EIAR NON-TECHNICAL SUMMARY – WHITE PINES CENTRAL

FOR ASSESSMENT OF PROPOSED RESIDENTIAL DEVELOPMENT AT WHITE PINES CENTRAL, STOCKING AVENUE, DUBLIN 16

PREPARED FOR:

ARDSTONE HOMES
48 Fitzwilliam Square
Dublin 2
D02 EF89

PREPARED BY:

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IN ASSOCIATION WITH:

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June 2021

1.0 INTRODUCTION

1.1 Outline Details

This Environmental Impact Assessment Report (EIAR) relates to a Planning Application by Ardstone Homes Limited[1] (Ardstone Capital Limited), with respect to the proposed residential development on a site of c.2.2 Ha at lands south of Stocking Avenue, Dublin 16. (see Figure 1.1).

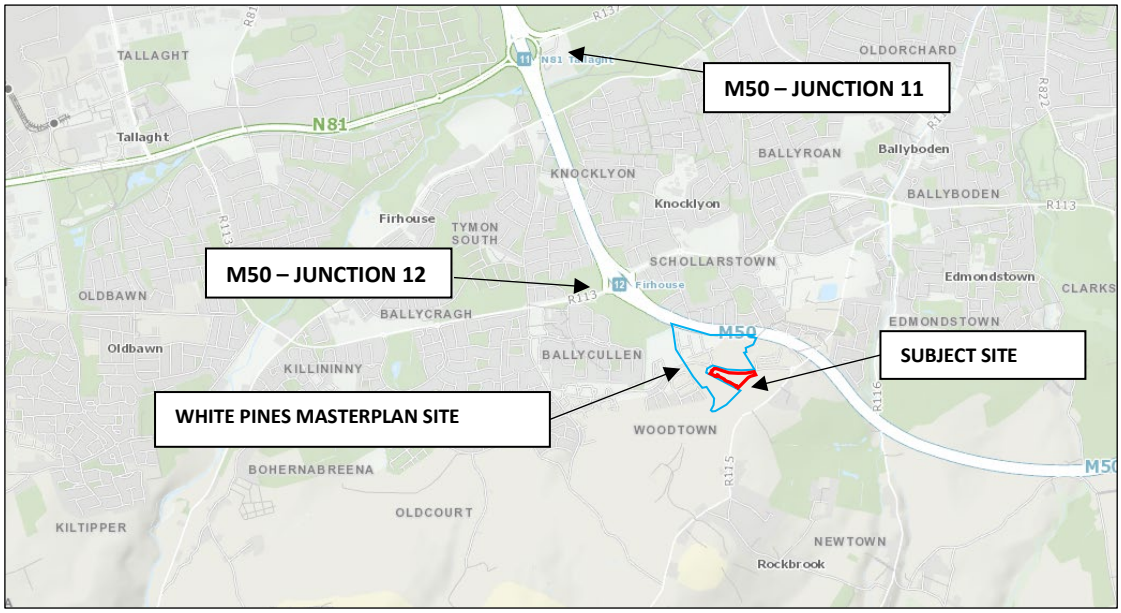

Figure 1.1: Urban Context Map (Source: www.geohive.ie; Annotated and Cropped by TPA, 2021).

The application site is principally bounded by;

- Stocking Avenue to the north;
- White Pines Retail to the west;
- The White Pines South residential development to the southwest; and
- 2 no. one of houses (Áit Linn and Findelen) and lands zoned for rural and agriculture development, to the east.

The site represents a greenfield site, zoned for residential use in the *South Dublin Development Plan (SDDP) 2016-22* and Ballycullen Oldcourt LAP (BOLAP), 2014 and will comprise the fourth element of the overall White Pines residential development.

[1]No. 48 Fitzwilliam Square, Dublin 2, D02 EF89.

Figure 1.2: Site Location, Subject Site Outlined Red. [Source: Bing Maps: Cropped/Annotated by TPA]

The subject site at White Pines Central forms part of a wider masterplan development, known as White Pines. The White Pines masterplan site comprises; White Pines Central, White Pines East, White Pines North, White Pines South and White Pines Retail.

Ardstone Homes Ltd. control the entire White Pines masterplan site and have already provided for some 281 no. three, four and five bedroomed family homes on lands adjacent to the subject site. The subject application (White Pines Central) represents the fifth and final phase of the wider White Pines masterplan development.

Phase	Provided/Proposed	Status
1. White Pines North	175 no. 3-5 bed family homes	Complete and Occupied
2. White Pines South	106 no. 3-5 bed family homes	Complete and Occupied
3. White Pines Retail	A single storey convenience retail unit (c.1,688 sq.m. GFA) and a three storey creche building (c.591sq.m. GFA).	Construction Commenced August 2020
4. White Pines East SHD	241 units in a mix of 1 and 2 bed apartments (see Table 1.2 below).	SHD Application submitted 30.03.2021
5. White Pines Central SHD	114 no. 1-3 Bed apartments/duplex units.	Subject application.

Table 1.1: White Pines Masterplan Development

Reg. Ref.	Address	Decision	Description
Completed/Approved Ardstone Homes Development			
South Dublin Reg. Ref. SD19A/0345,	Stocking Retail	Granted 27.02.2020	Planning permission was granted the construction of a neighbourhood centre comprising: a single storey convenience retail unit (c. 1,479sq.m GPA); a three storey creche building (c.577sq.m. GPA).
South Dublin Reg. Ref.	Stocking South	Granted 26.09.2019	Retention permission was sought for works proposed to 65 no. houses. The overall development related to the construction of

Reg. Ref.	Address	Decision	Description
SD19A/0099/ ABP Ref. PL06S.304670			99 no. houses permitted under Ref. SD17A/0359 on a site of c.2.29 ha at Stocking South.
South Dublin Reg. Ref. SD14A/0222,	White Pines North -	Granted 20.03.2015	Planning permission was granted for a 10-year permission for the construction of 164 no. houses, 8 no. apartments and 1 creche (total of 172 no. dwelling units).
Pending Planning Applications			
ABP Ref. PL06S.309836.	White Pines East SHD	Submitted to ABP 30.03.2021	An SHD Pre-application submission was made to ABP in June 2020, by Ardstone Homes, comprising the development of 359 no. residential units, on a site opposite the subject site on Stocking Avenue, see Figure 1.2 above. Following feedback received from ABP at this meeting, the project design team are exploring options to reduce the scale of the proposed development. The design of the revised scheme is not yet fixed, however, at this stage of the process it is considered that the development will provide c.250 no. residential units in a mix of 1, 2 and 3 bed apartments.

Table 1.2: Ardstone Development Sites surrounding White Pines Central

Please refer to Section 3.0 of the Planning Statement, prepared TPA, for a comprehensive breakdown of the site's planning history and other relevant planning applications in the area.

There are no recorded monuments within a 500m radius of the application site. There two Protected Structures (recorded by the NIAH), a gate lodge (RPS No. 335) c. 250m to the south associated with Woodtown Park/Manor and the Ballyboden Waterworks (RPS. No. 333) c.500m to the northeast.

The project will comprise the construction of 114 no. residential units. The development will be provided across 6 no. blocks ranging in height from 3 to 6 no. stories, in a mix of 1, 2 and 3 bed apartment and duplex units.

The proposed development will also include hard and soft landscaping, boundary treatments, public lighting, an ESB substation, plant and switch rooms, and residential waste facilities, piped site wide services, and all ancillary works and services necessary to facilitate construction and operation. The development will be served by a vehicular access from Stocking Avenue, via White Pines Dale.

A key informing objective of Ardstone Homes masterplanning for their existing and planned residential developments at Stocking Avenue (see Table 1.2), including the current application at White Pines Central, has been to ensure connectivity with adjoining residential areas. A key design aim of the current application is to ensure adequate connectivity with White Pines South on south/western boundary of the subject site.

Furthermore, it is also noted that Ardstone Homes have recently submitted a separate SHD planning application for the provision of 241 no. residential units at White Pines East, located directly north of the application site. For the reasons detailed in Section 1.3 below, this EIAR will consider the proposed development in isolation and cumulatively with the existing and planned residential developments at the White Pines Masterplan site comprising; White Pines North, White Pines South, White Pines East SHD, White Pines Retail and the subject development at White Pines Central.

1.2 EIA Process

EIA requirements are governed by Directive 2014/52/EU, which amends the previous EIA Directive (Directive 2011/92/EU). The primary objective of the EIA Directive is to ensure that projects that are likely to have significant effects on the environment are subjected to an assessment of their likely impacts.

EIA forms part of the planning consent process and is carried out by the Competent Authority. An EIAR is prepared by / on behalf of a Developer in respect of a project seeking planning consent. The EIAR thus becomes an integral informing element in the Competent Authority's EIA. The 2014 Directive has introduced strict new requirements in respect of the competency of experts responsible for the preparation of the EIAR (see Appendix 1A of the EIAR for details on the experts involved in the preparation of this document).

The EIA process may be summarised as follows:

1. Screening – Is EIA Required?
2. Scoping – If EIA is Required, what aspects of the Environment should be considered?
3. Preparation of EIAR
4. EIAR informs EIA (as part of the consent process)

1.3 The Need for EIA

The proposed development has been screened for EIA in accordance with the *European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018*), in accordance with the EIA Directive.

Section 172(1) of the Acts sets out the requirement for EIA. Mandatory EIA is required for Projects listed in Part 1 of Schedule 5 of the *Planning and Development Regulations 2001-2020* ("*the Regulations*"), referred to as Annex I Projects, in accordance with the EIA Directive.

The Project is not listed within Part 1 of Schedule 5 of the Regulations and therefore mandatory EIA is not required in this instance.

With respect to Part 2 of Schedule 5 (Annex II Projects), the Project has been assessed against the following relevant criteria:

Class 10 – Infrastructure Projects

Subsection 10(b)(i):

> "*Construction of more than 500 dwelling units*"

This Project comprises a mixed-use development comprising 114 no. residential dwellings in a mix of apartments and duplex units. This is below the threshold for an EIAR.

However, as noted above, Ardstone Homes Ltd are also progressing with a separate SHD planning application for 241 no. residential units on a site immediately north of White Pines Centra; known as White Pines East (see Figure 1.2). Furthermore, Ardstone Homes Ltd have also recently developed 175 no homes at White Pines North and 106 no. homes at White Pines South. When considered cumulatively, the total number of units being proposed and provided

across the White Pines Masterplan Site, c. 636 no. residential units, is in excess of the threshold set out in Class 10 of Schedule 5, as noted above.

Although it is not strictly necessary to include homes that have already been completed within the above threshold, in the interest of comprehensively addressing any environmental concerns, and given the no. of homes recently delivered in the area by our client, it is considered appropriate to provide an EIAR to consider any potential impacts, in line with the provisions of the EIA Directive.

As noted above, Ardstone Homes are also in progressing a separate SHD application on a site north of the Subject site, White Pines East. Given both SHD Applications (White Pines East and White Pines Central) are being submitted independently, a separate standalone EIAR has been provided with each planning application. Each EIAR considers the impacts of their subject development and also the cumulative impacts of both developments in tandem.

1.4 Purpose of the Environmental Impact Assessment Report

As noted, the 2014 Directive has redefined EIA as a process, whereby an EIAR is a key informing element. An EIAR's purpose is to predict and assess likely significant effects (direct and indirect) on the environment arising from the proposed development. It is used during the consent process to inform EIA.

As per Article 5(1) of the amended Directive, an EIAR should provide the following information:

- Description of Project
- Description of Baseline Scenario
- Description of Likely Significant Effects
- Description of Avoidance / Mitigation Measures
- Description of Reasonable Alternatives (and rationale for chosen option)
- A Non-Technical Summary

Annex IV of the Directive sets out a more detailed outline of the information required in an EIAR. The subject EIAR has been prepared in full accordance with these stated requirements of Annex IV.

The preparation of the *Environmental Impact Assessment Report* has been co-ordinated by Tom Phillips + Associates, Town Planning Consultants,[2] in association with other members of the Project Team as identified in Table 1.1 below. Details in respect of the competence of the various experts is set out in Appendix 1.1.

1.5 Scoping of the Environmental Impact Assessment

An informal EIA Scoping Report was undertaken by TPA, dated April 2020, with respect to the proposed development. The purpose of the EIA Scoping exercise was to inform consultees of the proposed development, having regard to the extent of information to be contained within the EIAR for the project.

[2] Tom Phillips + Associates, Town Planning Consultants, 80 Harcourt Street, Dublin 2, D02 F449

The scope of the EIAR has been prepared in consultation with the respective specialists within the EIA team. The Report set out a detailed justification relating to the environmental aspects to be considered in detail in the EIAR for the proposed development on the basis of the potential for significant effects. The Report also related to the construction and operational phases of the proposed development.

The non-statutory scoping report was issued to a range of stakeholders / prescribed bodies as listed in Appendix 1.2.

All matters raised in the responses received from the stakeholders have been addressed within this EIAR and appropriate mitigation measures identified where necessary.

1.6 EIAR Format

In addition to the 2014 Directive, the subject EIAR has been informed by:

- *Draft Guidelines On The Information To Be Contained In Environmental Impact Assessment Reports* (EPA, August 2017);
- *Advice Notes for Preparing Environmental Impact Statements,* Draft, (EPA September 2015);
- *Environmental Impact Assessment of Projects: Guidance on Screening* (European Commission, 2017);
- *Environmental Impact Assessment of Projects: Guidance on Scoping* (European Commission, 2017);
- *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017);
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment,* (August 2018);

Environmental Impact Assessment Reports require the assimilation, co-ordination and presentation of a wide range of relevant information in order to allow for the overall assessment of a proposed development. To allow for ease of presentation, and consistency when considering the various environmental factors considered, a systematic structure is used for the main body of the Report.

The structure of the EIAR is outlined below. This structure is followed in each chapter so as to systematically identify, assess and where necessary mitigate the environmental impacts of the proposed development.

1.6.1 Receiving Environment (Baseline Situation)

This section provides a description of the current state of the environment related to the subject site, and a description of its likely evolution in the event that the Project is not implemented.

1.6.2 Characteristics of the Proposed Development

This section provides a description of the location, nature and extent of the project along with its construction and operational characteristics. The description includes estimates of any residues, emissions, or waste produced during the construction and operational stages.

1.6.3 Environmental Factors Affected

This section provides a list of the environmental factors likely to be impacted by the Project.

1.6.4 Likely Impact of the Proposed Development and Remedial and Mitigation Measures

This section allows for a description of the direct and indirect impacts that the proposed development is likely to have on aspects of the environment affected. This is done with reference to both the *Receiving Environment* and *Characteristics of the Proposed Development* sections, while also referring to the magnitude, duration, consequences (including use of natural resources) and significance of any impact.

1.6.5 Assessment of Alternatives

This part of the EIAR describes the reasonable alternatives considered and provides a rationale for the chosen Option.

1.6.6 Avoidance, Mitigation or Compensation Measures

This section provides a description of the measures envisaged to prevent, reduce and (where possible) offset any significant adverse effects on the environment that are practicable or reasonable, having regard to the potential impacts.

1.6.7 Monitoring

This section outlines monitoring measures (for both construction and operational stages), where appropriate, in cases where significant adverse impacts have been identified.

1.6.8 Non-Technical Summary

As per the requirements of the Directive, this Non-Technical Summary (NTS) comprises an easily accessible summary of the EIAR, using non-technical language. It is formulated to be understandable to those without a prior background to the project or particular environmental expertise.

1.6.9 EIAR Study Team and Guarantee of Competency and Independence

The Environmental Impact Assessment Report was completed by a project team led by Tom Phillips + Associates, who also prepared a number of the chapters.

In accordance with EIA Directive 2014/52/EU, we confirm that the experts involved in the preparation of this EIAR are fully qualified and competent in their respective fields. Each has extensive proven expertise in the relevant field concerned, thus ensuring that the information provided herein is complete and of high quality. The individual members of the team and their respective inputs and competency are detailed in Appendix 1A. Table 1.2 below provides an overview of the various consultancies who prepared the relevant chapters.

Chapter	Aspects of the Environment Considered	Contributor
Chapter 1	Introduction	TPA
Chapter 2	Site Location and Context	TPA
Chapter 3	Description of the Proposed Development	TPA
Chapter 4	Examination of Alternatives	TPA
Chapter 5	Archaeology, Architectural and Cultural Heritage	Irish Archaeological Company
Chapter 6	Population and Human Health	AWN Consulting
Chapter 7	Biodiversity	Altemar Marine and Environmental Consultants
Chapter 8	Land and Soils (Geology and Hydrogeology)	DBFL Consulting Engineers
Chapter 9	Landscape and Visual Impact	Mitchell & Associates
Chapter 10	Hydrology including Flood Risk Assessment	DBFL Consulting Engineers
Chapter 11	Air and Climate	AWN Consulting
Chapter 12	Noise and Vibration	AWN Consulting
Chapter 13	Material Assets – Waste	AWN Consulting
Chapter 14	Material Assets – Traffic and Transportation	DBFL Consulting Engineers
Chapter 15	Material Assets – Site Services	DBFL Consulting Engineers
Chapter 16	Interactions and Cumulative Impacts	TPA
Chapter 17	Mitigation and Monitoring	TPA
Chapter 18	Difficulties Encountered	TPA
NTS	Non – Technical Summary	TPA

Table 1.2: EIAR Chapter Headings and Contributors

1.7 The Developer

The development is proposed by the owners of the site, Ardstone Homes. The registered office of which is 48 Fitzwilliam Square, Dublin 2, D02 EF89

2.0 SITE LOCATION AND CONTEXT

2.1 Location of the Subject Site

The subject site, White Pines East, is located in south west Dublin, in the administrative district of South Dublin Council. The site comprises a c.2.2 Ha greenfield site, zoned for 'new residential' in the *South Dublin Development Plan 2016-22*.

The subject site is located approximately 1.5km to the south-east of Woodstown village centre. The site is accessed from Stocking Avenue, which is a distributor route to the new residential areas south of Woodstown Village.

The site's topography is sloped rising from the site's southern boundary with Stocking Lane, with the highest point being the south corner of the site.

The site is located within an area characterised primarily by new residential developments. The site is principally bounded by the White Pines South residential scheme to the west; Stocking Avenue to the North; White Pines Retail to the west; The White Pines South residential development to the south and west; and 2 no. one of houses (Áit Linn and Findelen) and lands zoned for rural and agriculture development, to the east.

As shown in Figure 2.1 below, the surrounding area is characterised principally by a mix of residential and outdoor amenity spaces.

