area as a result. In addition, if unauthorised waste contractors were used, waste materials could be incorrectly managed and disposed of illegally and result in negative environmental impacts or pollution. Thus, all waste generated must be managed in accordance with regional and national waste legislation and taken to suitably registered and licenced waste facilities for processing, segregation, reuse, recycling, recovery or disposal, as deemed appropriate. There are numerous licensed waste facilities in the region which can accept waste generated.

Waste materials generated will be segregated on site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be bins and receptacles provided to facilitate segregation at source. The appointed waste contractor will collect and transfer the wastes to the licensed waste facility. Waste contractors will be required to service the development on a regular basis each week.

The potential effect of operational waste generated from the proposed Project is considered to be long-term, not significant and negative.

11.5 Avoidance, Remedial & Mitigation Measures

All possible precautions shall be taken to avoid unplanned disruptions to any services or utilities during the construction phase of the proposed Project. It should be noted that a number of mitigation measures proposed in other EIAR chapters are also of relevance to Material Assets and should be referred to when reading this EIAR.

The construction phase mitigation measures includes avoidance, reduction and remedy measures as set out within the Development Management Guidelines document. The design and construction of the necessary service infrastructure will be in accordance with relevant codes of practice and guidelines. As a result this is likely to mitigate any potential impacts during the operational phase of the proposed Project. However, routine maintenance of the site services will be required from time to time, as such any mitigation measures will be advised by the relevant service provider.

A site-specific Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. Operational waste management will be managed on a block by block basis by the management companies on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards. Please refer to the supporting respective management plan documents prepared by Liv Consult and Purple Property Management which are submitted as part of the application packs.

11.6 Residual Impacts

If unregulated, predicted impacts associated with the construction phase of the proposed Project would be expected to include potential disruption to local natural and human material assets resulting in both short-term and long-term impacts. The implementation of the mitigation measures set out in this chapter and other chapters of this EIAR would ensure that there is unlikely to be significant residual impacts during the construction phase. Therefore impacts are likely to be temporary and neutral. During the operational phase, the impact to services and utilities is considered to be positive and permanent positive to all end users.

11.7 Monitoring

Prior to the operational phase of the proposed Project, all services/utility connections will be tested by a suitably qualified professional under the supervision of the service provider.

The proposed Project water supply will be tested to the satisfaction of Dublin City Council prior to the connection to public potable water.

Any monitoring of the built services required during the operational phase of the proposed Project will be as advised by the relevant service provider.

The management of waste during the construction and operational phases of the proposed Project should be monitored to ensure compliance with best practice and relevant legislative requirements.

11.8 Reinstatement

No reinstatement will be required regarding Material Assets. Residual impacts on services and utilities are considered to be imperceptible.

11.9 Interactions

The main interactions relating to Material Assets are water, air quality, and population and human health.

During the construction phase, the availability of water supplies to the subject lands and during the connection of water supply and wastewater services has the potential to impact of the local surface water. There is also implications for the local population if these services are disrupted during the construction phase. The development and installation of the material assets (services) during construction has the potential to impact on the local air quality.

During the operational phase, the water supply and wastewater services will have a potential interaction with the available water supply and the potential emissions to the water cycle.

11.10 Difficulties Encountered in Compiling

The exact location of existing service infrastructure is reliant upon the records obtained, where relevant. Overall, no difficulties were encountered in compiling this chapter.

11.11 Cumulative Impacts

The assessment has considered cumulative impacts of construction and operational phases of the proposed Project, in conjunction with surrounding developments.

Considering the minimal use of material assets during the construction phase, there is no likely impact.

Multiple sites under construction at the one time may result in cumulative impacts in terms of noise and vibration during the construction period. However, such impacts are short term and neutral.

During the operational phase of the development there will be similar existing commercial and residential developments in proximity to the proposed Project which will generate similar waste types. Authorised waste collectors will be required to collect segregated waste materials from multiple development which is likely to result in an improvement of efficiencies of waste collection and indeed is likely to result in an improvement in waste targets in line with national and local legislation. As such the long term effect will be imperceptible and neutral.

11.12 'Do-Nothing' Impact

A 'do-nothing' scenario is not considered valid as the lands are currently zoned for development under the City Development Plan. However, if a do-nothing scenario were to occur, the lands would not be developed and therefore would be no adverse impacts to material assets. In the event that the proposed Project does not proceed, the lands would remain in its current condition in the short-term or until alternative development proposals are granted planning permission.

11.13 References

Waterman Moylan Consulting Engineers drawings and documentation submitted as part of these three applications

Environmental Protection Agency (EPA), Guidelines on the information to be contained in Environmental Impact Statements (March 2002)

EPA, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements) (September 2003)

EPA, Advice notes for preparing Environmental Impact Statements (September 2015)

EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports (August 2017)

Circular Letter PI 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive)

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018)

Waste Management Acts 1996 -2001 and associated Regulations

Protection of the Environment Act 2003 (as amended)

Litter Pollution Act 1997

Eastern-Midlands Region (EMR) Waste Management Plan

Dublin City Council Bye-Laws for the Storage, Presentation and Collection of Household and Commercial Waste 2013

Waste Management: Changing Our Ways (1998)

Preventing and Recycling Waste: Delivering Change (2002)

Taking Stock & Moving Forward (2004)

National Strategy on Biodegradable Waste Management (2006)

A Resource Opportunity Waste Management Policy in Ireland (2012)

Chapter 12 – Landscape and Visual Amenity

12.1 Introduction

This Landscape and Visual Amenity Chapter presents the landscape environment and resulting impact appraisal to accompany an application in respect of a planning submission for a residential development on the site of Clongriffin (to be referred to as Clongriffin). It shall demonstrate the landscape and visual impact, if any on the existing and adjoining landscape and its character. This chapter shall examine the existing and surrounding landscape of Clongriffin and the visual impact upon the landscape presented by the new proposed residential development.

There shall be 2 formal SHD submissions based on a masterplan, SHD 1 and SHD 2 and a submission to Dublin City Council. There shall be 3 no. submissions in total.

Development plans were originally completed in early 2000's and the development, comprising houses and apartments, started in 2005 and was planned to have educational, retail and service facilities, including a range of amenities. Clongriffin was part of the Northern Fringe Development (along with Belmayne in Balgriffin and estates on the former Baldoyle Racecourse and in north Coolock) and was approved by Dublin City Council to provide new accommodation for Dublin on green fields and to complete the development of north Donaghmede. Clongriffin's developments comprise Grange Lodge, Beau Park, Station Point and Marrsfield.

Clongriffin (Irish: Cluain Ghrífin) is a growing community on the northern fringe of Dublin City, northern Donaghmede. The development shall consist of 1,950 residential units and commercial space and is based on a masterplan previously developed by the applicant. Development slowed for a variety of reasons during the downturn in the Irish economy and these applications form the basis of a revised planning submission.

The name Clongriffin is a combination of the Irish word for meadow, Cluain "clon", and the name of a mythical beast, a Griffin, perhaps inherited from the adjoining Balgriffin.

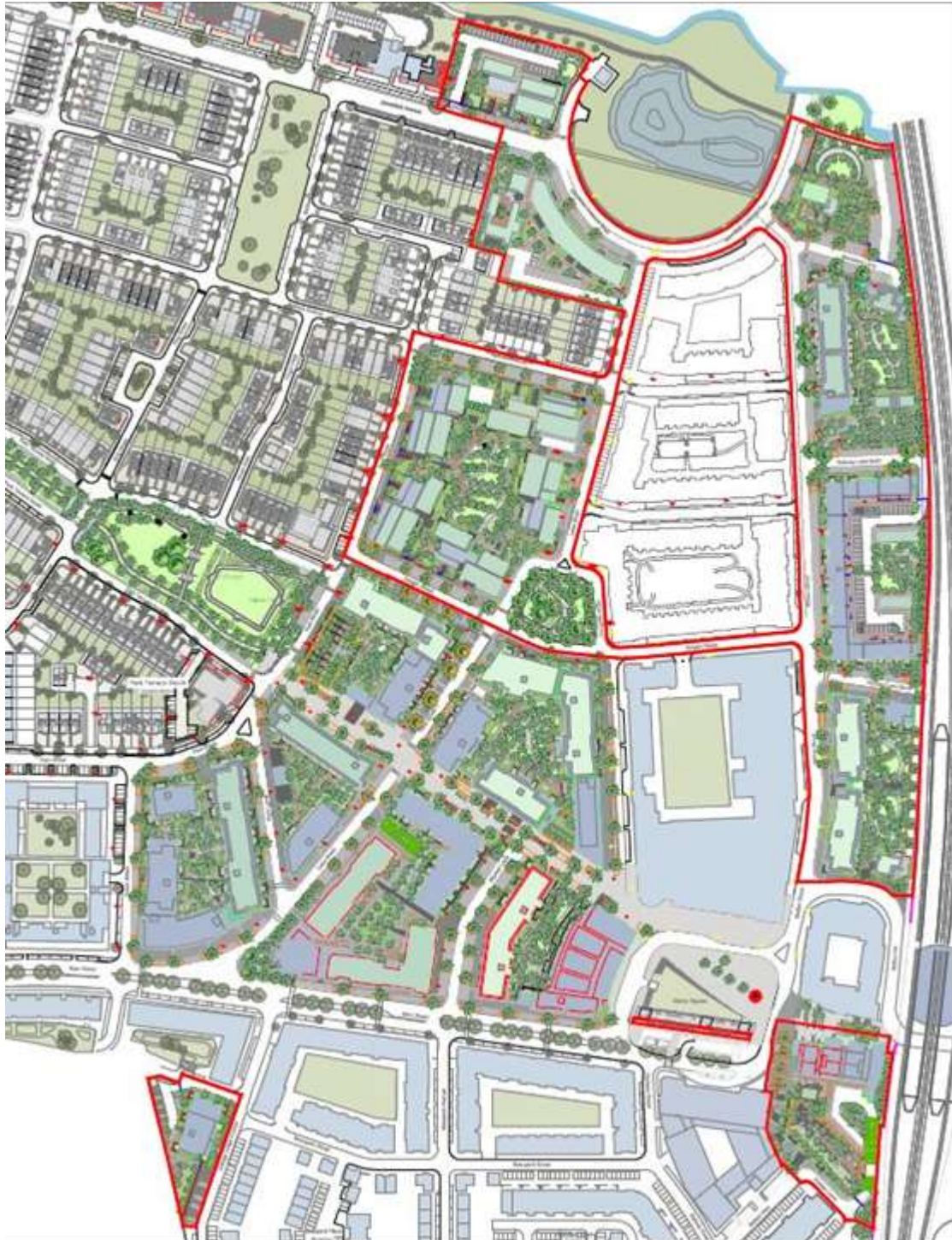


Fig. 12.1 – Clongriffin Masterplan SHD 1 (red outline)

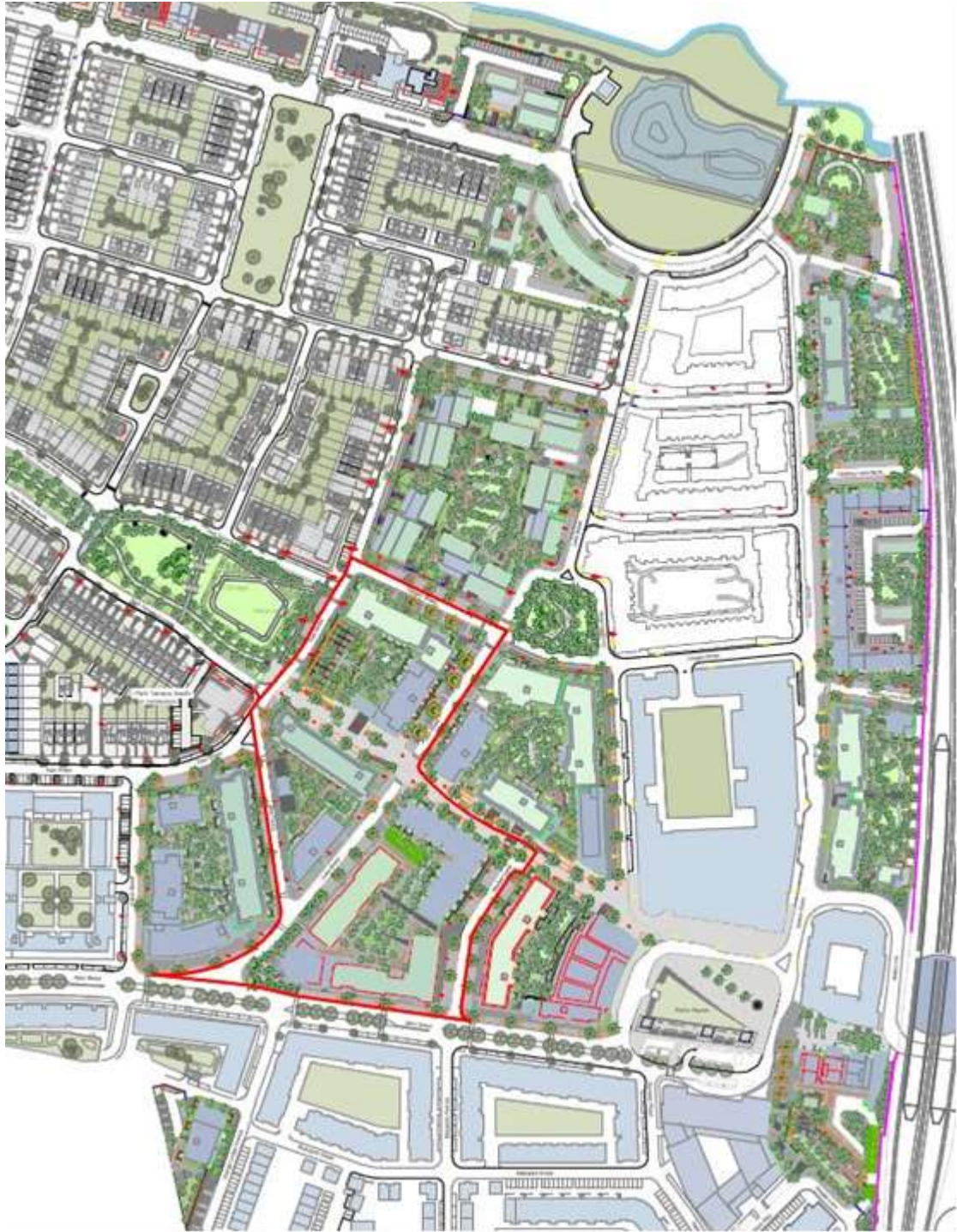


Fig. 12.2 – Clongriffin Masterplan SHD 2 (red outline)



Fig. 12.3 – Submission to Dublin City Council (red outline)

The lands subject to this application form part of a wider masterplan development proposal for Clongriffin which provides for a total of 1,950 residential units and c.22,727.5 sq.m. of commercial development. The masterplan lands are divided into three separate planning applications, in accordance with the legislative provisions of the SHD process, such that two of which are SHD applications whilst the third application is being lodged to Dublin City Council.

The proposed 1,950 residential units and c.22,727.5 sq.m. are provided across 15 no. blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 49 no. studios, 715 no. 1 bed units, 1,073 no. 2 bed units and 113 no. 3 bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build to Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m. of commercial development including c.30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. creche facilities, 1 no. 8-screen cinema, 1 no.

commercial gym, 7 no. cafés/ restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks, utilisation of existing infrastructure and all associated works necessary to facilitate the development.

12.2 Research Methodology

This assessment of the impact on the Landscape and Visual character as a result of the proposed development is based on the guidelines laid down by the Environmental Protection Agency (EPA):

- Revised Guidelines on the information to be contained in Environmental Impact Statements Draft (September 2015)
- Advice Notes for Preparing Environmental Impact Statements Draft (September 2015)
- EPA EIAR Guidelines (August 2017)

The following Methodology was used in this EIAR Chapter:

1. A desk top study of the proposed site and its environs, including reviewing aerial photography and ordinance survey documents.
2. A site survey was undertaken to determine the character of the landscape and the surrounding area, including site visits during the months of February and May 2019.
3. An assessment of the proposed development was carried out by examining the layout plans, elevations and sections to determine the impacts of the development.
4. An evaluation of these impacts was carried out in accordance with the criteria set out in the EPA guidelines.

12.2.1 Definition of Landscape

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as '*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*'.

This definition is important, as it defines that the landscape is not only a physical and visual amenity but provides for a range of functions:

- As a cultural resource, the interaction of man and landscape has formed the basis of much of our cultural heritage and values.
- The rhythms of the land as it was settled has informed what Clongriffin is today.
- The landscape provides opportunities for passive and active recreation.
- It contributes to the sense of place, as over time and place various histories and interactions have formed a sense of place for the local populations.
- The landscape provides also a historic record and is a resource for food production, sources of energy, and in the natural cycle: oxygen and water as the source for living elements.
- It provides materials for building and cover for settlement.

12.2.2 Forces for Landscape Change

The landscape in Clongriffin is not unchanging. It has changed with the settlement pattern over the last several hundred years. It has progressed from wilderness to

agriculture and to settlement. The patterns of settlement have been driven primarily by economic need and the requirement to provide shelter and a food resource. In this frame, it has to be accepted that change shall occur and it requires finding an appropriate balance between economic, social and environmental forces and values.

The landscape proposal has focused on i.e. Bringing Nature into the Urban realm so that the residents may have a sense of place and value in the place in which they reside. In this the proposed development has signed up to the All Ireland Pollinator Plan 2015 - 2020. This shall encourage insects and habitat renewal. Climate change was one of the factors that was used to select this proposed design consideration, i.e. the need to mitigate and offset issues associated with urban development. In this the approach to surface run-off is integrated with landscape solutions in the SUDS requirements. This was felt to be very important to be able to manage the water and more extreme weather and rainfall patterns. The landscape design by RMDA and the consulting engineers Waterman Moylan took cognisance of the two step SUDS approach, cleaning and temporary storage of surface water. The use of tree pits and detention basin have been adopted as part of this new landscape proposal and is a positive visual impact upon the landscape and the environment.

12.2.3 Nature of Impacts

12.2.3.1 Impact Significance Criteria

In determining the Visual Impacts, the following definitions were used to assess the significance of the impacts:

Imperceptible	An effect capable of measurement but without noticeable consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without noticeable consequences
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

12.2.3.2 Terms used to describe Quality of Visual Impact

Neutral Impact:	A change which does not affect the quality of the landscape, or effects that are imperceptible;
Positive Impact:	A change which improves the quality of the environment or landscape;
Negative Impact:	A change which reduces the quality of the environment or landscape.

12.2.3.3 Terms used to describe the Duration of Visual Impact:

Momentary	Effects	Seconds to Minutes
Brief	Effects	Less than a day
Temporary	Effects	Less than a year
Short-term	Effects	Lasting 1 to 7 years
Medium-term	Effects	Lasting 7 to 15 years
Long-term	Effects	Lasting 15 to 60 years
Permanent	Effects	Lasting over 60 years
Reversible	Effects	Effects that can be undone
Frequency of	Effects	Describe how often the effect will occur

12.3 Receiving Environment

The lands on which Clongriffin is being built was primarily farmland. In July of 2003, Dublin City Council granted planning permission for the mixed-use development at Grange Road, Donaghmede, to be called Clongriffin at Grange Road, Donaghmede. This forms part of the Northern Fringe Development.

The 3 no. proposed development sites are approximately 11.4 hectares in total. Clongriffin is reached by Hole in the Wall Road from its junction with Grange Road and the N32 road. The N32 connects to the Malahide Road, and the M1 and M50 motorways.

Clongriffin is in close proximity to Baldoyle Bay, approximately 2km (1.24mi) inland and 10km (6.21mi) northeast of Dublin City Centre, in northern Donaghmede, at the northern edge of Dublin's suburbs. Dublin City Council is the local authority. The development lies within the townland of Grange, in the parish of Baldoyle, from which Donaghmede was largely formed.

To the North lies open field systems with associated hedgerows and is separated by the Mayne River. Clongriffin is adjacent to Baldoyle Bay, with the estuaries of the Sluice River and Mayne River, and wetlands, all of which are protected by the National Parks and Wildlife Service.

Clongriffin railway station is situated along the Dublin–Belfast railway line, which is served by the intercity trains to Belfast. There is access to a Park and Ride underground car park with 400 spaces on Station Square, which is located on Main Street.

This is an area characterised by the expanding city of Dublin, with large housing developments to the East, West and South. It is located on low lying land with a number of views and walkways. The Low Lying Character Type has an open character that has been partially developed with roads and services. There are no hedgerows present on site and existing native hedgerows that formed part of an overall field pattern of the area are now only found to the North along the amenity

walkway beside the River Mayne. There are no hedgerows on the proposed development area.

Father Collins lies immediately to the West of the lands, it has been developed prior to this submission and is an important amenity, providing recreational value for local residents, football pitches, playgrounds, paths and green space for the local population. The 54-acre (26 hectare) park includes some natural woodland. There is a running/cycling track, six playing pitches and six fitness areas. There is also a promenade, concert amphitheatre, and picnic areas with outdoor chess or draughts boards, two playgrounds and a skate park. It was officially reopened in May 2009 and is Ireland's first wind powered and 'self-sustainable' Park. The park has since won a number of awards.

There are Five 50-kilowatt wind turbines, which are quite dominant in the park that provide power for a fountain in the central lake, for the public lighting, maintenance depots, and the sports club changing rooms.

There are several routes, pedestrian, running, and cycle converging at Station Square, notably the connection through Market Street along Belltree/Panhandle Park to Father Collins Park. There is also a route to Dublin coastal walkways and Baldoyle Bay, the estuary of two rivers and a noted wetland along the Northern walkway along the River Mayne, under the rail line to a proposed park in Fingal County.

12.3.1 Characteristics of the Proposed Development

The proposed scheme involves the development of a mixed-use development for a new Residential Neighbourhood of Clongriffin increasing population of Dublin City and its immediate environs.

The access to the site shall be directly from the R138, the Northern Cross route Extension, via the Hole in the wall road and from the Marrsfield Avenue/Belmayne Road to the North. Pedestrians may access from these roads as well as from other pedestrian connections. There shall be a number of pedestrian access points from Corkagh park and from the housing development to the east.

To the East a rail line separates the proposed development, Clongriffin railway station is situated along the Dublin–Belfast railway line Access to a Park and Ride underground car park with 400 spaces is located on Clongriffin's Main Street.

On completion of the residential development, it shall be landscaped to a very high standard, with tree planting and paving that shall characterise the external open spaces and shall feature a high standard of landscape development. The open spaces shall contain, green areas, paths, play spaces and extensive tree and bulb planting. A public art piece has been proposed for the central square and is currently under negotiation with the Arts officers of Dublin City Council.

The soft landscape proposals shall compliment the development aesthetically and functionally and shall tie in with the existing built landscape. The proposed and existing trees, hedges and shrubs shall position the development into the urban landscape and provide a large element of screening. It is intended to tie in with and blend the development into the local landscape befitting of its urban background and development plan for the area.

12.3.2 Objectives of the Proposed Development

In landscape terms the proposed development will have the following objectives:

1. To renew and augment existing vegetation with planting suitable to the local & new proposed environment.
2. To create new landscape features & habitats that will complement and enhance the Landscape utilizing principles of Biophilic design.
3. To provide a new landscape feature in the form of a housing development that will significantly enhance and retain the character of the area.

12.4 Analysis

12.4.1 Potential Impact of the Proposed Development

The visual impact of the proposed development on the landscape is considered in the context of the construction and operational stages. Generally, the development shall not reduce the amount of green space, as it has been developed previously with roads and services. The open spaces remaining from previous works shall be replaced with the proposed units, and associated walls, roads and planting. The space that is being removed were part of fields, however no field boundaries with hedgerows and trees exist on site at present.

The main visual changes shall be the height and the extent of the proposed residential development and associated building works to the landscape. The height and mass of the buildings shall be the main visual impact.

The design and organisation of the streetscapes shall ameliorate the impact of this development and of this decrease in spatial area. This shall be aided through provision of extensive semi-mature tree planting, native hedge planting in defensive planting zones. The hedge and tree planting shall be all from a pollinator plant list that shall encourage bee pollination.

The visual impact of the lines and the height of the buildings shall be mitigated by the proposed use of soft landscape materials shall further reduce the impact of the development.

Semi-mature trees and shrub planting shall give an immediate effect tying in with the surrounding landscape. The impact of the landscape intervention on the existing development shall be positive and long term.

The overall impact with the existing housing estates and encroaching town of Clongriffin shall be moderate in the short term.

12.4.2 Visual Impact of the Removal of the Site Vegetation

During the construction stages traffic movement, excavation operations and construction works shall have little significant visual impact on the site. The site has been developed with roads and services previously. There may be some moderate-significant visual impacts during the construction stage, due to the scale of the development.

Grass forms the groundcover over a portion of the site however there are no existing trees or hedgerows on the development site. The removal of the grass will be necessary for the development to commence.

Although the portion of 'green' land will be reduced no loss of botanical significance shall be incurred. The visual impact upon the area shall be slight to the long term.

12.4.3 Potential Visual Impact

As the site has previously been developed the proposed works shall complete the building of a new mixed-use scheme with linkages to existing connections in the surrounding area.

In terms of development, this proposal shall provide a renewed public realm and shall complete the proposed masterplan for Clongriffin, which provides a positive visual impact to the area.

There shall be apartments and streetscapes with a landscape scheme, both hard and soft, accompanying them to provide a highly developed and coherent design. The proposed mixed-use units, roads, parking and planting shall be clearly identified and developed in an organised manner.

The potential visual impact shall be moderate in the short term and shall change to positive development in the long term, as the mixed-use units and associated public realm is developed.

The development shall therefore be a maturing site becoming increasingly knitted to the fabric of the urban landscape in this area.

The planting of trees and shrubs shall mitigate the impact of the units in the landscape. The planting shall provide visual relief and add to the amenity of the current landscape. The planting shall be a positive visual impact which shall be immediate and long term. However, as the public realm develops over a period of time, the upgrade and improvement of the external spaces shall have a positive impact on the landscape and reduce the visual impact upon nature of the location.

12.4.4 Visual Impact due to introduction of New Structures & Buildings

The introduction of the proposed buildings shall be visually significant as they are the vertical elements of the proposal. However, the ordered and significant landscape development shall reduce the visual impact. Clongriffin has established vertical elements, in the form of previous buildings and landscape development i.e. trees. The main visual impact shall be the mass of the proposed structures.

The new structures and associated works shall reduce the amount of open space. The associated planting shall mitigate any negative impact in the medium to long term.

The proposed development will require groundworks of the site which will generate limited impacts to the existing topography. In the short term and long term, the visual impact of the development will be moderate to significant, due to the flat topography of the site and the proposed extensive landscape development, of new trees and planting.

12.4.5 Visual Impact due to access roads

The entrance and access roads are already well defined with extensive avenues of trees. The proposed roads and streets shall connect with the existing routes.

Internally there shall be a hierarchy of roads with associated details. The roads shall be heavily planted with semi-mature trees, pollinator plants and hedges, reducing the impact of the road on the environment.

As the site is not elevated, there shall be no need for excessive 'Cut and Fill' work, allowing the access roads to have a minimal visual impact.

12.4.6 Visual Impact due to telecommunications/power lines

On this site, the development shall be served from existing services and telecommunications. The services on site shall be underground. The opportunity to organise and reduce the telecommunication and services shall be utilised to reduce the visual impact, if any of the development.

12.4.7 Visual Impact of Lighting

The lighting layout has been established previously and the existing street lighting shall connect with the proposed lighting proposal.

The lighting of the new apartments shall be limited and shall be typical of a development as urban as this. The existing road, R139 and Belmayne Road/Marrsfield Avenue have established lighting levels, which the proposal shall not increase.

Internally the roads and streets shall be lit by individual columns. The columns have been specifically located not to interfere with the proposed and existing trees. Therefore the impact of lighting on the existing landscape shall be moderate in the medium term—and neutral in the long term as Clongriffin develops and blends with existing developments

The lighting of the development shall reinforce the change in character of the site from that of an unfinished development space to that of an urban space. The light in the evening shall link this development to other developments in close proximity. The lighting along the streets shall link with the lighting of the existing residential areas, of Beaupark, Belmayne and other developments in the area.

The proposed lighting layout was developed in close association with the consulting lighting engineers. Proposed trees and lamp standards were positioned to avoid each other. There is a minimum of 5 metre distance between tree and light columns. The organised layout of trees and light columns has resulted in the maximising of tree planting, as they do not impact on the services. The ordered tree planting on the streets and roads is a positive effect of the design process. The impact shall be positive in the long term.

12.4.8 Visual Impact of Landscaping Proposals

The landscape proposals shall consist of, new planting of a variety of tree species, including native trees, being introduced along with shrubs in specified areas. These proposals shall enhance the landscape character of the development. The site will change from a series of uncompleted roads to a completed development with an associated landscape scheme.

The landscape scheme shall impact on the development in a positive way, working with the landscape through the use of trees and hedging to create an environment maintaining desirable aspects of the existing landscape and accentuating them through introduction of new elements.

There shall be an increase in the species and varieties of plants, notably trees on the existing landscape which was lain undeveloped for a number of years.

The landscape proposals shall include a range of pollinator plants, trees, hedges and shrub planting. The flowering of these plants shall enable bees to flourish but also increase the texture and colour in the landscape. This shall be a positive and long term visual impact.

The concept for the landscape proposals is based on Biophilic design i.e. to create an environment where the residents want to actively participate in, preserve, and connect with the natural landscape that surrounds them.

12.5 Predicted Visual Impact of the Proposed Development

12.5.1 Construction Phase

During the construction of the development, the area shall be changed from unfinished development sites to a mixed-use development. The introduction of the built structures, roads boundaries and landscape will be carried along with a phased programme of landscape works shall be a positive effect. A site that is in transition

The development shall be carried out in an organised basis, the impact on the initial area of construction shall be significant. Grass areas shall be removed to accommodate new buildings, roads and services.

The introduction of pollinator plants and trees shall benefit the habitats throughout the site and shall reduce the visual impact of the proposal during construction.

As the development increases and phasing continues, the improvement in growth and maturity of the planted material trees, hedges and shrubs, shall reduce the visual impact and in the long term be positive.

The greatest impact shall be the views through the site as they will become determined by the elements of housing, walls, roads, trees and hedges.

The predicted impact during construction, although significant and shall be positive in the long term, as the public realm and buildings develop over time and link with existing developments in the area.

12.5.2 Operational Phase

Parking

The parking areas are on street and underground. On-street car spaces shall be ameliorated by extensive tree planting and screened by new planting of pollinator wildflower planting, proposed and existing trees. The organised layout of the parking spaces and tree planting shall be beneficial for the new streetscape. Trees have been positioned as regular intervals to break up potential long lines of car spaces. The organic form of the trees shall reduce the visual impact of the car form. The proposed paved surface of the parking areas shall introduce further texture into the landscape and be visually more stimulating. The visual effect shall be moderate in the short term and the impact positive in the long term.

Waste handling areas

Bin storage shall be developed in an organised manner. Communal bin storage shall be in constructed bin stores and shall be located to the rear and basement of apartment blocks.

Residual Impact

Initially, on completion of the development the introduced shrubs, plants and trees will be at early stages of establishment, the trees shall be semi mature at planting. As time progresses the plants and trees will grow and stabilise in their new environment creating better defined avenues and spaces.

The number and quality of landscape elements shall be an addition to the built environment of adjoining developments providing quality amenity for the residents.

The extensive development of the external spaces shall provide an improvement on the existing landscape. The ordered design shall be visually positive and long term. The visual impact on the surrounding landscape shall be moderate in the short term, however with maturity of the trees, hedges and plants it shall be neutral to positive in the long term.

12.5.3 Do nothing Impact

At present the site has been partially developed and is neither functioning as grass, agricultural or amenity. If the site remained undeveloped; the site in time shall become waste ground framed by the housing developments to the South East and West. The function of agriculture has ceased some time ago due to the partial development of the lands, proximity of the town and surrounding developments.

If the site remains partially developed, the area becomes unmanaged and in particular, the existing roads would fall into disrepair as they are not maintained or used. Pioneer trees and scrub would begin to establish. Therefore, as development continues on all sides of the site, the agricultural function having ceased, being cut off from its' hinterland. The open space, undeveloped lands are ceasing to function as grassland and as such shall fall into disrepair and into waste ground. Visually and functionally the lands become unkept and are limited in the range of amenity and use.

12.6 Visual Impact Assessment Viewpoints



Fig. 12.4 – Location of Receptor Views (Local)



Fig. 12.5 – Location of Receptor Views (Wider area)

12.6.1 Visual Impacts: Images

We have noted images from various receptor points as per the aerial plan, enclosed in the accompanying landscape receptor views. Please refer to Digital Dimensions photomontages. They have been prepared to illustrate the impacts, if any, with respect to the proposed development.

Table 1

View	Description
1	Looking East Along Marrsfield Avenue
2	Looking West from Steps at Train Station Clongriffin
3	Looking North East, from Open Space Beaupark
4	Looking North from open space Beaupark.
5	Looking East main street, Clongriffin.
6	Looking East, along green route, Belltree/Panhandle Park.
7	Looking East from inside Father Collins Park
8	Looking South West – Entrance to Settlement on Moyne Road, R123
9	Looking West from Adjoining Development – The Coast, Red Arches Road.
10	Looking North West Baldoyle Industrial Estate
11.	Looking North East – From roundabout at Hole in the Wall road and R139
12	Looking East from Entrance to main street from Hole in the wall road.
13	Looking East, from intersection of Marrsfield Avenue and Hole in the Wall road.
14	Looking, South East from Balgriffin Fingal Cemetery
15	Looking South West, intersection of Coast road and strand road
16	Looking West from Coast Road and entrance to The Coast development
17	Looking North West, From Carrickbrack Road Howth Golf Club
18	Looking East, from intersection at the Northern Cross Route Extension Business Park

12.6.2 Visual Selector Interaction

The 18 visual receptors were originally presented to the team. Through a process of dialogue, Internal receptor views have been also included. They represent the most significant and sensitive location points. RMDA in conjunction with the Architects; Wilson, CCK and Downey Architecture, the CGI developers Digital Dimensions and the Planning Consultants Downey Planning provided locations for the visual receptors. They were based upon the sensitivity of the locations and typical criteria is listed on Table 1, below.

12.6.3 Sensitivity

A visual receptor is a human user of the landscape. The practice has adopted the principle that the sensitivity for each type of visual receptor is inherent to the nature of the activity they are undertaking rather than the view itself.

Table 2: Visual Receptor Sensitivity

Sensitivity	Typical Criteria for Visual Receptors
High	Users of residential properties, public rights of way, named viewpoints and scenic roads or railways. Users of cultural heritage features including World Heritage Sites, Registered Parks and Gardens, Scheduled Monuments, Listed Buildings and Conservation Areas where they are known to be tourist destinations or places used by local communities.
Medium	Users of public rights of way (urban or industrial areas) play areas, sporting and outdoor active recreational facilities and rural roads.
Low	Users of office and employment areas, industrial areas and the main road and rail network.

	View 1
Existing View	Looking East Along Marrsfield Avenue
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is shown as a CGI and can be seen from the Road over the existing development
Impact – Construction Stage	Neutral in the short term.
Impact – Operational Stage	Moderate impact – in the short term. Consistent with existing patterns.
Quality of Change	Neutral in the long term

	View 2
Existing View	Looking West from Steps at Train Station
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a CGI and can be seen from the steps.
Impact – Construction Stage	Neutral in the short term.
Impact – Operational Stage	Moderate impact – in the short term
Quality of Change	Neutral in the long term

	View 3
Existing View	Looking North East, from Open Space Beaupark
Proposed View	The image shows the visual impact the development shall have on the adjoining development. The proposed development site is as a CGI and can be seen from the open space
Impact – Construction Stage	Negative in the short term.
Impact – Operational Stage	Moderate impact – in the short term
Quality of Change	Neutral in the long term

View 4	
Existing View	Looking North from open space Beaupark.
Proposed View	The image shows the visual impact the development shall have on the adjoining development. The proposed development site is as a CGI and can be seen from the open space
Impact – Construction Stage	Negative – Significant Impact
Impact – Operational Stage	Moderate Impact in long term.
Quality of Change	Neutral in the long term

View 5	
Existing View	Looking East main street, Clongriffin.
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is indicated as a CGI
Impact – Construction Stage	Neutral
Impact – Operational Stage	Moderate Impact
Quality of Change	Positive in the long term

View 6	
Existing View	Looking East, along green route, Belltree/Panhandle Park.
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is indicated as a CGI over the developing Park
Impact – Construction Stage	Significant
Impact – Operational Stage	Moderate Significant – in keeping with emerging pattern.
Quality of Change	Neutral to Postive in the long term

View 7	
Existing View	Looking East from inside Father Collins Park
Proposed View	The red line denotes the location and outline of the proposed development. The proposed development cannot be seen from the Road due to the existing mature planting and hedgerows.
Impact – Construction Stage	No Impact - Neutral
Impact – Operational Stage	No Impact - Neutral
Quality of Change	Neutral in the long term

View 8	
Existing View	Looking South West – Entrance to Settlement on Moyne Road, R123
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a CGI and can be partially seen from the road
Impact – Construction Stage	Significant Impact

Impact – Operational Stage	Moderate – short term - Neutral long term
Quality of Change	Moderate - Neutral in the long term

View 9	
Existing View	Looking West from Adjoining Development – The Coast, Red Arches Road.
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a CGI and can be seen from the road
Impact – Construction Stage	Significant Impact
Impact – Operational Stage	Moderate – short term - Neutral long term
Quality of Change	Moderate - Neutral in the long term

View 10	
Existing View	Looking North West Baldoyle Industrial Estate
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line
Impact – Construction Stage	Neutral Impact
Impact – Operational Stage	Neutral long term
Quality of Change	No Change

View 11	
Existing View	Looking North East – From roundabout at Hole in the Wall road and R139
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line
Impact – Construction Stage	Neutral Impact
Impact – Operational Stage	Neutral long term
Quality of Change	No Change

View 12	
Existing View	Looking East from Entrance to main street from Hole in the wall road.
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line. The development may be possible to be viewed, however is part of an overall existing development.
Impact – Construction Stage	Neutral Impact
Impact – Operational Stage	Neutral long term
Quality of Change	Neutral in the long term – No Change

View 13	
Existing View	Looking East, from intersection of Marrsfield Avenue and Hole in the Wall road.
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line. Screened by Vegetation and existing built form.
Impact – Construction Stage	No Impact - Neutral
Impact – Operational Stage	No Impact - Neutral
Quality of Change	Neutral in the long term

View 14	
Existing View	Looking, South East from Balgriffin Fingal Cemetery
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line, cannot be seen due to wall
Impact – Construction Stage	No Impact - Neutral
Impact – Operational Stage	No Impact - Neutral
Quality of Change	Neutral in the long term

View 15	
Existing View	Looking South West, intersection of Coast road and strand road
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a CGI and can be seen from road
Impact – Construction Stage	Significant Impact
Impact – Operational Stage	Moderate – short term - Neutral long term
Quality of Change	Moderate - in the long term

View 16	
Existing View	Looking West from Coast Road and entrance to The Coast development
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is indicated as a CGI may be seen in the distance
Impact – Construction Stage	Moderate
Impact – Operational Stage	Moderate
Quality of Change	Neutral in the long term

View 17	
Existing View	Looking North West, From Carrickbrack Road Howth Golf Club
Proposed View	The image shows the visual impact the development shall have on the landscape.
Impact – Construction Stage	No Impact - Neutral

Impact – Operational Stage	No Impact - Neutral
Quality of Change	Neutral in the long term

	View 18
Existing View	Looking East, from intersection at the Northern Cross Route Extension Business Park
Proposed View	The image shows the visual impact the development shall have on the landscape. The proposed development site is as a red line
Impact – Construction Stage	Neutral Impact
Impact – Operational Stage	Neutral long term
Quality of Change	Positive in the long term

12.7 Mitigation of Visual Impacts

12.7.1 Remedial and Reductive Visual Measures

During construction, there shall be a phased programme of landscape works, that shall mitigate the impact of the proposed buildings in the landscape. An Environmental Management Programme of good husbandry will be undertaken to ensure environmental protection and that there is no debris, pollutants or otherwise that would damage the landscape.

The landscaping proposals for this scheme shall be developed to form an integral part of the development. There are a number of measures that shall reduce the impact of this proposed development, extensive planting, retention of existing hedgerows and trees, development of pathways, seating areas and textured hard surfaces

In the operational stage, the site will have established a landscape that shall be integrated around the street scape and apartment buildings. The planting will have matured and will be actively used by the residents and therefore having a positive visual impact on the public realm.

The buildings shall be visually ameliorated by planting, trees and hedges. The landscaping shall reduce the visual impact of straight lines and hard surfaces, with extensive tree and shrub planting. There shall be a defensive planted buffer to the proposed apartments, the landscaping of the open spaces and communal gardens surrounding the buildings shall soften hard edges.

An extensive landscape programme shall create the best landscape solution within this environment. The impact of the buildings shall be reduced through the planting of mature trees, shrubs and careful use of hard landscape material, both hard and soft.

The car spaces and paths to the front to the streetscape shall be surfaced with high quality materials – increasing the texture in the environment – a further positive visual improvement. The organisation of the hard landscape elements with soft landscape shall provide an ordered and sustainable new landscape. The increased number and range of species of plant shall be an improvement on the existing plant species currently in Clongriffin, in terms of variety and in number. They shall replace the previous monoculture of grass and replace with an increased range of pollinator species shall benefit the existing habitats.

12.7.2 Monitoring

A Landscape Architect shall be appointed to oversee and monitor the project at construction & operational stage. They shall liaise with other project members in relation to any existing and proposed trees.

The landscape architect shall overview all hard & soft landscape works and liaise with resident engineer, project team and contractor. The landscape architect shall also inspect the trees; however, most of the monitoring works shall be during and post civil construction stage. The landscape architect shall review and instruct on details of soft planting, trees, shrubs and of paving materials, walls & railings.

During the operational stage, the landscape Architect & Arborist shall review the state of all planting and trees. The landscape architect shall review for period of 18 months, from practical completion of each stage the standard and quality of the materials and workmanship. A final certificate of completion shall be issued by the landscape architect in respect of this.

12.8 Executive Summary

12.8.1 Cumulative impacts

Cumulative Impacts are impacts that result from incremental changes caused by other past, present or reasonably foreseeable developments together with the proposed development:

- (a) Likely;
- (b) Significant; and,
- (c) Relating to an event which has either occurred or is reasonably foreseeable together with the impacts from this development.

In assessing Cumulative Impacts the following the principal source consulted: Dublin City Development Plan.

In accordance with Schedule 6, Part 2(c) of the Planning and Development Regulations 2001, this Section has considered the cumulative impact of the proposed development. This relates to the cumulative impact on the subject site itself and on surrounding sites. The European Commissions report of May 1999 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions' defines cumulative impact as follows:

"Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project".

With regard to the cumulative impact of proposed development on landscape and visual amenity, the future development will take place on a partially developed site and will form part of the comprehensive redevelopment and rejuvenation of the existing development at Clongriffin. In this regard, the cumulative impact of the overall development is expected to be moderately positive. It is considered that there will be short to medium term moderate negative impacts associated with the construction phase of the project over all phases of development. Subsequent construction phases are likely to occur sequentially after the completion of the first Phase. It is considered that there will be a long term positive visual impact as a result of the proposed development, due to the modern residential facilities being provided, the improved visual amenity and outlook from the surrounding area, creation of an integrated streetscape and attractive, useable public realm, and the provision of

commercial, retail and community floorspace to serve the needs of the local community.

The most significant impact on the local area in recent periods was the development of the M50 which was started in 1983 and has undergone improvement and enlargement over the years.

The R139 road is a regional road in Ireland, the route, is dual carriageway, runs from the Northern Cross Extension. This road has made accessible the lands at Clongriffin and has contributed to the development of Belmayne, Beaupark, the retail units at the Northern Cross route extension. Visually significant, it shall serve the wider population of North Dublin.

As the road is a regional road, it has the capacity to serve future development, but this shall be further away from the Clongriffin development site. As Clongriffin is surrounded by development the visual impact from future developments will be limited if at all due to the distance, current emerging trends and existing development.

The housing developments of Beaupark, Marrsfield, Belmayne, shall provide a visual interaction with existing residential developments. The proposed new development at Clongriffin shall tie in with these existing developments and shall provide a positive impact to the development in the immediate area.

Fr. Collins Park has positive interactions and impacts upon Clongriffin and provides a valuable visual and recreational amenity for the area. The proposed interaction between the proposals in the form of paths is a positive impact and shall provide a resource for the expanding population.

Northern Cross Route Extension Business Park has been developed in the locality to provide employment for the local population. They are well serviced and are landscaped to a high degree providing an ordered and organised public realm. The future impact of these business parks shall be dependent on economic conditions. The proposed Clongriffin development shall provide a positive interaction with the business parks and the ordered development of the housing shall have a positive long term visual impact and effect.

12.8.2 Interactions

Inter-relationships are the interaction/interrelations between the impacts and proposed mitigation for one discipline with another associated discipline.

12.8.2.1 Population & Human Health

Negative temporary visual impacts will arise for residents located close to or adjoining the construction boundary. Landscape and visual mitigation measures have been utilised in the design of the proposed development to reduce impacts on property. A construction Management plan shall be drawn prior to construction and implemented.

Specific mitigation measures include the provision of hoarding around construction compounds during the construction phase for properties particularly impacted by the works. Operational phase landscape & visual impacts will arise from the built physical presence of the roads and streets. Mitigation measures will include general measures such as development of the public realm and extensive connections to

existing developments. Planting a range of trees and species that shall benefit the resident population.

12.8.2.2 Traffic

Traffic in the proposed development will have landscape and visual effects on properties in proximity to the proposed development. These effects were taken into account during design development of the Proposal. Mitigation measures have been proposed, in the form of landscape planting, street trees, width of new streets and roads. The organised planting of street trees along roads and parking spaces, all provide a new environment and sense of place. The new traffic from the existing Hole in the wall road, R139 and Marrsfield road through the development provides the opportunity to propose an organised and varied design that shall provide a positive landscape and visual impact along the proposed roads and streets. This shall reduce the visual impact of Traffic.

12.8.2.3 Soils & Geology

The construction of the proposed development will involve excavation of existing soils, primarily soft in nature, with spoil material being placed in material deposition areas within the land take. The development of the proposal, both horizontal and vertical, takes account of landscape and visual impacts on residential properties.

12.8.2.4 Hydrogeology

As a result of the redistribution of traffic, there is a risk to water quality through pollution and spillage accident risk. The construction phase of the project has the potential to impact on groundwater and habitats. Mitigation measures have been put in place to avoid and/or minimise these effects.

During the operational stage, sealed drainage systems will be used and storm water drainage will be suitably treated prior to discharge. The SUDS (Sustainable Urban Drainage System) proposed will be a significant improvement over the traditional drainage regimes and with the distribution of the traffic onto the new roads is likely to result in an improvement during the operation stage for hydrogeology. The SUDS proposed aim is to utilise a two step intervention of surface water, cleaning and temporary storage, prior to release to the system.

12.8.2.5 Archaeology Architecture Cultural Heritage

The development of the proposed development both including and following the selection of the preferred design has given due consideration to the existing habitats and development of the area. The development took account of the impact on the archaeological, architectural and cultural heritage impacts.

The Archaeology reports and digs have already been completed on site. Pre - construction surveys have been carried out to identify previously undiscovered sites of archaeological potential. The development of Clongriffin also took account of Archaeological Heritage and Cultural Heritage and Architectural Heritage impacts, as outlined in the respective chapters

12.8.2.6 Material Assets & Land – Property

Landscape & visual effects may impact on residential properties located near the proposed development. Likely landscape and visual effects will be most pronounced during the construction and initial operation stages causing initial visual impacts, after which landscape mitigation measures will be increasingly effective in integrating the

proposed development within the landscape and in reducing landscape and visual impacts on properties.

12.8.2.7 Biodiversity

The scheme has been developed to increase the range and number of plants in Clongriffin. Public and Communal Open spaces have been selected to plant trees and pollinator shrubs. This shall have a positive effect on landscape quality visual amenity and biodiversity. Landscape mitigation proposals have been developed to be complementary with the ecological requirements. These include planting of native, pollinator naturalised and indigenous species to provide new habitat areas. The hierarchy of street tree planting shall help in reconnecting ecological networks resulting in a positive effect on biodiversity and a positive long term impact for Clongriffin.

The inner part of the estuary and wetlands of Baldoyle Bay are protected as a Special Area of Conservation (SAC). It was declared a Statutory Nature Reserve in 1988. Under the Ramsar Convention, the wetlands have been designated as of international importance. They support several habitats that are listed on the EU Habitats Directive. The proposed development shall aid the connection to a proposed park, which includes these lands which is in the county of Fingal.

12.9 Difficulties Encountered

Clongriffin is an open site with easy access to the site. There were no difficulties encountered on visiting the development area.

12.10 Conclusion

The visual impact of the development shall be neutral at first, due to the existing development of roads and services. However, as Clongriffin provides more accommodation for future residents, the well-designed layout is sympathetic to the characteristics of the surrounding built form it shall become positive visual impact

The increase and coherent design of external spaces shall replace the existing and fallow site locations. Direct access to Fr. Collins Park to the west, utilising the green link, Panhandle Park/Belltree park shall provide a positive visual amenity.

The planting of semi-mature trees and pollinator plants on the streets and in the open spaces provides habitat runs. The proposed planting shall tie the proposed existing planting and shall provide a connection with nature which shall be a positive long term visual impact.

Although the character of the environment shall change, it is in line with emerging patterns of development in Clongriffin and of Dublin City. The proposal is however sympathetic to the surrounding urban landscape and shall present a positive visual impact in the long term.

The increased tree cover shall also enhance and increase the biodiversity of the existing landscape and tie it in with the existing hedgerows and trees.

The duration of construction shall have a significant visual impact in the short term but as development increases in Clongriffin, the emerging and existing trends shall view this development as positive in the long term, as the proposal is well designed and sympathetic to the existing landscape.

This development shall be a large mixed-use development to the existing urban fabric of the town of Clongriffin, Belmayne, and Beaupark, and in the long term have a positive impact upon the landscape and its usage, providing ordered and well developed public spaces.

The development shall provide a coherent ordering of buildings and external spaces and present a positive visual impact upon the existing developments.

Therefore the visual impact upon the nature of the landscape shall be moderate in the short term, with slight effects in the medium term. The overall proposed mixed-use development in the interaction with the surrounding developments shall result in neutral visual impact to the medium term. As a new town emerges with associated landscape and public realm development, it shall form a positive visual impact in the long term.

12.11 References

British Standard BS5837:2012 Trees in Relation to Design, Demolition and Construction. Recommendations

Advice Notes on Current Practice in the preparation of Environmental Impact Statements (1995)

Guidelines on the Information to be Contained in Environmental Impact Statements (2002)

Revised Guidelines on the information to be contained in Environmental Impact Statements Draft (September 2015)

Advice Notes for Preparing Environmental Impact Statements Draft (September 2015)

Guidelines On The Information To Be Contained In Environmental Impact Assessment Reports Draft (August 2017)

Dublin City Development Plan 2016 -2022

Landscape Institute and Institute of Environmental Management & Assessment (2013). Guidelines for Landscape and Visual Impact Assessment.

Planning and Development, Act 2000 (as amended)

EPA EIAR Guidelines (August 2017)



View location map 1



View location map v2



View location map 3



reference information	
location	View 1 Existing
date	08-08-2018
field of view	54.4°
35mm equivalent	35mm
distance to site	221m

project: Clongriffin



reference information	
location	View 1 Proposed
date	08-08-2018
field of view	54.4°
35mm equivalent	35mm
distance to site	221m

project: Clongriffin



reference information	
location	View 2 Existing
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	

project: Clongriffin



reference information	
location	View 2 Proposed
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	

project: Clongriffin



reference information	
location	View 3 Existing
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	215m

project: Clongriffin



reference information	
location	View 3 Proposed
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	215m

project: Clongriffin



reference information	
location	View 4 Existing
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	211m

project: Clongriffin



reference information	
location	View 4 Proposed
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	211m

project: Clongriffin



reference information	
location	View 5 Existing
date	08-08-2018
field of view	73.7°
35mm equivalent	24mm
distance to site	187m

project: Clongriffin



reference information	
location	View 5 Proposed
date	08-08-2018
field of view	73.7°
35mm equivalent	24mm
distance to site	187m

project: Clongriffin



reference information	
location	View 6 Existing
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	152m

project: Clongriffin



reference information	
location	View 6 Proposed
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	152m

project: Clongriffin



reference information	
location	View 7 Existing
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	349m

project: Clongriffin



reference information	
location	View 7 Proposed
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	349m

project: Clongriffin



reference information	
location	View 8 Existing
date	15-11-2018
field of view	76°
35mm equivalent	23mm
distance to site	510m

project: Clongriffin



reference information	
location	View 8 Proposed
date	15-11-2018
field of view	76°
35mm equivalent	23mm
distance to site	510m

project: Clongriffin



reference information	
location	View 9 Existing
date	08-08-2018
field of view	81.2°
35mm equivalent	21mm
distance to site	383m

project: Clongriffin



reference information	
location	View 9 Proposed
date	08-08-2018
field of view	81.2°
35mm equivalent	21mm
distance to site	383m

project: Clongriffin



reference information	
location	View 10 Existing
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	525m

project: Clongriffin



reference information	
location	View 10 Proposed
date	08-08-2018
field of view	96.7°
35mm equivalent	16mm
distance to site	525m

project: Clongriffin



reference information	
location	View 11 Existing
date	08-08-2018
field of view	71.5°
35mm equivalent	25mm
distance to site	581m

project: Clongriffin



reference information	
location	View 11 Proposed
date	08-08-2018
field of view	71.5°
35mm equivalent	25mm
distance to site	581m

project: Clongriffin



reference information	
location	View 12 Existing
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	493m

project: Clongriffin



reference information	
location	View 12 Proposed
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	493m

project: Clongriffin



reference information	
location	View 13 Existing
date	08-08-2018
field of view	71.5°
35mm equivalent	25mm
distance to site	667m

project: Clongriffin



reference information	
location	View 13 Proposed
date	08-08-2018
field of view	71.5°
35mm equivalent	25mm
distance to site	667m

project: Clongriffin



reference information	
location	View 14 Existing
date	15-11-2018
field of view	69.7°
35mm equivalent	27mm
distance to site	1903m



reference information	
location	View 14 Proposed
date	15-11-2018
field of view	69.7°
35mm equivalent	27mm
distance to site	1903m

project: Clongriffin



reference information	
location	View 15 Existing
date	08-08-2018
field of view	90°
35mm equivalent	18mm
distance to site	1246m

project: Clongriffin



reference information	
location	View 15 Proposed
date	08-08-2018
field of view	90°
35mm equivalent	18mm
distance to site	1246m

project: Clongriffin



reference information	
location	View 16 Existing
date	08-08-2018
field of view	81.2°
35mm equivalent	21mm
distance to site	1183m

project: Clongriffin



reference information	
location	View 16 Proposed
date	08-08-2018
field of view	81.2°
35mm equivalent	21mm
distance to site	1183m

project: Clongriffin



reference information	
location	View 17 Existing
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	4775m

project: Clongriffin



reference information	
location	View 17 Proposed
date	08-08-2018
field of view	76.1°
35mm equivalent	23mm
distance to site	4775m

project: Clongriffin



reference information

location	View 18 Existing
date	08-08-2018
field of view	90°
35mm equivalent	18mm
distance to site	1629m

project: Clongriffin



reference information	
location	View 18 Proposed
date	08-08-2018
field of view	90°
35mm equivalent	18mm
distance to site	1629m

project: Clongriffin

Chapter 13 – Traffic and Transport

13.1 Introduction

This chapter of the EIAR assesses the likely traffic and transportation impacts on the receiving environment during the construction and operational phases of the proposed development. The existing and proposed transport infrastructure in the area is described, and an assessment of the current and the future traffic environment is made. The impact of the development in terms of public transportation, pedestrian and cycle is also assessed.

The chapter describes: the methodology; the receiving environment at the application site and surroundings; the characteristics of the proposal in terms of physical infrastructure; the potential impact that proposals of this kind would be likely to produce; the predicted impact of the proposal examining the effects of the proposed development on the local road network; the remedial or reductive measures required to prevent, reduce or offset any significant adverse effects; and the monitoring.

13.2 Methodology

The following methodology has been adopted for this assessment:

- Review of relevant available information including where available Development Plans, existing traffic information and other relevant studies;
- Site visit to gain an understanding of the site access and observe the existing traffic situation;
- Consultations with Dublin City Council Roads Department to agree the site access arrangements and determine the scope of the traffic analysis required to accompany a planning application;
- Detailed estimation of the transport demand that will be generated by the development. The morning and evening peak times will be addressed as well as an estimation of the construction stage traffic; and
- Assessment of the percentage impact of traffic on local junctions, car parking requirements and accessibility of the site by sustainable modes including walking, cycling and public transport.

13.3 Receiving environment

13.3.1 Roads and Junctions - Existing

Access

Access to the subject development is from The Hole in the Wall Road via the R123 Balgriffin Road to the north and the Grange Road to the south.

The road layout in the area of the development is illustrated In Figure 13.1.

Roads – External

The Hole in the Wall Road links the R139 Grange Road to the south with Marrsfield Avenue to the north. The three junctions on this road are: -

- The four arm Hole in the Wall Roundabout at Grange Road
- Signalised cross-roads at Main Street
- A priority T-junction with Marrsfield Avenue (future signalised crossroads).

The Hole in the Wall Road has a four-lane carriageway with a traffic lane and a bus lane in each direction, Off-road cycle tracks and footpaths are provided on both sides of the road.

Roads – Internal

Main Street is the main access to Clongriffin. It links Hole in the Wall Road to the west with Station Square in the Clongriffin Town Centre to the east.

The western section of Main Street along Fr Collin's Park is a two-lane dual carriageway with a traffic lane and a bus lane in each direction on either side of a central median. Off-road cycle tracks and footpaths are provided on both sides.

The eastern section of Main Street is a single carriageway road with a 3.0 metre wide traffic lane and a 3.0 metre wide bus lane in each direction. The carriageway is flanked by parallel parking and 2.0 metre wide footpaths on both sides.

No off-road cycling facilities are provided along Main Street to the east of Fr Collin's Park. In this area, cyclists share the bus lane with buses for circa 400 metres to Station Square.

Marrsfield Avenue is the second access to Clongriffin from Hole in the Wall Road. Marrsfield Avenue is a two-lane single carriageway road with parking, grass verge and footpath on both sides.

Park Avenue is a two-lane single carriageway road along the east side of Fr. Collin's Park.

Junctions

The primary junctions which provide access to Clongriffin are: -

- Hole in the Wall Road / Main Street: Signalised crossroads
- Hole in the Wall Road / Marrsfield Avenue: Priority T-junction (future signalised crossroads).



Figure 13.1 | Layout of Road Network

13.3.2 Public Transport - Existing

Commuter Rail

The Commuter Rail service through Clongriffin Station serves all stations from Dundalk through the City Centre to Gorey. The service operates at 2 – 3 services per hour in both directions on weekdays.

DART

The Dart service through Clongriffin Station serves all stations from Malahide through the City Centre to Bray and Greystones. On weekdays, this service operates at a 20-minute frequency in both directions.



Figure 13.2 | Southbound DART Service at Clongriffin Station

Dublin Bus

Dublin Bus Stage Route 15 links Clongriffin through the City Centre to Ballycullen Road. On weekdays, this service is operated by a fleet of double deck buses at a frequency of 10 minutes in both directions.



Figure 13.3 | Dublin Bus Route 15 in Station Square

Car Sharing

Car sharing at Clongriffin is facilitated by the on-site GoCar service. The service operates from designated GoCar parking spaces at Station Square.

At the time of writing In June 2019, 4 No. vehicles are provided at Station Square, 2 No. standard cars and 2 No. van. In addition, there are three other GoCar vehicles based at Clongriffin.



Figure 13.4 | GoCar at Station Square

13.3.3 Cycle Parking - Existing

Covered public cycle parking with 112 stands is provided In Clongriffin at Station Square adjoining the Park & Ride car park. See Figure 13.5.



Figure 13.5 | Cycle Parking at Station Square

13.3.4 Cycle Infrastructure - Existing

Within the Clongriffin area, the cycle Infrastructure generally consists of cycle tracks along with new main roads or bus lanes with some facilities provided through Fr. Collin's Park.

Externally, cycle lanes are provided along the Hole in the Wall Road linking to the cycle network developed by Dublin City Council In the surrounding area. The Green Route also links Beltane Avenue and Hole in the Wall Road.

Figure 13.6 following is an extract of the Cycle Network Plan for the Greater Dublin Area illustrating the existing cycling infrastructure within the subject area.

The map shows that the extent of the Cycle Facilities Type C1 (Cycle tracks separate from the road) in the area around the proposed development.

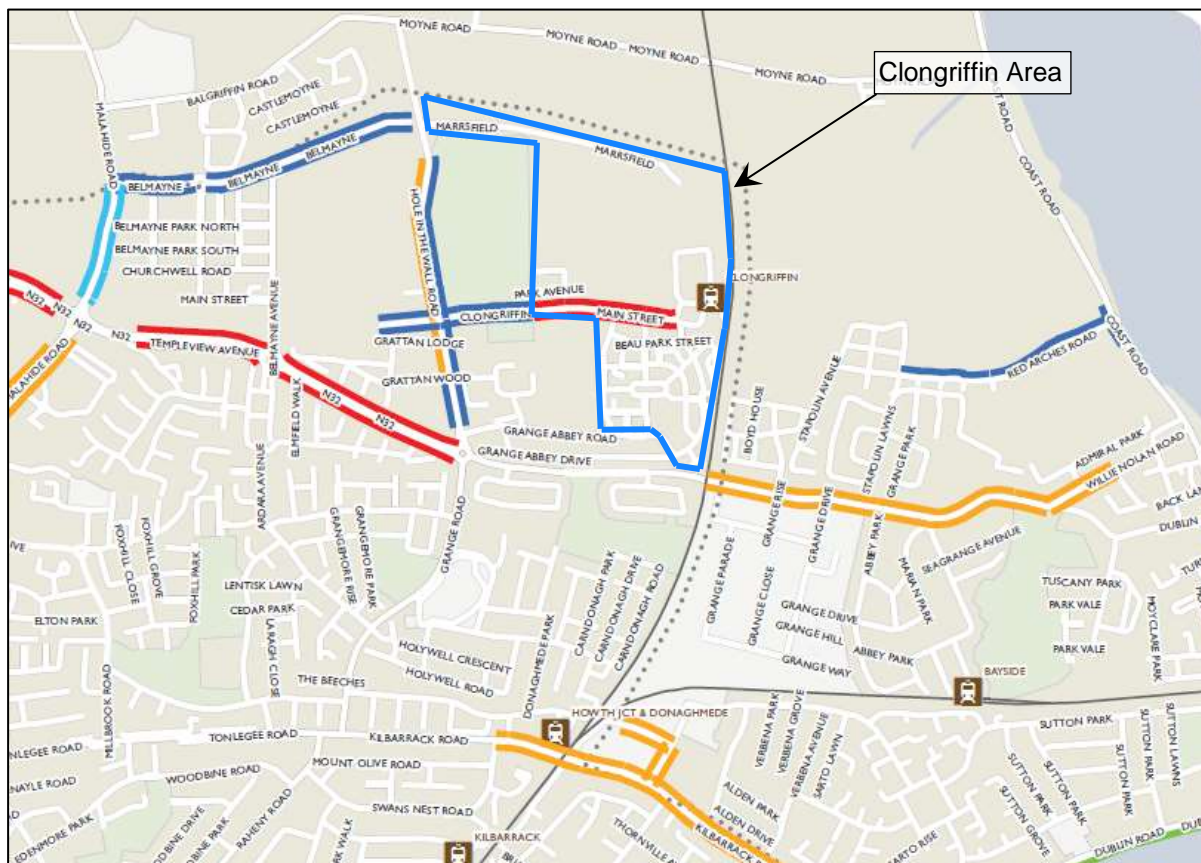


Figure 13.6 | Extract from Cycle Network Plan for the North Dublin Area

13.3.5 Pedestrian - Existing

The existing pedestrian facilities in the area of Clongriffin comprise an Inter-connected network of footways linking the various neighbourhoods to each other and to the surrounding public network.

The Green Route provides an important walking and cycling corridor connecting Belmayne with Clongriffin Station Square via Father Collin’s Park. The Route is partly complete and provides a 3m wide cycle and pedestrian route within a 7m reservation.

13.4 Transportation Improvements

13.4.1 Roads and Junctions - Proposed

Belmayne Main Street – Belmayne Avenue

The primary road improvement project in the surrounding area is the Belmayne Main Street – Belmayne Avenue roadway, which includes:

- Signalised junctions at Belmayne Avenue/Belmayne Main Street and at Belmayne Main Street/Malahaide Road with dedicated pedestrian crossings;
- Bus lane facilities, including a bus lane in both directions and a new bus-gate link to the Malahaide Road;
- Construction of carriageway with central median island, footpaths and cycleways along the Belmayne Main Street;

Dublin City Council is proposing to undertake the works, which are estimated to be complete in Q4 of 2020.

Currently, Main Street extends some 140 metres to the west of the signalised junction with Hole in the Wall Road. As part of the Clongriffin – Belmayne Local Area Plan, it is intended to extend the road infrastructure further west, connecting with Belmayne Avenue as per the above project.

The Hole in the Wall Road Roundabout, Donaghmede, Dublin 13.

This Scheme is being undertaken by Dublin City Council and will comprise the

- Installation of dedicated signalised pedestrian and cyclist crossings on The Hole in the Wall Road and Clarehall Avenue arms of the roundabout,
- Extension of The Hole in the Wall Road's inbound bus lane to the roundabout.
- Improvements to the existing pedestrian crossing at the entrance to Grange Abbey,
- Improvements to cycle facilities on the Hole in the Wall Road and Clarehall Avenue arms of the roundabout, and,
- Improvements to the existing traffic signal operational Infrastructure.

These improvements are ongoing; however, the traffic modelling conservatively assume that the roundabout operates as per the existing arrangement.

Mayne Road / Hole in The Wall Road Junction Upgrade Scheme

The secondary road improvement projected in the surrounding area, north of the subject site, is the *Mayne Road / Hole in the Wall Road Junction Upgrade Scheme* being undertaken by Fingal County Council.

The Scheme will comprise

- Construction of a new road linking the recently upgraded section of Hole in the Wall Road, within the administrative area of Dublin City Council, to a new four-arm signalised junction with the Drumnigh Road (R124) and Mayne Road (R123). Also included is the upgrading of portions of the Mayne Road (R123) and Drumnigh Road (R124).
- Reconfiguration of the existing Hole in the Wall Road/Mayne Road priority junction to allow for "left-out" one-way west bound vehicular traffic movement only on the immediate approach to Mayne Road. Two-way traffic flow will be retained to access the properties and business along the section of the Hole in the Wall Road north of Belmayne Boulevard.
- Provision of upgraded footpaths, cycle tracks, pedestrian crossing facilities, street furniture, road signage & markings, landscaping & planting and agreed accommodation works as required.

The tendering process is ongoing with an estimated construction period of 15 months. The anticipated completion date is Q1/Q2 of 2021.

13.4.2 Public Transport

DART

The DART Expansion Project is included within the 10-year horizon for the National Development Plan 2018 – 2027. It includes for an extension of the DART service to Balbriggan and an increased weekday frequency of 15 minutes in each direction.

Bus Connects

The Bus Connects project currently being implemented by the National Transport Authority aims to deliver a much enhanced bus service to the Greater Dublin Area (GDA). It includes for the replacement of the existing Dublin Bus Route 15 with a high frequency radial service linking Clongriffin DART Station to the City Centre at a service frequency of 4 – 8 minutes and a series of Orbital Routes linking Clongriffin to the west and north. See Figure 13.7.

Bus Connects have proposed improvement works to the bus facilities at Clongriffin as shown in Figure 13.8.