Figure 2.1: Surrounding context [source, Bingmaps, cropped and annotated by TPA 2020]

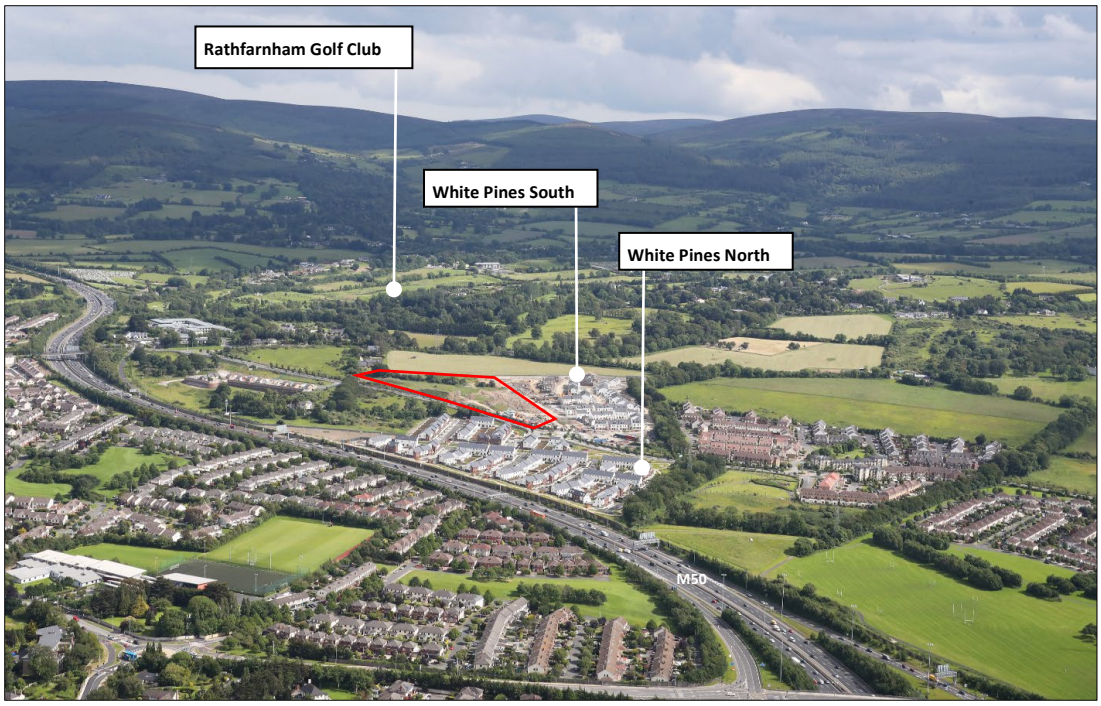

Plate 2.1: Ariel View of Site, Looking South (Approximate Site Boundary Outlined Red)

2.1.1 Northern Site Boundary

The site is bound to the north by Stocking Avenue. As shown in Figure 1.2, the site is surrounded by a number of existing residential areas and a number of vacant sites, zoned for new residential and commercial with extant planning permissions.

North of Stocking Avenue, the site is bound by the White Pines North residential development and the White Pines East, proposed residential development.

As noted above, White Pines East comprises a separate SHD planning application, prepared by Ardstone Homes, for the construction of C.250 no. residential units. The White Pines North development has recently completed construction and is currently in operation. White Pines North provides 175 no. residential units.

Green Acres House and the Stocking Hill residential development are also located north of the site, on Stocking Avenue, identified in Figure 2.1 above.

Plate 2.2: Northern Boundary of the Subject Site, Looking Southeast, White Pines South Show in Background [Source: TPA, 2020]

Plate 2.3: Northern Boundary of the Subject Site, Looking West, White Pines North Show on Right [Source: TPA, 2020]

Plate 2.4: White Pines North Entrance, [Source: TPA, 2020]

Plate 2.5: View of White Pines East SHD site, looking east, Subject site on Right. [Source: TPA, 2020]

2.1.2 Western Site Boundary

The site is bound to the west by White Pines Retail, provided by Ardstone Homes. White Pines Retail was granted planning permission (SDCC Ref. SD19A/0345) in February 2020 for the construction of a neighbourhood centre comprising: a single storey convenience retail unit and a creche. The White Pines Retail site recently commence construction. For further information please refer to Table 3.2.

Further west lies the residential development of Stocking Wood, identified in Figure 2.4.

2.1.3 Southern Site Boundary

As identified in Plate 2.1 above, the site is bounded to the southwest by White Pines South residential development. White Pines South is a residential development, provided by Ardstone Homes, comprising the provision of 106 no. Houses. The development recently completed construction and is due to be occupied in the coming months.

2.1.4 Eastern Site Boundary

The site is bound to the southeast by 2 no. one of houses, Áit Linn House and Findelen House.

The site is also bound to the south and east by lands zoned for rural and agriculture development, shown below. Lands to the east of the site fronting Stocking Lane are also zoned to provide new residential developments.

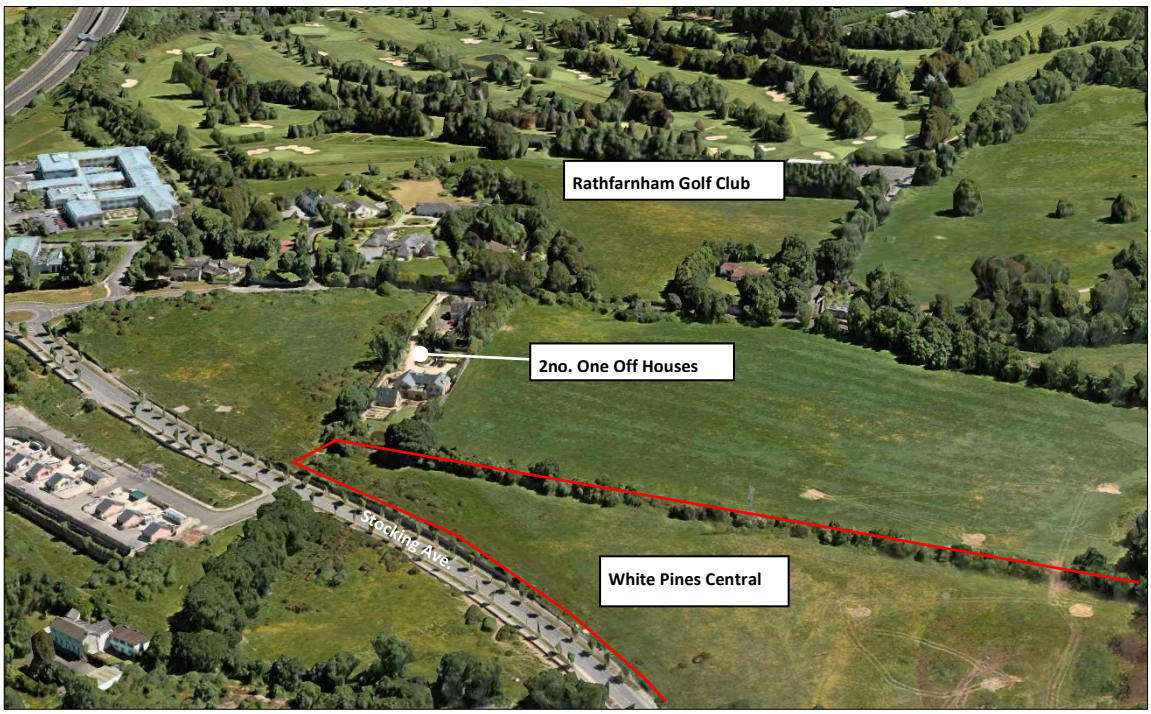

Figure 2.5: South-eastern Site Boundary (Source: Apple Maps, cropped and annotated by TPA 2020

2.3 Planning Context

a) South Dublin Development Plan 2016-22

The application site is located within the administrative boundary of South Dublin County Council and as such is guided by the policies and objectives set out in the South Dublin County Council Development Plan 2016-22 (SDCCDP).

The site is zoned for 'New Residential' in the SDDP 2016-22. This zoning objective for this designation seeks;

"To provide for new residential communities in accordance with approved area plan"

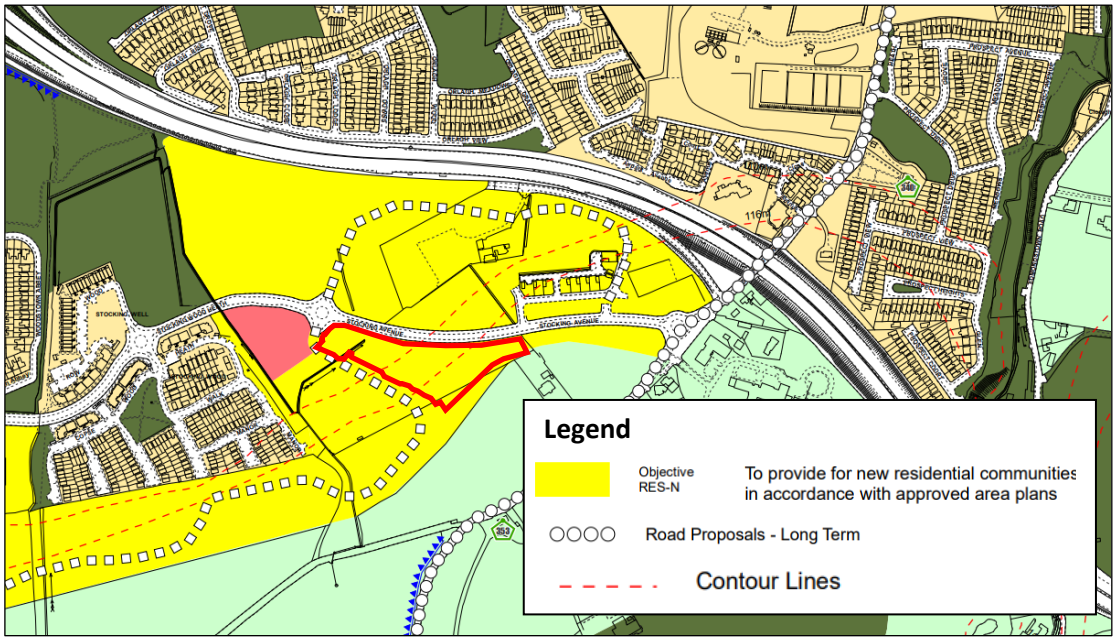

Figure 2.2: Zoning Map SDDP 2016-22, Application Site Outlined Red (cropped and annotated by TPA, 2021)

a) Ballycullen Oldcourt LAP 2016-22

There is also an adopted Local Area Plan for the area, the Ballycullen - Oldcourt Local Area Plan (BOLAP) 2014 (Extended 2019), which will expire on 2nd June 2024.

The site is also Zoned for 'Proposed Residential' in the *BOLAP 2014*.

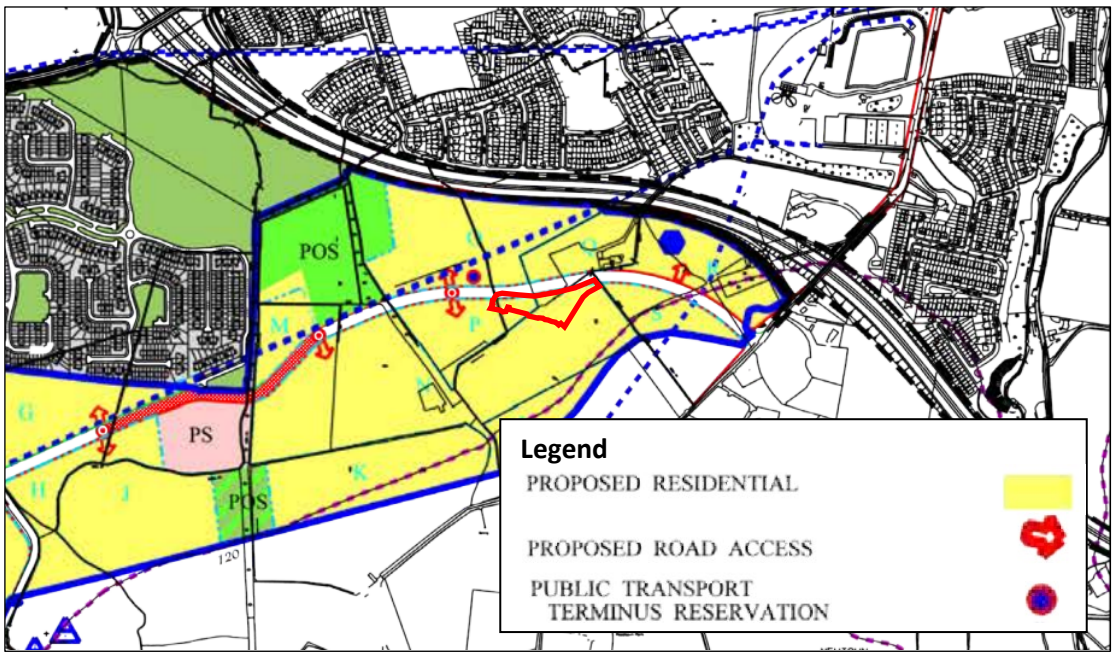

Figure 2.2: Zoning Map Ballycullen-Oldcourt LAP 2014, Application Site Outlined Red (cropped and annotated by TPA, 2021)

For a detailed breakdown of how the proposed development is in accordance with Local and National Planning Policies and Objectives, please refer to the Planning Statement, and Statement of Consistency prepared by TPA, submitted with this application.

2.3 Protected Structures and Monuments

There are no recorded monuments within a 500m radius of the proposed development area. There two Protected Structures (also recorded by the NIAH), a gate lodge (RPS No. 335) c. 265m to the south associated with Woodtown Park/Manor and the Ballyboden Waterworks (RPS. No. 333) c.430m to the northeast.

3.0 DESCRIPTION OF PROPOSED DEVELOPMENT

3.1 Introduction

This chapter of the EIAR provides a detailed description of the project, together with details of the existing environment surrounding the site. The chapter has been prepared in accordance with Article 5(1)(a) of the 2011 EIA Directive as amended by Directive 2014/52/EU, the description of the proposal should comprise "*…information on the site, design, size and other relevant features of the project*".

In summary, the proposed development will comprise the construction of 114 no. residential units on a site of c.2.2Ha.

3.2 Characteristics of the Proposed Development

The project will comprise:

- 114 no. residential units comprising:

Units Type	Number of Units Proposed
One Bed Apartments	32
Two Bed Apartments	53
Three Bed Duplex Units	29
TOTAL	**114**

Table 3.1: Proposed Residential Mix

The development primally comprises 6 No. buildings (Described in the application as Blocks A, B, C1, C2, D and E) ranging in height from 3 –8 storeys. The residential blocks are positioned to provide access and pedestrian routes through the site, incorporating landscaped public open spaces.

A new vehicular access to the site will be provided from Stocking Avenue, to the northwest of the site. Internal pedestrian and vehicular access to/from White Pines Central will also be provided to the south of the site, providing vehicular access to Blocks B, C1, C2, D and E.

Additional pedestrian and cycle access points will also be provided along the northern boundary of the site to Stocking Avenue.

Pedestrian access will also be provided to the west of the site, via a newly proposed entrance plaza to Block A.

Existing public foul drainage infrastructure is located along the northern boundary of the site. As the site falls from its high point on its southern boundary toward its northern boundary, this existing infrastructure will facilitate a gravity foul drainage connection. For further information, please refer to Chapter 10 of this EIAR.

The proposed development will provide 98 no. car parking spaces and 198 no. cycle parking spaces.

A detailed description of the proposed development is set out in section 3.2.4 below.

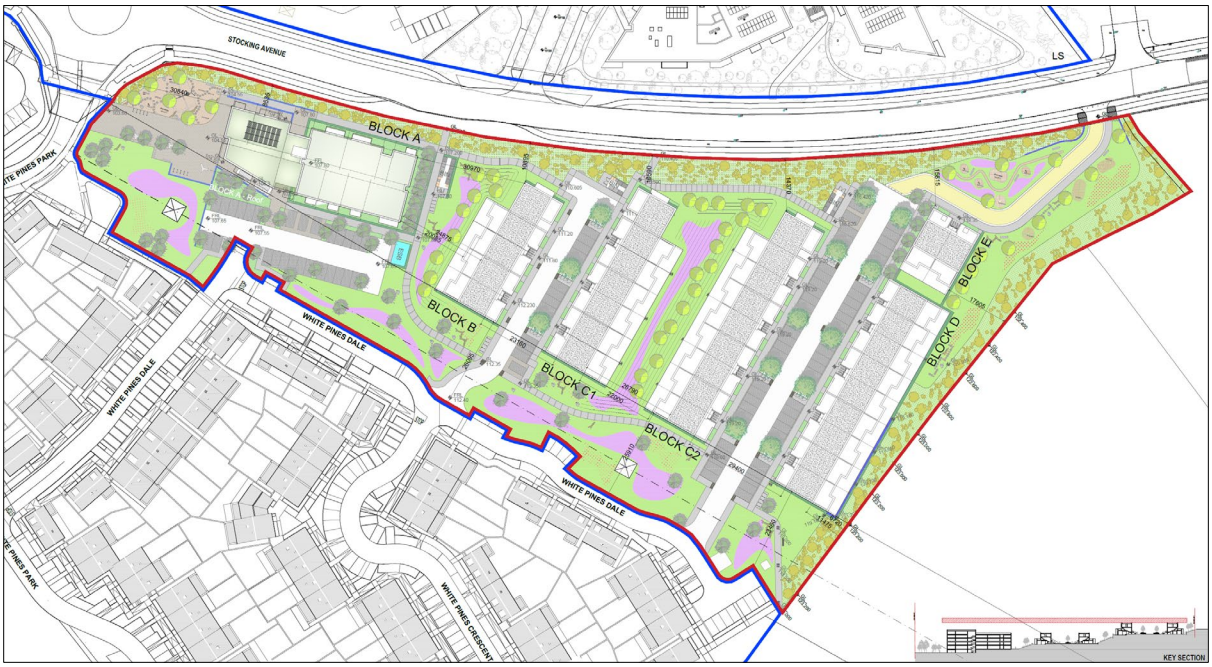

Figure 3.1: White Pines Central Development Sites, Site Layout Plan [Source: RAU]

3.2.1 Site Area

The site has an overall area of c.2.2 ha. The planning application site forms part of a masterplan development site, comprising White Pines North, White Pines South, White Pines Retail and White Pines Central.

Figure 3.2: Ardstone Homes Development Sites [Source: Bing Maps, annotated by TPA 2021.

3.2.2 Density of Development

The proposed development has density of c.53 no. units per hectare. The density is considered appropriate for the site, having regard to national planning policy guidelines and the site location and access to public transport.

3.2.3 Detailed Description of Development

Ardstone Homes Ltd. intend to apply to An Bord Pleanála for permission for a strategic housing development at a site a site of c.2.2 ha, at Stocking Avenue, Dublin 16.