Figure 13.7 | Proposed Route Map - Bus Connects

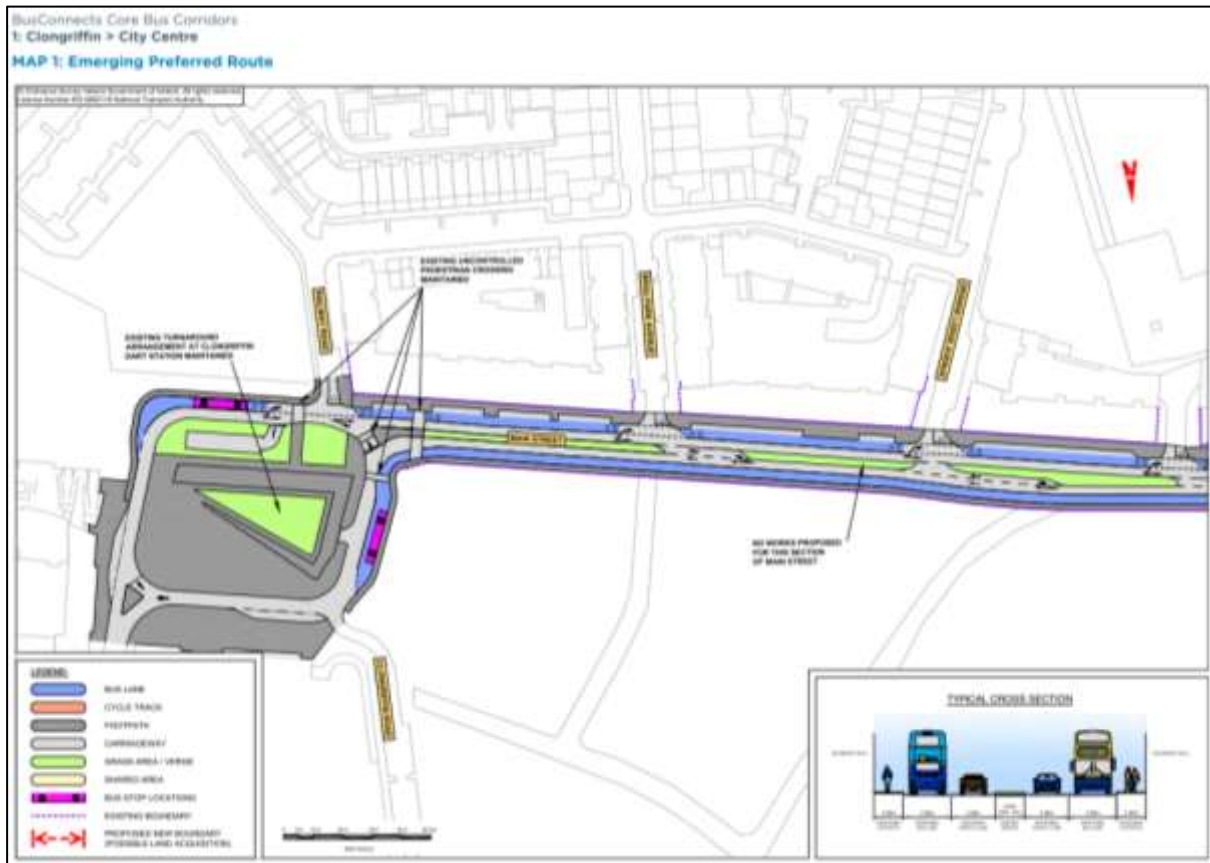


Figure 13.8 | Bus Connects Proposals for Clongriffin

13.4.3 GoCar

It is expected that the GoCar provision at Clongriffin will increase from 7 vehicles to 13 vehicles as the development is completed.

13.4.4 Pedestrian

Additional pedestrian facilities will be provided at Clongriffin as the development progresses.

13.4.5 Cycle

Proposals for the Greater Dublin Area Cycle Network Plan were published by the National Transport Authority in December 2013. The plan sets out a vision and a strategy for the construction and / or designation of a comprehensive network of cycling routes throughout the Greater Dublin Area (Counties Dublin, Meath, Kildare and Wicklow).

An extract from Sheet N2 for Dublin North East is reproduced in Figure 13.9.

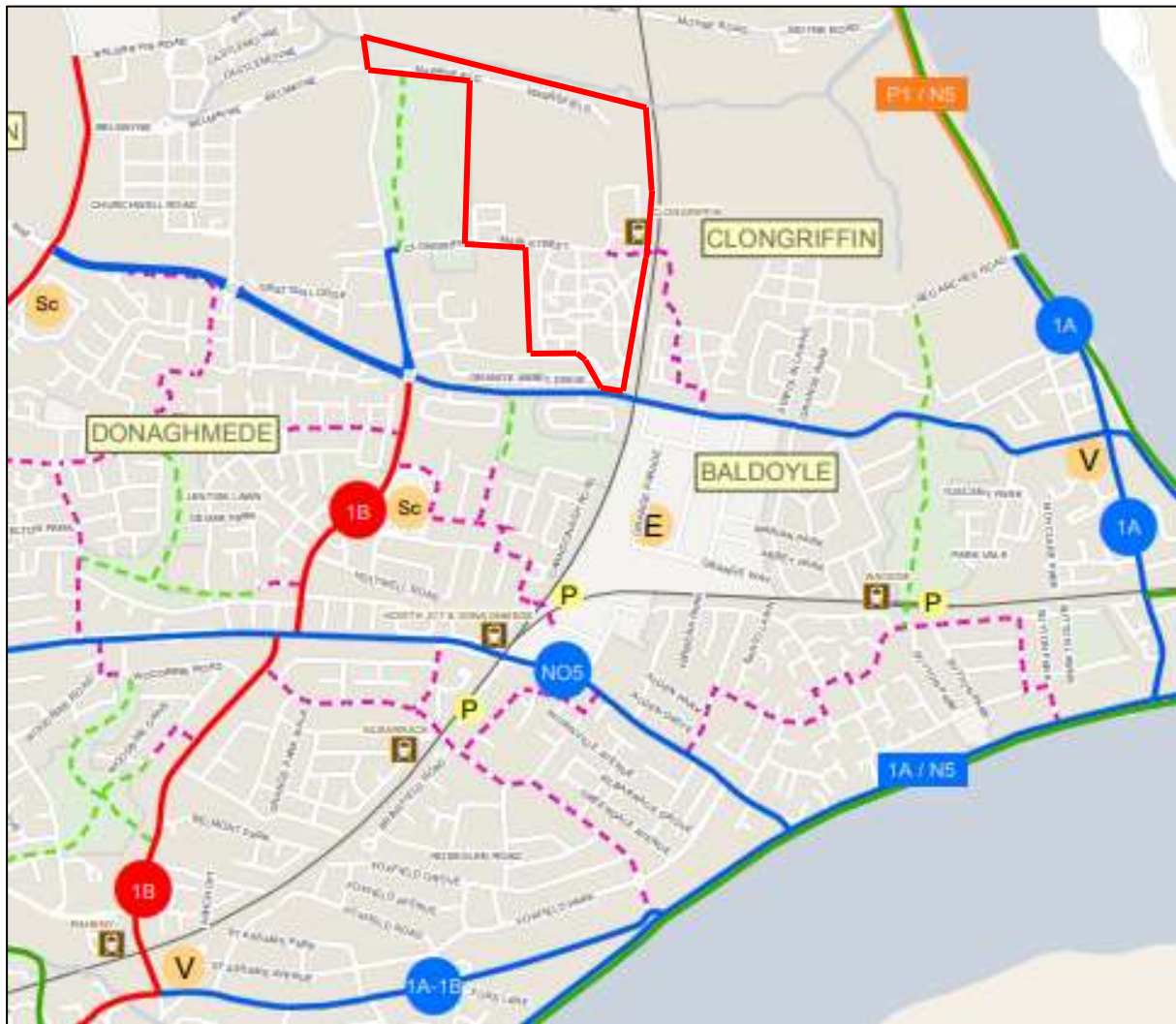


Figure 13.9 | Extract from Sheet N2 Cycle Network Plan for the GDA

Public cycle parking is provided at Station Square in accordance with the requirements of Section 16.39 of the Dublin City Development Plan 2016 – 2022.

The required number of stands has been calculated in accordance with Table 16.2 of the Plan which for Train Stations requires 7 spaces per number of trains in the two-hour peak period AM with a minimum of 100 spaces.

In the case of Clongriffin Station, the current number of trains is 16 per two-hour In the AM. This expected to increase to 20 trains per two-hour after completion of the DART Expansion Project.

These volumes will create a cycle parking requirement of 112 stands in 2019 increasing to 140 stands after DART Expansion.

The current provision is 112 stands at Station Square.

The additional 28 stands are part of the proposed development works and will be also provided at Station Square.

13.5 Characteristics of the Proposal

13.5.1 Description of Development

Neighbourhoods

Clongriffin comprises four neighbourhoods at different stages of development. They are supported by Station Square, a Town Centre, a public park and a railway station with an Intensive commuter service.

The four neighbourhoods illustrated In Figure 13.10 are: -

- Marrsfield to the north of Marrsfield Avenue with 553 residential apartments including Blocks 34, 35 and 36 (partly developed).
- Belltree in the west with 473 residential housing units (partly developed).
- The Town Centre Including Station Square, Main Street and Station Street. This neighbourhood which is partly developed comprises multi-storey residential apartments and non-residential floorspace in Blocks 1 –17 and 19 – 27. The Town Square also includes a multi-storey car park with a Park & Ride section.
- Beau Park to the southeast with 604 low rise residential housing units and Block 18 (completed).

Overall Development

The overall development at Clongriffin which is expected to be completed in 2025 is summarised In Table 13.1.

Area	Houses	Apartments	Total Residential	Non-Residential
Marrsfield	-	553	553	708
Belltree	443	30	473	-
Town Centre	-	2,590	2,590	44,533
Beaupark	506	98	604	223
Total	949	3,271	4,220	45,464 sqm

Table 13.1 | Overall Development

Population 2025

During the 2016 Census, the resident population of Clongriffin was 3,832 persons in 1,372 housing units equivalent to 2.79 persons per unit.

On this basis, the resident population of Clongriffin when completed about 2025 is expected to be 11,774 persons based on 4,220 residential units at a density of 2.79 persons per unit.

At the same time, the staff numbers working at Clongriffin are expected to increase to 1,228 persons based on the following floorspace and densities: -

- Offices : 8,468 sqm x 1 person per 15 sqm : 565 persons
- Retail : 6,171 sqm x 1 person per 50 sqm : 124 persons
- Leisure : 7,565* sqm x 1 person per 180 sqm : 42 persons
- Hotel : 8,080 sqm x 1 person per 100 sqm : 80 persons

• Crèche	:	1,230 sqm x 1 person per 50 sqm	:	25 persons
Total New Developments:	:	31,514 sqm x 1 person per 37 sqm	:	836 persons
Existing Development :	:	13,950 sqm x 1 person per 37 sqm	:	377 persons
Overall Development :	:	45,464** sqm x 1 person per 37 sqm	:	1,228 persons.

*7,565sqm of leisure area includes: 5,507sqm of leisure, 1,641sqm of café/restaurant and 417sqm of community use

**At the time of writing, some 706 sqm of retail were under construction on Blocks 2, 32 and 33 (Planning Ref's 3776/15 and 2478/17) and 8,080 sqm of hotel were permitted on Block 19 but not yet under construction (Planning Ref. 2569/17).



Figure 13.10 | Location Map for Neighbourhoods

13.5.2 Planning Background

Parent Application 2002

The parent planning permission for Clongriffin was granted by An Bord Pleanála In June 2003 subject to 46 conditions (Reg Ref: 0132/02).

The permission provided for

- 3,576 dwelling units comprising 838 houses, 428 duplex and 2,310 apartments.
- 85,000 sqm of mixed retail, commercial, leisure and community use.
- Clongriffin Railway Station.
- An underground town car park Including 420 park and ride spaces.
- Taxi rank, drop-off and bus Interchange
- Main Street, Park Avenue, Station Street and Marrisfield Avenue
- An underpass linking Station Square with the lands to the east of the railway.
- Cycle route through Panhandle Park linking Station Square with Father Collin's Park.

Amending Applications 2003 – 2016

In the period following the parent permission, there have been a number of amending applications between 2003 and 2016, the effects of which were to Increase the number of residential units and the amount of non-residential floorspace up to 100,000sqm.

Current Applications 2019

The proposed development comprises 15 blocks In the Town Centre neighbourhood.

The development comprises 1,950 residential units, 22,728 sqm of non-residential floorspace and 1,358 car parking spaces.

The proposed development is divided into three applications, Strategic Housing Development Application No. 1 (SHD 1), which refers to blocks 6, 8, 11, 17, 25, 26, 27, 28 and 29; Strategic Housing Development Application No. 2 (SHD 2), which refers to blocks 4, 5 and 14 and one application to be submitted to Dublin City Council (DCC) which refers to blocks 3, 13 and 15.

Block	Residential	Commercial	Car Parking
SHD 1	1,030	2,286	673
SHD 2	500	3,125	357
DCC	420	17,317	328
Total	1,950 units	22,728 sqm	1,358

Table 13.2 | *Current Planning Applications*

13.5.3 Phasing of Development

Parent Permission 2002

Condition 3 of the parent permission required the submission of a phasing programme Including the appropriate and timely provision of Infrastructure In tandem with the provision of residential development. At the time of writing in 2019, all of the headline infrastructure Including the railway station, roads, junctions and the multi-storey Park and Ride at Station Square have been completed

Existing Development

The existing development completed at the end of 2018 is summarised In Table 13.3.

Area	Houses	Apartments	Total Residential	Non-residential
Marrsfield	-	179	179	368
Belltree	366	-	366	-
Town Centre	-	536	536	13,359
Beaupark	506	98	604	223
Total	872	813	1,685 units	13,950 sqm

Table 13.3 | *Development – Existing*

Proposed New Development

The new development to be completed by 2025 will comprise 2,535 residential units (585 permitted/under construction and 1,950 units proposed as part of the subject applications) and 31,514 sqm of non-residential floorspace (8,786 sqm permitted/under construction and 22,728 sqm as part of the subject applications).

The new non-residential floorspace at Clongriffin amounting to 31,514 sqm will comprise: -

- Retail : **6,171 sqm** (706 sqm under construction & 5,465 sqm part of the subject applications)
- Offices : **8,468 sqm** (part of the subject applications)
- Leisure : **7,565* sqm** (part of the subject applications)
- Hotel : **8,080 sqm** (permitted)
- Crèche : **1,230 sqm** (part of the subject applications)

Total : **31,514 sqm**

*7,565 sqm of leisure area includes: 5,507sqm of leisure, 1,641sqm of café/restaurant and 417sqm of community use.

Overall Development 2025

The overall development to be completed at Clongriffin by 2025 is summarised in Table 13.4.

Area	Houses	Apartments	Total Residential	Non-residential
Marrsfield	-	553	553	708
Belltree	443	30	473	-
Town Centre	-	2,590	2,590	44,533
Beaupark	506	98	604	223
Total	949	3,271	4,220	45,464 sqm

Table 13.4 | *Completed Development 2025*

13.5.4 Travel Characteristics

Road Traffic Surveys

Traffic surveys carried out in by Tracsis in May 2018 recorded the traffic movements at six junctions in the surrounding area at the locations shown in Figure 13.11.

The surveys were carried out over a period of 24 hours between 00h00 and 00h00 on Tuesday 22nd May 2018.

The surveys identified the AM peak hour as 08h00-09h00 and the PM peak hour as 18h00 – 19h00 for all six junctions.



Figure 13.11 | Location of Traffic Counts

Road Traffic Flows - Existing

The recorded two-way link flows on the roads at Clongriffin are presented in Table 13.5.

No significant delays or queuing were identified during the survey.

Location	AM Peak 8 - 9	PM Peak 6 - 7	24 Hour
Grange Road	1,489	1,406	21,438
Hole in the Wall Road (north of Main Street)	589	673	7,701
Hole in the Wall Road	1,067	1,347	16,530

(south of Main Street)			
Main Street	516	777	8,184
Marrsfield Avenue	218	180	1,844
Park Avenue	111	94	964

Table 13.5 | Recorded Link Flows on Surrounding Road (two-way)

Arrivals and Departures – Car

The arrivals and departures by car at Clongriffin on 22nd May 2018 are summarised In Table 13.6.

Location	AM Peak Hour 8 - 9		PM Peak Hour 6 - 7		24-hour	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Marrsfield Avenue	76	142	104	76	1,009	1,017
Main Street	198	318	416	361	4,107	4,087
Total	274	460	520	437	5,116	5,104

Table 13.6 | Arrivals and Departures - AM Peak Hour and PM Peak Hour

Park and Ride

Usage of the 420 Park and Ride car parking spaces under Station Square is currently 50%.

Car Sharing

The 7 No. GoCar vehicles based at Clongriffin are currently well used and the provision of new GoCar spaces are proposed for the area as the development progresses.

Census 2016

Census 2016 was carried out by the Central Statistics Office on 24th April 2016.

For the purpose of the survey, Clongriffin was divided into 12 zones as shown In Figure 13.12.

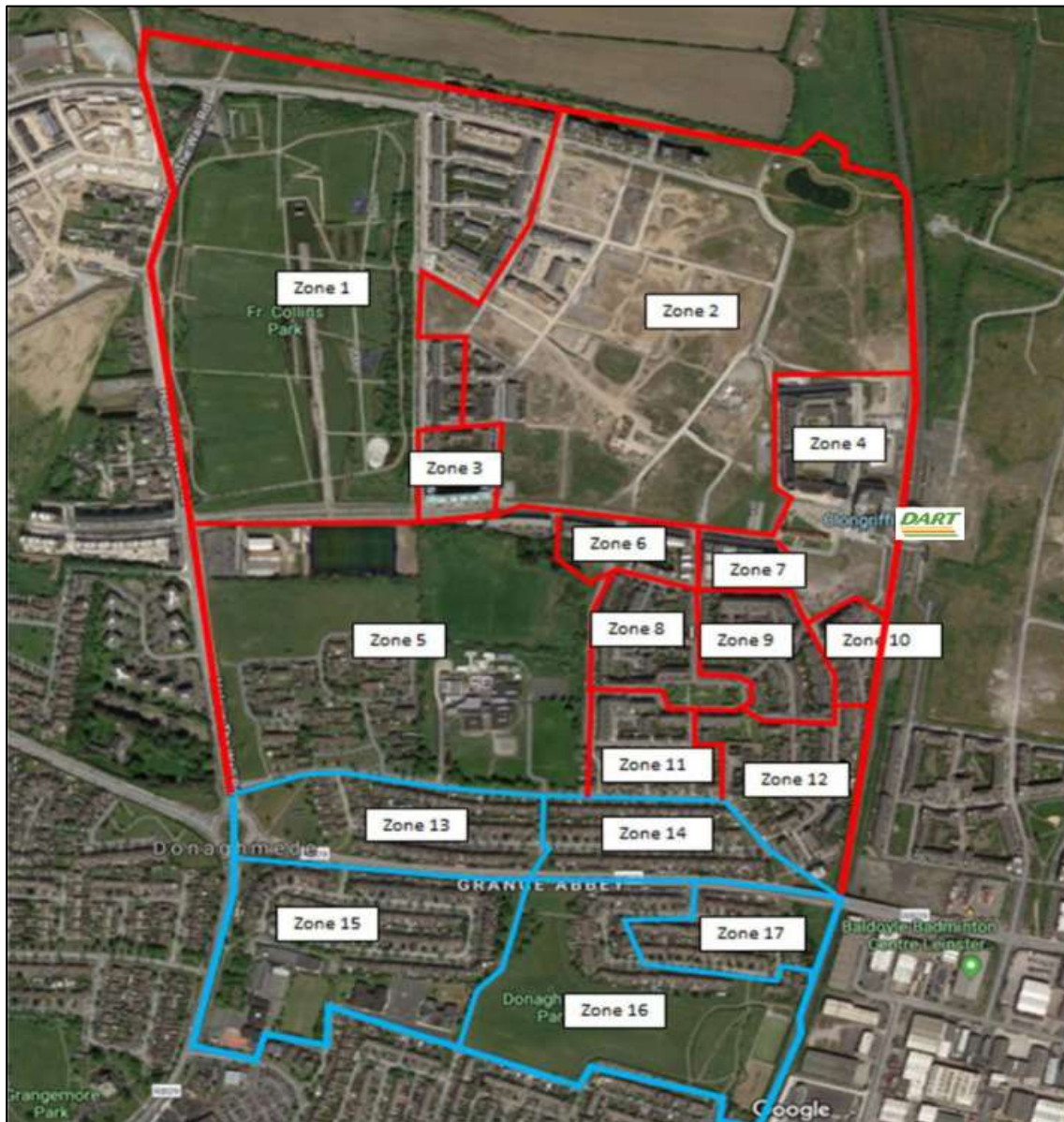


Figure 13.12 | Zones for Census 2016

Car Ownership

The results of the census for car ownership in Clongriffin Zones 1 – 12 are presented in Table 13.7.

The survey recorded that the population of 3,832 persons at Clongriffin had a car ownership of 1,407 vehicles equivalent to 1 car per 2.7 persons or 0.98 car per unit.

CAR OWNERSHIP										
CLONGRIFFIN										
ZONE	POPULATION	HOUSING	0	1	2	3	4+	NO STATED	TOTAL	T/H
1	283	105	19	60	18	3	0	5	105	1.00
			18.10	57.14	17.14	2.86	0.00	4.76		
2	328	112	31	62	18	0	1	0	102	0.91
			27.68	55.36	16.07	0.00	0.89	0.00		
3	263	97	12	51	25	3	4	2	126	1.30
			12.37	52.58	25.77	3.09	4.12	2.06		
4	366	128	36	62	17	6	3	4	126	0.98
			28.13	48.44	13.28	4.69	2.34	3.13		
5	343	117	26	64	19	3	1	4	115	0.98
			22.22	54.70	16.24	2.56	0.85	3.42		
6	328	139	26	76	26	0	0	11	128	0.92
			18.71	54.68	18.71	0.00	0.00	7.91		
7	236	106	31	52	16	0	0	7	84	0.79
			29.25	49.06	15.09	0.00	0.00	6.60		
8	328	105	22	46	27	3	1	6	113	1.08
			20.95	43.81	25.71	2.86	0.95	5.71		
9	408	138	17	77	36	1	1	6	156	1.13
			12.32	55.80	26.09	0.72	0.72	4.35		
10	200	85	18	57	9	0	0	1	75	0.88
			21.18	67.06	10.59	0.00	0.00	1.18		
11	327	106	11	62	27	3	0	3	125	1.18
			10.38	58.49	25.47	2.83	0.00	2.83		
12	422	134	28	55	42	3	1	5	152	1.13
			20.90	41.04	31.34	2.24	0.75	3.73		
TOTAL	3832	1372	277	724	280	25	12	54	1407	1.03
			20.19	52.77	20.41	1.82	0.87	3.94		

Table 13.7 | Surveyed Car Ownership at Clongriffin 2016

Rail Travel Census

The National Heavy Rail Census was carried out by Iarnrod Eireann in 2017 on behalf of the National Transport Authority (NTA).

The Final Report published in July 2018 recorded ongoing significant annual increases in passenger numbers at Clongriffin Railway Station.

These Increases are likely to continue for a number of years into the future.

The results of the Census for passenger numbers per day at Clongriffin Station are presented In Tables 13.8 and 13.9.

Activity	2017	2016	2015	2014	2013	2012
Boarding's	1,296	1,256	1,013	830	767	674
Alighting's	1,219	985	875	726	567	640
Total	2,515	2,241	1,888	1,556	1,334	1,314

Table 13.8 | Passenger Numbers at Clongriffin Station 2012 – 2017

Activity	Northbound	Southbound	Total
Boardings	70	1,226	1,296
Alighting's	1,162	57	1,219
Total	1,232	1,283	2,515

Table 13.9 | Boardings and Alightings at Clongriffin Railway Station 2017

Rail Passenger Forecasts 2019 and 2025

For the purpose of forecasting future rail passenger numbers at Clongriffin, the methodology described below was used.

- Extraction of surveyed daily numbers from Rail Census 2017 published in 2018.
- Calculation of growth rate from the survey results for 2012 – 2017.
- Application of the growth rate to the 2017 survey results to generate the 2019 numbers (existing).
- Calculation of passenger numbers that will be generated by the proposed new developments at Clongriffin.
- Addition of the new passenger numbers to the 2019 passenger numbers to forecast the 2025 passenger numbers (completed development).

Daily Rail Passenger Numbers 2019

The surveyed passenger numbers for Clongriffin Station show an average year on year increase of 14% per annum over the five years between 2012 and 2017.

This rate of increase was applied to the 2017 surveyed numbers to estimate the future numbers in 2019 (+ 30%). The results are presented in Table 13.10.

Activity	Northbound	Southbound	Total
Boardings	91	1,594	1,685
Alighting's	1,511	74	1,585
Total	1,602	1,668	3,270

Table 13.10 | Boardings and Alightings at Clongriffin Railway Station 2019 (Existing)

Peak Hour Rail Boardings and Alightings 2019

The hourly profile surveyed during the Census recorded that overall 17% of daily passenger demand occurred during the AM Peak Hour and 15% of daily passenger demand occurred during the PM Peak Hour.

The proportion of passenger numbers during the AM Peak Hour and the PM Peak Hour varies significantly with the location of the rail station whether in the City Centre or the suburbs.

In the case of Clongriffin, outbound passenger numbers in the AM Peak Hour and inbound passenger numbers during the PM Peak Hour will be greater than the corresponding more balanced numbers in the City Centre. Similarly, inbound passenger numbers in the AM Peak Hour and outbound passenger numbers during the PM Peak Hour will be greater than the corresponding more balanced numbers in the City Centre.

For the purpose of this TA, it was assumed that 20% of the daily boardings occur during the AM Peak Hour and 10% during the PM Peak Hour.

It was also assumed that 10% of the alightings occur during the AM Peak Hour and 20% during the PM Peak Hour.

The Peak Hour passenger numbers for Clongriffin in 2019 are presented in Table 13.11.

Year	Period	Activity	Northbound	Southbound	Total
2019 (Existing)	AM Peak hour	Boarding	18	319	337
		Alighting	151	7	158
	PM Peak hour	Boarding	9	159	168
		Alighting	302	15	317

Table 13.11 | *Peak Hour Boardings and Alightings 2019 (existing)*

Surveyed Modal Split – Residents

The surveyed modal split for the journey to work by the residents at Clongriffin as surveyed In Census 2016 is presented In Table 13.12.

The Census recorded that 52% of 3,832 population generated 1,985 trips for the journey to work.

Some 45.3% of trips were by car, 38.5% by public transport and the remaining 16.2% by cycle or on foot.

MODAL SPLIT									
CLONGRIFFIN									
Zone	Housing	Trip Attactor	Total Trips	Car Driver	Car Passenger	Train	Bus	Bycicle	Others
1	105	Work	145	59	5	37	21	7	16
				40.7	3.4	25.5	14.5	4.8	11.0
2	112	Work	125	61	7	33	15	3	6
				48.8	5.6	26.4	12	2.4	4.8
3	97	Work	157	81	5	34	19	5	13
				51.59	3.18	21.66	12.10	3.18	8.28
4	128	Work	230	72	8	95	27	10	18
				31.30	3.48	41.30	11.74	4.35	7.83
5	117	Work	140	68	5	13	22	5	27
				48.57	3.57	9.29	15.71	3.57	19.29
6	139	Work	196	86	2	65	16	2	25
				43.88	1.02	33.16	8.16	1.02	12.76
7	106	Work	152	49	5	51	18	10	19
				32.24	3.29	33.55	11.84	6.58	12.50
8	105	Work	150	60	6	39	15	2	28
				40	4.0	26.0	10.0	1.3	18.7
9	138	Work	213	89	2	71	14	5	32
				41.78	0.94	33.33	6.57	2.35	15.02
10	85	Work	109	51	2	24	8	8	16
				46.79	1.83	22.02	7.34	7.34	14.68
11	106	Work	168	74	2	44	20	8	20
				44.05	1.19	26.19	11.90	4.76	11.90
12	134	Work	200	95	4	36	27	5	33
				47.50	2.00	18.00	13.50	2.50	16.50
TOTAL	1372		1985	845	53	542	222	70	253
%			1985	42.6	2.7	27.3	11.2	3.5	12.7

Table 13.12 | Surveyed Modal Split for Residents at Clongriffin

Target Modal Split for Residents

The target proposals for modal split for residents engaged on the journey to and from work outside Clongriffin in 2025 are presented In Table 13.13.

On the basis of 4,220 units and an average of 2.79 persons per unit as recorded by Census 2016, it is estimated that Clongriffin will have a resident population of 11,774 persons when fully completed and occupied.

Mode	Census 2016	Target 2025
Car (Driver)	42.6%	30%
Car (Passenger)	2.7%	
Train	27.3%	30%
Bus	11.2%	30%
Cycle	3.5%	10%
Other	12.7%	
Total	100%	100%

Table 13.13 | Modal Split for Residents Journey to Work from Clongriffin in 2025

Target Modal Split for Staff Travelling to Work at Clongriffin

The target proposals for modal split for at Clongriffin staff engaged on the journey to work In the AM and from work to home In the PM Peak Hour in 2025 are presented In Table 13.14.

On the basis of commercial floor space extending to 45,464 sqm and an average staff provision of 1 person per 37 sqm, it is estimated that some 1,228 persons will work at Clongriffin when fully completed and occupied.

Mode	Target 2025
Car (Driver)	33%
Car (Passenger)	
Train	28%
Bus	28%
Cycle / Walking	11%
Total	100%

Table 13.14 | Modal Split for Staff Journey to Work at Clongriffin in 2025

13.6 Person Trip Generation

Parent Permission

Trip generation rates were Included in Section 6.0: *Transportation Impacts* of the Environmental Impact Statement (EIS) prepared by Brian Meehan and Associates on behalf of Gannon Homes for the parent planning application in January 2002 (Reg Ref: 0132/02, PL29N.131058).

The person trip rates which were based on the TRICS database are reproduced In Table 13.15.

The corresponding breakdown between inbound and outbound trips were also extracted from the EIS. These are reproduced In Table 13.16.

Land Use Category	Daily Trip Rate (Two-way)	Daily Trip Rate (One-way)	Calculation Factor
Residential	9	-	Per unit
Office	-	9	Per 100sqm
Retail	-	150	Per 100sqm
Leisure	-	150	Per 100sqm
Hotel	-	10	Per 100sqm
Crèche	-	62	Per 100sqm

Table 13.15 | Daily Person Trip Rates from 2002 EIS

Land Category	Use	AM (08:00 – 09:00)		PM (18:00 – 19:00)	
		% Trips In	% Trips Out	% Trips In	% Trips Out
Residential		5	12	12	10
Office		80	5	5	70
Retail		8	5	7	8
Leisure		5	5	8	8
Hotel		10	10	10	30
Crèche		19	13	12	13

Table 13.16 | Breakdown of Inbound and Outbound Person Trips from 2002 EIS

Person Trips

The calculated person trips for the completed Clongriffin development in 2025 are presented in Table 13.17.

These have been based on

- An assessment year of 2025.
- An existing development of 1,685 residential units and 13,950 sqm non-residential floorspace.
- New development (developments under construction, permitted developments and subject applications) comprising 2,535 residential units and 31,514 sqm non-residential floorspace.
- A total of 4,220 residential units with a residential population of 11,774 persons.
- A total of 45,464 sqm non-residential development with a working population of 1,228 persons.
- The person trip rates from Table 13.15.
- The breakdown between internal and external trips from Table 13.16.
- An AM Peak Hour of 08h00 – 09h00 and PM Peak Hour of 18h00 – 19h00

From Table 13.17, it will be seen that the proposed new developments at Clongriffin are expected to generate a total of 34,344 daily person trips with 5,330 trips (2,713 inbound and 2,617 outbound) during the AM peak hour and 6,794 trips (3,133 inbound and 3,661 outbound) during the PM peak hour.

Land Use	Unit or Area (sqm)	Daily Person Trips (One-way)	AM Person Trips		PM Person Trips	
			In	Out	In	Out
Residential	2,535	11,408	570	1,369	1,369	1,141
Office	8,468	762	610	38	38	534
Retail*	6,171	9,256	740	463	648	740
Leisure**	7,565	11,347	567	567	905	905
Hotel	8,080	808	81	81	81	242
Crèche	1,230	763	145	99	92	99
Sub-total (New dev.)	2,535 units 31,514 sqm	34,344	2,713	2,617	3,133	3,661
Existing dev.	1,685 units 13,950 sqm		Existing trips included in travel surveys			
Total	4,220 units 45,464 sqm		Total trips included in Table 13.24.			

Table 13.17 | Daily and Peak Hour Person Trips 2025

*6,171sqm of retail area includes: 5,465 sqm part of the subject applications and 706sqm under construction.

**7,565 sqm of leisure area includes: 5,507 sqm of leisure, 1,641sqm of café/restaurant and 417sqm of community use.

13.7 Trip Assignment and Distribution

Residential

From Table 13.17, it will be seen that the 2,535 new residential units permitted + proposed for Clongriffin are expected to generate a total of 1,939 person trips during the AM peak hour (570 Inbound and 1,369 outbound) and a total of 2,510 person trips during the PM peak hour (1,369 Inbound and 1,141 outbound).

As presented previously, the existing modal split for the journey to work by residents living within the Clongriffin Electoral Area is 45% by car, 28% by rail, 11% by bus and the remaining 16% by cycle or on foot.

These figures differ somewhat from those used in the EIS prepared for the parent permission which predicted 30% by car, 30% by rail, 30% by bus and the remaining 10% by cycle or on foot.

For the purpose of this TA, it has been assumed that the modal split for the journey to work by residents will be 45% by car, 28% by rail, 11% by bus and the remaining 16% by cycle or on foot (Table 13.13).

This reduction in the use of private car and the increase in the use of public transport has been based on a number of inter-related factors including

- The proposed local improvements on the public transport in the Clongriffin area, such as Bus Connects and DART Expansion Programme.

- The variety of commercial/office elements proposed for Clongriffin and the potential of these developments to create new job opportunities in the local area.
- The overall size of the development and the mix of land uses.

This reduction in the use of private car and the increase in the use of public transport are based on the variety of retail / commercial / office facilities proposed for Clongriffin and the potential of these developments to create new job opportunities in the local area. As a consequence, some Clongriffin residents are likely to travel to/from these facilities during the AM & PM peak hours, primarily as customers but also as workers. Therefore, for the purpose of this analysis, the all mode trips predicted to be generated by the Clongriffin residents have also split into internal and external trips. The split assumes that

- 80% of the car trips will be external and 20% internal.
- 100% of the rail trips will be external.
- 100% of the bus trips will be external.
- 50% of the pedestrians and cycle trips will be external and 50% internal.

The trips expected to be generated by the new residential units are summarised in Table 13.18 below.

Table 13.18 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Residents										
Car	6%	24%	34	82	82	68	137	329	329	274
Bus	-	30%	-	-	-	-	171	411	411	342
Rail	-	30%	-	-	-	-	171	411	411	342
Pedestrians Cyclists	5%	5%	29	68	68	57	29	68	68	57
Total	100%		63	150	150	125	508	1,219	1,219	1,015

Table 13.18 | Summary of Peak Hour Residential Trips 2025

Retail

As presented in Table 13.17 the new retail units to be developed in Clongriffin are expected to attract/generate a total of 1,203 person trips during the AM peak (740 inbound and 463 outbound) and a total of 1,388 person trips during the PM (648 inbound and 740 outbound). These trips are assumed to be generated only by customers.

Based on the location of the proposed retail units (in a high-density residential area and in close proximity to offices and leisure developments), it was assumed that 70% of the retail customer trips to/from these amenities will be generated by walking/cycling whilst 10% will be generated by car, by

residents and workers from Clongriffin (Internal). The remaining 20% of the customer trips were considered to be generated by external population, 10% by car and 10% by walking/cycling.

In addition to customer trips, the new retail units are also expected to attract/generate staff trips, people traveling to their place of work in Clongriffin each morning and departing home each evening.

On the basis of the total retail floor space of 6,171 sqm (706sqm under construction on Blocks 2, 32 and 33 (Planning Ref's 3776/15 and 2478/17 and 5,465sqm proposed as part of the subject applications) and an average staff provision assumption of 1 person per 50 sqm, it was calculated that some 124 persons will work at the retail units in Clongriffin.

Based on the large number of residential units proposed for overall Clongriffin, it was assumed that 40% of the retail staff population will be Clongriffin residents (internal), who will travel to/from work by walking or cycling, and the other 60% will be external. For the purpose of the analysis, it was considered that all the external trips will be generated by cars (20%) and public transport (20% by bus and 20% by rail).

The inbound and outbound trips expected to be generated by the new retail units are presented in Table 13.19 below.

Table 13.19 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Customers										
Car	10%	10%	74	46	65	74	74	46	65	74
Bus	-	-	-	-	-	-	-	-	-	-
Rail	-	-	-	-	-	-	-	-	-	-
Pedestrians Cyclists	70%	10%	518	324	454	518	74	46	65	74
Sub-total	100%		592	370	519	592	148	92	130	148
Staff										
Car	-	20%	-	-	-	-	25	-	-	25
Bus	-	20%	-	-	-	-	25	-	-	25
Rail	-	20%	-	-	-	-	25	-	-	25
Pedestrians Cyclists	40%	-	49	-	-	49	-	-	-	-
Sub-total	100%		49	-	-	49	75	-	-	75

Total	100%	641	370	519	641	223	92	130	223
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Table 13.19 | Summary of Peak Hour Retail Trips 2025

Offices

As can be seen in Table 13.17, the new office units proposed for Clongriffin are expected to generate a total of 648 person trips during the AM peak (610 inbound and 38 outbound) and a total of 572 person trips during the PM (38 inbound and 534 outbound). All the trips are assumed to be generated by the staff population.

Based on the large number of residential units proposed for overall Clongriffin, it was assumed that 20% of the office staff population will reside in Clongriffin (internal) and will travel to/from work by walk or cycling. The other 80% are assumed to be external.

On the basis of the total office floor space of 8,468 sqm and an average staff provision assumption of 1 person per 15 sqm, it was calculated that some 565 persons will work at the offices in Clongriffin.

Founded on the proposed local improvements on the public transport in the Clongriffin area, in 2025, the 80% of external office staff trips are assumed to be split into 25% by car 25% by bus, 25% by rail and the remaining 5% by walking/cycling.

The all mode staff, internal and external, inbound and outbound trips for the new office units are presented in Table 13.20 below.

Table 13.20 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Staff										
Car	-	25%	-	-	-	-	152	10	10	133
Bus	-	25%	-	-	-	-	152	10	10	133
Rail	-	25%	-	-	-	-	152	10	10	133
Pedestrians	20%	5%	122	8	8	107	31	2	2	27
Cyclists										
Total	100%		122	8	8	107	487	32	32	426

Table 13.20 | Summary of Peak Hour Office Trips 2025

Leisure

As presented in Table 13.17, the new leisure units proposed for Clongriffin, which include leisure, café, restaurant and community uses, are expected to generate a total of 1,134 person trips during the AM

peak (567 inbound and 567 outbound) and a total of 1,810 person trips during the PM (905 inbound and 905 outbound). These trips are assumed to be generated only by customers.

Based on the location in a high-density residential area and in close proximity to offices and retail developments) and the typology of the new leisure units, it was assumed that an average of 50% of the leisure customers trips to/from these amenities will be internal, generated by residents and workers of Clongriffin, by walking or cycling. The other 50% of the new leisure customers trips was considered to be external, generated by car (15%), bus (15%), rail (15%) and walking/cycling (5%).

In addition to customers trips, the new leisure units are also expected to attract/generate staff trips, people traveling to their place of work in Clongriffin each morning and departing home each evening.

On the basis of the type and the total leisure floor space of 7,565 sqm and an average staff provision assumption of 1 person per 180 sqm, it was calculated that some 42 persons will work at the leisure units in Clongriffin.

Based on the large number of residential units proposed for the overall Clongriffin, it was assumed that 40% of the leisure staff population will be Clongriffin residents (internal), who will travel to/from work by walking or cycling whilst the other 60% will be external. For the purpose of the analysis, it was considered that 30% of the external staff trips will be generated by public transport (15% by bus and 15% by rail) followed by 15% by car and 15% by walking/cycling.

The trips expected to be generated by the new leisure units in Clongriffin are presented in Table 13.21 below. Table 13.21 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Customers										
Car	-	15%	-	-	-	-	85	85	136	136
Bus	-	15%	-	-	-	-	85	85	136	136
Rail	-	15%	-	-	-	-	85	85	136	136
Pedestrians Cyclists	50%	5%	284	284	453	453	28	28	45	45
Sub-total	100%		284	284	453	453	283	283	453	453
Staff										
Car	-	15%	-	-	-	-	6	-	-	6
Bus	-	15%	-	-	-	-	6	-	-	6
Rail	-	15%	-	-	-	-	6	-	-	6
Pedestrians Cyclists	40%	15%	18	-	-	18	6	-	-	6

Sub-total	100%	18	-	-	18	24	-	-	24
Total	100%	302	284	453	471	307	283	453	477

Table 13.21 | Summary of Peak Hour Leisure Trips 2025

Hotel

As presented in Table 13.17, the hotel permitted to be developed in Clongriffin (Planning Reference 2569/17) is expected to generate a total of 162 person trips during the AM peak (81 inbound and 81 outbound) and a total of 323 person trips during the PM (81 inbound and 242 outbound). These trips are assumed to be generated only by guests.

Based on the land use category of the development, it was assumed that 100% of the hotel guest trips will be external, generated primarily by cars (70%) followed by bus (15%) and rail (15%). No pedestrians or cyclist trips were considered to be generated by hotel guest.

In addition to guest trips, the hotel units are also expected to attract/generate staff trips, people traveling to their place of work in Clongriffin each morning and departing home each evening.

On the basis of the total hotel floor space of 8,080 sqm and an average staff provision assumption of 1 person per 100 sqm, it was calculated that some 80 persons will work at the hotel units in Clongriffin.

Based on the large number of habitational units proposed for Clongriffin, it was assumed that 40% of the hotel staff population will be Clongriffin residents (internal), who will travel to/from work by walking or cycling and the other 60% will be external. For the purpose of the analysis, it was considered that the external staff trips will be split into 30% by public transport (15% by bus and 15% by rail), 15% by car and 15% by cycling/walking.

The trips expected to be generated by the permitted hotel in Clongriffin are presented in Table 13.22 below.

Table 13.22 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Guests										
Car	-	70%	-	-	-	-	57	57	57	170
Bus	-	15%	-	-	-	-	12	12	12	36
Rail	-	15%	-	-	-	-	12	12	12	36
Pedestrians	-	-	-	-	-	-	-	-	-	-
Cyclists	-	-	-	-	-	-	-	-	-	-
Sub-total	100%		-	-	-	-	81	81	81	242
Staff										
Car	-	15%	-	-	-	-	12	-	-	12
Bus	-	15%	-	-	-	-	12	-	-	12
Rail	-	15%	-	-	-	-	12	-	-	12
Pedestrians	40%	15%	32	-	-	32	12	-	-	12

Cyclists									
Sub-total	100%	32	-	-	32	48	-	-	48
Total	100%	32	-	-	32	129	81	81	290

Table 13.22 | Summary of Peak Hour Hotel Trips 2025

Crèche

As can be seen in Table 13.17, the new crèche units proposed for Clongriffin are expected to generate a total of 244 person trips during the AM peak (145 inbound and 99 outbound) and a total of 191 person trips during the PM (92 inbound and 99 outbound). These trips are assumed to be generated only by children attending the crèche.

Based on the large number of residential units proposed for the overall Clongriffin development, it was assumed that 100% of the crèche trips will be internal, generated primarily by cars (70%) followed by walking (30%).

In addition to the trips generated by the children, the crèche units are also expected to attract/generate staff trips, people traveling to their place of work in Clongriffin each morning and departing home each evening.

On the basis of the total crèche floor space of 1,230 sqm and an average staff provision assumption of 1 person per 50 sqm, it was calculated that some 25 persons will work at the crèche units in Clongriffin.

Based on the large number of habitational units proposed for Clongriffin, it was assumed that 40% of the crèche staff population will be Clongriffin residents (internal), who will travel to/from work by walking or cycling and the other 60% will be external. For the purpose of the analysis, it was considered that the external staff trips will be split into 30% by public transport (15% by bus and 15% by rail), 15% by car and 15% by cycling/walking.

The trips expected to be generated by the new crèche units in Clongriffin are presented in Table 13.23 below. Table 13.23 has been based on the modal split and the internal / external split described above.

Mode	Internal Modal Split	External Modal Split	Internal Trips				External Trips			
			AM		PM		AM		PM	
			In	Out	In	Out	In	Out	In	Out
Children										
Car	70%	-	102	69	64	69	-	-	-	-
Bus	-	-	-	-	-	-	-	-	-	-
Rail	-	-	-	-	-	-	-	-	-	-
Pedestrians	30%	-	43	30	28	30	-	-	-	-
Cyclists										
Sub-total	100%		145	99	92	99	-	-	-	-
Staff										
Car	-	15%	-	-	-	-	4	-	-	4
Bus	-	15%	-	-	-	-	4	-	-	4
Rail	-	15%	-	-	-	-	4	-	-	4

Pedestrians	40%	15%	10	-	-	10	4	-	-	4
Cyclists										
Sub-total	100%		10	-	-	10	16	-	-	16
Total	100%		155	99	92	109	16	-	-	16

Table 13.23 | Summary of Peak Hour Crèche Trips 2025

Distribution of Peak Hour Rail Trips

For the purpose of this TA, it was assumed that 20% of the daily boardings occur during the AM Peak Hour and 10% during the PM Peak Hour.

It was also assumed that 10% of the alightings occur during the AM Peak Hour and 20% during the PM Peak Hour.

Summary of Peak Hour Trips 2025

Table 13.24 below shows a summary of the all mode, customer, guest, children and staff, external and internal, inbound and outbound trips expected to be generated by the new developments in Clongriffin during the AM and PM peak periods.

As presented in Table 13.24, the future residential and commercial developments are expected to generate a total of 1,079 external car trips (552 inbound and 527 outbound) during the AM and a total of 1,431 external car trips (597 inbound and 834 outbound) during the PM.

Mode	Internal Trips				External Trips			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out	In	Out
Residents								
Car	34	82	82	68	137	329	329	274
Bus	-	-	-	-	171	411	411	342
Rail	-	-	-	-	171	411	411	342
Pedestrians	29	68	68	57	29	68	68	57
Cyclists								
Sub-total	63	150	150	125	508	1,219	1,219	1,015
Customers / Guests / Children								
Car	176	115	129	143	216	188	258	380
Bus	-	-	-	-	97	97	148	172
Rail	-	-	-	-	97	97	148	172
Pedestrians	845	638	935	1,001	102	74	110	119
Cyclists								
Sub-total	1,021	753	1,064	1,144	512	456	664	843
Staff								
Car	-	-	-	-	199	10	10	180

Bus	-	-	-	-	199	10	10	180
Rail	-	-	-	-	199	10	10	180
Pedestrians Cyclists	231	8	8	216	53	2	2	49
Sub-total	231	8	8	216	650	32	32	589
Total								
Car	210	197	211	211	552	527	597	834
Bus	-	-	-	-	467	518	569	694
Rail	-	-	-	-	467	518	569	694
Pedestrians Cyclists	1,105	714	1,011	1,274	184	144	180	225
Total	1,315	911	1,222	1,485	1,670	1,707	1,915	2,447

Table 13.24 | Summary of Peak Hour Trips 2025

Distribution of Peak Hour Car Trips

In order to determine the amount of new car trips expected to travel through each main junction in the vicinity of the site, these external car trips have been distributed. The distribution percentage of the external car trips for the AM and PM peak hour is detailed In Figure 13.13 and the corresponding AM & PM peak hour traffic flows, based on the assumed distribution, are presented In Figure 13.15.

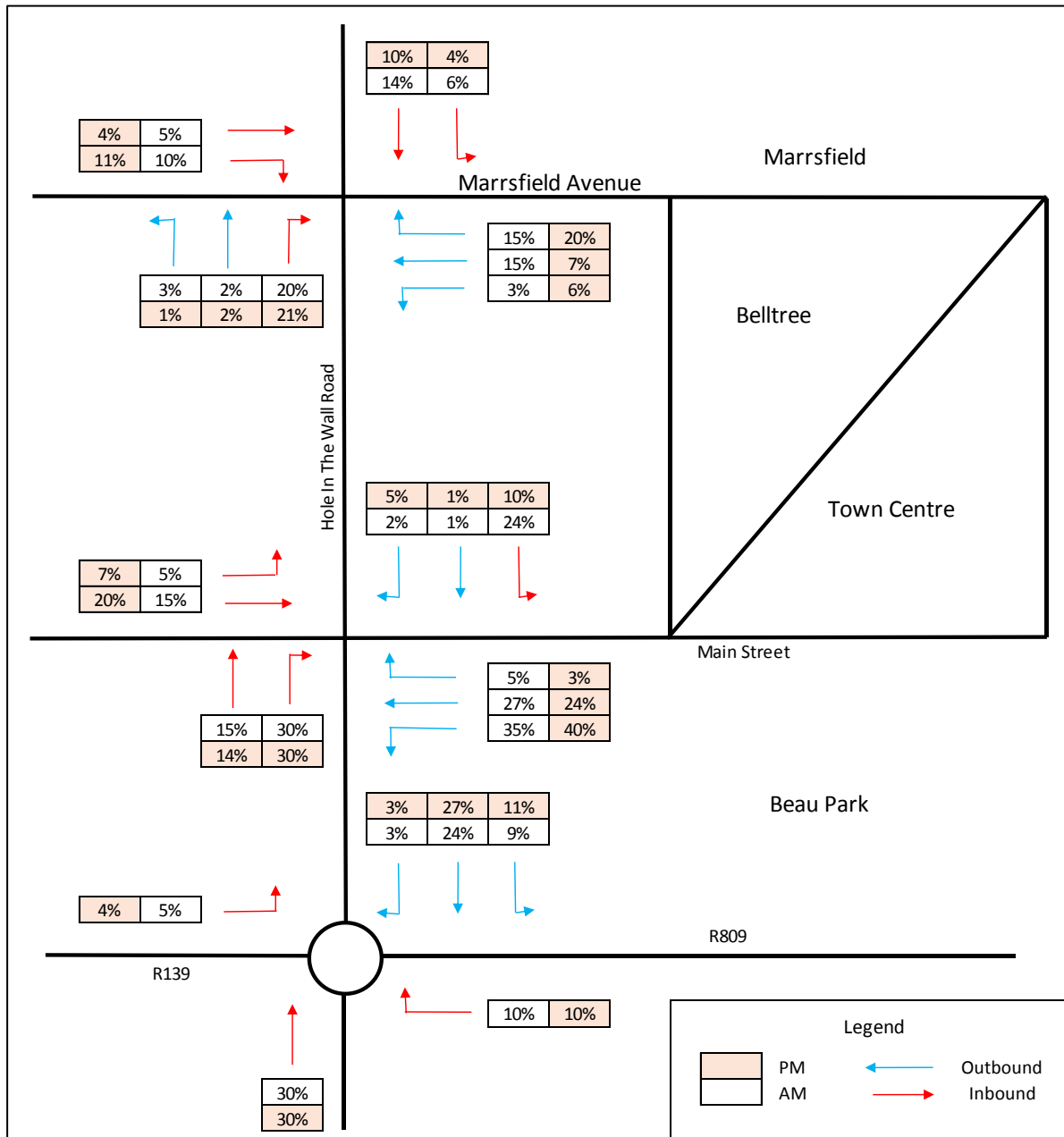


Figure 13.13 | Vehicle Trip Distribution for AM Peak Hour and PM Peak Hour 2025

13.8 Traffic Forecasting

Existing Traffic 2018

The existing road traffic movements in the area of Clongriffin taken from the classified survey undertaken by Tracsis in May 2018 are presented in Figure 13.14.

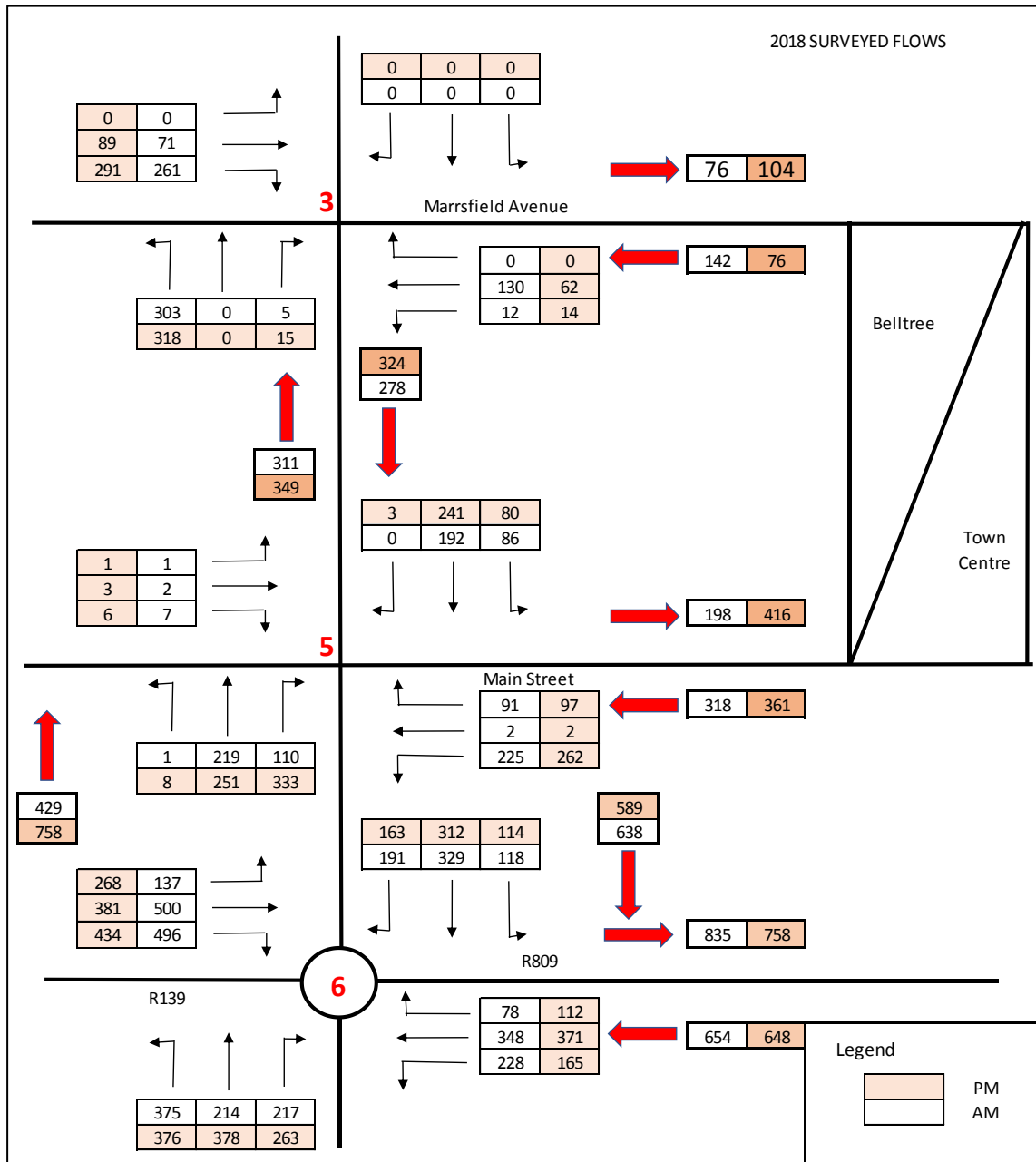


Figure 13.14 | Existing Traffic 2018

New Developments at Clongriffin

Road traffic movements from the proposed new developments at Clongriffin are presented in Figure 13.15.

These movements have been based on the trips from Table 13.24 and the trip distribution from Figure 13.13.

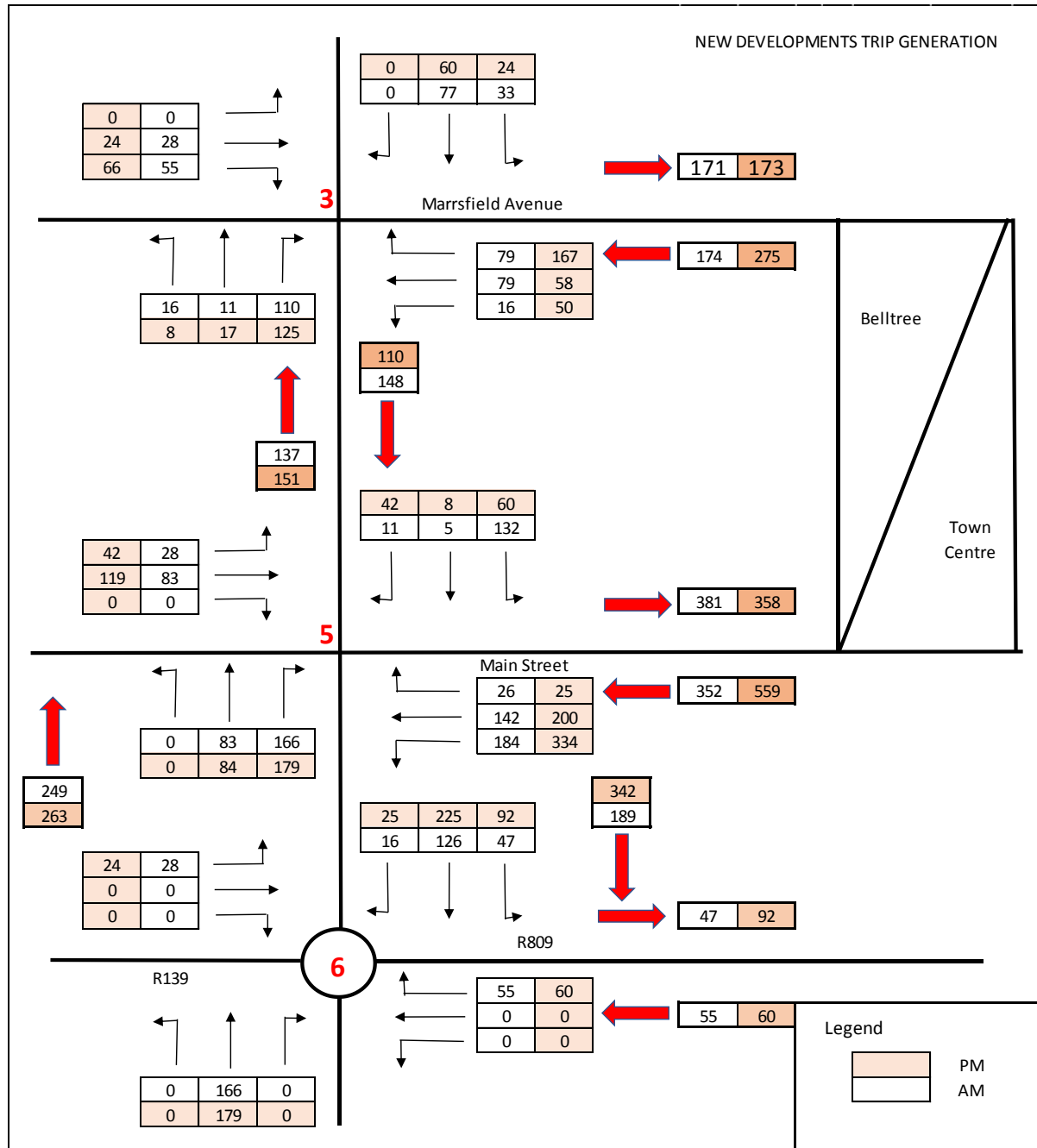


Figure 13.15 | Traffic from New Developments at Clongriffin

Contiguous Developments

Contiguous development in the surrounding area will be the 600 house development at Belmayne.

The road traffic movements expected to be generated by this development are presented in Figure 13.16.

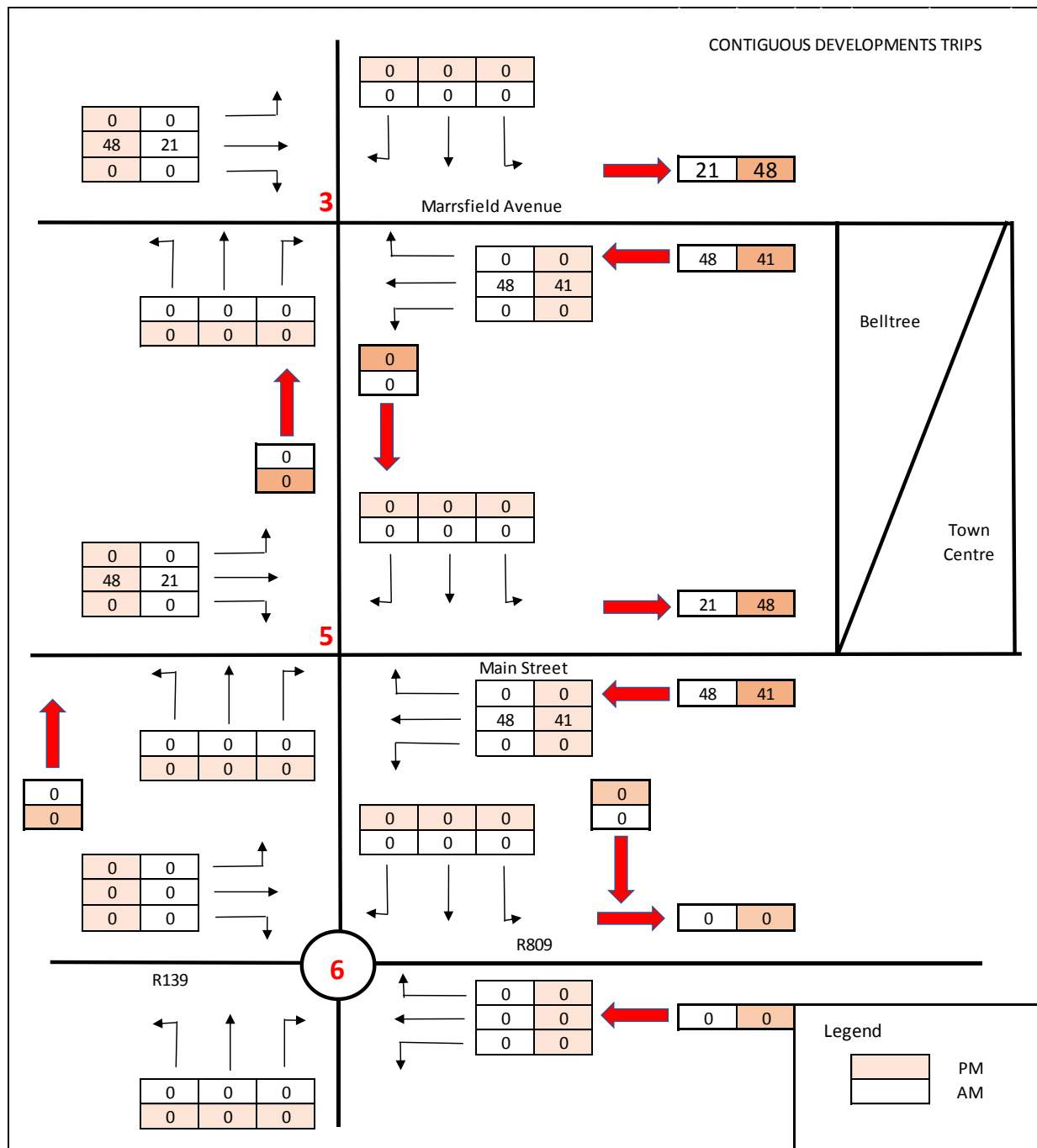


Figure 13.16 | Traffic from Contiguous Developments

Future Traffic 2025

The future traffic in the area of Clongriffin in 2025 is presented in Figure 13.17.

These movements were obtained by adding the movements from proposed new developments in Figure 13.15 and the contiguous developments in Figure 13.16 to the surveyed existing movements in Figure 13.14.

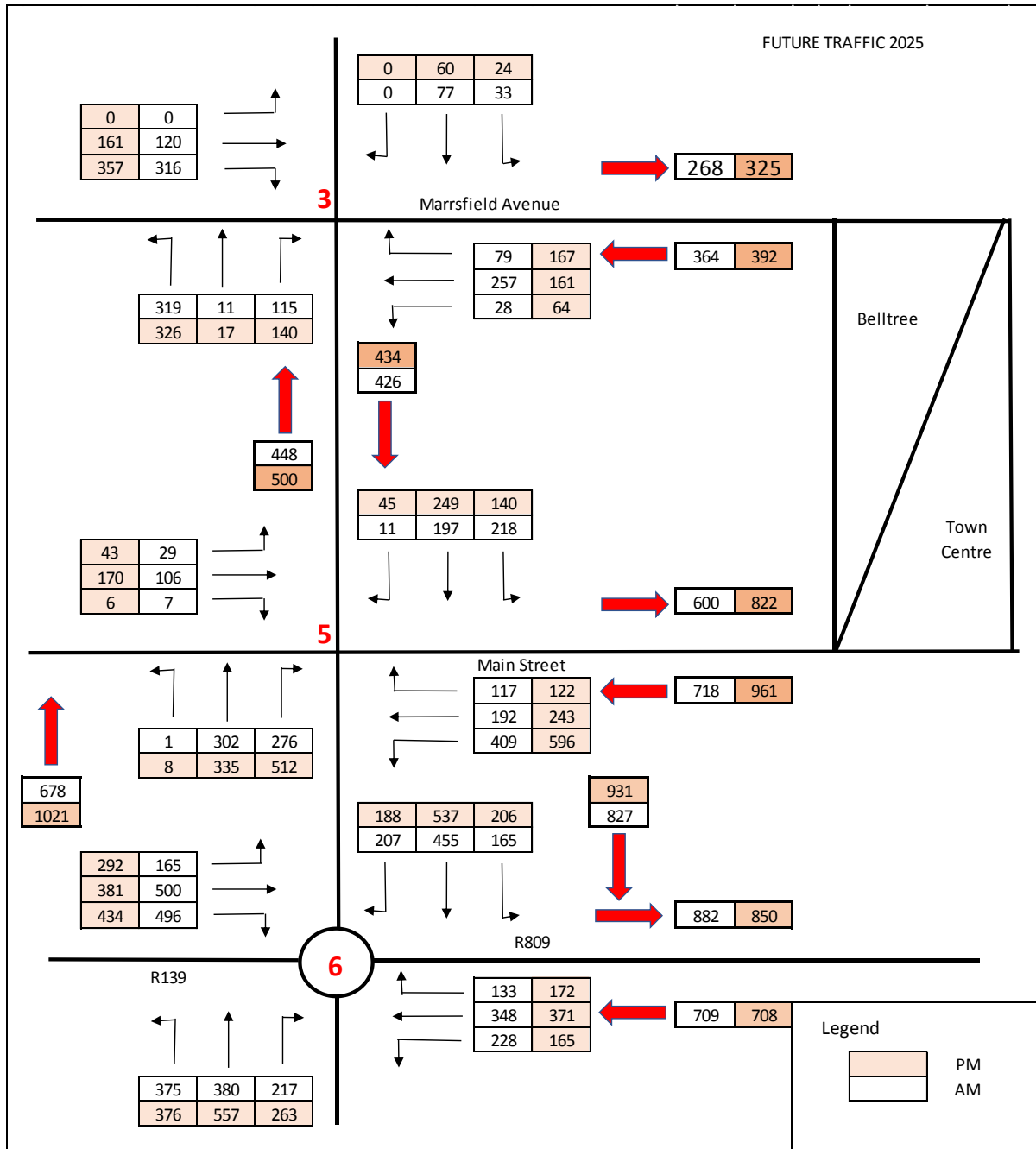


Figure 13.17 | Future Traffic 2025

13.9 Potential impact of the proposal

13.9.1 Introduction

This section considers the possible types of effects a development proposal of this kind is likely to produce. The potential traffic and transport impacts of the development are considered below.

13.9.2 Trip generation

The proposed development will generate a number of trips by various modes of travel including vehicular, pedestrian, cycle and public transport. These trips may have an impact on the surrounding road network. Specific impacts are identified below.

13.9.3 Traffic impact

The traffic impact of the development is dependent upon the background traffic on the local road network, the capacity of the existing road network, and the amount of additional traffic generated as a result of the proposed development.

Traffic count data was obtained for the purposes of the planning application. This data is expected to reflect the peak traffic conditions on the network. A robust estimation of the traffic generation and distribution of the proposed development has been set out in the previous section. This will be compared to the background traffic counts in order to ascertain the impact the development will have on the local road network.

Should there be a reasonable impact as a result of the proposed development which causes potential capacity implications at surrounding junctions, traffic modelling software, if required, will be used to identify further details of the impact of development traffic, in terms of queuing, degree of saturations and ratios of flow to capacity.

13.9.4 Walking and cycling infrastructure

It is also necessary to ensure that the proposal incorporates appropriate access facilities for pedestrians, cyclists and public transport users in order to facilitate trips by these modes.

13.9.5 Construction traffic

The construction traffic impacts of the proposed development are dependent on the capacity of the local road network to facilitate access to the development by HGV's and heavy construction machinery associated with the construction phase. The ability to accommodate temporary parking for contractors and storage of materials on site is another key consideration.