The development consists of the following;

""The proposed residential development will provide for 114 No. residential units in a mix of 1, 2 and 3 bed apartment and duplex units, across 6 No. separate blocks;

- *Block A is a part 6 part 4 storey apartment block comprising 47 No. 1 and 2 bed units;*
- *Block B is a 3 storey duplex block comprising 11 No. 1, 2 and 3 bed units;*
- *Block C1 is 3 storey duplex block comprising 15 No. 1, 2 and 3 bed units;*
- *Block C2 is a 3 storey duplex block comprising 19 No. 1, 2 and 3 bed units;*
- *Block D is a 3 storey duplex block comprising 18 No. 2 and 3 bed units; and*
- *Block E is a 3 storey duplex block comprising 4 No. 2 and 3 bed units.*

The proposed development will also consist of the provision of: 110 sqm residential amenity space in the lower ground floor of Block A; waste storage facilities; 98 No. car parking spaces and 238 No. bicycle parking spaces; boundary treatments and street lighting; the provision of Sustainable Urban Drainage systems (SUDs); 1 No. ESB substation; plant and switch rooms and all ancillary works and services necessary to facilitate construction and operation; changes in levels across the site; associated hard and soft landscaping; and all other associated site excavation; and infrastructural and site development works above and below ground. The development will be served by a vehicular access from Stocking Avenue via White Pines South on the western side of the site."

3.2.4 Site Clearance Works

Topsoil and subsoil will be excavated to facilitate site preparation, construction of foundations, and the installation of underground services. The volume of material to be excavated has been estimated by the project engineers to be c.18,000m^3. It is anticipated that c.9,000m^3 of excavated material will need to be removed offsite for appropriate reuse, recycling or disposal. It is envisaged that c.5,500m^3 of topsoil and c.9,000m^3 of subsoil will be reused onsite in landscaping and non-structural fill. For further information please refer to Section 8.5.1 of the EIAR.

3.2.5 Building Height/Form/Massing

The design of the proposed development, in particular the inclusion of the 6 storey Block A, has been given careful consideration in the context of the wider White Pines masterplan site. A new public plaza is proposed at the base of Block A that will tie into the wider landscape masterplan.

As detailed in Section 5.1 of the Material Contravention Statement, prepared by TPA, the inclusion of Block A, at 6 no. storeys, has been specifically chosen to act as a local landmark with the key aim of providing a distinct development that will tie into the emerging commercial development at White Pines Retail and aid in local wayfinding.

Section 5.1 of the Material Contravention Statement provides a comparison with the built form of development at similar roundabout locations within the Local Area Plan lands, noting that where increased building heights had not taken place at these key sites the form of development provided appears quite monotonous, failing to make any meaningful contribution to place-making.

As detailed in the Statement of Consistency, prepared by TPA, the proposed development has been assessed against National, Regional and Local planning policies and is considered to be an appropriate scale, which responds to the scale of the adjoining developments.

The overall heights within the scheme vary from 3 to 6 no. storeys in height.

Figure 3.3: CGI of proposed development, Looking East along Stocking Avenue; [Source: RAU Design Statement 2021].

3.2.6 Design and Building Materials

There is a broad range of materials proposed within this development, varying depending of use and location within the development. In general, the elevations comprise the use of brick and render within the elevations of Blocks A, B, C1-2, D and E. As noted on page 80 of the Design and Access Report, prepared by RAU, the following materials will be utilised in the building's construction;

- Rener Finisk;
- Brick Finish;
- Glazing – Selected Aluminium Window System

- Powercoated miled Steal
- Brise soleil fins
- Cassette Aluminum Cladding
- Brushed Stainless Steel; and,
- Reconstituted Stone.

3.4.6.1 Residential Use

The proposed development comprises a total of 114 no. residential units. The development has been designed to exceed standards as set out in the *Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities*, 2020, prepared by the Department of Housing, Planning and Local Government. For further information, please refer to the Statement of Consistency, prepared by TPA, submitted with this application.

Figure 3.4: CGI of proposed development, Looking West along Stocking Avenue; [Source: RAU Design Statement 2021].

Block A

Block A is a part 6, part 4 storey building, providing 47 no. apartments in a mix of 1 and 2 bed units. Block A will provide; 26 no 1 bed units and 21 no. 2 bed units.

Block A comprises balconies on northern, eastern, western and southern elevations.

Figure 3.5: Block A Southern Elevations (Source: Drawing no. 3.1-201, prepared by RAU)

Block A also provides c.110sq.m of residential tenant amenity space, at lower ground floor level, to serve White Pines Central, shown in Figure 3.6 below. In addition to this, additional informal external residential amenity space will also be provided, in front of Block A, at the newly created plaza space. It is intended that this space could also be booked for informal gatherings and dedicated events for residents of the scheme.

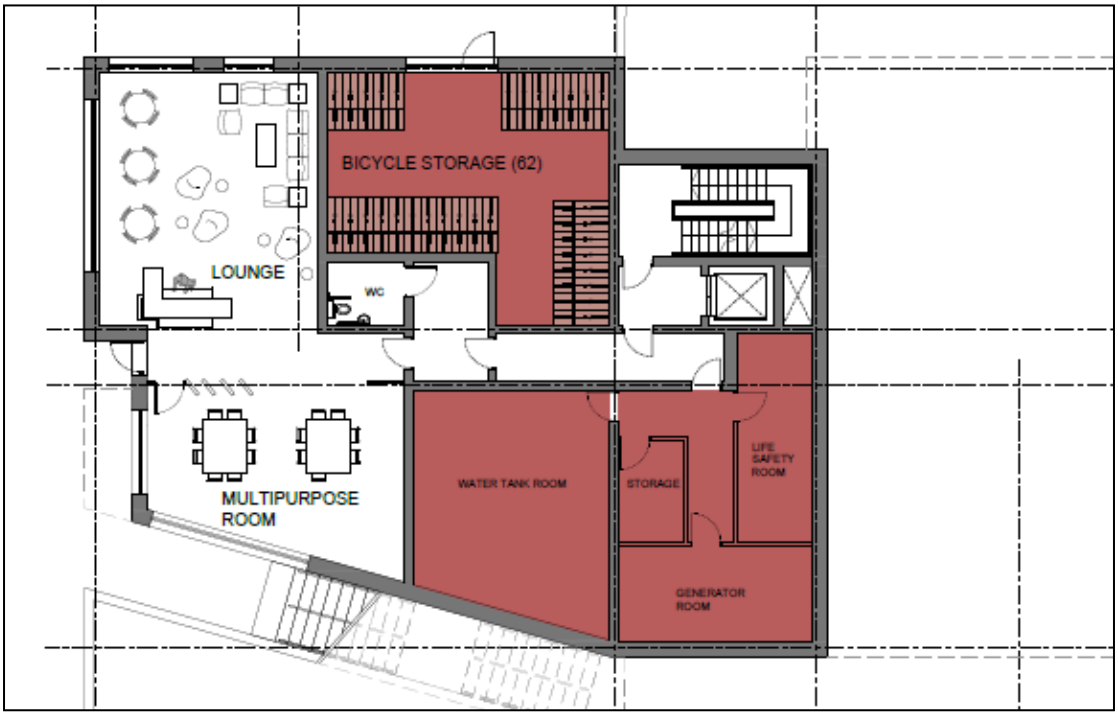

Figure 3.6: Internal Residential Amenity Space (Source: RAU Design Statement).

Block B

Block B is a 3 storey duplex block providing 11 no. residential units. The building will provide 2 no. 1 bed apartments, 5 no. 2 bed apartments and 4 no. 3 bed duplex units. Block B comprises balconies/terraces on western and northern elevations.

Blocks B, C1, C2, D and E are similar in appearance and layout. They are all three storey duplex blocks, with ground floor apartments and 3 bed duplex units above. Please refer to Figures 3.7 – 3.10 for further information.

Figure 3.7: Block B East Elevation (Source: Drawing no. 3.1-202, prepared by RAU).

Block C1

Block C1 is a 3 storey duplex block providing 15 no. units in a mix of 1, 2 and 3 bed units. Block C1 will provide 2 no. one bed units, 7 no. 2 two bed units and 6 no. three bed units.

Block C1 comprises balconies on the eastern and northern elevations.

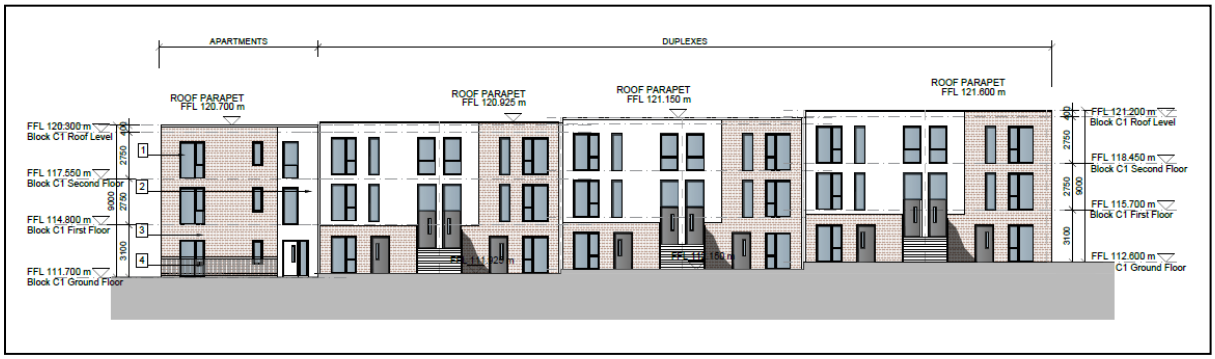

Figure 3.8: Block C1 East Elevation (Source: Drawing no. 3.1-203, prepared by RAU).

Block C2

Block C2 is 3 storey duplex block providing 19 no. units in a mix of 1, 2 and 3 bed units. Block C2 will provide 2 no. one bed units, 9 no. 2 two bed units and 8 no. three bed units.

Block C2 comprises balconies on the western and northern elevations.

Figure 3.9: Block C2 West Elevation (Source: Drawing no. 3.1-204, prepared by RAU).

Block D

Block D is a 3 storey block, providing 18 no. units. Block D will provide 9 no. 2 bed apartments and 9 no. 3bed duplex units.

Block D comprises balconies/terraces on western elevation.

Figure 3.10: Block D Western Elevation (Source: Drawing no. 3.1-205, prepared by RAU).

Block E

Block E is a 3 storey building providing 4 no. units. Block E will provide 2 no. 2 bed apartments and 2 no. 3 bed duplex units.

Block E comprises terraces on the southern elevation.

Figure 3.11: Block E Northern Elevation (Source: Drawing no. 3.1-205, prepared by RAU).

3.4.7 Access Arrangements

As shown in Figure 3.10 below, the main vehicular access to/from the subject development will be provided via White Pines Crescent on the south western boundary of the site, which connects onto a roundabout on Stocking Avenue. There will also be an emergency vehicular access onto Stocking Avenue via a new priority junction on the north-eastern boundary of the site.

Additional pedestrian access points are also provided along Stocking Avenue, to the north of the site, providing access to/from Stocking Avenue.

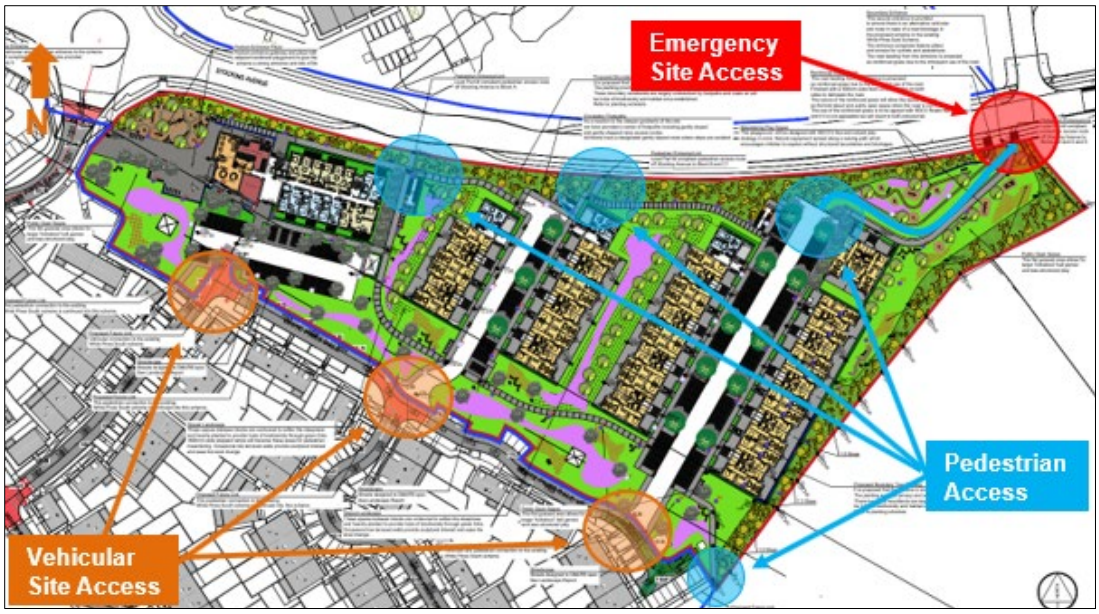

Figure 3.12: Proposed Site Access Locations, [EIAR Chapter 14, Figure 14.15].

We refer to Chapter 14 Material Assets – Traffic and Transportation, which provides full description and assessment of the traffic and transportation impacts arising from the proposed development.

3.4.8 Landscaped Spaces

The architect landscaped spaces have been designed to create a sense of place, supporting the urban design layout in the creation of streetscapes and residential spaces. The design strategy aims to promote sociability, providing places for social interaction and the creation of a sense of community.

The strategy has been prepared by Mitchell and Associates in the context of the provisions of the *Ballycullen and Oldcourt LAP 2014* and informed by detailed assessments undertaken as part of the development process, as outlined further in the EIAR and supporting planning application documents. Mitchell and Associates were the Landscape Architects responsible for the adjoining White Pines North Scheme.

The approach to the site layout and landscape masterplan prioritises non-vehicular traffic on internal roads with pedestrian desire lines catered to. Inherent to the design is a people-friendly layout.

The provision of a landscaped amenity space with various character areas (e.g. landscaped buffer zone (wild grasses); kickabout / key public realm nodes; and children's play area) will cater for a wide range of future users.

3.4.9 Drainage Infrastructure

Chapter 10 of the EIAR provides an assessment of the likely impact of the proposed development on the surrounding surface water and hydrogeological environments (including flood risk, surface water drainage, foul drainage and water supply) as well as identifying proposed mitigation measures to minimise any impacts.

The site falls from its eastern boundary (c.+123.00) towards its western boundary (c.+103.50), following the grade along Stocking Avenue. As such, gravity drainage solutions are provided for both surface water drainage and foul drainage.

Foul Drainage

Foul drainage from the site will discharge by gravity into the existing foul drainage network constructed to serve White Pines South under planning application SD10A/0041. The existing foul drainage network has been designed to accommodate additional flow form the subject application site. A spur has been left from White Pines South foul drainage network adjacent to the site's western boundary. As the site falls from its eastern boundary towards its western boundary, a gravity drainage solution can be facilitated.

Surface Water Drainage

Surface water runoff from the site's street network will be directed to tree pits via conventional road gullies (with high level overflow to the piped surface water network) while surface water runoff from on street parking areas will be captured by permeable paving.

Surface water runoff from duplex roofs will be routed to the proposed surface water pipe network via the porous aggregates beneath permeable paved parking areas (providing an additional element of attenuation).

Surface water runoff from apartment roofs will be captured by green roofs (sedum blanket) prior to being routed to the piped surface water drainage network.

The site has been assessed in relation to surface water attenuation. Surface water discharge rates from the proposed surface water drainage network will be controlled by a Hydrobrake type flow control device and associated underground attenuation tanks.

Surface water discharge will also pass via a full retention fuel / oil separator which was installed as part of "White Pines South" under SD10A/0041 before leaving the site.

Please refer to DBFL's Infrastructure Design Report for full details of the proposed SUDS methodologies.

2.1.1 Water

The proposed development will utilise a 500mm Watermain watermains running along the southern side of Stocking Avenue, adjacent to the site's northern boundary. An existing 150mm water main network is also located to the south of the site within White Pines South.

The proposed development's water supply is to be taken from the existing 500mm diameter water main located on Stocking Avenue and connected back into the 150mm diameter network located within White Pines South. A 200mm diameter looped water main will be provided within the development.

3.4.10 Site Clearance and Construction

Details of the demolition and construction programme are outlined in greater detail in a Construction Management Plan, prepared by DBFL Consulting Engineers, and included with this EIAR.

3.4.11 Development Projects Proximate to Subject Site

The following projects are known to have permission / be under construction in the wider area:

Reg. Ref.	Address	Decision	Description
Completed/Approved Ardstone Homes Development			
South Dublin Reg. Ref. SD19A/0345, as amended SDCC Ref. SD20A/0322)	White Pines Retail	Granted 22.03.2021	Planning permission was granted permission for the construction of a neighbourhood centre comprising: a single storey convenience retail unit (c.1,688 sq.m. GFA) and a three storey creche building (c.591sq.m. GFA).
South Dublin Reg. Ref. SD19A/0099/ ABP Ref. PL06S.304670	White Pines South	Granted 26.09.2019	Retention permission was sought for works proposed to 65 no. houses. The overall development related to the construction of 99 no. houses permitted under Ref. SD17A/0359 on a site of c.2.29 ha at Stocking South.
South Dublin Reg. Ref. SD17A/0443–	White Pines South	Granted December 2017	Planning permission was granted by SDCC in December 2017 to amend a portion of the site, relating to 7 no. houses of the 122 permitted under application Reg. Ref. SD10A/0041, as amended.
South Dublin Reg. Ref. SD14A/0222, as amended SD14A/0222 SD17A/0359	White Pines North -	Granted 20.03.2015	Planning permission was granted for a 10-year permission for the construction of 175 no. residential units.
Pending Planning Applications			
ABP Ref. PL06S.309836.	White Pines East SHD	Submitted 30.03.2021	An SHD planning application was submitted to ABP 30th March 2021 for the construction of 241no. residential units and a community building space on a site north of Stocking Avenue, see Figure 1.2.

Table 3.2: Recent Planning Applications surrounding the Subject Sites

3.5 Production of Waste

A Construction & Demolition Waste Management Plan and Operational Waste Management Plan, prepared by AWN, have been included with this EIAR in order to document the anticipated levels of and types of waste likely to be generated by the proposed development.

The Construction and Demolition Waste Management Plan provides details regarding the anticipated waste generation on foot of the construction phase of the proposed development, potential impacts and proposed mitigation measures to ameliorate any anticipated negative impacts.

The Operational Waste Management Plan provides details on the anticipated levels of waste the operational phase of the development may give rise to, also detailing measures for the collection, recycling and disposal of this waste.

In summary, all waste generated during the construction and operational periods is proposed to be appropriately disposed of in accordance with the relevant waste management policy and waste management plans.

3.6 Emissions and Nuisances

No significant impacts are likely to arise in terms of emissions and nuisances during the construction and operational period of the development. A detailed assessment of the potential impacts on noise and vibration and air quality is contained in Chapters 11 and 12 of this EIAR respectively. In addition, the preliminary Construction Management Plan details the mitigation measures proposed to ameliorate any potential negative impacts.

3.7 Risk of Accidents

The risk of accidents arising as a result of the proposed development at both construction and operational phases will be minimised through detailed design considerations and health and safety management. Details of these design considerations and management measures are contained in the Preliminary Construction Management Plan within this EIAR.