The construction phase is also likely to result in an increase of mud and dust on the adjoining road network.

The predicted impacts of the construction phase on traffic in the area are short term to medium term and will not have any material effect during the operational phase of the project.

13.9.6 Do-nothing scenario

Should the proposed development not take place, the access roads and infrastructure will remain in their current state and there will be no change. Background traffic would be expected to grow over time. Given the location and zoning of the subject site, it is reasonable to assume that a similar development,

with a potentially more intensive requirement for vehicular trips would be established on this site at some stage in the future.

13.10 Predicted impact of the proposal

13.10.1 Introduction

When considering a development of this nature, the potential traffic impact on the surrounding area must be considered for each of two stages; the construction phase and operational phase. These two distinct stages are considered separately within this section.

13.10.2 Construction phase

A number of the construction traffic movements will be undertaken by heavy goods vehicles, though there will also be vehicle movements associated with the appointed contractors and their staff.

An estimate of the day to day traffic movements associated with the construction activities, based on experience of similar sites and the phasing plan, considered that the number of constructions related heavy goods vehicle movements to and from the application site will be approximately 20 arrivals and departures per day.

It is noted that the proposed development consists of the completion of 15 No. infill blocks to be constructed over a 5 year period.

On the basis that the construction period is 18 months, typically 4 No. blocks could be under construction at the same time.

There are no main infrastructure works to be undertaken as part of the proposed development, with all trunk foul, surface water and water network in place, together with road construction partially completed generally, with surface courses to be added. All site clearance is complete with minimal cut/fill requirements.

Each block is expected to generate 4-6 HGV movements per day.

Similarly, the general workforce with typical average of 50-80 in number per block, which equates to 200-320 employees and with an allowance for shared journeys could equate to a maximum of around 100-160 arrivals and departures per day by private car.

This number of construction vehicle movements is low compared to the number of trips expected to be generated by the proposed development during the operational phase. It should be noted that the majority of such vehicle movements would be undertaken outside of the traditional peak hours, and it is not considered that this level of traffic would result in any operational problems. Therefore, no road and junction assessment for the construction phase were undertaken.

A construction car park will be created on the start of works by the laying of a temporary surface for vehicles.

Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, and temporary car parking is provided within the site for contractor's vehicles. It is likely that construction will have a negligible impact on pedestrian and cycle infrastructure.

13.10.3 Operational phase

Road and Junction Assessment

Junctions Assessed – Existing 2018

The assessment for 2018 was based on the existing junction layouts which comprise: -

- **Junction 3:** Hole in The Wall Road / Marrsfield Avenue (Priority t- junction);
- **Junction 5:** Hole in The Wall Road / Main Street (Signalised crossroads);
- **Junction 6:** Hole in The Wall Road / R139 / R809 (Four-armed roundabout).

The junction movements for these assessments are illustrated in Figure 13.14.

Junctions Assessed – Future 2025

For the 2025 assessment, it was assumed that road improvements and junction upgrades described earlier in this TA had been completed and that the network comprised: -

- **Junction 3:** Hole in The Wall Road / Marrsfield Avenue (Signalised Crossroads);
- **Junction 5:** Hole in The Wall Road / Main Street (Signalised crossroads);
- **Junction 6:** Hole in The Wall Road / R139 / R809 (Upgraded four-armed roundabout).

The junction movements for these assessments are illustrated in Figure 13.17.

Modelling Background

There are various modelling software packages available to assess every type of junction. Waterman Moylan uses ARCADY, TRANSYT and PICADY to analyse roundabouts, signalised and priority junctions, respectively.

ARCADY is a software for modelling roundabouts. This programme utilises roundabouts geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the roundabout.

TRANSYT (Traffic Network Study Tool) software is a widely accepted software for modelling signalised controlled junctions. This programme utilises the phases input by the user and optimises their timings over a cycle time. The outputs of a TRANSYT assessment include a Degree of Saturation percentage (DOS%) figure and queue length for each link on the road network.

PICADY is a software for modelling priority-controlled junctions. This programme utilises junction's geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the junction.

Typically, a junction is said to be working satisfactorily when the DOS% or RFC of each link does not exceed 90%/0.9. Acceptable DOS% or RFC values are considered to be in the range of 80%/0.8 to 100%/1.0 with higher values indicating restrained movements.

Assessment Scenarios

The performance of the junctions has been analysed for the critical AM Peak Hour and PM Peak Hour (08:00 – 09:00 and 17:00 – 19:00) for the following scenarios:

- **2018:** Existing road network with surveyed flows.
- **2025:** Proposed road network with existing traffic flows + traffic from the proposed new developments at Clongriffin + traffic flows from Belmayne.

Roads and Junctions Assessment Results 2018 - 2025

Junction 3 (Hole in The Wall Road / Marrsfield Avenue)

Junction 3 is an existing three-armed priority-controlled junction located west of the proposed site. As described in Section 13.4 of this report, a road improvement project is being undertaken by Fingal County Council in order to upgrade this junction to a signalised crossroads. This proposed road upgrade will be in place for the opening year of 2025.

The analysis results for 2018 and for the opening year of 2025 are presented in Table 13.25 and 13.26.

2018

The arms of the three-armed priority-controlled junction were labelled as follows within the PICADY model:

- Arm A: Marrsfield Avenue (E)
- Arm B: Hole in The Wall Road (S)
- Arm C: Marrsfield Avenue (W)

The analysis results in Table 13.25 indicate that the Junction 3 is currently working well within capacity during both peak periods, with the highest RFC at 0.52 and a corresponding queue of 1.10 vehicles during the AM peak period and a maximum RFC at 0.53 with a corresponding queue of 1.10 vehicles recorded for the PM.

Junction 3	Stream B-C		Stream B-A		Stream C-AB	
	RFC	Queue	RFC	Queue	RFC	Queue
AM	0.52	1.10	0.01	0.00	0.48	0.90
PM	0.53	1.10	0.04	0.00	0.53	1.10

Table 13.25 | Hole in The Wall Road / Marrsfield Avenue PICADY Analysis Results 2018

2025

The arms of the proposed signalised crossroads were labelled as follows within the TRANSYT model:

- Arm A: Marrsfield Avenue (E)
- Arm B: Hole in The Wall Road (S)
- Arm C: Marrsfield Avenue (W)
- Arm D: Hole in The Wall Road (N) – Proposed road extension

The analysis results in Table 13.26 indicate that the Junction 3, with the proposed improvements and the addition of the generated trips, will continue to work within capacity during both peak periods, with the highest DOS at 71% and a corresponding queue of 11.69 vehicles during the AM peak period and a maximum DOS at 77% with a corresponding queue of 13.10 vehicles recorded for the PM.

Junction 5	Arm A		Arm B		Arm C		Arm D	
	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue
AM	71	11.69	62	13.97	69	13.12	61	3.98
PM	77	13.10	70	15.83	75	15.93	62	3.20

Table 13.26 | Hole in The Wall Road / Marrsfield Avenue TRANSYT Analysis Results 2025

Junction 5 (Hole in The Wall Road / Main Street)

Junction 5 is an existing crossroads signal-controlled junction located west of the proposed site. As presented in Section 13.4, as part of the Clongriffin-Belmayne Local Area Plan 2012-2018, Main Street is projected to be extended further west connecting with Belmayne Avenue. This proposed road extension will be in place for the opening year of 2025.

The analysis results for 2018 and for the opening year of 2025 are presented in Table 13.27 and 13.28.

2018

The arms of the signal-controlled junction were labelled as follows within the TRANSYT model:

- Arm A: Main Street (E)
- Arm B: Hole in The Wall Road (S)
- Arm C: Main Street (W)
- Arm D: Hole in The Wall Road (N)

The analysis results in Table 13.27 indicate that the Junction 5 is currently operating well within capacity during both peak periods, with the highest DOS at 34% and a corresponding queue of 7.81 vehicles during the AM peak period and a maximum DOS at 54% with a corresponding queue of 10.13 vehicles recorded for the PM.

Junction 5	Arm A		Arm B		Arm C		Arm D	
	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue
AM	25	7.55	30	8.4	6	0.32	34	7.81
PM	31	8.97	41	14.29	6	0.32	54	10.13

Table 13.27 | Hole in The Wall Road / Main Street TRANSYT Analysis Results 2018

2025

The analysis results in Table 13.28 indicate that the Junction 5, with the proposed improvements and the addition of the generated trips, will continue to work within capacity during both peak period, with the highest DOS at 62% and a corresponding queue of 13.51 vehicles during the AM, and with a maximum DOS at 77% with a corresponding queue of 26.92 vehicles recorded for the PM.

Junction 5	Arm A		Arm B		Arm C		Arm D	
	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue	DOS (%)	Queue
AM	50	18.00	58	16.98	59	5.00	62	13.51
PM	70	27.49	77	26.92	73	8.07	76	14.92

Table 13.28 | Hole in The Wall Road / Main Street TRANSYT Analysis Results 2025

Junction 6 (Hole in The Wall Road / R809 / R139)

Junction 6 is an existing four-armed roundabout located southwest of the proposed site. As described in Section 13.4 of this report, a new scheme for this roundabout is being undertaken by Dublin City Council. However, the junction modelling conservatively assumes that the roundabout will operate as per the existing arrangement during the opening year of 2025.

The analysis results for 2018 and for the opening year of 2025 are presented in Table 13.29 and 13.30.

2018

The arms of the roundabout were labelled as follows within the ARCADY model:

- Arm 1: R809 (E)
- Arm 2: R809 (S)
- Arm 3: R139 (W)
- Arm 4: Hole in The Wall Road (N)

The analysis results in Table 13.29 indicate that the Junction 6 is currently working well within capacity during both peak periods, with the highest RFC at 0.65 and a corresponding queue of 1.8 vehicles during the AM peak period and a maximum RFC at 0.78 with a corresponding queue of 3.5 vehicles recorded for the PM.

Junction 6	Arm 1		Arm 2		Arm 3		Arm 4	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
AM	0.51	1.0	0.61	1.6	0.65	1.8	0.50	1.0
PM	0.48	0.9	0.78	3.5	0.69	2.2	0.43	0.8

Table 13.29 | Hole in The Wall Road / R809 / R139 ARCADY Analysis Results 2018

2025

The analysis results in Table 13.30 indicate that the Junction 6, with the proposed improvements and the addition of the generated trips, will continue to work within capacity during the AM peak period, with the highest RFC at 0.76 and a corresponding queue of 3.2 vehicles and with satisfactory capacity during the PM, with a maximum RFC at 0.96 with a corresponding queue of 17.3 vehicles recorded.

Junction 6	Arm 1		Arm 2		Arm 3		Arm 4	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
AM	0.59	1.5	0.76	3.2	0.73	2.6	0.65	1.9
PM	0.59	1.5	0.96	17.3	0.78	3.5	0.68	2.1

Table 13.30 | *Hole in The Wall Road / R809 / R139 ARCADY Analysis Results 2025*

Summary of Road and Junction Assessment

The results of the road junction assessment are summarised in Table 13.31.

The results indicate that all of the junctions assessed will operate satisfactorily in 2018 and in 2025.

Table 13.31 below presents a summary of the junction's analysis results.

Scenario	Junction 3				Junction 5				Junction 6			
	AM		PM		AM		PM		AM		PM	
2018 (Existing Road Network with Surveyed Flows)	Max RFC	Max Queue	Max RFC	Max Queue	Max DOS %	Max Queue	Max DOS %	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
		0.52	1.10	0.53	1.10	34	7.81	54	10.13	0.65	1.80	0.78
2025 (Proposed Road Improvements with Surveyed Flows + Generated Flows)	Max DOS %	Max Queue	Max DOS %	Max Queue	Max DOS %	Max Queue	Max DOS %	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
	71	11.69	77	13.1	62	13.51	77	26.92	0.76	3.2	0.96	17.3

Table 13.31 | *Summary of Junctions Analysis 2018 and 2025*

Public Transport Assessment

Additional Rail Passengers – New Developments

The additional rail passengers that will be generated by new developments at Clongriffin are presented in Table 13.32.

Year	Period	Activity	Northbound	Southbound	Total
2025 (Future developments)	AM	Boarding	26 (5%)	492 (95%)	518
	Peak hour	Alighting	444 (95%)	23 (5%)	467
	PM	Boarding	35 (5%)	659 (95%)	694
	Peak hour	Alighting	541 (95%)	28 (5%)	569

Table 13.32 | *Rail Passengers - Proposed New Developments at Clongriffin*

Rail Services

Details of train capacity by type are set out in Appendix C of the National Rail Census 2017.

The commuter train capacity table from Appendix C of the Census Report is reproduced below.

Train Type		Capacity	
4-DART	(4 Car DART Set)	700	Seats + Standing Accommodation
6-DART	(6 Car DART Set)	1050	Seats + Standing Accommodation
8-DART	(8 Car DART Set)	1400	Seats + Standing Accommodation
2 x 2600	(2 Car Commuter Rail Car)	206	Seats + Standing Accommodation
2 x 2800	(2 Car Commuter Rail Car)	221	Seats + Standing Accommodation
4 x 29000	(4 Car Commuter Rail Car)	640	Seats + Standing Accommodation
8 x 29000	(8 Car Commuter Rail Car)	1280	Seats + Standing Accommodation

From Sections 13.3.2 and 13.4.2 of this report, it will be seen that the peak hour weekday rail service at Clongriffin will provided capacity for 6,760 – 9,440 passengers in each direction.

This capacity will be provided by 2 – 3 x 8-car Commuter Rail services per hour (2,560 – 3,840 capacity) and 4 x 6 – 8 car DART services per hour (4,200 - 5,600 capacity).

These services will be more than adequate to cater for the expected peak single train demand of 694 passengers which is predicted to occur in the PM Peak Hour (Table 13.24).

Bus Services

Services to and from Clongriffin will continue to be operated by double deck buses into the future.

The passenger capacity of the double deck buses in the current Dublin Bus fleet in May 2019 is shown on the table below reproduced from Wikipedia.

For the purpose of this TA, the capacity of each bus has been assumed to be 85 passengers.

Following implementation of Bus Connects, the weekday peak hour service to and from Clongriffin will comprise 7 – 15 services per direction per hour.

These services will provide capacity for 595 – 1,275 passengers per hour in each direction and will be more than adequate to cater for the for the expected peak hourly demand of 694 passengers which is predicted to occur in the PM Peak Hour (Table 13.24).

Quantity	Manufacturer	Type	Fleet Code	Passengers
76	Volvo	B7TL with ALX400 bodywork	AV	91
70	Volvo	B9TLT (Euro 4) with Enviro500 bodywork	VT	119–124
192	Volvo	B7TL (Mk. II) with ALX400 bodywork	AX	91
97	Volvo	B9TL (Euro 4) with Enviro400 bodywork	EV	94

50	Volvo	B9TL (Euro 4) with Eclipse Gemini bodywork	VG	88
160	Volvo	B9TL (Euro 5) with Eclipse Gemini bodywork	GT	78–81
369	Volvo	B5TL (Euro 6) with Gemini 3 bodywork	SG	95
2	Wrightbus	StreetLite DF integral	WS	37

GoCar

The provision of GoCar vehicles at Clongriffin is expected to increase from 7 to 13 vehicles before 2025.

Transportation Impact

Road and Junctions

The results of the road junction assessment in Section 13.10.3 indicate that all of the junctions assessed will operate satisfactorily in 2018 and in 2025.

Public Transport

The results of the public transport assessment in Section 13.10.3 indicate that capacity, both rail and bus will considerably exceed the forecast demand at Clongriffin.

Comparison with Parent Permission (EIS)

Section 6.7 of the Environmental Impact Statement (EIS) which accompanied the parent planning application in 2002 set out the projected travel demand in Tables 6.9 – 6.18

These movements are reproduced in Tables 13.33 and 13.34 below.

	EIS 2002		TA 2019	
	Inbound	Outbound	Inbound	Outbound
Car	763	762	552	527
Bus	847	694	467	518
Rail	847	694	467	518
Cycle	198	162		
Walk	85	69	184	144

Table 13.33 | Comparison of AM Peak Hour External Trips

	EIS 2002		TA 2019	
	Inbound	Outbound	Inbound	Outbound
Car	766	1,575	597	834
Bus	823	1,724	569	694
Rail	823	1,724	569	694
Cycle	192	402	180	225
Walk	82	172		

Table 13.34 | Comparison of PM Peak Hour External Trips

Servicing

Servicing Strategy

The completed development at Clongriffin will include a number of commercial units which will receive regular deliveries.

The retail units in Blocks 3, 5, 13, 14, 15, 17, 28 together with the Café / Restaurant in Blocks 4, 13, 14 and 15 falls into this category.

To accommodate these deliveries, it is proposed to provide a network of loading bays on the streets close to these units.

The locations of the proposed loading bays are shown on Waterman Moylan Drg No 18-059-FIG. 12

The locations of the nine loading bays include

- Main Street (1 No)
- Market Street (2 No)
- Dargan Street (1 No)
- Friars' Street (1 No)
- Lake Street (2 No)
- Park Street (1 No)
- Station Street (1 No)

Each loading bay would be 15.6 metres long (3 x car parking spaces) and signed for dual usage 00h00 – 00h00 Monday – Sunday.

The operational hours for loading would be 08h00 – 18h00 Monday – Friday.

Outside these hours between 18h00 and 08h00, the loading bays could be used for car parking by residents with Residents Parking Permits, commercial, visitors, etc. thereby adding an additional 27 spaces to the evening parking stock.

Pay and Display tickets would not be valid at the loading bays in Clongriffin.

Waste Collection

All of the proposed developments at Clongriffin will be accessible for refuse vehicles/fire tenders. Turning path layouts are shown on the Waterman Moylan Drg No. 18-059-P1140 (SHD 1), Drg. No. 18-059-P2140 (SHD 2) and Drg. No. 18-059-P3140 (DCC Application).

13.10.4 Car parking provision

Dublin City Development Plan 2016 – 2022

Standards for car parking in new developments are set out in Table 16.1 of the Dublin City Development Plan 2016 – 2022 and Parking Areas in Map J.

As shown on Map J, Clongriffin is located within Parking Area 2 which occurs along transport corridors.

The maximum car parking standards for Clongriffin based on a location in Area 2 are reproduced in Table 13.35.

Land Use	Standard
Offices	1 space per 200 sqm GFA
Retail	1 space per 100 sqm GFA
Residential - Apartments	1 space per dwelling
Cinema	1 per 25 seats
Restaurant / Cafe	1 space per 150 sqm seating area
Cultural	space per 250 sqm GFA

Table 13.35 | *Dublin City Development Plan 2016 - 2022, Maximum Car Parking Standards*

Pre-Planning Discussions with Dublin City Council

During the pre-planning stage in 2018 and 2019, various pre-planning meetings have been held with Dublin City Council and the reduced parking standards in Table 13.36 have been agreed due to the nature of the development (high residential and commercial density) and due to the proximity to public transportation as described previously.

In particular, the maximum standard for residential has been reduced from 1 space per unit to 0.75 space per unit due to:

- The proximity to the existing railway station
- The proximity to the existing bus terminal
- The intended rail service improvements
- The intended BusConnects bus service improvements
- The availability of surplus on street car parking spaces
- The provision of on-site GoCar parking spaces.

The agreed car parking standards for Clongriffin are shown in Table 13.36.

Land Use	Standard
Offices	1 space per 200 sqm GFA
Retail	1 space per 275 sqm GFA
Apartments	0.75 space per dwelling
Cinema	1 per 25 seats
Restaurant / Cafe	1 space per 150 sqm seating area
Cultural	1 space per 250 sqm GFA
Creche	space per classroom

Table 13.36 | Agreed Car Parking Standards for Clongriffin

Car Parking Required – Residential

Based on the agreed car parking standard of 0.75 space per unit, the quantum of car parking required for the residential land use in the Town Centre is 1,466 spaces as calculated in Table 13.37 below.

Block	No of Units	Standard	Spaces
Block 3	141	0.75 space per unit	106
Block 4	74	0.75 space per unit	56
Block 5	138	0.75 space per unit	104
Block 6	270	0.75 space per unit	203
Block 8	114	0.75 space per unit	86
Block 11	96	0.75 space per unit	72
Block 13	187	0.75 space per unit	140
Block 14	288	0.75 space per unit	216
Block 15	92	0.75 space per unit	69
Block 17	210	0.75 space per unit	158
Block 25	63	0.75 space per unit	47
Block 26	78	0.75 space per unit	59
Block 27	57	0.75 space per unit	43
Block 28	122	0.75 space per unit	92
Block 29	20	0.75 space per unit	15
Overall Total	1,950	0.75 space per unit	1,466

Table 13.37 | Car Parking Required – Residential in Town Centre

Car Parking Required – Commercial

Based on the car parking standard set out in the Dublin City Development Plan, the maximum quantum of car parking for the commercial land use in the Town Centre is 138 spaces as calculated in Table 13.38.

Block	Land Use	Size	Standard	Spaces
3	Retail	791 sqm	1 per 275 sqm GFA	3
	Offices	3,732 sqm	1 per 200 sqm GFA	19
4	Café / Restaurant	78 sqm	1 per 150 sqm seating area	1
	Creche	304 sqm	1 per room	4
	Community Hall	417 sqm	1 per 250 sqm GFA	2
5	Retail	393 sqm	1 per 275 sqm GFA	1
6	Creche	418 sqm	1 per room	4
8	-	-	-	-
11	-	-	-	-
13	Retail	1,142 sqm	1 per 275 sqm GFA	4
	Cafe	230 sqm	1 per 275 sqm GFA	1
	Offices	4,736 sqm	1 per 200 sqm GFA	24
14	Retail	1,127 sqm	1 per 275 sqm GFA	4
	Café / Restaurant	806 sqm	1 per 150 sqm seating area	5
15	Retail	906 sqm	1 per 275 sqm GFA	3
	Café / Restaurant	527 sqm	1 per 150 sqm seating area	4
	Cinema (1,232 seats)	5,253 sqm	1 per 25 seats	49
17	Retail	431 sqm	1 per 275 sqm GFA	2
25	-	-	-	-
26	-	-	-	-
27	Creche	508	1 per room	5
28	Retail	675 sqm	1 per 275 sqm GFA	2
	Leisure	254 sqm	1 per 250 sqm GFA	1
29	-	-	-	-
	Total	22,728 sqm		138

Table 13.38 | Maximum Car Parking for Commercial in Town Centre

Park and Ride

A total of 397 spaces were described in the EIS which accompanied the parent planning application in 2002.

This number was increased to 420 spaces in the parent planning application issued by An Bord Pleanála in 2003.



Figure 13.18 | VMA Sign at Clongriffin Park & Ride

Car Parking Proposed

The proposed car parking in the Town Centre is set out in Table 13.39.

The locations of the proposed parking spaces are shown on the Waterman Moylan drawings accompanying the planning application.

Location	Pre-Assigned Residential	Residential	Park & Ride	Shared Public	Total
On-street Parking	-	-	-	371	371
Off-street	-	987	-	-	987
Multi-Storey Car Par	46	479	420	252	1,197
Total	46	1,466	420	623	2,555

Table 13.39 | Proposed Car Parking in Town Centre

Operation and Management

Some 58% of the car parking spaces at Clongriffin will be allocated to and reserved for residents. The remaining 42% will operate on a shared basis serving residents, visitors, staff, customers and rail passengers.

Access to residents parking will be through lifting barriers operated by fob pre-issued by the Management Company.

The on-street shared spaces will be controlled on a 'Pay and Display' basis. The time of operation will vary from location to location depending on demand, but the core operational hours are expected to be 07h00 – 19h00 Monday – Friday. Tickets will be available from parking meters on payment of the appropriate fee.

Residents may have the option of applying for a Dublin City Council Residents Parking Permit should this be deemed necessary.

In order to ensure parking for visitors, staff and customers, the number of Residents Parking Permits to be issued by the parking operators will be limited.

The Park and Ride spaces will be controlled by the requirement to have a valid rail ticket for exit, and/or through a daily, weekly or annual fee, which can be pay and display, through a mobile phone app, on-line payment of telephone payment.

13.10.5 Cycle Parking

Dublin City Development Plan 2016 - 2022

Standards for cycle parking in new developments are set out In Table 16.2 of the Dublin City Development Plan 2016 – 2022.

The cycle parking standards for the proposed development at Clongriffin are reproduced In Table 13.40.

Land Uses	DCC Standards
Residential	1 stand per unit
Retail	1 stand per 150sqm
Employment	1 stand per 100sqm
Restaurant / Cafe	1 stand per 150sqm
Cinema	1 stand per 20 seats
Crèche	1 stand per 3 students
Recreational Buildings	1 stand per 150sqm

Table 13.40 | *Cycle Parking Standards Dublin City Development Plan 2016 -2022*

Private Cycle Parking Required in Town Centre

Based on the cycle parking standard set out In the Dublin City Development Plan, the quantum of cycle parking required for the proposed development is 2,220 stands as calculated In Table 13.41 below.

Land Uses	No. Units/GFA	DCC Standards	Parking Required
Residential	1,950 Units	1 per unit	1,950
Retail	5,465 sqm	1 per 150sqm	36
Employment	8,468 sqm	1 per 100sqm	85
Restaurant/Café	1,641 sqm	1 per 150sqm	11
Cinema	5,253 sqm (1,232 seats)	1 per 20 seats	62
Leisure	254 sqm	1 per 250sqm	1
Crèche	1,230 sqm	1 per 3 students	72
Recreational Buildings	417 sqm	1 per 150sqm	3
Total			2,220

Table 13.41 | Cycle Parking Required in Town Centre

Public Cycle Parking

Public cycle parking is provided at Station Square in accordance with the requirements of Section 16.39 of the Dublin City Development Plan 2016 – 2022.

The required number of stands has been calculated in accordance with Table 16.2 of the Plan which for Train Stations requires 7 spaces per number of trains in the two-hour peak period AM with a minimum of 100 spaces.

In the case of Clongriffin Station, the current number of trains is 16 per two-hour in the AM. This is expected to increase to 20 trains per two-hour after completion of the DART Expansion Project.

These volumes will create a cycle parking requirement of 112 stands in 2019 increasing to 140 stands after DART Expansion.

The current provision is 112 stands at Station Square.

The additional 28 stands are part of the proposed development works and will be also provided at Station Square.

13.11 Internal Road Layout

13.11.1 Roads

The internal road layout as shown on the Waterman Moylan drawings accompanying the planning application includes provision for

- Access and Circulation.
- Car Parking (On-street).
- Disabled Car Parking (5%).
- Electric Car Parking.
- Motorcycle Parking (4% of car spaces).

- Loading Bay (9 No).
- Cycle Parking.

13.11.2 Station Square

Similarly, the layout of Station Square as shown on the Waterman Moylan Drg No 18-059-Fig11 accompanying the planning application includes provision for

- Access and Circulation. (Existing)
- Traffic Management. (Existing)
- Bus Stop (2 No bus stops). (Existing)
- Taxi Rank (3 No taxis). (Existing)
- Park & Ride (420 spaces). (Existing)
- Loading Bay (1 No). (Existing)
- Cycle Parking (140 stands). (112 No. existing + 28 No. proposed)

13.11.3 Traffic Management

Proposals for traffic management are also shown on the Waterman Moylan drawings accompanying the planning application.

13.12 Remedial or reductive measures

13.12.1 Introduction

This section of the report will discuss remedial and reductive measures to minimise the impact the proposed development will have on the surrounding area during the construction phase and operational phase.

13.12.2 Construction phase

It is proposed that a Construction Management Plan (CMP) would be prepared by the appointed contractor in order to minimise the potential impact of the construction phase of the proposed development on the safety and amenity of other users of the public road. The CMP will consider the following aspects:

- Minimise the volume of material removed from site by optimising the cut to fill requirements within the site;
- Segregation of waste material produced during the construction process to minimise the contamination or reusable fill material resulting from excavation on the site;
- Wheel wash to be provided for vehicles leaving the site when earthworks are being carried out during winter periods;
- Ensure that deliveries to the site and removal of spoil material from this site are restricted to off peak periods where possible and practicable.
- Optimise routes to be used by heavy vehicles and detail construction traffic forecast;
- Determine the working hours of the site;
- Facilities for loading and unloading and;

- Facilities to parking cars and other vehicles.

13.12.3 Operational phase

Construction Management Plan

This report is accompanied by a Construction Management Plan (CMP) prepared in accordance with the requirements of Section 8.5.5 of the Dublin City Development Plan 2016 – 2022.

This Plan describes the proposed development and specifies the measures to be adopted to mitigate the impacts of construction including traffic management, hours of working, delivery times, the reduction of noise and dust, the reinstatement of roadways, the repair of damage to footways and the accommodation of worker parking.

Travel Plan/Mobility Management Plan

This report is also accompanied by a Travel Plan/Mobility Management Plan prepared in accordance with the requirements of Section 8.5.5 of the Dublin City Development Plan 2016 – 2022.

The scope of the Travel Plan/Mobility Management Plan is to promote best practise mobility management and travel planning at Clongriffin, to balance car use to capacity and to provide for the necessary mobility via sustainable transport modes.

Travel management is a key operational feature in the provision of sustainable travel Infrastructure at Clongriffin. The management will implement the Travel Plan on an ongoing basis as the successor to the Mobility Management Plan, with the triple objectives of promoting sustainability, enhancing public transport and reducing dependency on the use of the private car for the journey to and from Clongriffin.

The targets set in the Travel Plan/Mobility Management Plan will be achieved against the background of expanding public transport capacity in the surrounding catchment.

Rail Services

Station Square at Clongriffin is located at key transport Interchange between rail and bus services.

Clongriffin Railway Station was financed by the applicants and opened in 2010.

The station supports intensive electric and diesel services both of which will be enhanced in the near future.

Passenger numbers through the station have been growing steadily with a 50% increase between 2012 and 2017.

In 2011, it was suggested by Iarnród Éireann that Clongriffin station could become a new junction station on the proposed Dublin Airport railway line extension. In the 'Rail Vision 2030' strategic network review document, this line extension was recommended as a long-term goal.

Bus Services

Dublin Bus runs a frequent bus service from Clongriffin to the City Centre. This service will be significantly enhanced when the new Bus Connects project currently being implemented by the National Transport Authority provides a high frequency radial service linking Clongriffin DART Station to the City Centre at a service frequency of 4 – 8 minutes and a series of Orbital Routes linking Clongriffin to the west and north.

Go Car

GoCar has been operating successfully from Station Square in Clongriffin since 2013.

GoCar members book cars online or via the app, then unlock the car with their phone or GoCard; the keys are in the car, with fuel, Insurance and city parking all Included.

Carsharing contributes to sustainable transport and can reduce car ownership at an estimated rate of one rental car replacing 15 owned vehicles.

Servicing Strategy

The completed development at Clongriffin will include a number of commercial units which will receive regular deliveries.

To accommodate these deliveries, it is proposed to provide a network of loading bays on the streets close to these units.

Each loading bay would be 15.6 metres long (3 x car parking spaces) and signed for dual usage 00h00 – 00h00 Monday – Sunday.

The operational hours for loading would be 08h00 – 18h00 Monday – Friday.

Outside these hours between 18h00 and 08h00, the loading bays could be used for car parking by residents with Residents Parking Permits, commercial, visitors, etc. thereby adding an additional 27 spaces to the evening parking stock.

Pay and Display tickets would not be valid at the loading bays In Clongriffin.

13.13 Monitoring

Monitoring of the phasing and timing of the traffic signals will be required following completion of the development. This is standard procedure and is required to ensure that the signals are correctly set and respond to traffic demand patterns which may change over time.

It is recommended that the Travel Plan/Mobility Management Plan be monitored by Transportation Coordinator, in particular the responsiveness of the public transport services to meet the demand.

No other additional monitoring is envisaged.

Chapter 14 – Cultural, Archaeology and Architectural Heritage

14.1 Introduction

This chapter of the Environmental Impact Assessment Report has been prepared by Courtney Deery Heritage Consultancy Ltd.¹ on behalf of Gerard Gannon Properties. This chapter provides an assessment of the archaeological, architectural and cultural heritage background for a proposed mixed-use development at Clongriffin, Dublin 13.

The objective of the chapter is to assess the impact of the proposed development on the receiving archaeological, architectural and cultural heritage environment and to propose ameliorative measures to safeguard any monuments, features, finds of antiquity or features of archaeological or cultural heritage merit.

14.2 Study Methodology

14.2.1 Desk Study

This report was based on an examination of published and unpublished documentary and cartographic sources. The following sources were consulted in the course of the study.

- *Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR)*: The primary source of information for the desk study is the Record of Monuments and Places (RMP) of the Department of Culture, Heritage and the Gaeltacht (DCHG). The Sites and Monuments Record (SMR), as revised in the light of fieldwork, formed the basis for the establishment of the statutory RMP pursuant to Section 12 of the National Monuments (Amendment) Act, 1994. The RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on vertical aerial photographs. It is based on a comprehensive range of published and publicly available documentary and cartographic sources. The information held in the RMP files is read in conjunction with published constraint maps. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (National Monuments Service, DCHG), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Those sites designated as SMR sites have not yet been added to the statutory record, but are scheduled for inclusion in the next revision of the RMP;
- *National Museum of Ireland (NMI) Topographical Files*: The topographical files of the National Museum of Ireland (NMI) identify recorded stray finds held in the museum's archive. The files, which are donated to the state in accordance with national monuments legislation, are provenanced to

¹ This EIAR chapter has been prepared by Dr. Clare Crowley and Dr. Yolande O' Brien of Courtney Deery Heritage Consultancy Ltd. Dr. Crowley holds a PhD in Archaeology and Ancient History from Trinity College Dublin and certificates in the Repair and Conservation of Historic Buildings from Dublin Civic Trust and in Condition Surveys of Historic Buildings from University of Oxford. She has twenty years of experience in the fields of archaeology, built heritage and cultural heritage, working in both the private and public sector and has managed cultural heritage EIAs for numerous infrastructural and development projects.

Dr. O' Brien holds a PhD in Archaeology (National University of Ireland, Galway), MA in Landscape Archaeology (National University of Ireland, Galway) and a BA in Archaeology and Classical Civilisation (National University of Ireland, Galway). She has four years of archaeological experience in a variety of contexts involving research, teaching, survey, excavation and the production of mapping.

townland and sometimes include reports on excavations undertaken by NMI archaeologists earlier in the 20th century;

- *Dublin City Development Plan 2016-2022*: The current Dublin City Development Plan was consulted for a list of protected structures, the Record of Protected Structure (RPS sites), comprising schedules of buildings and items of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest that are listed for protection in the study area;
- *Clongriffin-Belmayne Local Area Plan, 2012-2018*, Dublin City Council;
- *National Inventory of Architectural Heritage*: The National Inventory of Architectural Heritage (NIAH) was established in 1990 in order to fulfil Ireland's obligations under the Granada Convention which states that '*for the purpose of precise identification of the monuments, groups of buildings and sites to be protected, each Party undertakes to maintain inventories of that architectural heritage*'. The building survey highlights a representative sample, and raises awareness of the wealth of architectural heritage in the county. The NIAH surveys can be reviewed at www.buildingsofireland.ie;
- *Excavation Bulletins and Dublin Archaeology Data Viewer*: The 'Excavations' bulletin published by Wordwell and on the website www.excavations.ie, was consulted for any previous relevant archaeological surveys and excavations that have taken place on or in the vicinity of the proposed development. The 'County Dublin Archaeology Data viewer' also provides excavation information for County Dublin in the form of a webGIS in which archaeological excavations are mapped with excavation reports provided. It is available at www.heritagemaps.ie;
- Cartographic sources consulted include the Down Survey Barony Maps 1658-1659, Rocque's 1756 Map, Taylor's map of 1816 and various editions of the OS Maps;
- Additional documentary and literary references consulted are listed in the bibliography;

14.2.2 Standards and Guideline

The following legislation, standards and guidelines were consulted to inform the assessment:

- National Monuments (Amendments) Acts, 1930-2014;
- The Planning and Development Act 2000, as amended;
- Heritage Act, 1995;
- The UNESCO World Heritage Convention, 1972;
- ICOMOS Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005;
- Council of Europe Convention for the Protection of the Architectural Heritage of Europe (Granada) 1985, ratified by Ireland in 1991;

- Council of Europe European Convention on the Protection of the Archaeological Heritage (Valletta) 1992, ratified by Ireland in 1997;
- The Burra Charter, the Australia ICOMOS Charter for Places of Cultural Significance 2013;
- The European Landscape Convention (ELC), ratified by Ireland 2002 European Landscapes Convention 2010. (The Department of the Environment, Heritage and Local Government 'Landscape and Landscape Assessment Guidelines' have been in draft form since 2000, however the Draft National Landscape Strategy (NLS) was launched in July 2014);
- Guidance on Heritage Impact Assessments for Cultural World Heritage Properties – A publication of the International Council on Monuments and Sites, January 2011;
- Guidelines on the information to be contained in Environmental Impact Statements, 2002, EPA;
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements), 2003, EPA;
- EPA: Draft Revised Guidelines on The Information to be Contained in Environmental Impact Assessment Reports, August 2017;
- EPA: Advice Notes for Preparing Environmental Impact Statements, Draft, September 2015;
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht and Islands;
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 2000 and the Planning and Development Act 2000;
- Code of Practice between the National Roads Authority (NRA) and the Minister for Arts, Heritage and the Gaeltacht, June 2000;
- Guidelines for the Assessment of Architectural Heritage Impact of National Road Schemes, 2006, NRA;
- Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes, 2006, NRA;
- Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes, 2006, NRA; and
- National Landscape Strategy for Ireland 2015-2025, Department of Arts, Heritage and the Gaeltacht.
- Historic England (July 2015), Historic Environment Good Practice Advice in Planning, Note 3: The Setting of Heritage Assets;
- Historic Scotland (October 2010), Managing Change in the Historic Environment;

- The Heritage Council (2010), Proposals for Irelands Landscapes; and International Council on Monuments and Sites (2011), Guidance on Heritage Impact Assessments for Cultural World Heritage Properties.

Excerpts from the relevant legislation are contained in Appendix 14.1 of this chapter.

14.2.3 Rating of Impacts

Cultural heritage sites / landscapes are considered to be a non-renewable resource and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites. The likely significance of all impacts is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the cultural heritage asset). Having assessed the magnitude of impact with respect to the sensitivity/value of the asset, the overall significance of the impact is then classified as imperceptible, slight, moderate, significant, or profound. A glossary of impact assessment terms, including the criteria for the assessment of impact significance, is contained in Appendix 14.2 of this chapter.

In accordance with the NRA 'Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes' (2006) the significance (i.e. value) criteria used to evaluate an archaeological site, monument or complex are as follows: existing status (level of protection), condition or preservation, documentation or historical significance, group value, rarity, visibility in the landscape, fragility or vulnerability, and amenity value. The archaeological and cultural heritage environment is assigned a baseline rating, taking into account the importance, value and / or sensitivity of the receiving environment (Cf. Table 4, Appendix 14.2).

14.3 The Existing Receiving Environment (Baseline Situation)

14.3.1 Site Location and Context

The subject lands are located in the townland of Grange, and form part of a relatively new residential suburb named Clongriffin (Figure 14.1). The site is located less than a kilometre from the coastline, with the River Mayne flowing along the north side of the site on its course to the Irish sea. It is located within the townland of Grange, in the barony of Coolock and the historic parish of Portmarnock.

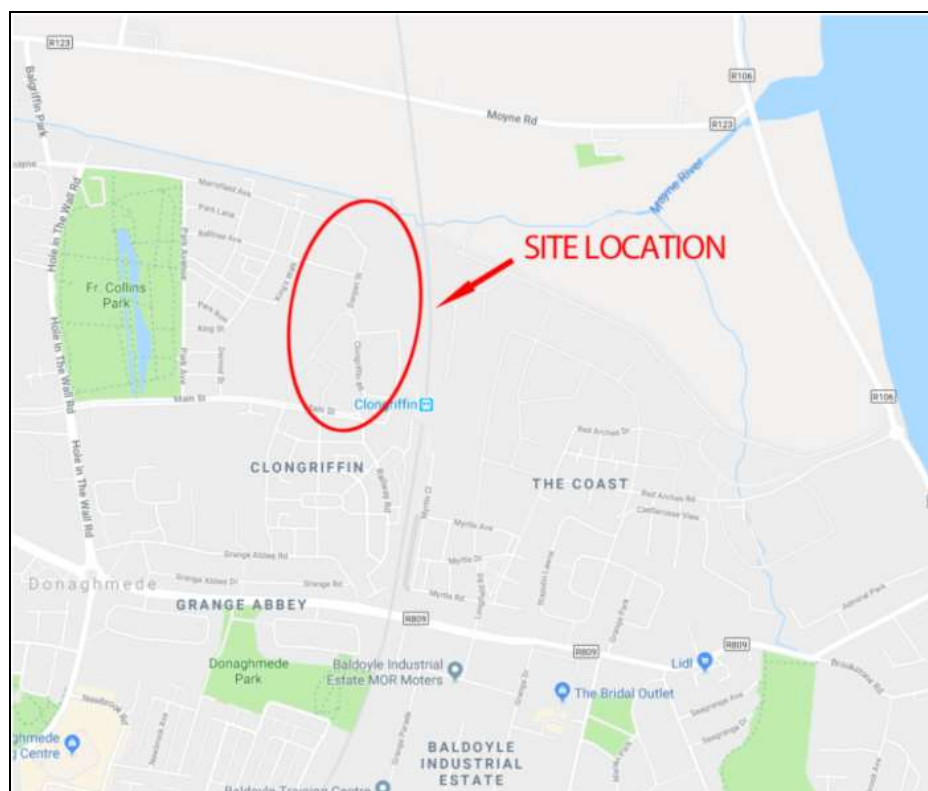


Figure 14.1 Site location

14.3.2 Recorded Archaeological Sites and Monuments

There are four recorded archaeological sites located within the proposed development area, none of which are scheduled for inclusion in the next revision of the RMP (Figure 14.2).

Two of these comprise enclosure sites that were identified on aerial photography. At enclosure site DU015-063, the aerial photograph showed cropmark evidence for a univallate enclosure roughly circular in plan. A second enclosure (DU015-064001) was identified on aerial photography c. 315m south / southeast (OS 7, 9517, 9519), where there appeared to be cropmark evidence for a univallate enclosure (diam. c. 20m) with an annex on the east. According to the descriptions in the SMR file, test excavation was undertaken in advance of a housing development in 2003, at which time nine trenches were opened on the site of the potential enclosures; no traces of any archaeological features were identified, and both sites are now built over (<http://webgis.archaeology.ie/historicenvironment>; Licence no. 03E1496; Excavations Bulletin Ref. 2003:485).

The remaining two sites are situated c. 40m apart and are recorded as burnt mounds that were discovered during archaeological testing and subsequently excavated (DU015-097 & DU015-096). According to the file descriptions in the ASI online SMR viewer, these were the remains of two small prehistoric burnt mounds, comprising deposits of heat shattered stone (Licence No. 03E1496; O'Carroll, E. 2006, 117; cited in SMR file).

The description of both in the online SMR is identical with the exception of the dates of testing (given as 1993 and 2003) and inversion of the dimensions.

Only one burnt spread is described in the archaeological testing report associated with licence number 03E1496, however, and there is no record of earlier testing on the site in 1993 (nor of a second burnt spread) either in the excavations bulletin or in the Dublin County

Archaeology database (www.excavations.ie; <https://heritagemaps.ie/WebApps/DublinArchaeologyProject>). It is possible that the site was duplicated when it was being entered into the system.

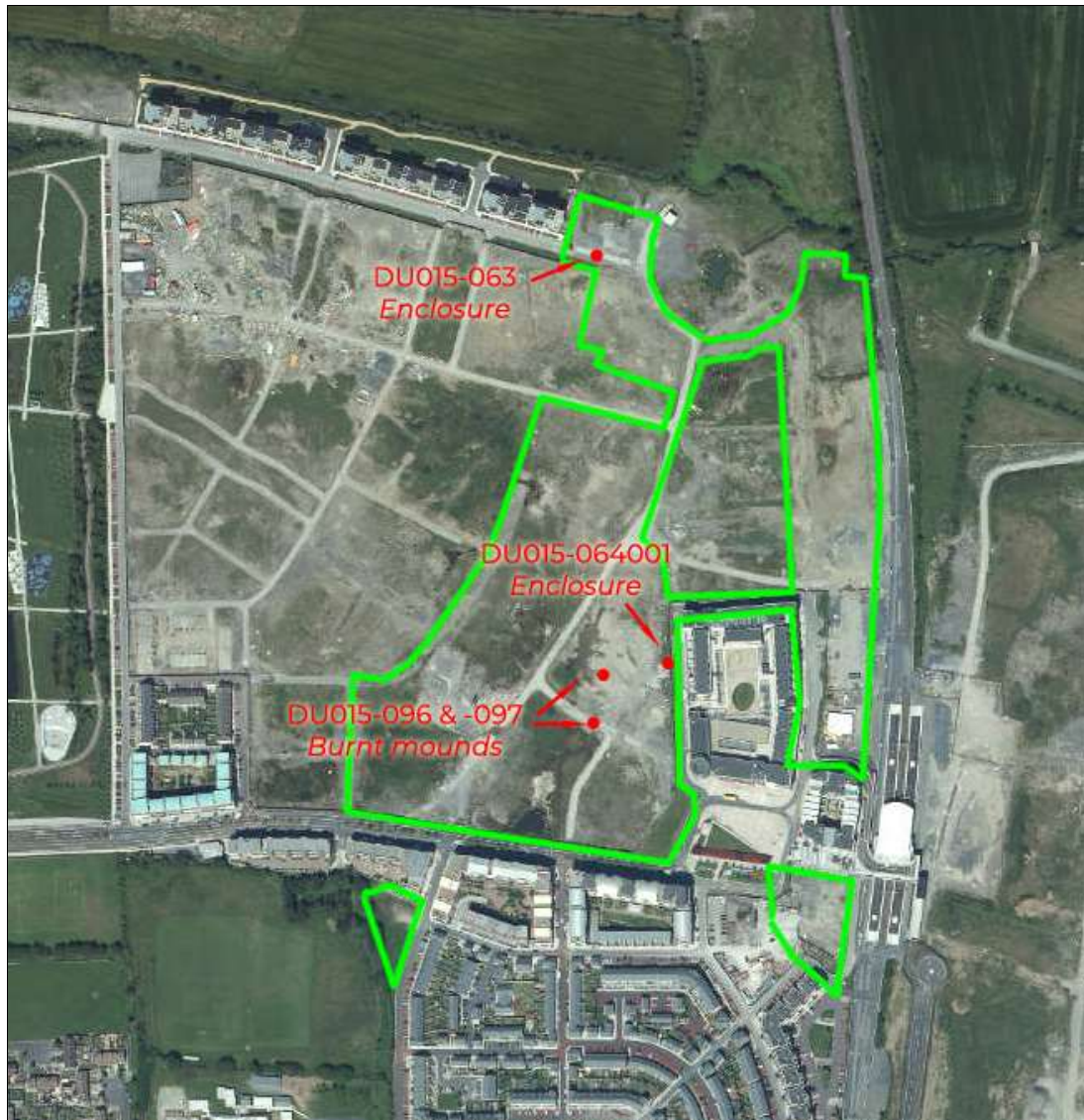


Figure 14.2 Recorded sites not scheduled for inclusion in the next revision of the RMP (masterplan area in green)

Other RMP / SMR sites in the surrounding landscape are discussed where relevant in the context of the archaeological and historical background in section 14.3.4 and their locations are illustrated on Figure 14.3.

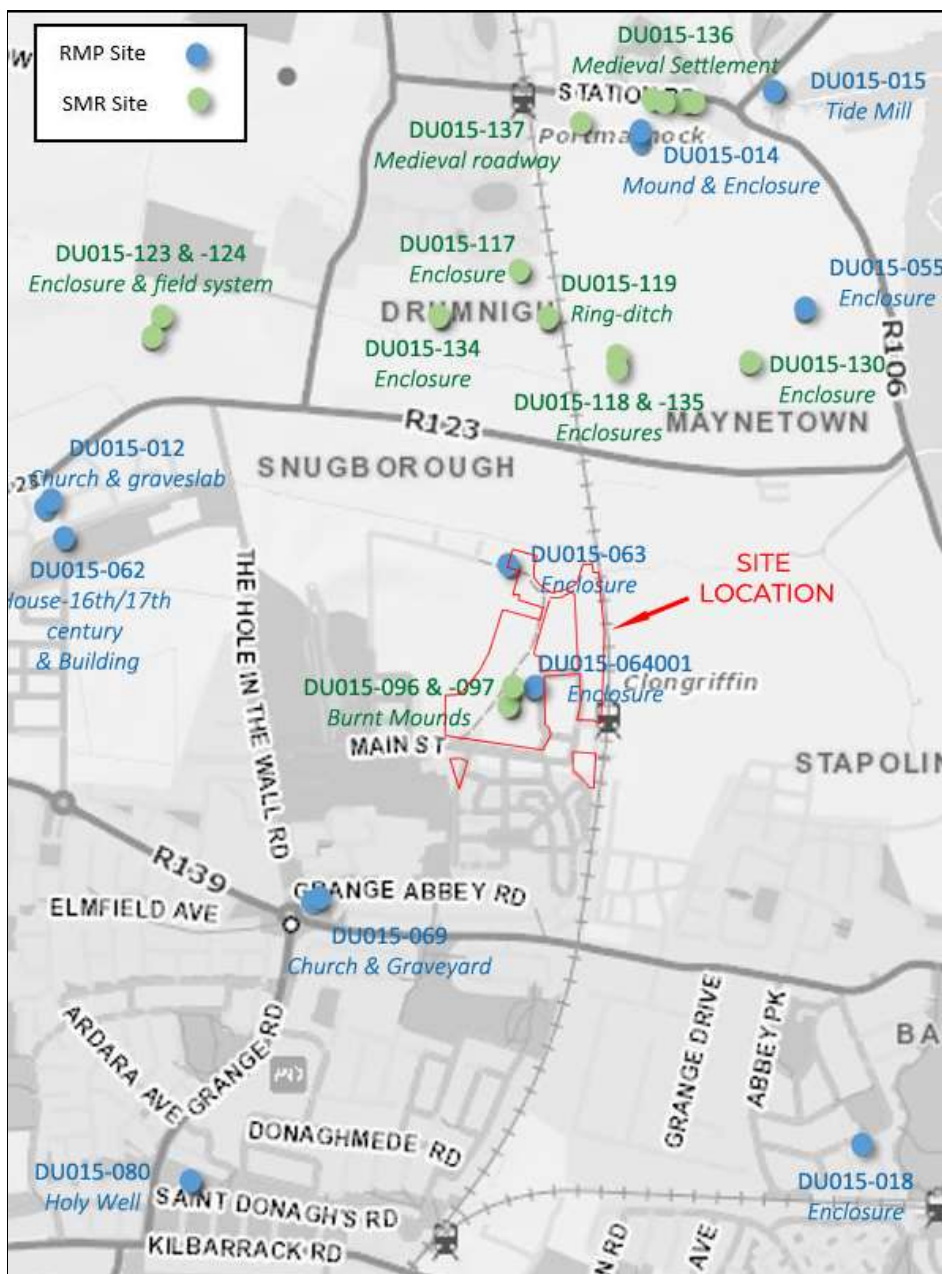


Figure 14.3 RMP / SMR site location map

14.3.3 Stray Finds

There are no recorded finds within the subject lands in the Topographical Files of the National Museum of Ireland. However, a small silver vessel (NMI ref.: IA/33/85) was recovered approximately 530m southwest at Newgrove House, Grange Abbey in 1984. The decorated vessel was thought, after inspection by NMI staff, to have been of 18th or 19th century date. The decoration was floral and lacking in religious symbolism, and was therefore thought to be a drinking goblet.

14.3.4 Archaeological Background

14.3.4.1 Prehistoric Period (c. 9000BC-c.500AD)

The coastal area of north County Dublin has produced relatively large quantities of flints, many of which may date to the Mesolithic, or Middle Stone Age, (c. 7000–5000 BC). Within the wider landscape of the masterplan area, Mesolithic and Neolithic activity has been noted at the raised beaches at Sutton (Mitchell 1990; Stout & Stout 1992) and Portmarnock Football Club in Robswall townland (Keeling & Keeley 1994). Further north again, systematic field walking at a proposed site for Malahide Football Club in 1999 – also close to the coast road – revealed lithic material (Keeling & Keeley 1994; Purcell 1999).

There is some evidence for activity within the study area during the Neolithic period (see section 14.3.6). This fits well with the significant body of Neolithic (c. 4,000BC– c 2,300 BC) material from the wider north County Dublin area. Evidence includes a large, well-preserved portal tomb at Howth Demesne, while excavations at Feltrim Hill revealed Neolithic ceramics and worked lithics, though no apparent remains of structures. Recent excavations on Lambay Island revealed areas of Neolithic activity associated with stone axe and flint tool manufacturing, some of which was of extremely high quality (Cooney 2000). The highest points of Lambay Island also have at least two cairns, mounds of stone that often cover burials, which may also date to the Neolithic.

The archaeological investigations within and surrounding the masterplan area point to a considerable amount of activity here during the Bronze Age. A ring ditch (a funerary monument) was discovered in close proximity to the masterplan area (Licence No. 04E0704, Section 5), along with a number of pits (or complexes thereof) which also date to this period (see Table 4.1, Section 14.3.6).

Two *fulachta fia* and two burnt mounds have been identified and excavated within / in proximity to the masterplan area (CF. Section 14.3.6, Licence Nos 04E0701, 04E0352, 04E0367; & SMR DU015-096/-097, section 14.3.2). A third *fulacht fia* site was identified c. 310m to the west (Licence No. 07E0979). The *fulacht fia* or burnt mound is the most common prehistoric monument in Ireland, with over 7000 known sites (Waddell 2010) and the number is rising all the time. *Fulachta fia* consist of a low mound of burnt stone commonly in horseshoe shape and are found in low-lying marshy areas or close to streams.

The presence of *fulachta fia* is often indicative of Bronze Age seasonal communal activity in river valleys, lakeshores and boggy ground; scientific dating of a randomly excavated sample has shown a predominance of second millennium BC dates for their use (Brindley & Lanting 1990). There is no agreement that burnt mounds were cooking places, although it does seem that they were used to prepare large quantities of boiling water and that they were repeatedly used, resulting in a large mound of heat shattered stones accumulating. Other theories for the use of these sites include bathing, saunas or sweatshouses, washing or dyeing large quantities of cloth, the preparation of leather and brewing.

A number of Early Bronze Age (c. 2400-1800 BC) burial sites are also recorded in wider landscape, including a burial on the Strand Road (RMP DU015-019), a stone cist burial (RMP DU015-022) in the grounds of the Suttonians Rugby Club, a burial from a mound (RMP DU015-023) in the area of the Rugby Club, and a ring-ditch identified in Drumnigh townland (SMR DU015-119). The latter was identified during geophysical survey and confirmed by archaeological testing.

The Maynetown enclosure site (DU015-055), to the northeast of the masterplan area (c. 805m), represents the ploughed-out remains of what was thought to be a substantial late prehistoric enclosure. Geophysical survey, carried out in 2000, identified the existence of the

enclosure and also revealed responses indicating an unusual entrance feature of two splayed linear elements leading to the south east side of the enclosure ditch (Shiels *et al.* 2000). These have been interpreted as a formal approach or avenue to the enclosure. This linear avenue is not typical of enclosures generally and makes this particular monument very unique. A portion of the approach was later confirmed during archaeological testing (Wallace 2000b) and was subject to further testing in 2008 (Moriarty, *pers. comm.*). During test excavation the enclosure ditch was found to be substantial in spite of its eroded state and measured approximately 7m wide and 2m deep. Finds recovered from the ditch included butchered animal bone and a ferrous nail shank. A charcoal sample from the base of the ditch was sent for radiocarbon dating, which returned a medieval date for the enclosure site (Moriarty *pers. comm.*).

Post-excavation analysis for the excavations undertaken within and around the masterplan area revealed that there was also activity in this area during the Iron Age. Radiocarbon dating identified that the quasi-industrial site formed by a complex of pits (including a primitive corn-drying kiln) was Iron Age, as was a single charcoal production pit, with a phase of Iron Age activity also found at the ring ditch site mentioned above (Licence Nos 04E0598, 04E0703, 04E0704; Table 14.1, Section 14.3.6).

14.3.4.2 Early Medieval Period (c. 500 AD-c.1100AD)

The early medieval period saw the development of a mixed-farming economy managed by kings, nobles and free farmers. There was an increase in settlement during the early medieval period (c. AD 500–AD 1200), and the ringfort, otherwise known as the ‘rath’ or ‘fairy fort’, is the best-known native monument of this period (Stout 1997).

Ringforts are essentially enclosed farmsteads dating to the early medieval period. The majority of these sites are univallate, surrounded by one ditch and bank, but some are surrounded by two and, to a lesser extent, three enclosing ditches and banks (known as bivallate and trivallate raths respectively). Another morphological variation consists of the platform or raised rath – the former resulting from the construction of the rath on a naturally raised area while the latter’s height resulting from prolonged occupation over many centuries. Many raths are circular or oval in shape but they can occur as D-, pear- and sub-rectangular-shaped enclosures (Kinsella 2007). Ringforts were not simple isolated homesteads, and should be considered within their contemporary settlement landscape, which would have consisted of unenclosed settlements, farms and fields, route ways and natural resources.

Many raths are situated on valley sides and on the brow of drumlins and for the most part, avoid the extreme low and uplands. They also show a preference for the most productive soils (Stout 1997) and usually command a good view of the surrounding landscape. Stout (1997) has shown that the majority were occupied from the beginning of the 7th until the end of the 9th centuries, covering a 300-year period. Raised and platform raths have been shown to be slightly later in date and were constructed between approximately the mid-8th and mid-10th centuries AD (Kerr 2007).

That being said, they are a site type that is relatively scarce in the archaeological record for County Dublin, partly because of the urban or suburban nature of much of the county, but also because of the intensive agricultural practices carried out in north County Dublin, which has destroyed surface traces of these sites. This can be witnessed in some of the recorded archaeological sites in the surrounding landscape. A ringfort site was excavated at the centre of the masterplan area, with both radiocarbon dating and artefactual analysis indicating early medieval settlement at the site (Licence No. 04E0342, Section 14.3.6). Lithics recovered from the site suggest that it overlay an area of previous prehistoric activity.

The enclosure sites formerly recorded in the masterplan area (DU015-063, DU015-064001 & 002) may also have been ringforts.

The survival of destroyed enclosures sub-surface is also demonstrated in the surrounding townlands, where geophysical survey and testing have identified the remains of several possible early medieval enclosed settlements, some of which are quite substantial in size (e.g. SMR sites DU015-117 & DU015-134 in Drumnigh townland). In addition, cropmarks have been recorded in Saint Doolaghs townland which may represent the remains of a ringfort and associated field system (DU015-123 & 124).

Where ringforts were the major secular component of early Christian settlement, ecclesiastical centres became the focus of the new religion that was readily adopted in the 5th and 6th centuries. Early medieval monastic settlements tend to be defined by a large curvilinear bank and ditch or stone enclosure (topography permitting), enclosing an area circa 90-120m in diameter, often preserved in the line of townland or field boundaries and roads (Swan 1988). The majority of ecclesiastical settlements had one or more concentric curvilinear enclosures, with the church placed at the centre, in the inner sanctum (frequently preserved in the surviving graveyard boundary), with more secular activities (domestic, commercial and industrial) reserved for the outer enclosures. They usually had a network of radiating roads, with the principal approach road (often from the east) terminating in a triangular market place. Features commonly found to be associated with early ecclesiastical sites include holy wells (usually outside of the main settlement), bullaun stones, high crosses, cross-inscribed stones and round towers.

A possible example of an ecclesiastical settlement is recorded in the wider area in Balgriffin Park townland, c.1km west/northwest of the proposed development site (RMP DU015-012001 & -012002). According to D'Alton the church was confirmed of its titles in 1178 by Archbishop O'Toole, though the Regal Visitations of 1630 describe the church and chancel as ruinous (Ronan 1941). The site is currently located within the open space of a housing development and a number of archaeological investigations were undertaken prior to the development. A substantial curving ditch (4.75m in width and 1.3m deep) that appeared to be enclosing the site of the church was identified during geophysical survey and archaeological testing at the site. Two smaller linear ditches were associated with the enclosure and contained similar fills, while several sherds of medieval pottery and a medieval glass bead were found in this area. Although an early medieval date could not be confirmed, the enclosing element is suggestive of an early foundation.

The early medieval period also saw the arrival of the Vikings and the establishment of Hiberno-Norse settlements. Fingal was in close proximity to the Viking settlement at Dublin, and the significant Norse influence on Fingal can be seen from both Gaelic place-names, such as Fine Gall or 'territory of the strangers' and Baile Dubh Gaill (Baldoyle: 'town of the dark stranger'). According to Hurley (1983), a Viking harbour is recorded in the vicinity of Baldoyle. Although there has never been any definitive evidence for this, archaeological excavations undertaken at a rectangular cropmark site in Baldoyle village in 2014 provided a radiocarbon date of 9th / 10th century for a cereal grain retrieved from the bottom of one of the features. This implies that there was at least some level of settlement activity there during the Viking period.

Before the battle of Clontarf, Brian Ború is said to have burned Fingal and the district of Howth, and some years later, during a predatory excursion into Fingal, the region is said to have been burned from Dublin to the River Delvin (Ball 1920). Fingal later came under the rule of Mac Gillamochoilmog, who controlled the lands south of Dublin before the arrival of the Anglo-Normans in the late 12th century.

14.3.4.3 Late Medieval Activity (c.1100AD-1600AD)

From the 12th century, the Anglo-Normans, with a keen eye for good agricultural land, superimposed the manorial system of landholding they had acquired from England and the Welsh borderlands onto their newly conquered territory in Fingal. Portmarnock, c. 1.2km to the north, was a pre-Norman ecclesiastical site that subsequently became a manorial village when taken over by the Anglo-Normans in the 12th to 15th centuries. The possible remnants of this settlement may have been uncovered during archaeological excavations in 2008 (Licence no.: 08E0376) and in 2018 (Licence no. 16E0613), which identified defined property plots, the foundations of rectangular houses and an associated medieval roadway (SMR DU015-136). A large assemblage of artefacts was recovered during the excavations, including in excess of 3,000 sherds of medieval pottery, mainly locally produced Leinster cooking ware and Dublin-type wares, as well as large numbers of metal objects. Evidence for food waste included large amounts of butchered animal bone as well as quantities of seashell (cockles, muscles, oysters, periwinkles, razor shell, etc.) and carbonised grains.

There is additional evidence for medieval activity at Portmarnock in the form of a tidal mill (DU015-015). Two tidal mills are recorded in the possession of St Mary's Abbey in an inquisition taken in 1541 (de Courcy 1996), one of which is probably represented by the remains of the old mill at Portmarnock (DU015-015) and the other at Malahide. The mill at Portmarnock was recorded as being in the property of the Plunkett family in 1663, but in a ruinous state after 1903 – 'unroofed and much dilapidated by the storm of 1903'. The Down Survey refers to a tidal mill at Malahide as "a mill that goeth by ebb tides" (Joyce 1912).

The full extent of the Maynetown enclosure was not identified until November 2000 when geophysical survey was carried out to establish the extent of the site for the creation of a buffer zone around it. The geophysical survey revealed a unique and interesting site when two linear responses identified what appeared to be a formal approach to the entrance of the enclosure. This entrance feature is rare in Ireland and similar in style to the Iron Age enclosures found in Britain; however, a charcoal sample taken from the base of the enclosure ditch during archaeological testing in 2008, was radiocarbon dated to the medieval period. When viewed in context with the other archaeological features found at Portmarnock an extensive medieval landscape begins to emerge.

Further medieval secular activity is known at Baldoyle village c. 1.5km to the east/southeast, which was reputedly the location of a Viking base for many years, was established as a manorial village after the arrival of the Anglo-Normans.

Grange Abbey (DU015-069, c. 530m southwest) is situated west of Baldoyle village, with the road connecting the two named Grange Road, and had a long association with All Saints Priory. In 1478, the prior of All Saints and lord of the town of Baldoyle made representations on behalf of the inhabitants. They were much distressed by excessive taxes levied upon them by the king's admirals and their deputies. It was therefore enacted by Parliament that the prior should henceforth be admiral of Baldoyle and of all other lands belonging to the priory in Ireland.

Several writers on the subject of Baldoyle have made reference to a parliament that was reputedly called at Grange Abbey in 1369 by the then lord lieutenant, William de Windsor, for the purpose of levying subsidies. However, there would appear to be no substantiation for the claim that de Windsor ever held a parliament in Grange Abbey. In 1609, repairs were made to the abbey by Thomas Fitzsimons and by the parishioners. By 1615, a royal visitation records that it was no longer in use, and in 1630, Archbishop Buckley made the comment that 'the church is altogether ruinous' (Grange Abbey Restoration Publication).

14.3.4.4 Post Medieval / Early Modern Activity

The 17th century saw significant transfers of land from Catholic to Protestant ownership throughout Ireland, often through the seizure of property following both the Confederate Wars and the Williamite War (1689–1691) and by the 18th and 19th centuries, many of these influential land-owners were consolidating their estates, building new, larger houses and creating landscaped demesnes. The stone manor houses, or what became known in Ireland as the 'big house', were constructed by planter families in County Dublin, as elsewhere in the country, roughly between the years 1670 and 1850, and they are often found near to or on the sites of older ruined castles or tower houses, churches or defunct administrative centres. Big Houses were also often situated within embellished and ornamented demesne land, which was frequently ringed by high walls (McCullough & Mulvin, 1987). Several examples of 18th and 19th century houses can be seen in the surrounding landscape, including Balgriffin Park (formerly 'Stapolin'), Stapolin House, Belcamp, Grange House and Newgrove House.

The most significant change to the landscape in the 19th century was the introduction of the railway line from Dublin to Drogheda. The scheme to construct the railway line between Dublin and Drogheda was presented to parliament in 1836 and received royal assent on 13 August 1836. The line was proposed to be built to 5ft 2in (1,575mm) gauge on the grounds of lower costs. The two broader gauges were used nowhere else. Following complaints from the UR the Board of Trade investigated the matter, and in 1843 decreed the use of 5ft 3in (1,600mm). John MacNeill was appointed as the line's engineer in 1840 and by October 1840 construction was underway. The official opening of the line occurred on 25 May 1844. Initially trains ran from Drogheda (the Drogheda terminus being 1/4 mile southeast of the current Drogheda railway station) to a temporary Dublin terminus at the Royal Canal.

14.3.5 Cartographic Sources

14.3.5.1 Earliest Available Sources

The Down Survey map for the barony of Coolock, c. 1656, shows no detail within the study area (Figure 14.4). The location can be approximated using the topographical features depicted on the map, with the estuary of the Mayne and Sluice rivers and the Burrow isthmus ('Conyborough') both depicted to the east. The point where the Mayne river enters the estuary is also depicted, with a house shown at the shoreline (possibly the site of Mayne Bridge). The townland named 'Part of Mayne' on the map is the present Maynetown townland, to the northeast of Grange townland. The latter is not named or depicted, being part of the lands owned by the Lord of Howth and, as such, unforfeited. No additional detail can be gleaned from the parish map or the accompanying terrier.



Figure 14.4 Down Survey, barony map of Coolock, County Dublin, c. 1656

Rocque's map of County Dublin in 1760 (Figure 14.5) is considerably more detailed and provides the first cartographic depiction of the masterplan area, which is exclusively agricultural land. The fields are shown as pastureland on the south side of the Mayne river. Baldoyle village and Kilbarrack are shown on the map, with the principal road network in place. Grange House is depicted to the southwest and a house and estate named Stapolin are shown to the northwest.