3.8 Secondary Projects

The subject proposal is not reliant on the completion of secondary projects and is thus a fully functioning independent project.

As shown in Figure 3.1 above, Ardstone homes have developed a number of sites surrounding White Pines Central for residential development and are also in the process of delivering 2 no. additional developments. A convenience retail store and creche know as White Pines Retail and a separate SHD planning application known as White Pines East, located north of the subject site. These projects are entirely independent and in no way reliant on each other.

4.0 EXAMINATION OF ALTERNATIVES

4.1 Introduction

This chapter of the EIAR was prepared by Tom Phillips + Associates and examines the alternative development options which were considered for the subject site during the design development process.

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) and in Schedule 6(1)(d) of the *Regulations,* which require the following information to be included:

> "*A description of the* ***reasonable alternatives*** *studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics and an indication of the main reasons for the options chosen, taking into account the effects of the proposed development on the environment*" (our emphasis).

Reasonable alternatives may relate to project design, technology, location, size and scale which were studied in the preparation of the EIAR relevant to the proposed development and its particular characteristics, together with an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

The *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* of August 2018 provide further guidance on this matter as follows:

> "*The types of alternatives will depend on the nature of the project proposed and the characteristics of the receiving environment. For example, some projects may be site specific so the consideration of alternative sites may not be relevant. It is generally sufficient for the developer to provide a broad description of each main alternative studied and the key environmental issues associated with each. A 'mini-EIA' is not required for each alternative studied*".

Thus, the consideration and presentation of the reasonable alternatives studied by the project design team is an important requirement of the EIA process.

4.2 Rationale for the Proposed Development

The rationale for the development is to provide residential accommodation in accordance with the zoning designation for the site. This is fully supported in National, Regional and Local planning policy. In this regard, the *National Planning Framework 2040- Our Plan (2018)*, identifies the need for consolidated growth in urban areas,

> "*making better use of* ***under-utilised land and buildings****, including 'infill', 'brownfield' and publicly owned sites and vacant and under-occupied buildings,* ***with higher housing and jobs densities****, better serviced by existing facilities and public transport*".

The provision of high-density apartment development is advocated in the *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2018.*

The development of the site is also supported under the *Eastern & Midland Regional Assembly - Regional Spatial & Economic Strategy 2019-2031*(RSES)Objective (RPO) 4.3, whichseeks the consolidation and re-intensification of infill / brownfield sites,

> "*to provide high density and people intensive uses within the existing built up area of Dublin city and suburbs and ensure that the development of future development areas is co-ordinated with the delivery of key water infrastructure and public transport projects.*"

4.3 Main Alternatives Studied

The main alternatives studied during the development of the project comprise alternative design solutions and layouts for the redevelopment of White Pines Central to provide a residential development on the site, in accordance with National, Regional and Local planning policy guidelines, as discussed further below.

4.3.1 Alternative Locations

Given the project comprises the redevelopment of White Pines Central, a site zoned for new residential development, the consideration of alternative locations is not relevant in this instance.

4.3.2 "Do-Nothing" Alternative

In the "Do-Nothing" scenario, the application site at White Pines Central would remain a greenfield site. This would be contrary to National and Regional Policy where it is the stated aim to progress development of zoned and serviced site such as the application site. Zoned serviced sites which do not progress towards development are subject to a vacant site levy.

4.3.3 Alternative Processes

Given the zoning objectives for the site, the rationale for the project, the nature of the proposed development, no reasonable alternative processes were considered appropriate.

4.3.4 Alternative Design Approach – Alternate Block Layouts

At the outset the project architects, Reddy Architecture + Urbanism (RAU), undertook an extensive site appraisal to determine the appropriate scale, mass and layout of this scheme.

The analysis includes an assessment of:

- The Site's Planning History;
- Existing and permitted development adjoining the site and within the wider area which changes the character of the site environs, i.e. White Pines North, White Pines South, White Pines Retail and White Pines East.
- The characteristics of the site to consider how the proposed development should appropriately respond to adjoining sites, specifically; Stocking Wood, White Pines South and White Pines Retail.
- The existing residential mix at Stocking Avenue, with a high proportion of 3-5 bed houses.

- The provisions of Local, Regional and National planning policy as referenced above and in particular, the provisions of the *South Dublin County Council Development Plan (SDDP) 2016-22 and Ballycullen Oldcourt Local Area Plan (BOLAP), 2014* (extended to 2022), which sets out proposed uses and design criteria.

The masterplan for the site, and surrounding sites in the ownership of Ardstone (please refer to Figure 1.3) has been informed by National, Regional and Local planning policies, in particular the *BOLAP 2014*, which sets out a number of specific adjustives for the area.

A number of design options were thereafter considered and developed for the site, as shown below in Figures 4.1 – 4.8 below.

4.3.5 Alternative Layout

As noted above, the design process for the site included pre-application consultation with South Dublin County Council (SDCC), in order to ensure the most efficient layout and successful design outcome is achieved in delivering a scheme which responds to the existing built context surrounding the subject site; and provides a scale, form and quantum of development appropriate for the site.

In considering the effects of these alternatives on the environment, key considerations have been:

- The extent and nature of visual impact from the development within the catchment of the proposed development;
- The residential amenity of the of proposed units having regard to on-going micro-climatic assessment during the design process (Sunlight / Daylight Analysis);
- The location of the site with respect to the provision of local services.

The key considerations and amendments to the scheme, having regard to and the key environmental issues, are set out below.

- **ALTERNATE LAYOUT 1: INITIAL SCHEME DESIGN**

The first design considered by the Design Team was the originally approved Masterplan layout. In September 2005 ABP granted planning permission for the redevelopment of the site shown in Figure 4.1, to provide a ten-year permission for a development comprising residential, crèche, retail, office and public house uses, to include the construction of: 793 no. dwellings. For further information, please refer to Section 3.1 of the Planning Report, prepared by TPA, dated July 2020.

A Layout for the subject site (now known as White Pines Central) was included with this application. This layout is considered the '*Initial Scheme Design'* for the purpose of the following assessment.

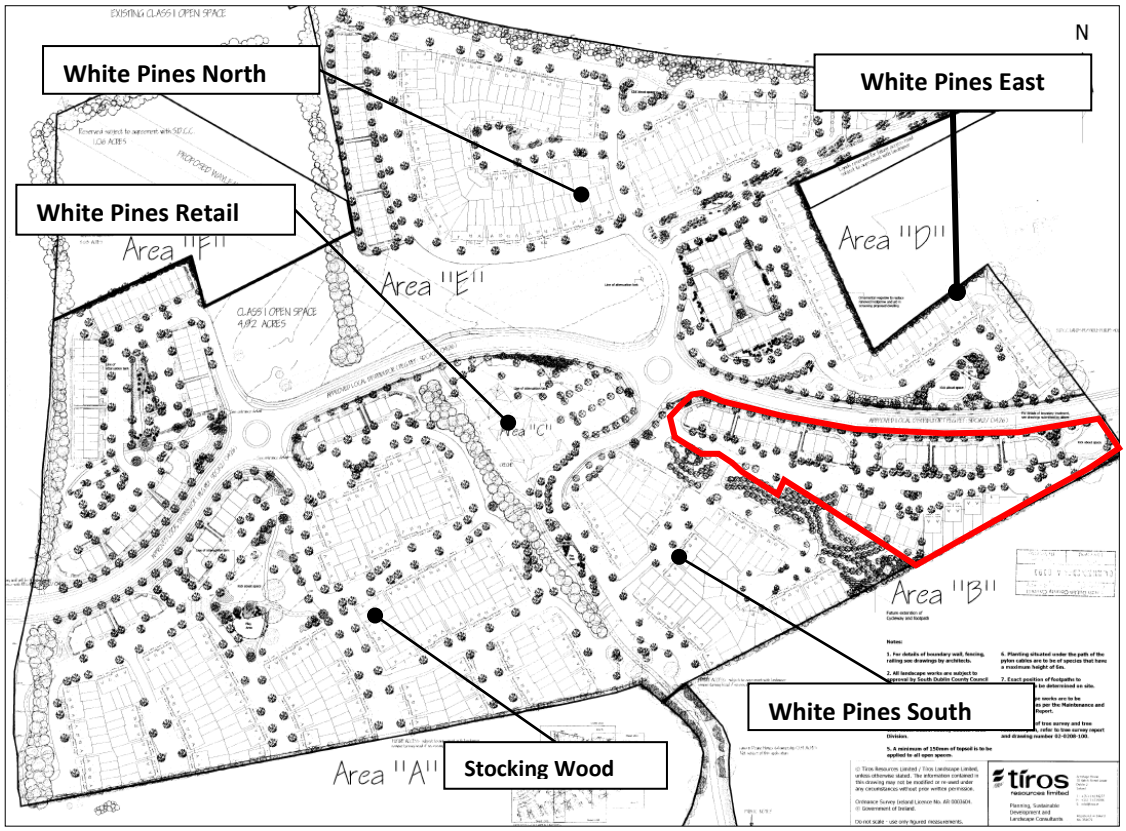

Figure 4.1: Ardstone Homes Planning Application Sites: Landscape Masterplan, SDCC Ref. SD04A/0393/ ABP Ref. PL06S.212191 [Source: SDCC Online Planning Register, annotated by TPA 2020]

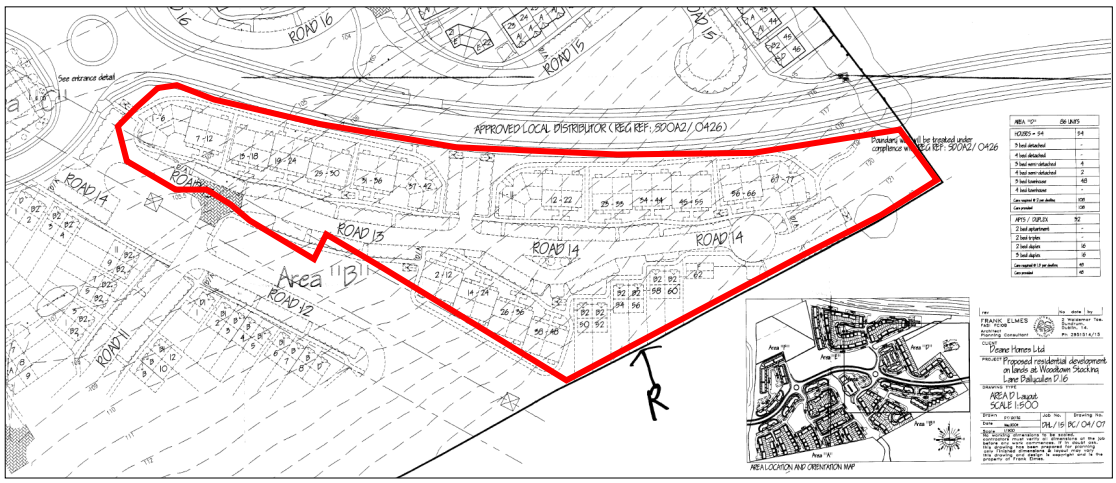

Figure 4.2: Ardstone Homes Planning Application Sites: Landscape Masterplan, SDCC Ref. SD04A/0393/ ABP Ref. PL06S.212191 [Source: SDCC Online Planning Register, annotated by TPA 2020]

The White Pines Central Site is generally noted as 'Area B' within the Masterplan Application. This area, as noted in Figure 4.2, comprised the provision of 86 no. residential units, 54 no. houses and 35. No duplex units, in a mix of 2 and 3 bed units.

The site is generally laid out in two sections, the northern section and southern section, in a west-east orientation, served by an internal distributor road.

As shown in Figure 4.2, the initial scheme design option proposed to locate the primary vehicular access route internally, to the south, that would be accessed via the development now known as White Pines South.

Landscaping was principally provided under the existing powerlines, within the designated wayleave. Additional open space was also provided to the north west.

Area B comprised the provision of 156no. car parking spaces to serve the 86 no. residential units at a ratio of 1.81 spaces per unit.

Following a detailed analysis of the Initial Scheme Design, a number of issues were identified. The biggest fundamental problem with the site was due to the approved layout. The layout, as shown in Figure 4.2 above, is not considered to appropriately address the site's sloping topography. Due to the site's sloping topography, this layout would require the use of cut and fill techniques, as the development site rises c. 18m from the site's lowest point, on the site's western boundary, to the site's highest point, on the eastern boundary. Given building are all proposed at a uniform 2-3 storey height, the proposed heights did not appropriately address the site's topography.

- **Background 2005 – 2016**

Following the granting of planning permission (SD04A/0393/ ABP Ref. PL06S.212191, granted 2005), the redevelopment of the Masterplan area (see Figure 4.1) experienced a number of substantial delays, most notably caused by the economic downturn in 2008. As such, only the initial phase of the masterplan application site has been realised, at Stocking Wood, located west of White Pines North, South and Retail, identified in Figure 4.1.

In recent years Ardstone Homes have purchased the balance of the Masterplan site and are currently in the process of delivering a significant quantum of housing and commercial floorspace on the site, identified in Table 3.2 of this EIAR.

Following the accusation of these lands, a number of alternative options for the proposed development of White Pines Central were considered. Enhanced building heights and residential densities were also considered, in the context of recently published *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018)* and the *Urban Development and Building Heights Guidelines for Planning Authorities (December 2018).*

- **ALTERNATE LAYOUT 2 (DESIGN OPTION A)**

As shown in Figure 4.3, Design Option A comprised the provision of c195 no. Build to Rent apartments, arranged across 6 no. principal blocks, Blocks A – F. Option A provided 9 no. studio apartments, 88 no. 1 Bed apartments and 98 no. 2 Bed units across the c2.2 Ha site. Each of the 6 no. residential blocks comprise a 4 storey apartment block, see figure 4.4.

The development also proposed a single storey 450sq.m building, to the west of the site, to provide internal residential amenity space to serve the BTR element of the proposed development.

This option proposed to provided 157 no. parking spaces, with a ratio of 0.8 spaces per residential unit. The proposed development also provided waste storage facilities; boundary treatments; street lighting, and associated site works.

3 no. public plazas were proposed, west of Block A, at the site's entrance, and south of Block C, were also proposed.

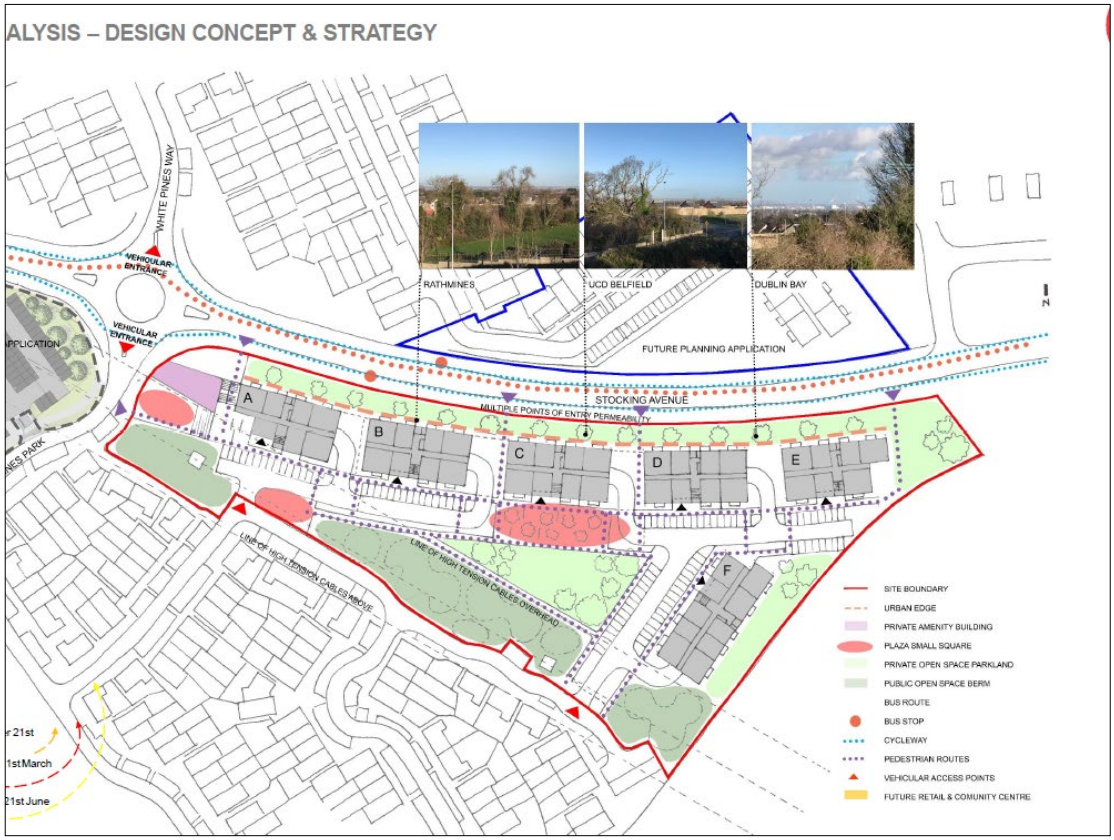

Figure 4.3: Alternative Layout 2 (Option A) 1 [Source: RAU 2019]

As shown in Figure 4.3, primary vehicular access for the proposed development remained generally as it was in the initial Masterplan for the site, with access to the site provided internally to the south, via the development now known as White Pines South.

Figure 4.4: Alternative Design 1, Contiguous Elevation Stocking Avenue [Source: RAU 2019]

Following a detailed analysis of Option A, a number of issues were identified;

- Given the development proposed all apartment blocks at 4. No. Stories. In the context of the site's sloping topography, the proposed scheme layout was considered to require further consideration to assess if the proposed development could respond to the site's topography in a more meaningful way.

- The proposed development was considered to respond positively to Stocking Avenue, however, further consideration was required on how the development would respond to the forthcoming White Pines South development, located south of the subject site.
- Further consideration was also required regarding the design/appearance of Block A given its prominent location, at the site's entrance adjacent to a roundabout on Stocking Avenue, a more prominent landmark building was considered to be more appropriate.
- The inclusion of 3 no. plazas was considered excessive. Further investigation was required to assess the usability of these spaces.

- **ALTERNATE LAYOUT 3 (DESIGN OPTION B)**

An alternative Design option was proposed to resolve the issues highlighted in Option A, principally to address the site's sloping topography. In doing so the proposed apartment blocks to the east of Block A were repositioned in a north-south orientation, to run along perpendicular to the gradient of the site's slope. In this regard, from street level, the development site would have a relatively flat perception.

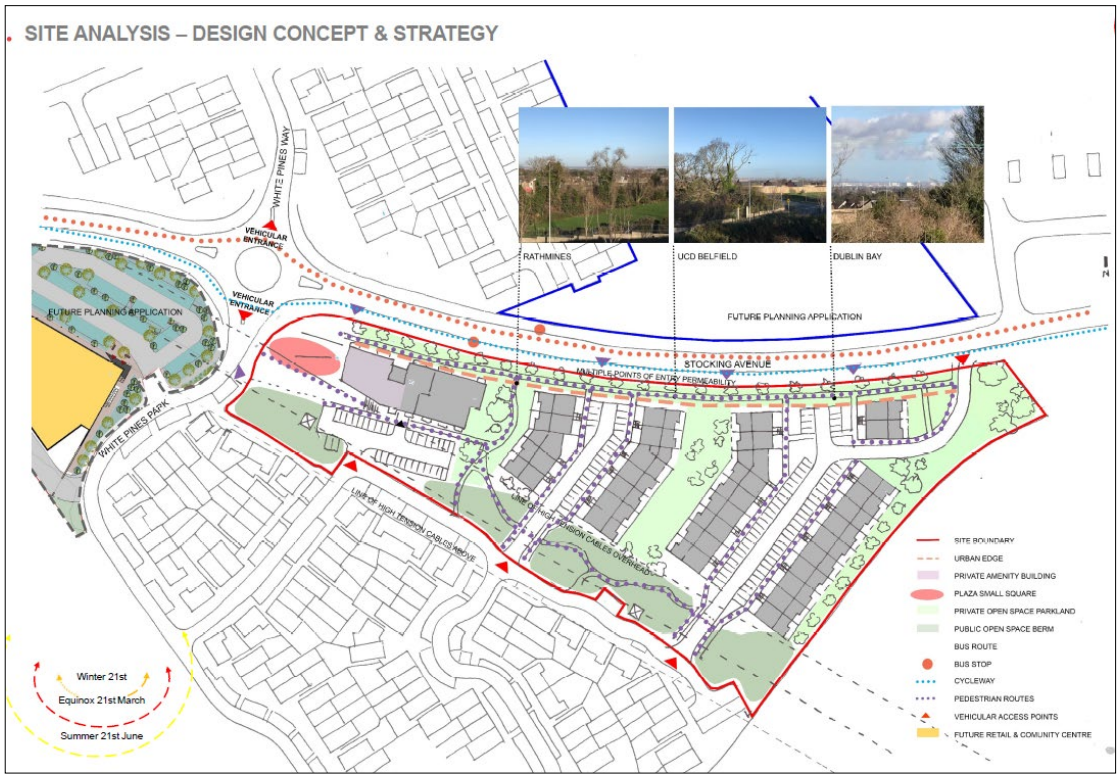

Figure 4.6: Ardstone Homes Planning Application Sites: Landscape Masterplan, Alternative Layout 3 (Option B) [Source: RAU 2020]

The proposed building heights were also revised, in part to address the site's sloping topography, but also to address the prominent roundabout location to the west of the site. In doing so a part 9 part 6 storey building was proposed at Block A. The balance of the residential blocks, Blocks B- F were proposed as 3 storey buildings providing apartment and duplex units, see Figure 4.6.

The amended proposal comprised the provision of 135 no. residential units. Block A provided 69no. apartments comprising principally 1 and 2 bed units. Blocks B-F provided 66 no.

apartment and duplex units comprising principally 2 and 3 bed units. In total, the proposed development comprised 42 no. one bed units, 90 no two bed units and 3 no. three bed units.

This option proposed to provided 131 no. parking spaces, with a ratio of 0.97 spaces per residential unit. The proposed development also provided waste storage facilities; boundary treatments; street lighting, and associated site works.

Amended vehicular assess was also proposed. As shown in Figure 4.6, Alternative Layout 3 (Option B) proposed to provide direct vehicular access to Stocking Avenue, to the north west of the site.

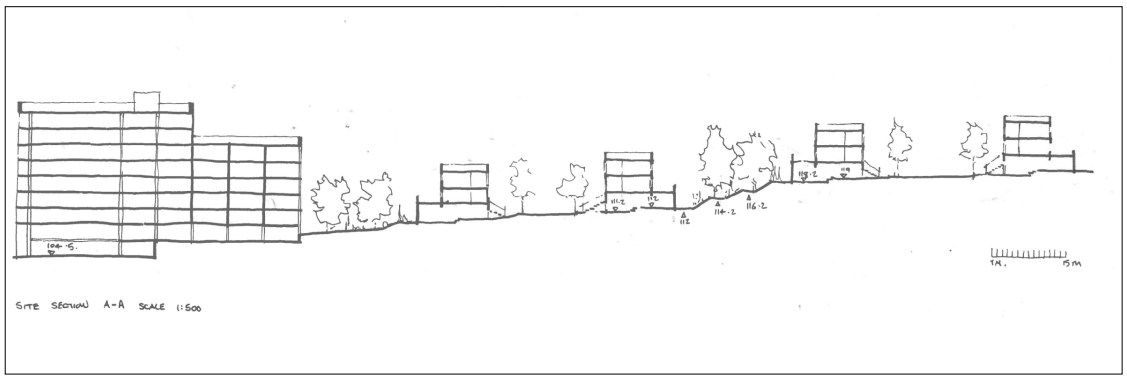

Figure 4.7: Alternative Layout 3 (Option B), Contiguous Elevation Stocking Avenue [Source: RAU 2020]

The single storey building proposed to the west of the site (shown in Figure 4.3 above), providing internal residential amenity space, was removed. The internal residential amenity space was relocated within Block A.

The removal of this building enabled the expansion of the public plaza in front of Block A, to provide a public plaza to address the recently granted White Pines Retail development site.

a) SDCC: Section 247 Pre-Planning Consultation 1

Alternate Layout 3 (Option B) was presented to SDCC for pre-planning consultation in March 2020 under Section 247 of the Planning and Development Act 2000. In their Response, SDCC provided the following comments relating to the proposed scheme design;

- Density of the proposed development was considered excessive in the context of the *Ballycullen Oldcourt Local Area Plan 2014*.
- Unit mix is heavily in favour of one bed units with 60% of total. Notwithstanding the requirements of the LAP and CDP in terms of unit mix, SPPR 1 of the Apartment Guidelines (2018) states that 'apartment developments may include up to 50% one bedroom or studio type units'.
- Building height is considered to be excessive at 9 storeys in height in the context of the *Ballycullen Oldcourt Local Area Plan 2014*.
- Concerns were also raised regarding the proposed layout, specifically the relationship on Stocking Ave with buildings perpendicular to the road.
- Further discussions with the Parks Department with regard to landscaping, trees and the new open space proposed were also recommended.

- **ALTERNATE LAYOUT 4 (OPTION C)**

The design of the proposed development was revised further principally to address the comments received from SDCC and also to advance the scheme design. In summary, the proposed changes to the development presented to SDCC for initial Section 247 Pre-Planning consultation comprise:

- 41 no. additional residential units resulting in a total provision of 176no. residential units.
- The reduction in height of Block A, comprising 2 no. stories to the eastern elevation resulting in a part 9 part 4 storey building.
- Reduction in the number of duplex units proposed and an increase in the number of apartments.
- Amalgamation of former Blocks C&D to provide 1no. part 4 part 5 storey building.
- A reduction in overall development footprint, which has allowed for the addition of an enhanced centrally located open space parkland.

The amended development comprised the provision of 176 No. BTR apartments/duplex units, within 5 no. residential blocks ranging in height from 3 to 9 stories.

b) SDCC: Section 247 Pre-Planning Consultation No. 2

The revised development was again presented to SDCC for pre planning Consultation in June 2020 under Section 247 of the Planning and Development Act, 2000. Comments received from SDCC through this additional round of public consultation comprised broadly similar comments to those raised through the initial round of consultation, namely;

- Density of the proposed development was still considered excessive in the context of the *Ballycullen Oldcourt Local Area Plan 2014*.
- The proposed residential mix was further questioned, as the council considered the unit mix to be heavily in favour of one bed units.
- The proposed building height of Block A was still considered to be excessive.
- Design and layout, still concern with the relationship on Stocking Ave with buildings perpendicular to the road.

These comments are addressed in detail in the Planning Report, prepared by TPA, submitted with this application.

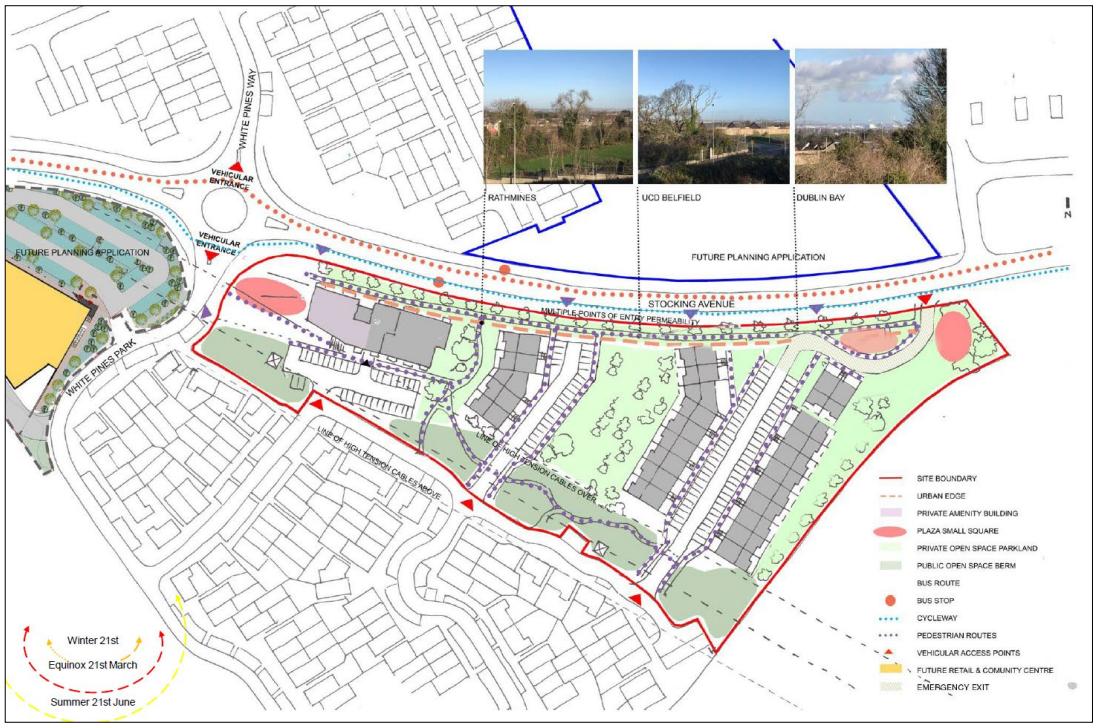

Figure 4.8: Ardstone Homes Planning Application Sites: Landscape Masterplan, Alternative Layout 3 (Option B) [Source: RAU 2020]

- **ALTERNATE LAYOUT 5 (DESIGN OPTION D, Preferred Option)**

Following the second round of consultation with SDCC, the preferred option scheme design was prepared for pre-SHD consultation with ABP. The main change proposed to the previous design was the reduction in height of Block A. Block A was proposed as a part 8 part 4 storey building. Additional minor amendments were also facilitated, however, the site's layout, as shown in Figure 4.8, remained broadly unaltered.

The development comprised the provision of 137 no. apartment and duplex units, arranged across 6 no. residential blocks, with an overall height of 3 to 8 stories:

- *Block A is a 8 storey apartment block comprising 70 No. Studio, 1 and 2 bed units;*
- *Block B is a 3 storey duplex block comprising 11 No. 1, 2 and 3 bed units;*
- *Block C1 is 3 storey duplex block comprising 15 No. 1, 2 and 3 bed units;*
- *Block C2 is a 3 storey duplex block comprising 19 No. 1, 2 and 3 bed units;*
- *Block D is a 3 storey duplex block comprising 18 No. 2 and 3 bed units; and*
- *Block E is a 3 storey duplex block comprising 4 No. 2 and 3 bed units.*

The proposed development was submitted to ABP for pre-application consultation in November 2020 (Case Reference: ABP-308642-20). A tripartite meeting was held with the applicant, SDCC and ABP on 8th February 2021. Following consultation, ABP issued their Opinion on the Pre-app submission, dated 22nd February 2020. A response to this Opinion has been prepared, and submitted with this application, detailing how the development, as currently proposed, has addressed all comments raised. For further information please refer to the Statement in Response to ABP Opinion, prepared by TPA, submitted with this application.

- **ALTERNATE LAYOUT 6 (DESIGN OPTION E, PROPOSED DEVELOPMENT)**

As detailed in Section 4 of the Planning Report, prepared by TPA, the final scheme design, subject of this application comprises;

""The proposed residential development will provide for 114 No. residential units in a mix of 1, 2 and 3 bed apartment and duplex units, across 6 No. separate blocks;

- *Block A is a part 6 part 4 storey apartment block comprising 47 No. 1 and 2 bed units;*
- *Block B is a 3 storey duplex block comprising 11 No. 1, 2 and 3 bed units;*
- *Block C1 is 3 storey duplex block comprising 15 No. 1, 2 and 3 bed units;*
- *Block C2 is a 3 storey duplex block comprising 19 No. 1, 2 and 3 bed units;*
- *Block D is a 3 storey duplex block comprising 18 No. 2 and 3 bed units; and*
- *Block E is a 3 storey duplex block comprising 4 No. 2 and 3 bed units.*

The proposed development will also consist of the provision of: 110 sqm residential amenity space in the lower ground floor of Block A; waste storage facilities; 98 No. car parking spaces and 238 No. bicycle parking spaces; boundary treatments and street lighting; the provision of Sustainable Urban Drainage systems (SUDs); 1 No. ESB substation; plant and switch rooms and all ancillary works and services necessary to facilitate construction and operation; changes in levels across the site; associated hard and soft landscaping; and all other associated site excavation; and infrastructural and site development works above and below ground. The development will be served by a vehicular access from Stocking Avenue via White Pines South on the western side of the site."

The layout, as progressed, provides 6 no. residential blocks surrounded by a large quantum of publicly accessible open space c.9,959sq.m, representing c.46% of the total site area. This includes the area of open space proposed beneath the wayleave for the power lines. If the area of open space beneath the powerline is discounted from the above calculation, the remainder of the site still provides c.5,890sq.m, representing c.37% of the remaining site area.

As detailed above, the proposed building heights and orientation have been carefully selected to respond to the site's sloping topography, rising from the western boundary to the site east. As shown in Figure 4.9, given the site's sloping topography, when viewed from a distance the proposed height of Block A will be broadly in line with 3 storey Blocks C2, D and E, given these are located at the highest point of the site.

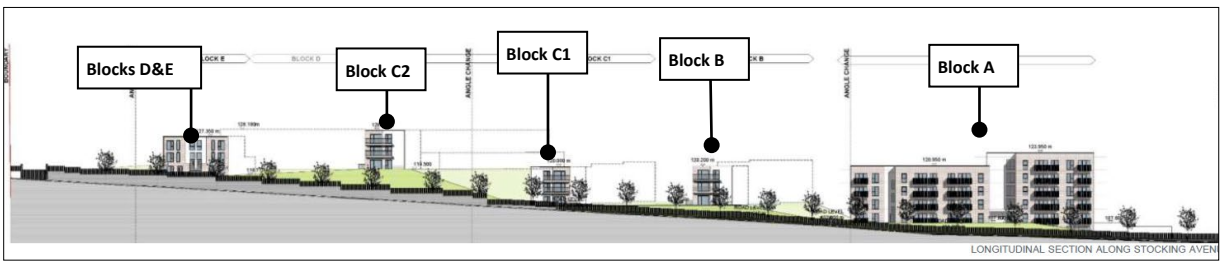

Figure 4.9: Contiguous Site Section, Stocking Avenue, [Source: RAU Drawing No. P1-153D]

The design of the development ensures that the proposed residential blocks will integrate well with the site. The proposed residential blocks, landscape design and mature trees will create

a high-quality attractive space, with a number of incidental breakout and play areas, kick about spaces and hard and soft landscaping features.

Figure 4.10: White Pines Central CGI, Stocking Avenue Looking East, [Source: RAU Design Statement 2020]

4.3.6 Final Landscape Design

The proposed landscape has been designed to create a sense of place, supporting the urban design layout in the creation of streetscapes and residential spaces. The design strategy aims to promote sociability, providing places for social interaction and the creation of a sense of community.

A Landscape Design Strategy has been prepared by MA in the context of the provisions of the *Ballycullen and Oldcourt LAP 2014* and informed by detailed assessments undertaken as part of the development process, as outlined above.

The proposed landscape design for the site, has been designed in tandem with the architectural design of the site, and that of White Pines South. As a result, the landscape components are inherent to the architectural layout of the scheme. The development includes extensive areas of landscape architecture. For further information please refer to the Landscape Masterplan and Landscape Design Statement, prepared by MA, submitted with this application.

4.3.7 Alternative Mitigation Measures

The mitigation measures which are outlined in the various chapters of the EIAR are considered appropriate to the location, nature and extent of the project and its potential impacts. As such, no alterative mitigation measures were considered.

4.3.8 Conclusion

Having examined various reasonable alternative designs, it is considered that the proposed development is the preferred option in terms of the sustainable and appropriate development of the subject site.

4.0 ARCHAEOLOGY, Architectural & Cultural Heritage

4.1 Introduction

4.1.1 General

IAC Archaeology Ltd. has prepared this section of the EIAR to assess the impact, if any, on the archaeological, architectural, and cultural heritage resource of a proposed residential development at Stocking Avenue, Dublin 16 (Figures 5.1). The assessment was carried out by Grace Corbett of IAC Archaeology Ltd.

4.1.2 Conclusions

The proposed development area is located on the south side of Stocking Avenue in the townland of Woodtown, Dublin 16, within the Parish of Cruagh and the Barony of Uppercross. The short north eastern border of the proposed development lies along the townland boundary separating Newtown and Woodtown.

There are no recorded monuments within a 500m radius of the proposed development. There two Protected Structures (also recorded by the NIAH), a gate lodge (RPS No. 335) c. 140m to the south associated with Woodtown Park House and Woodtown Park House itself (RPS No. 361), c. 410m to the south of the proposed development area.

A review of the Excavations Bulletin (1970–2019) has shown that while no archaeological investigations have previously taken place within the proposed development area, several have been carried out within the 500m study area. Extensive archaeological investigations have taken place in association with the construction of Stocking Avenue and residential developments adjacent to, and in the wider vicinity of, the proposed development area. A number of small archaeological sites were identified, including a possible Bronze Age structure.

From the 18th century onwards the proposed development area appears relatively unchanged, shown as occupying open land within an area marked as Hide/Hyde Park until the mid-19th century, after which this park is no longer marked and the area is shown corresponding to its present-day field boundaries.

An inspection of the aerial photographic coverage did not reveal any previously unknown archaeological features, but did indicate that the proposed development area has been subject to disturbance associated with the on-going construction of the residential development immediately to the southwest, and that the vicinity of the proposed development has been subject to extensive further residential development. This was confirmed during the site inspection, though it appears the eastern side of the site has been used for spoil storage and may not have been stripped of topsoil.

4.2 Description of Potential Impacts

4.2.1 Construction Phase Impact

4.2.1.1 Archaeology

There are no predicted impacts to any known archaeological remains or recorded monuments during the construction phase of the proposed development.