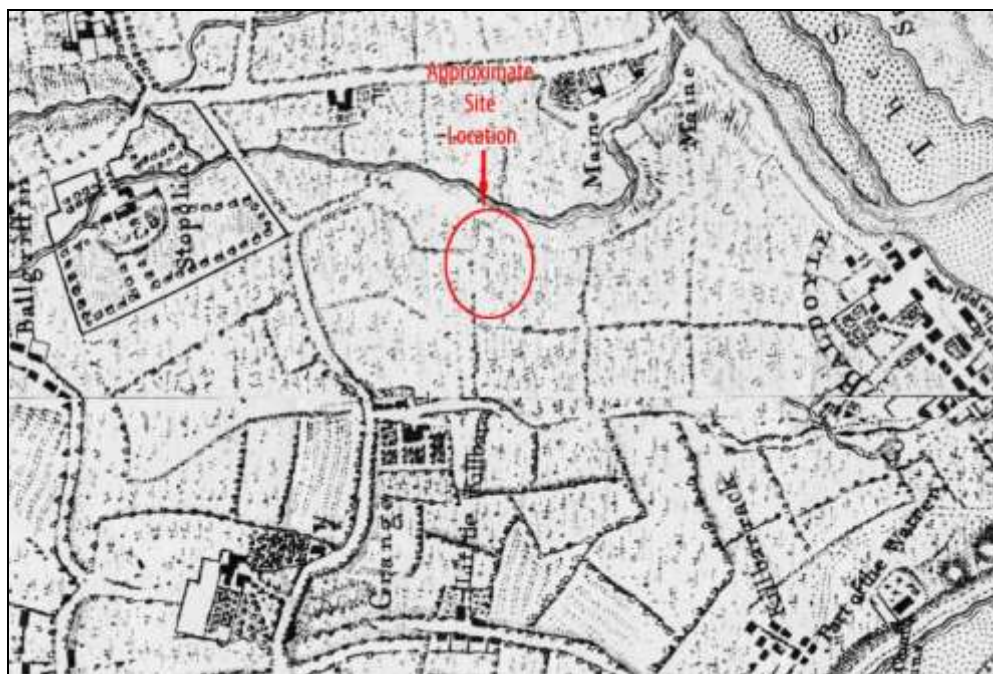


Figure 14.5 Rocque's 'An Actual Survey of County Dublin', 1760

14.3.5.2 Ordnance Survey Maps

Between 1829 and 1843, the Ordnance Survey (OS) completed the first ever large-scale survey of the entire country; Dublin county was largely completed in 1843. The maps were produced at a scale of six-inches to one mile, in both colour and in black and white, and are acclaimed for their accuracy. The first edition OS six-inch map (Figure 14.6) shows more detail within the masterplan area, which has remained undeveloped since Rocque's mid-18th century map. The agricultural fields extend south of the River Mayne, with a footpath crossing east-west through the fields. A tree-lined lane or avenue leading north from the public road extends almost as far as the masterplan area; this avenue bounds Grange Lodge to the east.

The line of the as yet unfinished Dublin to Drogheda railway line, which forms the eastern boundary to the masterplan area, is also depicted (noted on the map as 'in progress'). The country house to the west, formerly named Stapolin, is now called Balgriffin House, with a new 'Stapolin House' depicted on the eastern side of the railway line. Grange House and the site of Grange Abbey are depicted to the southwest, on the south side of the public road (named Grange Road).

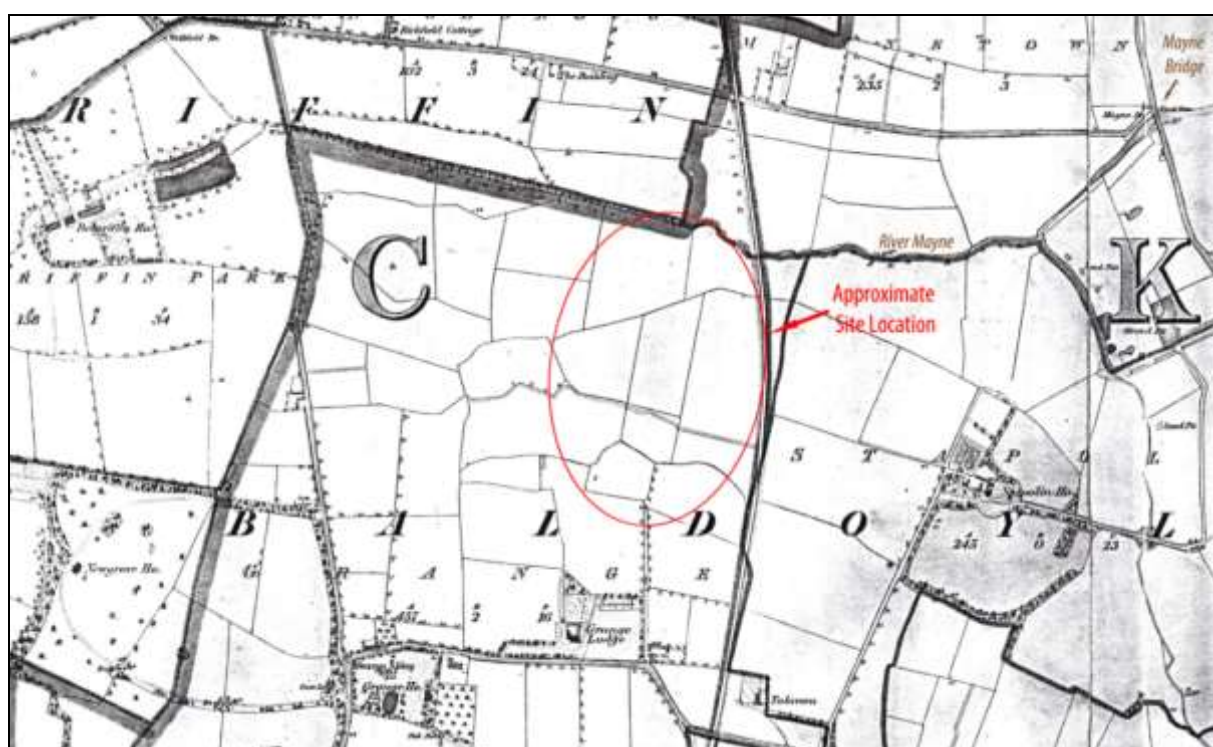


Figure 14.6 First edition 6-inch OS map 1843

Both the footpath and tree-lined avenue are gone by the time of the 1906 edition OS map (Figure 14.7). The railway line, which was officially opened in 1844, is designated as the 'Great Northern Railway' on the map. There are no other significant changes on this edition map.

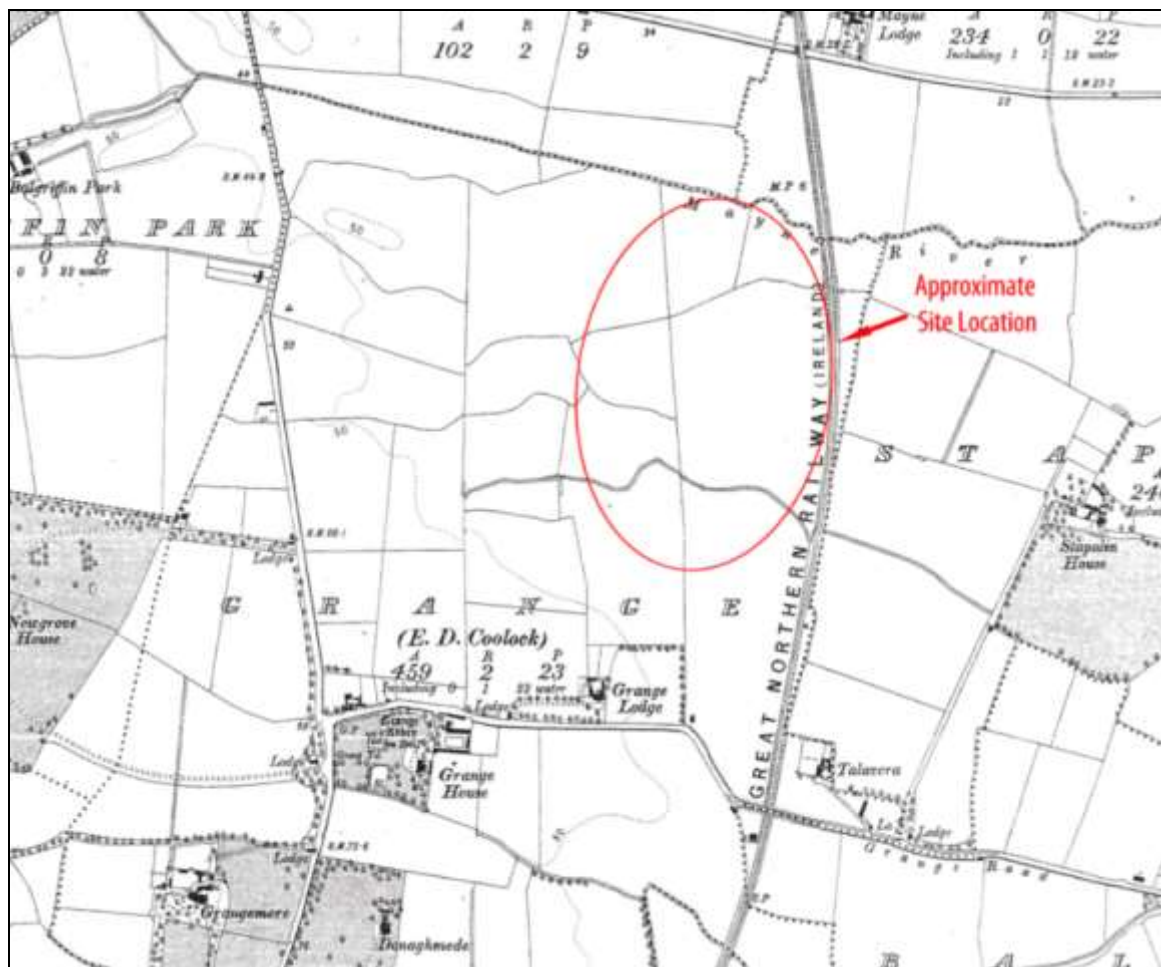


Figure 14.7 Second edition 25-inch OS Map, 1906-9

14.3.6 Previous Archaeological Investigations

Extensive archaeological investigation, comprising monitoring, testing and excavation, took place across the masterplan area (and to the west and south of it) in 2003 / 2004. These investigations were carried out in advance of proposed development within an area of approximately 133 acres, on lands bordered by Grange Road to the south, the Hole-in-the-Wall Road to the west, the Dublin-Belfast railway to the east and the Mayne River to the north (Figure 14.8). The lands under assessment in this report occupy the north-eastern section of the area investigated (Figure 14.8). Much of this area now already been developed; Figure 14.9 shows the subsequent progressive development between 2005 and 2018.



Figure 14.8 Google Earth aerial image 2003, showing area subjected to archaeological investigation (yellow), with present masterplan area in red

An initial programme of archaeological testing was carried out in 2003 prior to commencement of the monitoring phase, at the site of two recorded enclosures (DU015-063 & DU015-064001; Excavations 2003, No. 485, Licence No. 03E1496). As noted above in section 14.3.2, no trace of either monument was uncovered, though a burnt spread was uncovered and fully excavated (O'Carroll 2003). Subsequent monitoring began in early October 2003, before an application was made for the extension and alteration of the monitoring licence, in order to carry out comprehensive testing across the entire site area in conjunction with an extended period of monitoring.



A. Google Earth aerial image 2005



B. Google Earth aerial image 2008



C. Google Earth aerial image 2013



D. Google Earth aerial image 2018

Figure 14.9 Aerial imagery from 2005 to 2018 showing progressive development of the site

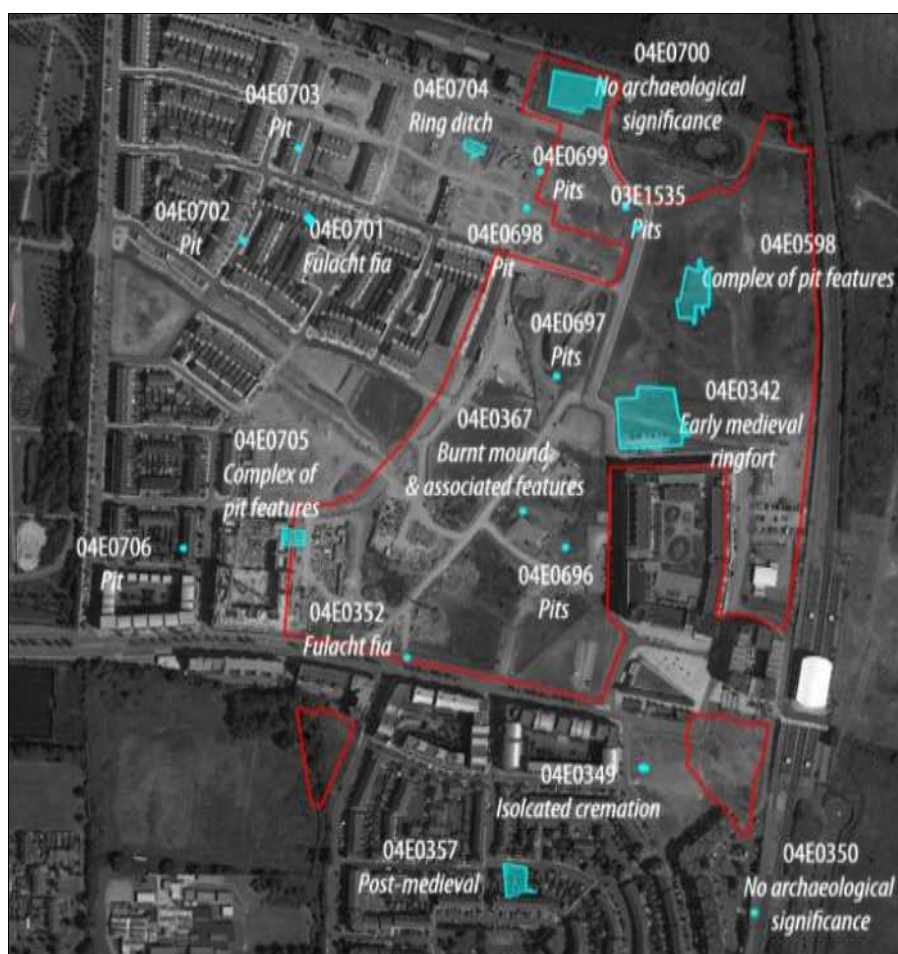


Figure 14.10 Results of archaeological investigations within / in proximity to masterplan area

The archaeological investigations produced evidence for a variety of sites including burnt mounds, pits and hearths associated with domestic and craft / quasi-industrial activities, ritual sites (a ring-ditch and an isolated cremation) and an early medieval ringfort. A total of 17 archaeological sites were uncovered and excavated, many of which were pits, with a number of the sites displaying evidence for multi-phase activity (Cf. Table 14.1, Figure 14.10). The original site topography was characterised by a mixture of high and low ground, with at least four glacial prominences evident on the topographical survey. Unsurprisingly, it was on the higher and drier land that the majority of the sites were found (Elder 2005). Post-excavation analysis (including radiocarbon dating, and environmental and artefactual analyses) indicates that these lands on the south side of the River Mayne have been the focus for human activity and / or settlement from the late Neolithic and Bronze Age, through the Iron Age and into the early medieval period.

Table 4.1 Results of Previous Archaeological Investigations

Licence No.	Site Type	Description	Date	Within masterplan area	Site Status
03E1535	Pits	Found during testing. Two charcoal production pits. Three other sites were located in the general vicinity, and all featured pits with charcoal-rich fills. This complex of features may, therefore, represent as yet unknown and undated industrial activity centred on the production of charcoal. Radiocarbon dating indicates both Bronze Age and early medieval activity.	Early medieval & Bronze Age	Yes	Excavated
04E0342	Ringfort	Found during testing. The site consisted of a c. 30m diameter sub-circular fosse with rounded terminal ends on the northern side, a metallated pathway extending several metres beyond the gap on either side, and a probable gatehouse immediately inside the gap. There were a series of sub-circular and sub-rectangular pits, and isolated postholes within the enclosure, but no direct evidence for dwellings, and no hearths or areas of industrial activity. A number of north - south aligned, evenly spaced wide plough furrows were seen to cut through the upper deposits of the archaeological features, suggesting that intensive tillage from the later medieval period onwards may have removed all traces of archaeology at a slightly higher level than the present substrate. Artefacts included a fragment of lignite bracelet and a copper-alloy stick pin from pit deposits towards the centre of the site and a socketed iron object from the western terminal of the ditch. Radiocarbon dating indicates early medieval settlement, while lithics recovered from the site suggest that it overlies an area of previous prehistoric activity.	Early medieval (also prehistoric)	Yes	Excavated
04E0349	Isolated cremation	Found during testing. Comprised a single sub-circular feature measuring 0.55m by 0.4m by 0.16m. The pit contained three fills; a layer of stones lining the base; the charcoal-rich cremation deposit; and a silty clay sealing deposit. A few fragments of crude earthenware were found adjacent to the pit feature, including a much worn neck-shoulder, most probably from an early Neolithic carinated bowl. If, indeed, the pit contained a human cremation it is most probably of middle to late Bronze Age date (as indicated by the radiocarbon dating) and the pottery represents much earlier residual activity.	Bronze Age (also Early Neolithic)	No	Excavated
04E0350	n/a	No archaeological significance	n/a	No	Excavated
04E0352	Fulacht fia	Found during topsoil-stripping. Situated in low-lying pasture at the base of a north-facing slope, close to an area of persistent wetland centred upon a small stream. The site comprised three features: an elongated oval pit measuring 1.92m by 0.97m by 0.32m deep containing two fills and a clay lining; a shallow sub-rectangular spread; and a short linear feature (probable modern plough furrow). The heat-shattered stone and charcoal-rich deposits filling the pit and spread were consistent with a burnt-mound site, though it is believed that intensive cultivation removed almost all traces of the mound. The pit feature most likely represents a single trough, lined with clay to prevent water seepage, and eventually filled by two separate layers of burnt-stone and charcoal-mound material. Radiocarbon date for fulacht indicated a Bronze Age date. Small hollow scraper recovered from site dates to Late Neolithic.	Bronze Age (also Late Neolithic)	Yes	Excavated

Licence No.	Site Type	Description	Date	Within masterplan area	Site Status
04E0357	Post-medieval	Post-medieval agricultural activity.	Post-medieval	No	Excavated
04E0367	Burnt mound & associated features	Found during topsoil-stripping. Comprised a complex of pits and stake-holes, with cobbling and associated burnt-mound spread. Four pits were present in the northern half of the site; three of these may be boiling pits, given that they were filled by charcoal and heat-shattered stone deposits, whilst a much smaller pit may have been for related activity, possibly blanching or cooling. Some of the stake-holes may have formed a splayed fence-like structure between the pits and the cobbled surface, possibly indicating an entrance into the working area.	Bronze Age	Yes	Excavated
04E0598	Complex of pit features	Found during testing. The site comprised a complex of pits, post-holes and stake-holes, within an area measuring c. 15m by 10m. The pits measured between 2.5m by 1.2m by 0.35m deep and 0.4m by 0.24m by 0.14m deep, and all contained charcoal-rich silty clay fills. One of the pits contained a large amount of charred cereals and may have been a primitive corn-drying kiln. A cluster of post-holes located towards the centre of the site may have formed a drying frame of some sort or a windbreaker. It is clear that the site formed some sort of industrial purpose, though the exact function remains unknown. Radiocarbon dated to the Iron Age, with lithics indicating an earlier phase of activity in the Neolithic / Bronze Age.	Iron Age (also Neolithic / Bronze Age)	Yes	Excavated
04E0696	Pits	Found during testing. Comprised two pits in isolation, the primary purpose of which is unknown. There was no obvious oxidisation of the base and sides of the pits, to suggest burning <i>in-situ</i> , but the charcoal-rich fills show that they were ultimately used as receptacles for the by-product of industrial or domestic (i.e. cooking) processes. These features are therefore interpreted as rubbish pits. This site was accidentally destroyed prior to full recording.	Unknown	Yes	Partly recorded
04E0697	Pits	Found during topsoil-stripping. Two pits situated just above the 6.5m contour, on the west-facing slope of an east - west orientated esker. Both pits contained a single charcoal-rich fill. Radiocarbon dating of charcoal recovered from one of the fills was used to determine the age of these pits, producing a date that from the early medieval period. Function unknown but pits may have served either for storage, waste, or as a structural feature in the past. Fragments of hazel nut shell in one of the pits may suggest that it contained the cleared out remnants of a hearth.	Early medieval period	Yes	Excavated
04E0698	Pit	Found during topsoil-stripping. The site comprised an oval pit featuring a metallised base and intense burning in situ and contained two charcoal-rich deposits. The evidence from the excavation of this site suggests that it was constructed as a deliberate hearth. Three other sites were located in the general vicinity and all featured pits with charcoal-rich fills. This complex of features, therefore, may represent thus far unknown and undated industrial activity centred on the production of charcoal.	Early medieval period	No	Excavated

Licence No.	Site Type	Description	Date	Within masterplan area	Site Status
04E0699	Pit	Found during spoil-heap removal. Two pits with charcoal-rich fills. The exact function of the two pits is unknown, but appears to be focused on the production of charcoal. Radiocarbon dated to Early medieval period. Two lithics recovered of probable Late Neolithic date, based on their technology and morphology, and therefore represent an earlier phase of activity on this Early Medieval site.	Early medieval period (also Late Neolithic)	No	Excavated
04E0700	n/a	No archaeological significance	n/a	Yes	Excavated
04E0701	Fulacht fia	This feature was interpreted as the site of a <i>fulacht fiadh</i> , with evidence of related activity in the form of small boiling pits. Two large sub-rectangular pits, which can be interpreted as trough pits. These two pits have stake-holes in each corner, which suggests either they formed a frame or suspension device for a cauldron or similar object, perhaps even the object being boiled, or that they represent the securing in place of a wooden trough, either a box constructed of planks, or a woven structure. Radiocarbon dated to the Bronze Age.	Bronze Age	No	Excavated
04E0702	Pit	Found during topsoil-stripping. Comprised a linear feature cut into the natural subsoil, measuring 2m by 0.20m. It contained a charcoal-rich silty clay matrix with occasional burnt stone inclusions. During the course of the erection of a safety barrier either side of the line of the overhead power cables, the site was destroyed by construction machinery before excavation could take place.	Unknown	No	Partly recorded
04E0703	Pit	Found during topsoil-stripping. Comprised a single shallow pit feature with oxidisation of the base and sides. It contained two charcoal-rich fills and an ashen deposit. Interpreted as a hearth site. The uppermost fill contained token amounts of burnt bone, some possibly pottery sherds and a polished pebble. This material would be consistent with a rubbish deposit and probably represents mixed soil, ash and refuse deliberately deposited to douse a fire. Radiocarbon dated to Iron Age.	Iron Age	No	Excavated
04E0704	Ring ditch	Found during topsoil-stripping. Comprised a single curvilinear ditch feature, containing two fills, and a re-cut containing three charcoal-rich fills. The ditch feature was aligned roughly north – south for the main part, curving slightly towards the southwest at its southern extreme, and was approximately 12m in overall length. Situated on an elevated location at the northern end of the area, south of the River Mayne, centrally-placed within a cluster of sites that are thought to be roughly contemporary. Sherds of crude pottery and token amounts of burnt bone were recovered from the deposits within the feature, as was a single fragmentary amber bead. The discovery of crude pottery sherds in association with burnt bone fragments (possibly cremated human bone), suggests that this site represents a burial monument. Two pottery rim sherds were found with the top of rim pointing downwards in context 3, the uppermost fill of the re-cut and therefore the final deposit of the feature. This suggests that an upturned Urn burial may have been placed in the ditch, but	Bronze Age (also Late Neolithic, Iron Age, Early Medieval period)	No	Excavated

Licence No.	Site Type	Description	Date	Within masterplan area	Site Status
		which may have succumbed to damage through more modern agricultural practice. Based on the radiocarbon results and specialist reports this site would appear to represent an area of multi-phase human activity and/or settlement extending from the late Neolithic / Bronze Age through the Iron Age into the Early Medieval period, with representative artefactual or dating evidence for each period.			
04E0705	Complex of pit features	Found during testing. Two smaller oval pits contained a single deposit each, a third slightly larger pit contained two deposits, and the fourth feature was a larger oval pit containing four deposits, and with a single stake-hole and a small oval single-deposit pit in the base. The features were roughly equidistant from each other, in a rectangular setting, as if four corners of a structure, for instance. There was no evidence, however, to suggest that any of the features were structural. The site lies close to the southern edge of an east - west esker, and faces an area of marshland. The original functions are therefore unclear, but ultimately, they became repositories for waste. Radiocarbon dated to Bronze Age.	Bronze Age	Yes	Excavated
04E0706	Pit	Found during testing. Situated on relatively flat pasture towards the crown of a southeast-facing slope, at the eastern end of an east - west esker. Comprised a single north - south orientated oval pit feature containing two fills, and with heavy oxidisation of the edges denoting intense burning <i>in situ</i> . This site was interpreted as an isolated kiln-type feature. Radiocarbon dated to Early Medieval period.	Early Medieval period	No	Excavated

14.3.7 Architectural Heritage

There are no structures recorded within the proposed development site on either the Record of Protected Structures (RPS) of Dublin City Council or on the National Inventory of Architectural Heritage (NIAH).

The nearest structures of built heritage interest as listed in the National Inventory of Architectural Heritage (NIAH) are located in Baldoyle village, 1.5km southeast, and are all 19th to early 20th century in date, including the Catholic Church, two convents and several houses (NIAH refs. 11358039 to 11358043). Of these, the church, a thatched house and an early 20th century former Christian Brother Retirement Home are protected structures (RPS 544, 545 & 795).

The surrounding area is particularly notable for the survival of houses dating from the 17th to 19th centuries; large estates or demesnes, which took advantage of the good agricultural land in the area, were a later feature of the Dublin landscape, and many of the houses associated with them remain. Some archaeological remains were incorporated as design features when the estates were landscaped during the 18th and 19th centuries, while many others were levelled for land improvements. Today, the area is characterised by housing developments, interspersed with the open tracts of land surviving from the estates.

Stapolin House

The site of the former Stapolin House (now demolished) is located 500m east of the proposed development lands in the neighbouring townland of Stapolin.

There were several such estate houses or sites of large houses in the surrounding environs of the proposed development, such as Talavera House to the south. The first edition of the OS six-inch maps, dating to 1843, shows Stapolin House for the first time (Figure 14.6). It is depicted as a relatively large house approached from Grange Road by a long, tree-lined avenue which is still present in the landscape today. The house itself appears to have had two walled enclosures/gardens to the north. There is also a long, partly tree-lined vista or pathway that extends eastwards before turning north; this pathway links the house to gravel and sandpits and is partly preserved within Baldoyle racecourse. To the north of the house, a tree-lined boundary consisting of mature Sycamores is shown on both the 1843 and 1906-9 six-inch editions of the OS. Also shown on both maps is a tree-lined field to the south of the house. Although simple, this does represent a significant landscaping effort for what was otherwise a relatively modest country residence. On the 1906-9 OS six-inch edition map, a lodge is depicted adjacent to the Grange Road at the entrance of the avenue that leads to the house. Along with the main house, a number of outbuildings and structures are shown.

14.3.8 Cultural Heritage

The Grange / Stapolin townland boundary is located to the east of the proposed development site. A small portion of this boundary (approximately 100m) was originally located west of the Dublin-Belfast railway, on the southeastern extent of the study area. This boundary was moved following the opening of the railway to the east of the tracks. Part of this former course would have been along the southeastern boundary of the proposed development site, but no trace survives given the surrounding development and surfaces.

A footpath was noted in historical mapping of the proposed development site (See Section 14.3.5.2; Figure 14.6). The footpath was gone by the time of the Second Edition 1906 survey, and no trace remains within the existing environment. The former field pattern is also evident within historical mapping, but all former field boundaries within the development site have been removed previously.

14.4 Characteristics of the Proposed Development

The project comprises 15 blocks totalling 1,950 apartments with c.22,727.5sq.m. of commercial/retail development. It is described thus, as per the planning application:

The lands subject to this application form part of a wider masterplan development proposal for Clongriffin which provides for a total of 1,950 residential units and c.22,727.5sq.m. of commercial development. The masterplan lands are divided into three separate planning applications, in accordance with the legislative provisions of the SHD process, such that two of which are SHD applications whilst the third application is being lodged to Dublin City Council.

The proposed 1,950 residential units and c.22,727.5 sq.m. are provided across 15 no. Blocks (Blocks 3, 4, 5, 6, 8, 11, 13, 14, 15, 17, 25, 26, 27, 28 & 29) which range in height and with a mix of 715 no. 1 bed units, 49 no. studios, 1,073 no. 2 bed units and 113 no. three bed units. Of the 1,950 units proposed, 1,130 units are proposed as Build to Rent units with 820 units proposed as Build To Sell/Social/Private Tenure units. The overall 3 no. applications also provide for 22,727.5 sq.m. of commercial development including c. 30 no. retail units, 10 floors of offices, 1 no. community room, 1 no. men's shed, 3 no. creche facilities, 1 no. 8 screen cinema, 1 no. commercial gym, 7 no. cafes/ restaurants, in addition to the 4,335.1 sq.m. of residential support amenities/facilities (e.g. residents meeting rooms, resident's gym, resident's cinema room, etc.) proposed across all blocks. The development also includes car parking, bicycle parking, landscaping including playgrounds, public open space parks, utilisation of existing infrastructure and all associated works necessary to facilitate the development.

14.5 Potential Impact of the Proposed Development

14.5.1 Archaeology

The archaeological potential within the masterplan area and its immediate environs has been realised and fully addressed through the extensive archaeological investigations that took place in 2003/2004 (discussed above in Section 14.3.6).

A total of 17 archaeological sites were uncovered, comprising of burnt mounds, pits and hearths associated with domestic and craft / quasi industrial activities, ritual sites (a ring-ditch and an isolated cremation) and an early medieval ringfort. Fifteen of these sites were fully excavated; the remaining two were only partly recorded, having been accidentally destroyed before excavation could take place. A further two sites initially identified during topsoil stripping and testing were subsequently excavated and shown to be of no archaeological significance.

The proposed development will therefore create no further impact on archaeology.

14.5.2 Architecture

There are no built heritage assets in or adjacent to the proposed development lands and there will consequently be no impact to architectural heritage.

14.5.3 Cultural Heritage

While the former course of the townland boundary and a footpath were noted in historical mapping within the proposed development lands, these were not noted in previous archaeological investigations and there are no existing remains of these features. In

addition, the former field boundaries have also been removed in previous works. There will therefore be no impact to cultural heritage.

14.6 'Do Nothing' Impact

No 'Do Nothing' impact is predicted.

14.7 Avoidance, Remedial & Mitigation Measures

There are no further archaeological, architectural or cultural heritage considerations in relation to the masterplan lands.

All recommendations are subject to the approval of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

The developer will make provision to allow for and fund whatever archaeological work may be required at the site and the post excavation requirements in accordance with the National Monuments Legislation (1930–2004; Appendix 1).

14.8 Monitoring

No monitoring is required for the proposed development. The archaeological potential within the masterplan area and its immediate environs has been realised and fully addressed through the extensive archaeological investigations that took place in 2003 / 2004 (as per Section 14.3.6).

14.9 Reinstatement

No reinstatement will be required in relation to the proposed development.

14.10 Interactions

No interactions are predicted in relation to the proposed development.

14.11 Difficulties Encountered in Compiling

No difficulties were encountered in compiling this report.

14.12 References

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Online Resources:

www.excavations.ie

www.libguides.ucd.ie

www.osi.ie

www.heritagemaps.ie

<http://downsurvey.tcd.ie>

Chapter 15 – Interactions

15.1 Introduction

All environmental considerations can be interlinked such that interrelationships exist on varying levels. Across the proposed Project and study area, interactions can occur in multiple interfaces. The construction, operational and cumulative impacts of the proposed Project have been assessed within each chapter of this EIAR and this chapter now considers the potential interactions between all environmental factors.

The matrix incorporated in Table 15.1 below, inter-relates Chapters 4.0 to 14.0 of the Environmental Impact Assessment Report to the various impacts referred to in the relevant Environmental Impact Assessment Regulations.

15.2 Interactions

Listed below are the interactions between the various significant environmental impacts generated by the proposed development:

15.2.1 Population and Human Health

Population and Human Health

The human being content of this proposed Project will impact on the existing environment in terms of the provision of new housing, new commercial facilities, new community services and indeed new recreational facilities for the area.

Chapter 4 of this EIAR found that the impact on human beings as a result of the proposed Project will be positive in the general area of the proposed development during the construction and operational phases. The scheme will provide a high-quality residential development required for the completion of Clongriffin town centre in order to meet demand deriving from predicted population increases, on zoned lands which are serviced and highly accessible to public transport links. The Project provides for retail and commercial development which will provide significant additional employment to the area and additional recreational and amenity facilities to increase the quality of the local environment for human population. The overall interaction will be a positive contribution to the critical mass needed to maintain and further expand typical urban facilities both in Clongriffin town centre and those local to the lands. No potential significant impact on population and human health are predicted.

Biodiversity

While catering for a predicted increase in population, the proposed Project will contribute to a population increase, which may place additional pressure on the natural environment. The key environmental interaction with biodiversity is water. A series of mitigation measures are proposed in the Water Chapter of this EIAR document to ensure the quality (pollution and sedimentation) and quantity (surface run-off and flooding) is managed appropriately in accordance with best practice. No potential significant impact is envisaged.

Land, Soils & Geology

This EIAR has found that provided that appropriate protective measures are implemented whilst construction and site excavation works are ongoing, and during the transportation of soil and spoil, any potential impacts on soils and geology in the area will be temporary and limited in extent, and as such no significant adverse impacts on the soils and geology of the subject lands are envisaged.

There is potential for dust generation during construction works which under dry conditions could lead to localised dust impacts for the properties proximate to the subject site. However, the implementation of the planned on site management controls and mitigation measures, as set out within the relevant chapters, will ensure that no significant adverse impacts will occur for adjoining local residents or occupants.

Air Quality

Dust emissions may arise during the construction phase. In order to ensure that any dust nuisance is minimised, a series of mitigation measures have been set out in chapter 8 including a dust minimisation plan which will be prepared as part of the Environmental Management Plan based upon the industry guidelines in the Building Research Establishment document entitled 'Control of Dust from Construction and Demolition Activities'. If the construction contractor adheres to good working practices and dust mitigation measures, the levels of dust generated are assessed to be minimal and are unlikely to cause an environmental nuisance.

No project specific mitigation measures have been identified for the operational phase of the development but emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. A mobility management strategy will be implemented to promote a modal shift to more sustainable forms of transport. In addition, the predicted and promoted move to more sustainable energy sources for vehicles (i.e. phasing out of diesel and petrol) and the reduction in the dependency on the use of the car, the impact will be significantly less than the outlined predictions in chapter 8. Emissions arising as a result of any traffic associated with the proposed Project is unlikely to impact on air quality standards for the human population.

Noise and Vibration

There will be some localised temporary adverse impacts in relation to noise during the construction phases of the development. However, these will be localised during construction only and can be mitigated through the use of appropriate noise control procedures. The implementation of these procedures will reduce noise impacts on the surrounding area.