There is potential for previously unrecorded archaeological features to be located at the site, impacts on any such remains may range from moderate to profound direct adverse and result from removal during construction.

4.2.1.2 Architecture

There are no predicted impacts to any known architectural heritage assets during the construction phase of the proposed development.

4.2.1.3 Cultural Heritage

There are no predicted impacts to any known cultural heritage assets during the construction phase of the proposed development.

4.2.1.4 Operational Phase Impact

There are no predicted impacts to any archaeological, architectural or cultural heritage assets during the operation of the proposed development.

4.2.1.5 Do Nothing Impact

If the proposed development were not to proceed there would be no negative impact on the archaeological, architectural or cultural heritage resource.

4.2.1.6 Worst Case Impact

In the event that the development proceeds without cultural heritage mitigation in place, it is possible that features of culture heritage value will be destroyed without proper record.

4.3 Mitigation Measures

All topsoil stripping outside of the areas of previous disturbance will be monitored by a suitably qualified archaeologist. Full provision should be made for the resolution of any archaeological features/deposits that may be discovered, should that be deemed the appropriate way to proceed.

4.4 Monitoring

The mitigation measures recommended above would also function as a monitoring system to allow the further assessment of the scale of the predicted impacts and the effectiveness of the recommended mitigation measures.

4.5 Cumulative Impacts

A number of developments, both proposed and those granted permission, in the surrounding area have been considered in the assessment of cumulative impacts.

There are no predicted cumulative impacts to the archaeological or cultural heritage resource. Should any archaeological or cultural heritage remains be identified on the site, they will be preserved by record, mitigating any negative impacts and adding to the understanding of the historical development of this area. Where proposed and granted developments in the surrounding area have the potential to impact on archaeological remains, it is highly likely that mitigation measures have also been proposed to preserve by record any identified archaeological remains.

4.6 Residual Impacts

Following the implementation of the above mitigation measures, there would be no residual impacts on the archaeological, architectural or cultural heritage resource.

5.0 POPULATION AND HUMAN HEALTH

5.1 Introduction

This chapter of the EIAR was prepared by AWN. The chapter evaluates the impacts of the proposed development on population and human health.

In accordance with the Draft EPA EIA Report Guidelines (2017) and EPA Draft Advice Notes for EIS (2015), this chapter has considered the "existence, activities and health of people" with respect to "topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions". Natural hazards are considered in Chapter 2 (Section 2.7) and Chapter 6. Issues examined in this chapter.

5.2 Assessment of Significance & Sensitivity

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of the effect.

Within any area, the sensitivity of individuals in a population will vary. As such, it would be neither representative of the population, nor a fair representation of the range of sensitivities in a population were an overall sensitivity classification assigned to the population in question. As such, the precautionary principle has been adopted for this assessment, which assumes that the population within the Study Area is of a uniformly high sensitivity.

5.3 Magnitude of Impact

The magnitude of predicted impacts has been quantified in this assessment using the terms outlined in Table 6.1 below:

Magnitude	Description of Magnitude
High	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a **major change** to existing baseline conditions (adverse or beneficial)
Medium	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a **moderate change** to existing baseline conditions (adverse or beneficial)
Low	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would result in a **minor change** to existing baseline conditions (adverse or beneficial)
Negligible	Change in an environmental and/or socio-economic factor(s) as a result of the proposed development which would not result in a change to existing baseline conditions at a population level, but may still result in an individual impact (adverse or beneficial)
No change	No change would occur as a result of the proposed development which would alter the existing baseline conditions (adverse or beneficial)

Table 6.1: Magnitude of Predicted Impacts

6.3.2 Significance of Effects

The assessment of the significance of effects in this assessment is a professional appraisal and has been based on the relationship between the magnitude of effects and the sensitivity of the receptor. Table 6.2 below provides a matrix on the measure of the significance of effects based on these parameters.

		Magnitude of Impact			
		Negligible	**Low**	**Medium**	**High**
Sensitivity of Receptor	**Negligible**	Negligible	Negligible or Minor	Negligible or Minor	Minor
	Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
	Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
	High	Minor	Minor or Moderate	Moderate or Major	Major

Table 6.2: Matrix illustrating the significance of effects as determined by the relationship between the magnitude of impact and the sensitivity of receptors

The Study Area selected for the assessment of baseline population factors and of the impact the proposed development would have on the human health of people within this population was defined as Electoral Division (ED) as per the 2016 census data surrounding the proposed development site (CSO, 2016) These electoral divisions chosen are;

- Firhouse – Ballycullen (ED Code 03012)
- Firhouse Village (ED Code 03014)
- Firhouse – Knocklyon (ED Code 03013)
- Ballyboden (ED Code 03002)
- Edmondstown (ED Code 13011)
- Bohernabreena (ED Code 03003)

The study area is presented in Figure 6.1 below.

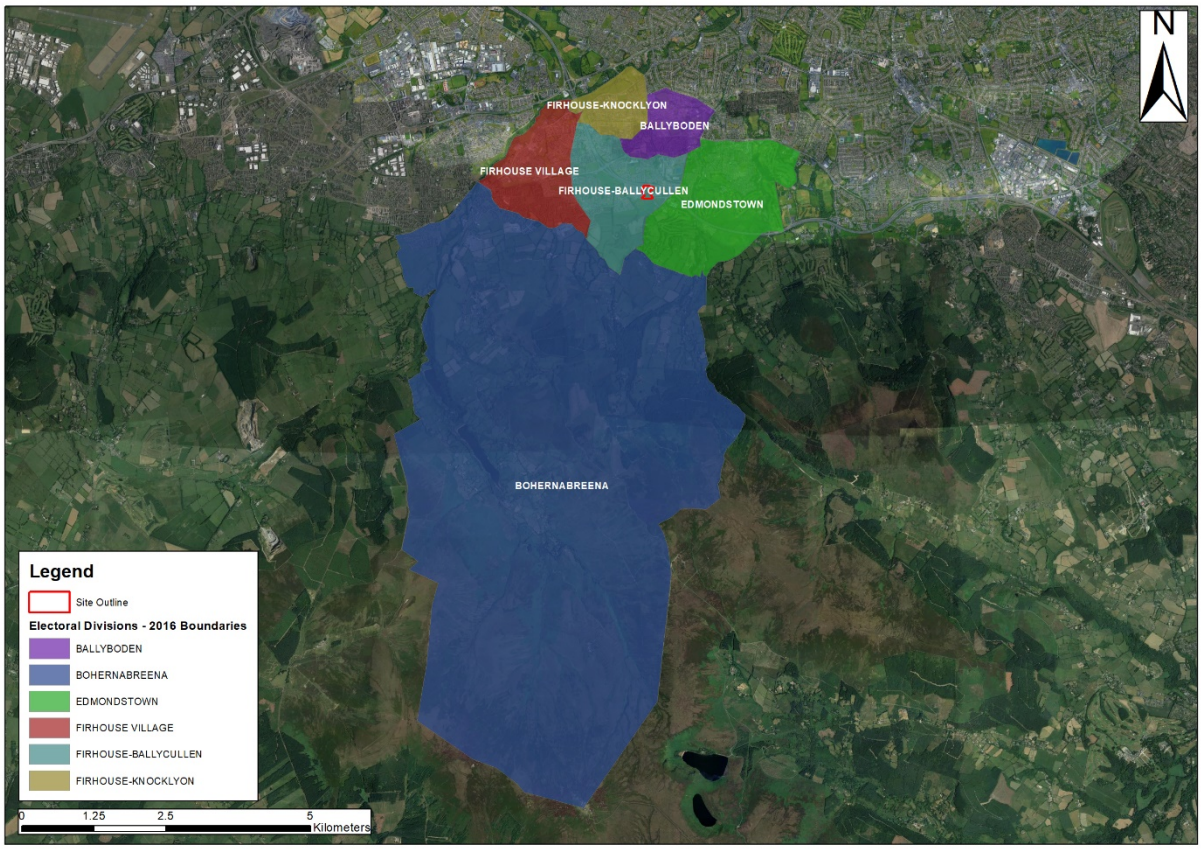

Figure 6.1: Map illustration the selected Study area for the proposed development (CSO, 2016)

6.5 Remedial and Mitigation Measures

The impacts on the local population in terms of residents and businesses are considered to be mainly positive in the sense of creating direct employment opportunities and indirect additional business, both during the construction and operational phases.

Mitigation measures proposed to minimise the potential impacts on human health in terms of air quality and climate and noise and vibration are discussed in the relevant sections of Chapters 11 and 12, respectively.

Chapter 14 Traffic and Transportation addresses mitigation measures proposed to reduce the impact of additional traffic movements to and from the development.

6.8 Residual Impacts

It is expected that the proposed development will have a not significant, positive and long-term impact on the immediate hinterland through continued employment opportunities and the associated economic and social benefits.

There are no predicted adverse impacts with respect to socio-economic factors, land-use or the amenity value and tourism potential of the area, primarily due to the location of the proposed development which is in an area of established residential development.

All other environmental aspects relating to the human environment which have the potential to impact on the local population such as air quality and climate, noise and vibration, material assets and traffic are addressed in Section 6.6.2 and in more detail in the relevant chapters of this EIA Report.

Measures outlined in Sections 6.6 and 6.7 will be put in place to ensure the health and safety of all site personnel and residents during both construction and operational phases.

6.9 Cumulative Impacts

Permitted developments in the vicinity of the proposed development are listed in Chapter 3. There is no predicted significant cumulative impact associated with the construction or operational phase of these projects.

The proposed development has been designed to ensure there are no significant residual effects on human health when taking into account the surrounding land uses. As such it is anticipated that the proposed development will not have a significant effect on human health.

As the proposed development will have a positive impact on the immediate hinterland and the South Dublin Region through economic and social benefits, it is concluded that any cumulative impacts on population and human health will be positive and long-term.

6.9 Conclusion

It is not predicted that the proposed development will have any adverse effects on human health during either the construction or operational phase.
It is not predicted that the proposed development will have any adverse effects on human health during either the construction or operational phase.

The proposed development will have numerous direct and indirect benefits on a regional and national scale and will have an overall positive effect on the local, regional and national population in terms of providing key residential development to ameliorate the effects of the current housing crises.

6.0 BIODIVERSITY

7.1 Introduction and Methodology

This section of the Environmental Impact Assessment Report (EIAR) was carried out by Altemar Ltd. It assesses the biodiversity value of the proposed development area and the potential impacts of the development on the ecology of the surrounding area within the potential zone of influence (ZOI). It also outlines the standard construction, operational and monitoring measures that are proposed to minimise potential impacts and to improve the biodiversity potential of the proposed development site.

Desk studies were carried out to obtain relevant existing biodiversity information within the ZOI. The assessment extends beyond the immediate development area to include those species and habitats that are likely to be impacted upon by the project. Details of the proposed development are seen in Chapter 2 of the EIAR.

The programme of work in relation to biodiversity aspects of the EIAR have been designed to identify and describe the existing ecology of the area and detail sites, habitats or species of conservation interest. It also assesses the significance of the likely impacts of the scheme on the biodiversity elements and outlines measures to alleviate identified impacts.

A separate Appropriate Assessment Screening, in accordance with the requirements of Article 6(3) of the EU Habitats Directive, has been produced. It was determined that "having taking into consideration the effluent discharge from the proposed development works, the distance between the proposed development site to designated conservation sites, lack of direct hydrological pathway or biodiversity corridor link to conservation sites and the dilution effect with other effluent and surface runoff, it is concluded that this development that would not give rise to any significant effects to designated sites. A Preliminary Construction Management Plan has been prepared by DBFL.

7.2 Methods for the Ecology Assessment

A pre-survey data search was carried out. This included examining records and data from the National Parks and Wildlife Service, National Biological Data Centre, the Environmental Protection Agency, in addition to aerial, 6 inch maps and satellite imagery. A detailed desktop review and field surveys were carried out, initially in November 2019, with additional site visits up to April 2020 as outlined in Table 7.1. All ecological elements were carried out by Bryan Deegan MCIEEM.

Proximity to designated conservation sites and habitats or species of conservation interest
Designated conservation sites within 15km of the site outline were studied. This included sites of National importance ((Natural Heritage Areas (NHA), proposed Natural Heritage Areas (pNHA) and Ramsar sites in addition to Natura 2000 sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA)).

Up to date GIS data (National Parks and Wildlife Service (NPWS) WMS data in addition to shapefiles) were acquired and plotted against 5, 10 and 15km buffers from the proposed development site. Where there was a potential for the ZOI to be influenced by natural biodiversity corridors e.g. rivers or woodland these were also take into account and assessment extended. A data search of rare and threatened species within 5km of the proposed site was provided by NPWS. Additional information on rare and threatened species

was researched through the National Biodiversity Data Centre maps data search and previous planning applications in the vicinity.

Habitats, Flora and Avian Ecology

A pre-survey data search was carried out. This included a literature review to identify and collate relevant published information and ecological studies previously conducted and comprised of information from the following sources; the National Parks and Wildlife Service, NPWS Rare and Protected Species Database, National Biodiversity Data Centre, in addition to aerial, 6 inch, satellite imagery. Following the desktop study, a walk-over assessments of the site was carried out on the 10th March 2020 and on the 16th April 2020. Habitat mapping was carried out according to Fossitt (2000) using AcrGIS 10.5 and displayed on Bing satellite imagery. Flora assessment was carried out on the 16th April 2020. Any rare or protected species were noted. Two transects of 200m long were carried out along treelines within the site and bird species seen or heard within 100m of the recorder were noted. Additional observations were noted on species within the fields and additional records were noted. A survey for mammals was carried out by means of a thorough search within the study area. The presence of mammals is indicated principally by their signs, such as resting areas, feeding signs or droppings - though direct observations are also occasionally made. The survey also included search for habitats suitable for amphibians and reptiles.

The nature and type of habitats present are also indicative of the species likely to be present; the habitats present were assessed in general accordance with techniques adopted for the Badger & Habitat Survey of Ireland (Smal, 1995) and habitats listed by Fossitt (2000). The field survey was supplemented by an evaluation of relevant literature and existing information. Survey for mammals was conducted in March, within the appropriate season for badger *Meles meles* surveys. Badger surveys are best conducted in winter (December to April, with optimum period mid-January to April). Survey for amphibians is best conducted in spring (late February to late March) when breeding sites can be identified.

Bat Fauna

Two bat assessments were undertaken (20th August 2019 and on the 16th April 2020) by Bryan Deegan, within the optimal survey period. The onsite habitats were visually assessed for their favourability for bats and the site survey was supplemented by a review of Bat Conservation Ireland's (BCIreland) Bat Records Database. No artificial structures were present on site that would be of bat roosting potential. Onsite trees were assessed for their bat roosting potential. The bat assessment was undertaken within the active bat period (March – October) when a detector survey is possible. Temperatures were greater than 10°C after sunset that at night. Winds were light and there was no rainfall.

Invasive Species

On the 20th April 2020 the proposed development site was surveyed and an assessment carried out for the presence of invasive species that are listed under the European legislation, the Birds and Natural Habitats Regulations 2011 (SI 477 of 2011) , Section 49(2) which prohibits the introduction and dispersal of species listed in the Third Schedule whereby "any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow [….] shall be guilty of an offence."

Difficulties Encountered

No difficulties were encountered in relation to the preparation of the Biodiversity chapter of the EIAR. The second fieldwork date was in the initial stages of the Covid 19 pandemic. The

site survey was carried out on site by a single outdoor fieldworker with no contact with any other person.

7.3 Proximity to Designated Conservation Sites and Habitats or Species of Conservation Interest

As can be seen from Figures 7.1 to 7.6 of the EIAR, there are no conservation sites within one kilometre of the proposed development site. The distance and details of the Natura 2000 sites (SAC & SPA) within 15km and NHA (including pNHA's) within 10km of the proposed development are seen in Table 7.2. There is an indirect pathway to the River Dodder via the public surface water network. It should be noted that no species of conservation importance were noted on site, based on NPWS and NBDC records. The common frog (Rana temporaria) was noted by NPWS 500m to the west of the site. The Irish Stoat (Mustela erminea subsp. Hibernica) and common frog (Rana temporaria) were noted in the 1km2 grids to the south. No species of conservation importance were noted by NBDC within or in the vicinity of the site.

Site Code	Conservation Site	Distance
SAC		
IE0001209	Glenasmole Valley SAC /pNHA	4.0 km
IE0002122	Wicklow Mountains SAC	4.2 km
IE0000210	South Dublin Bay SAC/pNHA	8.7 km
IE0001209	Knocksink Wood SAC	9.5 km
IE000713	Ballyman Glen	12.1 km
IE0000206	North Dublin Bay SAC/pNHA	13.1 km
IE0003000	Rockabill to Dalkey Island SAC	14.6 km
SPA		
IE0004040	Wicklow Mountains SPA	3.9 km
IE0004024	South Dublin Bay and River Tolka Estuary SPA	8.6 km
IE0004006	North Bull Island SPA/Ramsar	13.2 km
IE0004172	Dalkey Islands SPA	14.4km
Other pNHA's		
000991	Dodder Valley	2.4 km
001209	Glenasmole Valley	4.2 km
001753	Fitzsimon's Wood	4.9 km
001212	Lugmore Glen	6.4 km
002104	Grand Canal	6.6 km
001202	Ballybetagh Bog	8.8km
000211	Slade of Saggart and Crooksling Glen	8.8 km
001207	Dingle Glen	9.2 km
000210	Booterstown Marsh & South Dublin Bay	8.5 km
000725	Knocksink Wood	9.3 km
002103	Royal Canal	9.5 km
001755	Glencree Valley	9.7 km

Table 7.1. *Proximity to designated sites of conservation importance*.

7.4 Mitigation Measures & Monitoring

Mitigation measures will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the ZOI. These measures are outlined below in sequence and incorporate elements outlined elsewhere in this EIAR and in the DBFL

Construction Management Plan. It should be noted however, that additional measures may be incorporated into the proposed project following detailed discussions with County Council As the main potential vector for impacts would be seen to be via the indirect pathway to the River Dodder via the public surface water connection measures should be in place to protect the biodiversity of the River Dodder and the Dodder Valley pNHA. However, there is significant dilution and mixing in the River Dodder, when it meets the River Liffey and when the River Liffey enters into its estuarine stage and Dublin Bay. Based on this mixing and dilution there would deemed to be no significant effects on the Natura 2000 sites in the absence of controls on site. The measures outlined are not necessary for the protection of Natura 2000 sites. No additional mitigation measures are required besides those outlined below, during the construction and operational phases of the development, to protect against potential negative impacts on designated conservation sites.

Construction Phase,
Relevant mitigation measures relating to the construction phase of the proposed development are set out in the preliminary Construction Management Plan, prepared by DBFL, appended to the EIAR.

7.4.1 Additional measures to be carried out to prevent impacts on Habitats, Botany and Avian Ecology

- Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will need be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August).
- Replanting of the hedgerows and wildflower meadows should be carried out with native species.
- Construction operations outside of daylight hours should be kept to a minimum in order to minimise disturbance to fauna in addition to roosting bird species.
- Boundary vegetation. Linear features such as hedgerows and treelines serve as commuting corridors for bats (and other wildlife) and the onsite boundary vegetation should be retained and/or replaced once construction ends. Native species should be chosen in all landscaping schemes. Planting schemes should attempt to link in with existing wildlife corridors (hedgerows and treelines), both onsite and off, to provide continuity of wildlife corridors. Retention of boundary hedgerows and treelines will also serve to screen the development.
- Lighting restrictions. In general, artificial light creates a barrier to bats so lighting should be avoided where possible. Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) should be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. Mature trees should not be directly lit during construction or operation of the proposed development.
- Deer Fencing or suitable hoarding/fencing should be put in place on the eastern boundary of the site prior to any construction or clearance commencing on site.

Residual Impacts
None of the Natura 2000 sites (SAC & SPA) are within the potential Zone of Influence of this development. The nearest conservation site with a hydrological connection (Dodder Valley pNHA via public surface water network) to the site is 2.0 km downstream from the proposed development. No intact terrestrial biodiversity corridors connect the development area to a

designated conservation site. The development footprint is dominated bare ground and scrub habitat. The successful implementation of the CMP and additional measures outlined in this chapter of the EIAR would be seen as important elements to the successful mitigation/offsetting of the loss of biodiversity on site.

The proposed development has satisfactorily addressed the current ecology on site into its design so that application of the mitigation measures outlined in this EIAR will help reduce its impact on the local ecology to an adequate level. It is felt that where possible biodiversity enhancement measures have been retained and implemented into design to enhance the overall biodiversity value of the site. The overall impact on the ecology of the proposed development will result in a long term slight neutral residual impact on the existing ecology of the site and locality overall. This is primarily as a result of the loss of a single hedgerow on site, supported by the creation of additional terrestrial biodiversity features, mitigation measures and a sensitive native landscaping strategy.

8.0 LAND AND SOILS

8.1 Introduction

This Chapter of the EIAR comprised of an assessment of the likely impact of the proposed development on the soils and the geological environment as well as identifying proposed mitigation measures to minimise any impacts.

8.2 Methodology

An assessment of the likely impact of the proposed development on soils and the geological environment included the following activities:

- Preliminary Ground Investigation Study.
- Review of information available on the Geological Survey of Ireland (GSI) online mapping service.

Preliminary Ground Investigations for the proposed development were carried out by Ground Investigations Ireland in March 2020 and included the following scope of work:

- 11 No. Dynamic Probes
- 2 No. Infiltration Tests
- 10 No. Trial Pits
- 4 No. Window Samples

Refer to Appendix 8-A for Preliminary Ground Investigation Information (GII, Project No. 9411-02-20 – Dynamic Probe Logs, Infiltration Test Results, Trial Pit Logs and Window Samples).

8.3 Receiving Environment

8.3.1 Soils

Ground conditions at the site, as observed during Preliminary Ground Investigations, are summarised as follows:

- 0.2m to 0.4m thick topsoil layer overlying;
- 0.3m to 0.75m stratum of soft to firm, slightly sandy, slightly gravelly CLAY with occasional subangular to subrounded cobbles overlying;
- Firm to very stiff, slightly sandy, slightly gravelly CLAY with occasional subangular to subrounded cobbles (to target trial pit depth of 3.0m);
- Made ground (comprising of slightly sandy gravelly Clay with plastic, brick and concrete fragments) was encountered at two trial pit locations (TP 03 and TP 009 adjacent to the site' western and eastern boundary) to a depth of approx. 1.1m. Sublayers consistent with the rest of the site was observed below made ground at these locations (as described above);
- A thin layer of Tarmacadam above made ground was also observed at Trial Pit 03 (approx. 0.1m thick). Sublayers consistent with the rest of the site was observed below this asphalt layer (as described above);
- Groundwater ingress was encountered at trial pits located in the southern portion of the site (at depths ranging from 0.9m and 2.8m below existing ground level).

Infiltration tests were carried out at two locations (sites of proposed attenuation facilities). Test results indicate that soils are impermeable with no infiltration recorded.

8.4 Potential Impact of the Proposed Development

8.4.1 Construction Phase

8.4.1.1 Stripping of Topsoil

As noted in Chapter 8 of the EIAR, two stockpiles of topsoil are located at the eastern end of the site (stripped from the applicant's adjacent development, White Pines South). This material will be reused on site (incorporated into landscaping of back gardens and open space areas).

	Volume (m^3)
Topsoil strip (200mm to 400mm)	5,500
Topsoil reuse (landscape of gardens, open space, podium deck etc.)	5,500

Table 8.1: Preliminary Estimated Topsoil Volumes (+/- 10%)

8.4.1.2 Excavation of Subsoil Layers

Excavation of existing subsoil layers will be required in order to allow road construction, foundation excavation, drainage and utility installation and provision of underground attenuation of surface water.

Underlying subsoil materials generally comprise of sandy gravelly CLAY (refer to Section 8.3.1). and are expected to be generally suitable for reuse as non-structural fill (e.g. build-up of back gardens areas, build-up of open spaces, backfilling part of trenches in non-trafficked areas).

The topography of the site (steep gradients, typically 1:5 to 1:15) somewhat limits the potential for reuse of excavated material as non-structural fill. It is estimated that approx. 50% of excavated material can be reused on site with remaining 50% removed from site to a licenced waste receiving facility (subject to the approval of the facility operator in accordance with their facility permit or licence).

	Volume (m^3)
Cut (excavation of subsoil layers as described in 7.5.1.2 above)	18,000
Disposal of Excavated Subsoil	9,000
Reuse of excavated material as non structural fill	9,000

Table 8.2: Excavation of Subsoil / Reuse of Excavated Material (+/- 10%)

8.4.1.3 Imported Fill

Materials imported to site for use as fill will be natural stones sourced from locally available quarries or materials that have been approved as by-products by the EPA in accordance with the EPA's criteria for determining a material is a by-product, per the provisions of article 27(1) of the European Communities (Waste Directive) Regulations, 2011.

Imported fill materials will be granular in nature and used in the construction of pavement foundations, drainage and utility bedding and surrounds and as structural fill under buildings.

Materials will be brought to site and placed in their final position in the shortest possible time. Any imported material will be kept separate from the indigenous arisings from the site. All excavation to accommodate imported material will be precisely co-ordinated to ensure no surplus material is brought to site beyond the engineering requirement.

	Volume (m^3)
Imported Granular Material (granular material beneath road pavement, under floor slabs and for drainage and utility bedding and surrounds)	15,000

Table 8.3: Imported Granular Material (+/- 10%)

8.4.1.4 Construction Traffic

Earthworks plant (e.g. dump trucks) and vehicles delivering construction materials to site (e.g. road aggregates, concrete deliveries etc.) have potential to cause rutting and deterioration of any exposed subsoil layers, resulting in erosion and generation of sediment laden runoff.

This issue can be particularly noticeable at site access points (resulting in deposition of mud and soil on the surrounding road network). Dust generation can also occur during extended dry weather periods as a result of construction traffic.

8.4.1.5 Accidental Spills and Leaks

During the construction phase there is a risk of accidental pollution from the sources noted below. Accidental spills and leaks may result in contamination of the soils underlying the site.

- Storage of oils and fuels on site
- Oils and fuels leaking from construction machinery
- Spillage during refuelling and maintenance of construction machinery
- Use of cement and concrete during construction works

8.4.1.6 Geological Environment

Any excavations associated with development of the site are not expected to impact on the underlying geology.

8.4.2 Operational Phase

On completion of the construction phase, there will be no further impact on soils and the geological environment.

8.4.3 'Do Nothing' Scenario

There will be no impact on soils and the geological environment if the development does not proceed.

8.5 Ameliorative, Remedial or Reductive Measures

8.5.1 Construction Phase

8.5.1.1 Stripping of Topsoil

The existing topsoil stockpiles described previously will be protected for the duration of the works and are not located in areas where sediment laden runoff may enter existing surface water drains.

8.5.1.2 Excavation of Subsoil Layers

Design of proposed road and floor levels has minimised excavation of existing subsoil layers. Disturbed subsoil layers will be stabilised as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping).

The duration that subsoil layers are exposed is to be minimised in order to mitigate against weather effects.

Stockpiles of excavated subsoil material will be protected for the duration of the works. Stockpiles of subsoil material will be located separately from topsoil stockpiles.

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

8.5.1.3 Imported Fill

As noted in section 8.5.1.3 above, importation of fill to site will be required.

No large or long-term stockpiles of fill material will be held on the site. At any time, the extent of fill material held on site will be limited to that needed in the immediate vicinity of the active work area.

Smaller stockpiles of fill, where required, will be suitably protected to ensure no sediment laden runoff enters existing surface water drains. Such stockpiles are to be located in order to avoid double handling.

8.5.1.4 Construction Traffic

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

Vehicle wheel wash facilities will be installed in the vicinity of any site entrances and road sweeping implemented as necessary in order to maintain the road network in the immediate vicinity of the site.

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

8.5.1.5 Accidental Spills and Leaks

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

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

8.5.1.6 Geological Environment

No mitigation measures are proposed in relation to the geological environment.

8.5.2 Operational Phase

On completion of the construction phase no further mitigation measures are proposed as there will be no further impact on soils and the geological environment.

8.6.3 'Do Nothing' Scenario

No mitigation measures are proposed in relation to soils and the geological environment if the development does not proceed.

9.0 LANDSCAPE & VISUAL IMPACT ASSESSMENT

9.1 Introduction

Mitchell + Associates was engaged by Ardstone Homes to prepare a Landscape and Visual Impact Assessment (LVIA) as part of the Environmental Impact Assessment Report (EIAR) for this proposed residential development at White Pines Central, Rathfarnham, Dublin 16. This Chapter of the LVIA will assess the impact of the proposed development on the landscape character and visual amenity of the current site and on the contiguous area and the site environs. It will consider these in the context of the site, in the south-western suburbs of Dublin. It will describe the landscape character of the subject site and its hinterland, together with the visibility of the site from significant viewpoints in the locality. It will include an outline of the methodology utilised to assess the impacts and descriptions of the receiving environment (baseline) and of the potential impacts of the development. Mitigation measures introduced to ameliorate or offset impacts will be considered and the resultant predicted (residual) impacts outlined.

This preliminary report should be read with reference to the Architectural Design Statement prepared by John Fleming Architects and with the initial photomontages, which are contained in a separate A3 report prepared by 3D Design Bureau.

9.2 Potential Impact of the Proposed Development

A development such as this proposal has the potential to impact significantly upon the landscape and visual aspects of the existing environment in a number of ways, at both construction and operational stages. Effects can be short or long term; temporary or permanent. The purpose of this section of the report is to describe the potential effects of such proposed development; upon the visual and landscape aspects of the immediate area, and further afield, where relevant.

9.2.1 Construction Phase

Potential visual impacts during the construction phase are related to temporary works, site activity, and vehicular movement within and around the subject site. Vehicular movement may increase in the immediate area, and temporary vertical elements such as scaffolding, site fencing, gates, plant and machinery etc., will be required and put in place. All construction impacts will be temporary, and may include the following:

- Site preparation works and operations (incl tree protection measures)
- Site excavations and earthworks
- Site infrastructure and vehicular access
- Construction traffic, dust and other emissions
- Temporary fencing/hoardings
- Temporary site lighting
- Temporary site buildings (including office accommodation)
- Cranes and scaffolding

9.2.2 Operational Phase

The proposed development will consist of the insertion of new residential buildings, road infrastructure and associated ancillary elements onto the subject site and will replace the existing open field currently covering the site. It should be noted that the location and effectiveness of the existing field boundary hedgerow, if retained, will assist in restricting and screening existing views into the site from higher ground to the south-east. Aspects of the proposed scheme design are included specifically to respond to such issues and any associated concerns. The design approach and specific mitigation measures employed to address such contextual issues and to respect and enhance the local rural environs are outlined in Section 9.6 'Avoidance, Remedial and Mitigation Measures', below.

9.2.3 'Do Nothing' Impact

If the proposed development were not to proceed, the site would presumably (in terms of its landscape impact), remain in its present form for a period. In such circumstances the current pattern of gradual land degradation would also presumably continue. All existing tree, hedgerow and scrub vegetation would continue to grow and mature, subject to their maintenance and management by the current landowner and adjoining occupiers, as appropriate to the circumstances.

9.3 Avoidance, Remedial & Mitigation Measures

9.3.1 Construction Phase

The building site including a site compound with site offices, site security fencing, scaffolding and temporary works will be visible during the construction phase. This is generally viewed as a temporary and unavoidable feature of construction in any setting. Mitigation measures proposed during this delivery stage of the development, revolve primarily around the implementation of appropriate site management procedures during the construction works – such as the control of lighting, storage of materials, placement of compounds, control of vehicular access, and effective dust and dirt control measures, etc. Such mitigation will be set out in the Preliminary Construction Management Plan prepared by DBFL Consulting Engineers. This is a working document which will be continually reviewed and amended to ensure effective mitigation throughout the construction period. The Preliminary Construction Management Plan references construction phase mitigation measures as relevant to the assessment of Landscape and Visual impact.

9.3.2 Operational Phase

The proposed scheme is designed to integrate well within its existing context. This will be accomplished through:

- Establishing an integrated and respectful relationship between the existing housing and the proposed development, incorporating aspects of prevalent built forms, scale, texturing, colour and materials;
- The insertion, positioning and modelling of the built elements, in order to assist in the visual reduction of the apparent mass of buildings and in order to accentuate landmark aspects of the development – in particular, the siting of the higher 8-storey apartment block at the western end of the site;

- Appropriate architectural detailing to assist in the respectful integration of the external building facades – including the modulation of openings and fenestration in a manner that reflects current local proportions and rhythms.
- Rationalisation of all services elements and any other potential visual clutter and its incorporation internally within building envelopes (as far as practically possible).
- Use of appropriate and harmonising colour, tones and materials
- The provision, maintenance and management of a sensitively considered soft landscape design for the development, which assists in the integration and screening of the buildings within the existing landscape.

9.4 Residual Impacts

9.4.1 Introduction

The proposed development will impact on the landscape to varying degrees in terms of its perceived nature and scale. These impacts are tempered and conditioned by sensitivities associated with the receptor, however the adjacent and surrounding land uses to the north and west are also residential in character so adverse sensitivity on the basis of the nature of the development would not be expected from these quarters. The duration of such impacts is however determined by the expected life of the proposed development as tempered by the mitigating effect of the maturing designed landscape proposed as an integral part of the development. In this case the development has an expected life of up to 60 years. Impacts on landscape character are therefore deemed to be of long-term duration in this instance.

In assessing the landscape character impacts specifically, there are three main inter-related aspects to be addressed in considering the development proposals, namely:

- The perceived character of the existing residential urban edge/rural landscape – how it is impacted by the proposal;
- Impacts of the proposed development on social and cultural amenity and;
- The proposed views of the development relative to the existing site (outlined in 9.8) and the associated impact on visual amenity.

9.4.2 Construction Phase

Initially the erection of site hoarding and tree protection fencing will be completed, site access points established and site accommodation units placed. Early in the construction period, topsoil stripping and excavations for building foundations will commence. Removal and/or storage of excavated materials from site and the delivery of construction materials will generate increased traffic within, to and from the site.

As construction progresses over the construction period, visual impacts will vary, with the on-going business of construction - delivery and storage of materials, the erection of the buildings, etc. Mitigation measures have been proposed as per section 9.6.1 ‘Avoidance, Remedial and Mitigation Measures’ to minimise the impact of the construction works on the site environs.

People living in the existing residential estate to the west of the site will be impacted negatively to a slight extent by the construction of the proposed development. For the more sensitive of these receptors (occupiers of existing houses backing onto the subject site

boundary), the visual impact of the proposed development during construction will vary from slight and neutral to moderate and negative, depending on the stage of construction, and the intensity of adjacent site activity. The construction impacts will be of short-term duration.

9.4.3 Operational Phase

9.5 Impact on the landscape character of the area and on social and cultural amenity

Whilst the term 'landscape character' is generally held to involve more than simply appearances, there is little doubt that a place's visual qualities contribute most to its character. Generally speaking, this is particularly so for say, visitors whose experience is often fleeting. In the context of the proposed development, impacts will typically be felt by people who live nearby, who may no longer enjoy a prospect of the fields behind them, rather a view (albeit in some areas, filtered by new landscape planting) of a housing scheme similar in many respects to that in which they live.

One might surmise that the current landscape character of this area is perceived largely by local people as essentially former agricultural land located in the Dublin suburbs which is ultimately destined for residential development. However, the actual visual penetration into the site from the main public access routes is somewhat limited by the topography and local landform. Views into the site from the east and south are limited and the site is generally more visible from the lower western end, particularly adjacent to the existing roundabout.

It is clear that the insertion of any proposed development into this existing, fairly open site will alter the landscape context of the area to an extent, however this is an emerging, planned trend in the area. In addition, clear views-in are actually quite limited and this will limit associated impacts.

The existing site with limited access into it, offers little in the way of an amenity resource for the local populace. The proposed development will not greatly alter that but will provide open space amenities for residents. The scheme design provides linkage into and through the scheme as appropriate, for both vehicles and pedestrians.

9.6 Visual impact

The assessment of visual impact is determined through the comparison of 'before' and 'after' photomontages – it is therefore, perhaps, a little less subjective than an assessment of landscape character. It too is inevitably influenced to some extent by the standpoint of the viewer (the receptor). The assessment of visual impacts created by the proposed development includes a consideration of the visual impacts on the visual environment likely to be impacted. A total of 17 photomontages has been prepared that illustrate the visual impact of the proposed development on the surrounding landscape. They are included in a separate A3 report included with the planning submission. In this photomontage report the existing view from each viewpoint is shown together with the proposed development as seen from the same viewpoint. The red line that appears on some of the proposed photomontages indicates the location and profile of the new development in the background, which in such cases is largely screened from view by distance, the intervening built environment, topography or vegetation.

Because the expected life of the proposed development is up to 60 years, the duration of predicted visual impacts is assessed as long term, as is the case for residual landscape character impacts (refer to section 9.7.3.1).

The assessment of visual impacts through the use of comparative photomontages serves to identify impacts upon the visual environment. The photomontages are important in illustrating the impact of the proposed scheme from the more sensitive viewpoints. In this instance, they also serve to support and illustrate an aspect of the landscape character impact assessment.

It is important to remember that whilst photomontages are a useful tool in illustrating comparative visual impact, they are recognised as having their limitations and potential dangers. The guidelines for their use in assessment clearly advocate their use in the context of a site visit to the viewpoint locations and point out that photomontages alone should not be expected to capture or reflect the complexity underlying the visual experience (refer to the GLVIA, 3rd Edition and the Landscape Institute's Advice Note 01/11).

9.7 Assessment of views

The chapter also includes a detailed assessment of 15 no. verified views. As detailed in Section 9.8, photomontages were prepared for 15 views from a range of viewpoints. For each view, the significance/magnitude and quality/sensitivity of the impact are assessed in outline.