The main potential noise source that would be evident during the operational phase of the development would be that of increased road traffic noise associated with the proposed Project. Specifically, sources would be likely to include but not be limited to the following: vehicular traffic in and out of Clongriffin by residents, and general commercial activities. This EIAR has found that the cumulative impact of noise arising from onsite noise sources and road traffic noise associated with the proposed Project will not give rise to a significant noise nuisance in the area.

Landscape and Visual Amenity

The provision of significant quantities of public and private open space within the proposed development will be of benefit to future and existing residents of the wider area. Therefore, the significance of the landscape and visual impact of the proposed development will be positive as the landscape and environs matures over time.

Landscape & visual effects may impact on residential properties located near the proposed development. Likely landscape and visual effects will be most pronounced during the construction and initial operation stages causing initial visual impacts, after which landscape mitigation measures will be increasingly effective in integrating the proposed development within the landscape and in reducing landscape and visual impacts on properties.

Negative temporary visual impacts will arise for residents located close to or adjoining the construction boundary. Landscape and visual mitigation measures have been utilised in the design of the proposed development to reduce impacts on property. A Construction Management Plan shall be implemented for the construction of the proposed Project. Specific mitigation measures include the provision of hoarding around construction compounds during the construction phase for properties particularly impacted by the works.

Operational phase landscape & visual impacts will arise from the built physical presence of the roads and streets. Mitigation measures will include general measures such as development of the public realm and extensive connections to existing developments. Planting a range of trees and species will be carried out which shall benefit the resident and working population.

Transportation

The proposed development provides for pedestrian and cycle routes as well as road upgrades and as such this will result in a positive interaction between the human population and transportation as the proposed Project will facilitate the use of sustainable forms of transportation.

The Construction Management Plan will include construction traffic management measures for vehicular, cycle and pedestrian traffic which will be implemented in the area to minimise disruption arising as a result of traffic generated during the construction phase.

In conjunction with the upgrades to the internal road network where required, the surrounding junctions have been assessed and this concluded that there will be enough capacity to cater for the entire development of Clongriffin. The impact of the increased traffic volumes that will be generated in the area following the construction of the development is not expected to lead to significant congestion as the road network will have sufficient capacity to cater for the proposed development.

Material Assets

During the construction phase, the availability of water supplies to the subject lands and during the connection of water supply and wastewater services has the potential to impact of the local surface water. There are also implications for the local population if these services are disrupted during the construction phase.

15.2.2 Biodiversity

Water

The key environmental interaction with biodiversity is water. A series of mitigation measures are proposed in the Water Chapter of this EIAR document to ensure the quality (pollution and sedimentation) and quantity (surface run-off and flooding) is managed appropriately in accordance with best practice. No potential significant impact is envisaged.

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. In this instance, no further monitoring is required.

15.2.3 Land, Soils & Geology

Water

The depth and permeability of the underlying clay within the subject site will reduce the risk of accidental spillages that may occur during the construction works from penetrating the ground and damaging deeper subsoils and the water table. With the protective measures noted above in place during excavation works, any potential impacts on soils and geology in the area will not have significant adverse impacts. No significant adverse impacts on the soils and geology of the subject lands are envisaged.

On completion of the construction phase and following replacement of topsoil and implementation of a planting programme, no further impacts on the soil are envisaged. SuDS measurements, including permeable paving and infiltration drains, will assist with cleaning surface water runoff while replenishing the natural ground water table.

Monitoring during the construction phase is recommended as set out within chapter 6 of this EIAR. During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning should be incorporated into the safety file/maintenance manual for the development. No significant adverse impacts are envisaged.

15.2.4 Traffic and Transport

Air Quality

Emissions from motor vehicles accessing the proposed development and using the proposed new roads within the proposed Project are not anticipated to have a significant adverse impact on air quality in the area.

Traffic-related air emissions during the operation phase may generate higher quantities of air pollutants when compared to the existing traffic volumes. These impacts are addressed as a cumulative impact based on the traffic predicted for the wider Clongriffin Area. Emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. A mobility management strategy will be implemented to promote a modal shift to more sustainable forms of transport. In addition, the predicted and promoted move to more sustainable energy sources for vehicles (i.e. phasing out of diesel and petrol) and the

reduction in the dependency on the use of the car, the impact will be significantly less than the outlined predictions in chapter 8. Emissions arising as a result of any traffic associated with the proposed Project is unlikely to impact on air quality standards for the human population.

The cumulative impact of traffic related pollutants on air quality relates to a “negligible impact” on air quality as a result of operational traffic.

Noise and Vibration

Temporary minor increases in noise may be generated as a result of construction traffic. A Traffic Management Plan will be implemented to minimise disruption arising as a result of traffic generated during the construction phase.

No noise monitoring is deemed necessary for the operational phase however noise monitoring will most likely be a requirement as directed by the local authority for the construction phase based on the local authorities imposed limits on the hours of operation and noise limits. No vibration monitoring is deemed necessary for both the operational and construction phase.

Climate

The impact or increase in CO₂ levels mainly contributed to an increase in operational (heating/hot-water) use and road traffic use are deemed a moderate increase based on current construction standards and vehicle emissions and in line with a general increase in housing accommodation.

However if one was to apply the new Part L 2019 in combination with the proposed city district heating system and the new government’s policy for climate change phasing out petrol & diesel cars in the next 10 years and promoting the use of public transport and non motorised transport the actual CO₂ impact will be a marginal increase on the overall development in Clongriffin.

The development will have no effect on climatic conditions that would be sufficient to affect animal populations on or in the vicinity of the site.

Traffic-related air emissions during the operation phase may generate higher quantities of air pollutants when compared to the existing traffic volumes. These impacts are addressed as a cumulative impact based on the traffic predicted for the wider area. The cumulative impact of traffic related pollutants on air quality at the equates to a “negligible impact” on air quality as a result of operational traffic.

15.2.5 Material Assets

Water

During the construction phase, the availability of water supplies to the subject lands and during the connection of water supply and wastewater services has the potential to impact on the local surface water. There are also implications for the local population if these services are disrupted during the construction phase. During the operational phase, the water supply and wastewater services will have a potential interaction with the available water supply and the potential emissions to the water cycle.

Air Quality

The development and installation of the material assets (services) during construction has the potential to impact on the local air quality but this will be temporary and not significant, as further detailed within chapter 11 of this EIAR.

Population and Human Health

The construction phase will likely have a temporary impact on the existing settlement in the vicinity of the subject lands. There may also be some slight and temporary impacts to the existing population which may arise during the construction phase.

15.2.6 Landscape and Visual Amenity

Biodiversity

The provision of substantial public open space (pockets parks and landscape planting proposed) will provide habitat space for range of plant types and will encourage the movement of the species throughout the site.

The Project has been developed to increase the range and number of plants in Clongriffin. Public and Communal Open spaces have been selected to plant trees and pollinator shrubs. This shall have a positive effect on landscape quality visual amenity and biodiversity. Landscape mitigation proposals have been developed to be complementary with the ecological requirements. These include planting of native, pollinator naturalised and indigenous species to provide new habitat areas. The hierarchy of street tree planting shall help in reconnecting ecological networks resulting in a positive effect on biodiversity and a positive long-term impact for Clongriffin.

The inner part of the estuary and wetlands of Baldoyle Bay are protected as a Special Area of Conservation (SAC). It was declared a Statutory Nature Reserve in 1988. Under the Ramsar Convention, the wetlands have been designated as of international importance. They support several habitats that are listed on the EU Habitats Directive. The proposed development shall aid the connection to a proposed park, which includes these lands which is in the county of Fingal.

Land, Soils & Geology

The construction of the proposed development will involve excavation of existing soils, primarily soft in nature, with spoil material being placed in material deposition areas within the land take. The development of the proposal, both horizontal and vertical, takes account of landscape and visual impacts on residential properties.

Water

As a result of the redistribution of traffic, there is a risk to water quality through pollution and spillage accident risk. The construction phase of the project has the potential to impact on groundwater and habitats. Mitigation measures have been put in place to avoid and/or minimise these effects. During the operational stage, sealed drainage systems will be used and storm water drainage will be suitably treated prior to discharge. The SUDS (Sustainable Urban Drainage System) proposed will be a significant improvement over the traditional drainage regimes and with the distribution of the traffic onto the new roads is likely to result in an improvement during the operation stage for hydrogeology. The SUDS proposed aim is to utilise a

two-step intervention of surface water, cleaning and temporary storage, prior to release to the system.

Traffic and Transport

Traffic in the proposed development will have landscape and visual effects on properties in proximity to the proposed development. These effects were taken into account during design development of the Proposal. Mitigation measures have been proposed, in the form of landscape planting, street trees, width of new streets and roads. The organised planting of street trees along roads and parking spaces, all provide a new environment and sense of place. The new traffic from the existing Hole in the Wall road, R139 and Marrsfield Road through the development provides the opportunity to propose an organised and varied design that shall provide a positive landscape and visual impact along the proposed roads and streets. This shall reduce the visual impact of Traffic.

15.3 Summary

The EIAR has identified potential for interactions between a range of factors identified in Table 15.1. These interactions require the implementation of suitable mitigation measures to ameliorate the impact of the development on the environment. This EIAR has found that subject to the full implementation of the various mitigation measures specified by the EIAR team, the development will have no significant negative impact on the environment.

No.	Heading	Population and human health	Biodiversity	Land, Soils & Geology	Water	Air	Noise	Climate	Material Assets	Landscape and Visual Amenity	Transport	Cultural/ Heritage
4.0	Population and Human Health	✓		✓		✓	✓	✓	✓			
5.0	Biodiversity	✓			✓			✓		✓		
6.0	Land, Soils & Geology	✓	✓		✓					✓		
7.0	Water		✓	✓					✓	✓		
8.0	Air	✓							✓		✓	
9.0	Noise	✓									✓	
10.0	Climate					✓					✓	
11.0	Material Assets	✓		✓	✓						✓	
12.0	Landscape and Visual Amenity	✓		✓								
13.0	Transportation	✓				✓	✓	✓		✓		
14.0	Cultural, Archaeological and Architectural Heritage											

Chapter 16 – Mitigation Measures

16.1 Mitigation Measures

The chapters contained within this Environmental Impact Assessment Report have been ordered in a grouped format by their relevant topic. This chapter summarises the mitigation measures proposed. For clarity, the EPA Guidelines (2017) define mitigation measures as those:

“measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements.”

Each chapter contains detailed mitigation measures and in order to provide a comprehensive overview of the full range of mitigation measures discussed, each chapter of this EIAR should be referred to in conjunction with this summary chapter.

The mitigation measures should be implemented by way of planning condition imposed on any grant of planning permission by the competent planning authority. Mitigation measures shall be managed by the appointed contractors for the development of the proposed Project and also by the developer and landowners at the operational phase.

16.2 Population and Human Health

Population

No remedial or reductive measures are proposed with reference to population. The construction phase of the development will have a negligible or neutral impact on the population. The population increase predicted as a result of the operational stage of the proposed development ties in with broader trends in the area and the development will provide for this increase, therefore resulting in a positive impact on population.

There is no requirement for population monitoring.

Health and Safety

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise, traffic and air quality are set out in relevant chapters of this EIAR.

No mitigation measures are required in respect of human health during the operational phase of the development.

Through the implementation of remedial and reductive measures that have been set out in chapter 4, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

In terms of population and human health, measures to avoid negative impacts have been a key consideration in the design evolution of the buildings and overall layout of the proposed Project. Conditions will be attached to any grant of planning permission to ensure compliance in this regard. Building Regulations will also be adhered to during the construction phase to ensure a fully compliant development is constructed.

Health & Safety requirements, which are site specific to the proposed Project, will be carried out by the Project Manager on site.

Impacts from Air Quality, Noise and Vibration, Climate, and Traffic and Transport and monitoring measures in this regard will be addressed in the relevant chapters of this EIAR.

Employment

No adverse impacts on employment are predicted during the construction or operational phase of the development. No remedial or mitigation measures are considered necessary. The predicted impact of the proposed development will be the same as that set out for potential impacts.

There is no requirement for economic monitoring.

Land Use

No remedial or reductive measures are proposed with reference to land-use. The predicted impacts of the construction phase of the development is the same as that set out under the potential impacts of the construction phase of the development and are not anticipated to be significant. Furthermore, all impacts will be temporary in nature. The predicted impact is the same as that set out under the potential impacts of the operational phase of the development.

There is no requirement for land-use monitoring.

Community Infrastructure

Measures to mitigate potential impacts arising from the construction phase of the proposed development such as noise are set out in relevant chapters of this EIAR.

The proposed development, in conjunction with the full implementation of the overall Clongriffin-Belmayne LAP and masterplan vision for the lands will have a positive impact on the local community and will positively contribute to the vitality and viability of the local area, as well as passive amenity and open space provision

Through the implementation of remedial and reductive measures that have been set out above, the impacts of the construction phase of the development are not anticipated to be significant. Furthermore, all impacts will be temporary in nature.

The predicted impact is the same as that set out under the potential impacts of the operational phase of the development.

There is no requirement for community monitoring.

16.3 Biodiversity

The Biodiversity Chapter identifies measures including avoidance, reduction and constructive mitigation measures as set out in Section 4.7 of the Development Management Guidelines. Under the EIA Directive, where significant negative effects are predicted to arise from a project then mitigation measures are required.

This chapter has identified no impacts that were assessed as significant and therefore mitigation is not required. All birds' nests and eggs are protected under the Wildlife Act, regardless of their location or the date, and so it is recommended that site workers be notified of the legal requirements in this regard. Should an active nest be encountered then works in that area should cease until chicks have fledged. A nest with eggs can only be destroyed under licence from the National Parks and Wildlife Services.

A number of the identified impacts can also act cumulatively with other impacts from similar developments in this area of Dublin. These primarily arise through the urbanisation of the city's hinterland as provided for by land use zoning and include: loss of habitats and species, particularly hedgerows; pollution from surface water run-off and pollution from wastewater generation.

This proposed development can be viewed alongside the permitted construction of a series of project phases in Clongriffin and the likely future development of all the lands within the local area plan area. This will see the conversion of all these lands from open to a combination of built and amenity space. This process can impact upon species in a cumulative manner however, given the already urban environment in this location, this is not likely to impact negatively upon species already present.

The key environmental interaction with Biodiversity is water. A series of mitigation measures are proposed in the Water Chapter of this EIS document to ensure the quality (pollution and sedimentation) and quantity (surface run-off and flooding) is of an appropriate standard.

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. Section 5.8 summaries the likely impacts arising from this project. In this instance, no further monitoring is required.

16.4 Land, Soils & Geology

Mitigation Measures proposed as part of the construction phase of the development as they relate to Lands, Soil and Geology include:

- To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels and minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation. Surplus subsoil and rock that may be required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. This is outlined in Waterman Moylan's Preliminary Construction Management Plan, which accompanies this submission, and which will need to be updated and implemented by the development's main contractor during the construction phase.
- In the case of topsoil careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly.
- It is important that topsoil is kept completely separate from all other construction waste as any cross-contamination of the topsoil can render it useless for reuse.

- It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.
- If topsoil is stored in piles of greater than two metres in height the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.
- Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.
- Silt traps, silt fences and tailing ponds will also need to be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the construction phase.
- Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders' waste materials, etc., and so as to preserve the materials for future use as clean fill.
- The provision of wheel wash areas at the exit to the development as necessary will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis. All trucks on the public roads will carry up to a maximum of ten cubic metres of material to prevent spillage and damage to the surrounding road network.
- Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.
- Appropriate storage and bunding measures will be implemented throughout the construction stage to prevent contamination of the soil and groundwater from oil and petrol leakage from site plant. Refuelling will be restricted to allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.
- Soil samples taken from the site during the site investigations in March and April 2016 showed no evidence of contamination. However, any contaminated soil that may be uncovered on the site will be identified and disposed of to an appropriate waste disposal facility.
- On foot of Waterman Moylan's accompanying Preliminary Construction Management Plan, a Construction Management Plan, Traffic Management Plan and Waste Management Plan will be implemented by the contractor during the construction phase to control the above remedial measures.

With the protective measures noted above in place during excavation works, any potential impacts on soils and geology in the area will not have significant adverse impacts.

No significant adverse impacts on the soils and geology of the subject lands are envisaged.

Operational Phase:

- On completion of the construction phase and following replacement of topsoil, a planting programme will commence to prevent soil erosion.
- SuDS and filtration devices are proposed to be provided as part of the development. These will help to remove pollutants from rainwater runoff.
- Part of the SuDS proposal for this site is also to encourage infiltration of surface water to the ground. This infiltration will assist with natural ground water replenishment which is currently occurring on the lands.

On completion of the construction phase and following replacement of topsoil and implementation of a planting programme, no further impacts on the soil are envisaged.

SuDS measurements, including permeable paving and infiltration drains, will assist with cleaning surface water runoff while replenishing the natural ground water table.

Monitoring during the construction phase is recommended, in particular in relation to the following:

- Adequate protection of topsoil stockpiled for reuse.
- Adequate protection from contamination of soils for removal.
- Monitoring of surface water discharging to existing watercourses, ditches and the existing surface water drainage system.
- Monitoring cleanliness of the adjoining road network.
- Monitoring measures for prevention of oil and petrol spillages.
- Dust control by dampening down measures close to the boundaries of the site, when required due to unusually dry weather conditions.

During the operational phase, the surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning should be incorporated into the safety file/maintenance manual for the development.

16.5 Water

The potential impacts identified in Chapter 7 Water are resolved under the mitigation measures set out below:

Construction Phase:

- The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.

- The Construction Management Plan will also utilise sedimentation controls, including silt traps, tailings ponds and silt fences during the construction period.
- All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements. This will reduce the possibility of any cross connections being constructed going forward in the proposed subject Blocks.

Operational Phase:

- The increased runoff from the site will be attenuated within the Clongriffin regional attenuation pond (6,400m³ attenuation storage), with the discharge rate to the Mayne River limited to the greenfield runoff rate. In addition, the significant SuDS devices, outlined in Section 7.3.4, proposed with each block will significantly reduce and slow down the rate of surface water runoff from each. This will therefore reduce the peak flows in the downstream system during major storm events. Gullies and the hydrobrake shall be regularly maintained to avoid blockages.
- The SuDS treatment train will also treat the surface water discharging to the Mayne River, removing pollutants and hydrocarbons from the surface water runoff. Maintenance of these SuDS devices will be required to ensure that they continue to treat the surface water as designed.
- In relation to the foul water cross connections from the previously existing Clongriffin development, a significant investigation was undertaken by the Applicant to identify and reinstate all known cross-connections. Multiple cross connections were found and reinstated between 2015 and 2018, with the most recent investigation and reinstatement works completed in September 2018.
- To date, cross connections that drained foul water from up to 100 residential units to the surface water system have been located and re-connected to the foul water system.
- Recent laboratory testing of water samples taken from the attenuation pond in May 2019 show that indicators of foul water presence are now below the allowable European and EPA limits as set out in The EPA's "Parameters of Water Quality" (2001) for the highest quality A1 category. Waterman Moylan Consulting Engineers subsequently met with representatives from Dublin City Council's Drainage and Environmental departments on 14 August 2019 to inspect the improved pond, which had no odours or visual evidence of foul water contamination.
- A report outlining the improved water sampling results was issued to Dublin City Council Drainage Division in July 2019.

During the construction phase of this project some short-term negative impacts as identified above may result. However, due to the implementation of the proposed remedial and reductive measures, the impact of the proposed development during the construction stage will be minimised and no significant long-term impacts will result from construction works.

With the implementation of the SuDS treatment train and attenuation pond outlined in section 7.3.4 of this EIAR, the surface water quality and quantity discharging to the Mayne River will be treated and attenuated to the greenfield runoff rate, in

accordance with the requirements set out in the GDSDS, and no significant adverse impacts are envisaged.

16.6 Air Quality

In order to mitigate dust emissions during the construction phase, a dust minimisation plan will be prepared as part of the Environmental Management Plan based upon the industry guidelines in the Building Research Establishment document entitled 'Control of Dust from Construction and Demolition Activities'. This will include measures such as:

- Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud/aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- All vehicles exiting the site to make use of a wheel wash facility prior to entering onto public roads to ensure mud / other wastes are not tracked onto public roads. Wheel washes will be self-contained systems that do not require discharge to water bodies.
- Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind.
- Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage.
- The contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum.
- The construction Contractor will be required to monitor monthly dust deposition levels for the duration of construction for comparison with the guideline of 350mg/m²/day (for non-hazardous dusts). This monitoring should be carried out at a minimum of four locations at sensitive receptors. Where dust levels are measured to be above this guideline the mitigation measures in the area must be reviewed as part of the dust minimisation plan.

If the construction contractor adheres to good working practices and the dust mitigation measures, the levels of dust generated are assessed to be minimal and are unlikely to cause an environmental nuisance.

As outlined in the DMRB assessment, with the scheme operational, compliance with all the relevant limit values is predicted to be achieved. Also a 'Travel Plan' will be implemented for the development by Waterman Moylan.

The Travel Plan aims to promote sustainability, enhance public transport with regular and ongoing increases in the public transport capacity, both road and rail and to reduce dependency on the use of the private car for the journey to and from Clongriffin. The developer for the subject site will appoint a Co-ordinator to ensure it is managed in a comprehensive way.

No monitoring is deemed necessary due to the negligible impact of the development on air quality.

16.7 Noise & Vibration

The assessment of noise levels arising from operations at the subject site has shown that no mitigation is required for either noise or vibration at the site during the operational phase of the development.

DKP do not anticipate the requirement of any remedial measures but list the following recommendations mainly for the construction sites;

- Ensure that the local authority guidelines or planning directives to noise levels and operational times are adhered to.
- Prepare an operational plan with regards to limiting noise nuisance.
- Ensure all construction vehicles and plant are regularly maintained including any noise
- control measures such as attenuators, filters etc.
- Limit any construction noise spreading to neighbouring site by erecting temporary noise barriers (site boundary hoarding).
- Schedule particular high-level noise activities for times when increased noise levels are less sensitive or notify neighbouring residents or any sensitive sites.

No noise monitoring is deemed necessary for the operational phase however noise monitoring will most likely be a requirement as directed by the local authority for the construction phase based on the local authorities imposed limits on the hours of operation and noise limits.

No vibration monitoring is deemed necessary for both the operational and construction phase.

16.8 Climate

CO2 reduction measures to minimise impacts from transport during the construction phase include the following:

- Local sourcing of construction materials such as the recycling of material from excavations for reuse on site.
- Implementation of the Traffic Management Plan to minimise congestion and queuing, reduce distances of deliveries and eliminate unnecessary loads.
- Reducing the idle times by providing an efficient material handling plan that minimises the waiting time for loads and unloads. Reducing idle times could save up to 10% of total emissions during construction phase.
- To turn off engines when machinery is not required to operate in the relative short term unless this is an issue for security or functionality reasons.
- Periodic maintenance of plant and equipment.
- Technical inspection of vehicles to ensure they will perform the most efficiently.

Embodied carbon dioxide is the amount of carbon dioxide a material emits to the environment per unit (weight / volume) including its exploration, manufacturing process, transport to site, its 60 year use and end-of -life requirements also known as the Cradle-to-Grave impact. Embodied carbon dioxide is attributed to all materials to be used on site and by minimising or avoiding certain materials the impact on CO₂ emissions can be reduced by:

- Increasing the use of locally available recycled materials.
- Reducing the use of materials with a high embodied CO₂ element.
- Increasing the use of “green” concrete (Granulated Blast Furnace Slag to replace Portland cements as the latter has significant embodied CO₂).
- Reducing the use of metals. Metals generally contain the highest embodied CO₂ element of all materials mainly due to their exploration and manufacturing processes.

Under the new building regulation requirements (NZEB), in not so many words, the electrical and thermal energy systems in buildings must be designed and constructed to deliver at least a 70% primary energy reduction and a 60% CO₂ reduction over the Part L reference dwelling and have at least 20% primary energy equivalent energy coming from on-site produced renewable energy.

To achieve these reductions to following outline specification can be applied:

- Ground floors: $U \leq 0.110 \text{ W/m}^2\text{K}$
- External walls: $U \leq 0.130 \text{ W/m}^2\text{K}$
- Curtain walling (commercial): $U \leq 1.20 \text{ W/m}^2\text{K}$
- Party walls: $U = 0.0 \text{ W/m}^2\text{K}$ (solid party wall)
- Roofs: $U \leq 0.08 \text{ W/m}^2\text{K}$
- Window & frame: $U \leq 0.80 \text{ W/m}^2\text{K}$, Solar transmittance ≤ 0.66
- External (unglazed) door & frame: $U \leq 1.0 \text{ W/m}^2\text{K}$
- Cold bridging: $U \leq 0.07 \text{ W/m}^2\text{K}$ special construction joints applied.
- Thermal mass: TP250
- Ventilation: Humidity controlled natural ventilation / intermittent extracts or full MVHR.
- Air tightness: Design assumption $\leq 3.0 \text{ m}^3/\text{m}^2\cdot\text{h}$
- Lighting: 100% LED
- Controls: Time clock/ thermostatic control for each separate heating/hot-water zone
- Circulation pumps: Class A variable speed pump
- Heating / hot-water system: Space heating systems with buffered hot-water (calorifiers)
- Heating / hot-water energy source: City District Heating Network (CDHN)
- Renewable energy: CHP renewable energy element of CDHN.
- Cooling system / source (commercial only): City District Heating Network (CDHN) absorbent cooling or refrigerant cooling with cop (EESER) ≥ 3.8

Transport emissions personal and delivery vehicles are being reduced through EU and national initiatives and regulation on a continuous basis. CO₂ emissions from cars are regulated through EU legislation which sets statutory maximum emission targets for new vehicles currently set to achieve an average of 95 grams of CO₂ per km in 2022.

The following is applied to lower CO₂ emissions as a result of transport:

- Encourage the use of electric cars*.
- Encourage the use of new low CO2 petrol cars.
- Utilise available fiscal measures for the use of electric vehicles or renewable fuels.
- Design and plan the overall project in such manner as to encourage walking and cycling.
- Design and plan certain required facilities like schools, medical centres, shopping areas recreational spaces, within the development to lower the need to use motorised vehicles.
- Design and plan public transport routes throughout the development to encourage the use of public transport.

The impact or increase in CO2 levels mainly contributed to an increase in operational (heating/hot-water) use and road traffic use are deemed a moderate increase based on current construction standards and vehicle emissions and in line with a general increase in housing accommodation.

However if one was to apply the new Part L 2019 in combination with the proposed city district heating system and the new government's policy for climate change phasing out petrol & diesel cars in the next 10 years and promoting the use of public transport and non motorised transport the actual CO2 impact will be a marginal increase on the overall development in Clongriffin.

16.9 Material Assets

All possible precautions shall be taken to avoid unplanned disruptions to any services or utilities during the construction phase of the proposed Project. It should be noted that a number of mitigation measures proposed in other EIAR chapters are also of relevance to Material Assets and should be referred to when reading this EIAR.

The construction phase mitigation measures includes avoidance, reduction and remedy measures as set out within the Development Management Guidelines document. The design and construction of the necessary service infrastructure will be in accordance with relevant codes of practice and guidelines. As a result this is likely to mitigate any potential impacts during the operational phase of the proposed Project. However, routine maintenance of the site services will be required from time to time, as such any mitigation measures will be advised by the relevant service provider.

A site-specific Construction and Demolition Waste Management Plan (C&DWMP) has been prepared to deal with waste generation during the construction phase of the proposed Project and is included as part of the application packs. This document was prepared in accordance with best practice guidelines. Operational waste management will be managed on a block by block basis by the management companies on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards. Please refer to the supporting respective management plan documents prepared by Liv Consult and Purple Property Management which are submitted as part of the application packs.

If unregulated, predicted impacts associated with the construction phase of the proposed Project would be expected to include potential disruption to local natural and human material assets resulting in both short-term and long-term impacts. The implementation of the mitigation measures set out in this chapter and other chapters

of this EIAR would ensure that there is unlikely to be significant residual impacts during the construction phase. Therefore impacts are likely to be temporary and neutral. During the operational phase, the impact to services and utilities is considered to be positive and permanent positive to all end users.

Prior to the operational phase of the proposed Project, all services/utility connections will be tested by a suitably qualified professional under the supervision of the service provider. The proposed Project water supply will be tested to the satisfaction of Dublin City Council prior to the connection to public potable water. Any monitoring of the built services required during the operational phase of the proposed Project will be as advised by the relevant service provider. The management of waste during the construction and operational phases of the proposed Project should be monitored to ensure compliance with best practice and relevant legislative requirements.

16.10 Landscape and Visual Impact

The mitigation measures to address the landscape and visual effects of the Proposed Development are indicated as follows:

- During construction, there shall be a phased programme of landscape works, that shall mitigate the impact of the proposed buildings in the landscape. An Environmental Management Programme of good husbandry will be undertaken to ensure environmental protection and that there is no debris, pollutants or otherwise that would damage the landscape.
- The landscaping proposals for this scheme shall be developed to form an integral part of the development. There are a number of measures that shall reduce the impact of this proposed development, extensive planting, retention of existing hedgerows and trees, development of pathways, seating areas and textured hard surfaces
- In the operational stage, the site will have established a landscape that shall be integrated around the street scape and apartment buildings. The planting will have matured and will be actively used by the residents and therefore having a positive visual impact on the public realm.
- The buildings shall be visually ameliorated by planting, trees and hedges. The landscaping shall reduce the visual impact of straight lines and hard surfaces, with extensive tree and shrub planting. There shall be a defensive planted buffer to the proposed apartments, the landscaping of the open spaces and communal gardens surrounding the buildings shall soften hard edges.
- An extensive landscape programme shall create the best landscape solution within this environment. The impact of the buildings shall be reduced through the planting of mature trees, shrubs and careful use of hard landscape material, both hard and soft.
- The car spaces and paths to the front to the streetscape shall be surfaced with high quality materials – increasing the texture in the environment – a further positive visual improvement. The organisation of the hard landscape elements with soft landscape shall provide an ordered and sustainable new landscape. The increased number and range of species of plant shall be an improvement on the existing plant species currently in Clongriffin, in terms of variety and in number. They shall replace the previous monoculture of grass

and replace with an increased range of pollinator species shall benefit the existing habitats.

- A Landscape Architect shall be appointed to oversee and monitor the project at construction & operational stage. They shall liaise with other project members in relation to any existing and proposed trees.
- The landscape architect shall overview all hard & soft landscape works and liaise with resident engineer, project team and contractor. The landscape architect shall also inspect the trees; however, most of the monitoring works shall be during and post civil construction stage. The landscape architect shall review and instruct on details of soft planting, trees, shrubs and of paving materials, walls & railings.
- During the operational stage, the landscape Architect & Arborist shall review the state of all planting and trees. The landscape architect shall review for period of 18 months, from practical completion of each stage the standard and quality of the materials and workmanship. A final certificate of completion shall be issued by the landscape architect in respect of this.

With regard to the cumulative impact of proposed development on landscape and visual amenity, the future development will take place on a partially developed site and will form part of the comprehensive redevelopment and rejuvenation of the existing development at Clongriffin. In this regard, the cumulative impact of the overall development is expected to be moderately positive.

16.11 Transport

Mitigation measures proposed to minimise the impact the proposed development will have on the surrounding area during the construction phase and operational phase.

It is proposed that a Construction Management Plan (CMP) would be prepared by the appointed contractor in order to minimise the potential impact of the construction phase of the proposed development on the safety and amenity of other users of the public road. The CMP will consider the following aspects:

- Minimise the volume of material removed from site by optimising the cut to fill requirements within the site;
- Segregation of waste material produced during the construction process to minimise the contamination or reusable fill material resulting from excavation on the site;
- Wheel wash to be provided for vehicles leaving the site when earthworks are being carried out during winter periods;
- Ensure that deliveries to the site and removal of spoil material from this site are restricted to off peak periods where possible and practicable.
- Optimise routes to be used by heavy vehicles and detail construction traffic forecast;
- Determine the working hours of the site;
- Facilities for loading and unloading and;
- Facilities to parking cars and other vehicles.

The Construction and Demolition Plan (CMP) enclosed with each application describes the proposed development and specifies the measures to be adopted to mitigate the impacts of construction including traffic management, hours of working, delivery times, the reduction of noise and dust, the reinstatement of roadways, the repair of damage to footways and the accommodation of worker parking.

The proposed Project is also accompanied by a Travel Plan/Mobility Management Plan which promotes best practise mobility management and travel planning at Clongriffin, to balance car use to capacity and to provide for the necessary mobility via sustainable transport modes. Travel management is a key operational feature in the provision of sustainable travel Infrastructure at Clongriffin. The management will implement the Travel Plan on an ongoing basis as the successor to the Mobility Management Plan, with the triple objectives of promoting sustainability, enhancing public transport and reducing dependency on the use of the private car for the journey to and from Clongriffin. The targets set in the Travel Plan/Mobility Management Plan will be achieved against the background of expanding public transport capacity in the surrounding catchment.

The completed development at Clongriffin will include a number of commercial units which will receive regular deliveries. To accommodate these deliveries, it is proposed to provide a network of loading bays on the streets close to these units.

- Each loading bay would be 15.6 metres long (3 x car parking spaces) and signed for dual usage 00h00 – 00h00 Monday – Sunday.
- The operational hours for loading would be 08h00 – 18h00 Monday – Friday.
- Outside these hours between 18h00 and 08h00, the loading bays could be used for car parking by residents with Residents Parking Permits, commercial, visitors, etc. thereby adding an additional 27 spaces to the evening parking stock.
- Pay and Display tickets would not be valid at the loading bays in Clongriffin.

Monitoring of the phasing and timing of the traffic signals will be required following completion of the development. This is standard procedure and is required to ensure that the signals are correctly set and respond to traffic demand patterns which may change over time.

It is recommended that the Travel Plan/Mobility Management Plan be monitored by Transportation Coordinator, in particular the responsiveness of the public transport services to meet the demand.

No other additional monitoring is envisaged.

16.12 Cultural, Archaeology and Architectural Heritage

There are no further archaeological, architectural or cultural heritage considerations in relation to the masterplan lands.

All recommendations are subject to the approval of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.

The developer will make provision to allow for and fund whatever archaeological work may be required at the site and the post excavation requirements in accordance with the National Monuments Legislation (1930–2004).

No monitoring is required for the proposed development. The archaeological potential within the masterplan area and its immediate environs has been realised and fully addressed through the extensive archaeological investigations that took place in 2003/2004.