10.0 HYDROLOGY

10.1 Introduction

This chapter of the EIAR comprises of an assessment of the likely impact of the proposed development on the surrounding surface water and hydrogeological environments (including flood risk, surface water drainage, foul drainage and water supply) as well as identifying proposed mitigation measures to minimise any impacts.

The site falls from its eastern boundary (+123.00) towards its western boundary (+103.50), following the grade along Stocking Avenue. As such, gravity drainage solutions are provided for both surface water drainage and foul drainage.

The existing surface water drainage network constructed to serve "White Pines South" (under planning application SD10A/0041) has been designed to accommodate additional flow form the subject application site. A spur has been left from the "White Pines South" surfacewater network adjacent to the site'swestern boundary. The surface water network constructed to serve "White Pines South" outfalls via an existing surface water drain (225mm diameter) under Stocking Avenue.

The site will be divided into upper and lower surface water catchments. The upper catchment will discharge into the lower catchment. The lower catchment will then discharge into the existing surface water network as described above.

The attenuation strategy is based on an allowable outflow of 38 l/sec from "lands under the applicant's ownership" south of Stocking Avenue (as permitted under planning application SD10A/0041).

10.2 Flood Risk

A flood hazard assessment has been undertaken by reviewing information from the Office of Public Works (OPW) National Flood Hazard Mapping (www.floods.ie) and the Eastern CFRAM Study.

This assessment has been carried out in accordance with the procedures for a "Flood Risk Assessment" as outlined in the OPW's Guidelines for Planning Authorities – The Planning System and Flood Management (November 2009).

OPW Flood Hazard Mapping
OPW's Summary Local Area Report is included in Appendix 10.A (Flood Hazard Information). This report is sourced from the OPW website (www.floodmaps.ie) and summarises all flood events within 2.5 km of the site. No flood events or benefitting lands are noted in the immediate vicinity of the site.

Eastern CFRAM Study
Extracts from the Dodder Catchment Flood Risk Assessment and Management Study are included in Appendix 10-A (Flood Hazard Information) which indicates the extent of fluvial flooding in the vicinity of the site.

The closest modelled node to the site is located on the Owendoher River (approx. 900 m east of the site. No fluvial flooding in indicated in the vicinity of the site.

10.3 Foul Drainage

The existing foul drainage network constructed to serve "White Pines South" under planning application SD10A/0041 has been designed to accommodate additional flow form the subject application site. A spur has been left from "White Pines South" foul drainage network adjacent to the site's western boundary. As the site falls from its eastern boundary towards its western boundary, a gravity drainage solution can be facilitated. Refer to Figure 10.5 of the EIAR.

The foul drainage network constructed to serve "White Pines South" outfalls via an existing surface water drain (225mm diameter) under Stocking Avenue which in turn outfalls northwards via the foul drainage network constructed by Ardstone under SD14A/0222 (which serves "White Pines North" and ultimately discharging to an existing 450mm diameter foul drain which crosses under the M50 motorway).

Pre-Connection Feedback has been received from Irish Water dated 8th May 2020 (refer to Appendix 10-B) and advises that:

- Subject to a valid connection agreement being put in place, the proposed connection to the Irish Water's foul drainage network can be facilitated.
- To accommodate the proposed connection, upgrade works are required to increase capacity of the Irish Water Network.

10.4 Surface Water Drainage

An existing surface water drainage network (within "White Pines South") is located to the south and west of the site (refer to Figure 10.2) and will provide a suitable surface water outfall for the proposed development as the site falls from its eastern boundary towards its western boundary.

The existing surface water drainage network constructed to serve "White Pines South" (under planning application SD10A/0041) has been designed to accommodate additional flow form the subject application site. A spur has been left from the "White Pines South" surface water network adjacent to the site's western boundary. The surface water network constructed to serve "White Pines South" outfalls via an existing surface water drain (225mm diameter) under Stocking Avenue.

This surface water drain under Stocking Avenue facilitates attenuated flows (38l/sec) from all "lands under the applicant's ownership" south of Stocking Avenue in accordance with previously granted planning permissions SD10A / 0041.

The surface water drain under Stocking Avenue outfalls to the surface water drainage network constructed by Ardstone under SD14A/0222 which serves "White Pines North" and ultimately outfalls to an existing 600mm diameter surface water drain which crosses under the M50 motorway and onwards through piped networks in the Scholarstown / Knocklyon areas (ultimately discharging to the River Dodder).

10.5 Water Supply

An existing 500mm Watermain watermains running along the southern side of Stocking Avenue, adjacent to the site's northern boundary. An existing 150mm water main network

is also located to the south of the site within "White Pines South".

The proposed development's water supply is to be taken from the 500mm diameter water main on Stocking Avenue and connected back into the 150mm diameter network located within "White Pines South". A 200mm diameter looped water main will be provided within the development. Refer to Figure 10.6.

Pre-Connection Feedback has been received from Irish Water dated 8th May 2020 (refer to Appendix 10-B) and advises that:

- Subject to a valid connection agreement being put in place, the proposed connection to the Irish Water's water supply network can be facilitated.
- New connection to the existing network is feasible without upgrade

10.6 Potential Impacts of the Proposed Development

10.6.1 Construction Phase

Potential impacts that may arise during the construction phase are noted below:

- Surface water runoff during the construction phase may contain increased silt levels (e.g. runoff across areas stripped of topsoil) or become polluted by construction activities.
- Discharge of rain water pumped from excavations may also contain increased silt levels (potential impact on existing hydrology e.g. accidental discharge to existing surface water drainage network).
- Accidental spills and leaks associated with storage of oils and fuels, leaks from construction machinery and spillage during refuelling and maintenance.
- Concrete runoff, particularly discharge of wash water from concrete trucks. (potential impact on existing hydrology e.g. infiltration to ground).
- Discharge of vehicle wheel wash water (potential impact on existing hydrology e.g. discharge to existing surface water drainage infrastructure).
- Improper discharge of foul drainage from contractor's compound (impact on existing hydrology e.g. cross-contamination of existing surface water drainage.).
- Cross contamination of potable water supply to construction compound.

10.6.2 Operational Phase

Potential operational phase impacts are noted below:

- Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate).
- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas).
- Increased discharge to foul drainage network (daily foul discharge volume of 61m³).
- Increased potable water consumption (post development average hour water demand of 0.81 l/sec).

10.7 Potential Cumulative Impacts

The proposed surface water drainage infrastructure has been designed in accordance with the relevant guidelines. Any other future development in the vicinity of the site would have to be similarly designed in relation to permitted surface water discharge, surface water attenuation and SuDS, therefore, no potential cumulative impacts are anticipated in relation to surface water drainage and flooding. The applicant is also submitting a planning application for lands to the north of the subject application (known as "White Pines East"). That planning application is at a more advanced stage; however, we note that similar design criteria to those noted above will apply to mitigate potential cumulative impacts.

No potential cumulative impacts are anticipated in relation to foul drainage and water supply. As noted previously, Irish Water have advised that subject to a valid connection agreement being put in place, the proposed connections to the Irish Water network(s) can be facilitated.

As noted above the applicant is also preparing a planning application for lands to the north of the subject application (known as "White Pines East"). A letter has been received from Irish Water confirming feasibility for "White Pines East", as such no potential cumulative impacts associated with "White Pines East" are anticipated in relation to foul drainage and water supply.

10.7.1 Do Nothing Scenario

There are no predicted impacts should the proposed development not proceed.

10.8 Mitigation Measures

10.8.1 Construction Phase

The following measures are proposed during the construction phase to mitigate against risks to the surrounding hydrological environment:

- A site-specific Construction and Environment Management Plan has been developed and will be implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the Construction and Environment Management Plan included at Appendix 8 of this EIAR.
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge to the surface water network at a controlled rate.
- Weather conditions and typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion.
- In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals should be stored in a secure bunded hardstand area. Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets (where not possible to carry out such activities off site).
- Concrete batching will take place off site and wash down and wash out of concrete trucks will take place off site (at authorized concrete batching plant in full compliance

with relevant planning and environmental consents).

- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.

10.8.2 Operational Phase

Following the Site Specific Flood Risk Assessment, it has been determined that the proposed development is located in Flood Zone C as defined by the Guidelines i.e. proposed development is considered to have the required level of flood protection up to and including the 1% AEP flood event.

Proposed mitigation measures to address residual flood risks are summarised below;

- Proposed drainage system to be maintained on a regular basis to reduce the risk of a blockage.
- In the event of storms exceeding the 1% AEP design capacity of the attenuation system, possible overland flow routing towards open space areas should not to be blocked.

Surface water runoff from the site will be attenuated to the greenfield runoff rate as outlined in the Greater Dublin Strategic Drainage Study (GDSDS). Surface water discharge rates will be controlled by a Hydrobrake type vortex control device in conjunction with below ground attenuation storage.

The following methodologies are being implemented as part of a SuDS surface water treatment train approach:

- Surface water runoff from the site's street network are directed to tree pits via conventional road gullies (with high level overflow to the piped surface water network) while surface water runoff from on street parking areas will be captured by permeable paving.
- Surface water runoff from mews roofs will be routed to the proposed surface water pipe network via the porous aggregates beneath permeable paved driveways
- Surface water runoff from apartment roofs will be captured by green roofs (sedum blanket) prior to being routed to the piped surface water drainage network
- A drainage reservoir (drainage board) is to be provided on the podium slab over basement. The podium will have a typical roof garden build up with a mix of soft landscaping and permeable hard landscaping (over a drainage board which would serve as a reservoir)
- Attenuation of the 30 year and 100 year return period storms
- Installation of a Hydrobrake (limiting surface water discharge from the site to 4.6 l/sec/ha)
- Surface water discharge will also pass via a fuel / oil separator (sized in accordance with permitted discharge from the site).

A contract will be entered into with a suitably qualified contractor from maintenance of the attenuation system, Hydrobrake and full retention fuel / oil separator noted above.

No specific mitigation measures are proposed in relation to foul drainage however, all new foul drainage lines will be pressure tested and be subject to a CCTV survey in order to identify any possible defects prior to being made operational.

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

The potential impact of climate change has been allowed for as follows;

- Pluvial flood risk - attenuation storage design allows for a 10% increase in rainfall intensities.
- Pluvial flood risk - drainage system design allows for a 10% increase in flows, as recommended by the GDSDS.
- Provision of min. freeboard (500mm) from 1% AEP as required by GDSDS (mitigation against impact of climate change).

10.8.3 Do Nothing Scenario

No mitigation measures are proposed in relation to water and the hydrological environment if the development does not proceed.

10.9 Predicted Impact of the Proposed Development

10.9.1 Construction Phase

Implementation of the measures outlined in Section 10.6.1 will ensure that the potential impacts of the proposed development on water and the hydrogeological environment do not occur during the construction phase.

10.9.2 Operational Phase

As surface water drainage design has been carried out in accordance with the GDSDS and SuDS methodologies are being implemented as part of a treatment train approach, there are no predicted impacts on the water and hydrogeological environment arising from the operational phase.

10.9.3 Do-Nothing Scenario

There are no predicted impacts should the proposed development not proceed.

10.10 Monitoring Measures

Construction Stage
Proposed monitoring during the construction phase in relation to the water and hydrogeological environment are as follows:

- Adherence to Outline Construction Management Plan
- Inspection of fuel / oil storage areas.
- Monitoring cleanliness of adjacent road network, implementation of dust suppression and vehicle wheel wash facilities.
- Monitoring sediment control measures (sediment retention ponds, surface water inlet protection etc.)
- Monitoring of discharge from sediment retention ponds (e.g. pH, sediment content)

Operational Stage
During the operational phase an inspection and maintenance contract is to be implemented in relation to the proposed Class 1 full retention fuel / oil separators.

10.11 Reinstatement

Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase. Any remaining liquids are to be removed from site and disposed of at an appropriate licensed facility. South Dublin County Council's Environmental Control Section is to be notified of the proposed destination for disposal of any liquid fuels.

All sediment control measures (e.g. sediment retention ponds) are to be decommissioned on completion of the construction phase. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings.

11.0 AIR QUALITY & CLIMATE

11.1 Introduction

This chapter assesses the likely air quality and climate impacts, if any, associated with the proposed Stocking Central strategic housing development at Stocking Avenue, Co. Dublin. The proposed strategic housing development is on a site of 2.2 Ha, at Lands South of Stocking Ave., Stocking Avenue. A detailed description of the proposed development is included at Section 3.2.3 of the EIAR.

This chapter has been prepared with regard to the following guidelines:

- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018)
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports – Draft (EPA, 2017);

11.2 Mitigation Measures

11.2.1 Construction Phase

11.2.1.1 Local Air Quality

The pro-active control of fugitive dust will ensure the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the dust management plan. The key aspects of controlling dust are listed below. Full details of the dust management plan can be found in Appendix 11.3 and Section 9 of the Construction and Environmental Management Plan, prepared by DBFL, appended to this EIAR.

- The Contractor shall prepare a dust minimisation plan which shall be communicated to all site staff;
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential traffic;
- Any road that has the potential to give rise to fugitive dust must be regularaly watered, as appropriate, during dry and/or windy conditions;
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly(on any un-surfaced site road, this will be 20 kph and on hard surfaced roads as site management dictates;
- Vehicles delivering material with dust potential (soil, aggregates etc.) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- Public roads outside the site will be inspected on a daily basis for cleanliness and cleaned as necessary;
- Debris, sediment, grit etc. capeuted by road sweeping vehicles is to be disoposed off-site at a licensed facility;
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate prior to entering onto public roads;
- Material handling systems and site stockpiling of materials will be designsated and

laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;

- During movement of materials both or and off-site, trucks will be strintgently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.

At all times, the procedures within the plan will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

Monitoring of dust deposition levels (via the Bergerhoff method) shall take place at a number of locations at the site boundary of the development to ensure dust nuisance is not occurring at nearby sensitive receptors. This monitoring aims to ensure that the dust mitigations measures are being implemented properly throughout the site.

11.2.1.2 Climate

Construction traffic and embodied energy of construction materials are expected to be the dominant source of greenhouse gas emissions as a result of the construction phase of the proposed development. Construction vehicles, generators etc., may give rise to some CO_2 and N_2O emissions. However, based on the short-term nature and moderate scale of the works, the impact on climate will not be significant.

Nevertheless, some site-specific mitigation measures can be implemented during the construction phase of the proposed development to ensure emissions are minimised. In particular the prevention of on-site or delivery vehicles from leaving engines idling, even over short periods. Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.

11.2.1.3 Operational Phase

The operational phase air quality impact is considered imperceptible and therefore no site specific mitigation measures are required. In general mitigation measures in relation to traffic-derived pollutants have focused generally on improvements in both engine technology and fuel quality. EU legislation, based on the EU sponsored Auto-Oil programmes, has imposed stringent emission standards for key pollutants (Regulation (EC) No 715/2007) for passenger cars which was complied with in 2009 (Euro V) and 2014 (Euro VI). Current emission standards which took effect in 2017 are Euro 6c and Euro $6d_{temp}$.

Emissions of pollutants from road traffic can be controlled most effectively by either diverting traffic away from heavily congested areas or ensuring free flowing traffic through good traffic management plans and the use of automatic traffic control systems (UK DEFRA, 2016; 2018).

The Climate Action Plan 2019 (Government of Ireland, 2019) has outlined a number of actions to reduce the use of petrol/diesel vehicles and promote the uptake of electric vehicles in order to achieve the target of 500,000 electric vehicles on the road by 2030. The measures proposed include changes to VRT and motor tax to allow for this to be calculated based on CO_2eq, therefore higher emitting vehicles will pay increased tax rates, thus incentivising the purchase of lower emitting vehicles. VRT relief and Benefit in Kind exemptions as well as a vehicle scrappage scheme are among other measures proposed. In addition, as part of Budget 2020,

it is planned to introduce a NO_X emissions levy to all passenger cars from January 2020. The levy will be charged on a NO_X mg per kilometre basis. Overall, these measures will reduce pollutant levels in future years thus improving air quality.

11.3 Residual Impacts

11.3.1.1 Construction Phase

As with the proposed development, the primary source of air quality impacts during the construction phase of nearby committed developments will be the potential for nuisance dust impacts. The dust minimisation measures outlined for the proposed development should be implemented throughout the construction phase for all developments in the vicinity of the site to avoid any nuisance dust impacts occurring. Once these minimisation measures are in place the impact to air quality is considered short-term and imperceptible.

Construction machinery and vehicles have the potential to impact climate through the release of GHG emissions. However, based on the nature and scale of the proposed works CO_2 and N_2O emissions during the two year construction phase, there will be an imperceptible impact on climate.

The mitigation measures that will be put in place during construction of the proposed development should be implemented throughout the construction phase for all developments in the vicinity of the site to ensure that the impact of the developments complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the cumulative impact of construction of the proposed development with nearby developments is likely to be short-term and imperceptible with respect to human health.

11.3.1.2 Operational Phase

The local air quality impact assessment, regional air quality impact assessment and climate impact assessment described earlier in this section have all been based on cumulative traffic data incorporating projected traffic from existing and committed developments in the vicinity of the project site. As the outcomes of those assessments concluded that impacts will be long-term and imperceptible with respect to air quality and climate, no further cumulative impact assessment is required for the proposed development.

11.4 Monitoring

11.4.1 Construction Phase

Monitoring of construction dust deposition at nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure the mitigation measures are providing adequate dust minimisation. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The applicable limit value is the TA Luft limit value of 350 mg/(m^2*day) for a monitoring period of between 28 - 32 days.

11.4.2 Operational Phase

There is no monitoring recommended for the operational phase of the development as impacts to air quality and climate are predicted to be imperceptible.

11.4.3 Difficulties Encountered

There were no difficulties encountered in preparing this Air Quality and Climate Assessment.

12.0 NOISE AND VIBRATION

12.1 Introduction and Research Methodology

AWN Consulting Ltd. has been commissioned to prepare this chapter of the EIAR, which includes noise and vibration impact preplanning assessment of the proposed White Pines East development at Stocking Avenue, Dublin 16. This report provides a summary of the baseline environment, the relevant criteria adopted for the project, the key items to be assessed relating to noise and vibration and the methodologies to be employed.

In terms of the site, noise and vibration will be considered in terms of two aspects. The first is the outward effect of the development (i.e. the potential effect of the buildings and commercial activities on existing sensitive receptors in the study area) and the inward effect of the existing noise and vibration sources on the development itself.

The study has been undertaken using the following methodology:

- Baseline noise monitoring has been undertaken at the development site location;
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development;
- Predictive calculations have been performed to estimate the likely noise and vibration emissions during the construction phases of the project at the nearest sensitive locations (NSL's) to the site;
- Predictive calculations have been performed to assess the potential effects associated with the operation of the development at the most sensitive locations surrounding the development site and inward on the development itself;
- A schedule of mitigation measures has been proposed, where required, to control the noise and vibration emissions associated with both the construction and operational phases of the proposed development; and
- An initial risk assessment of the inward effect of noise in the surrounding environment into the proposed buildings has also been undertaken and outline details of mitigation measures have been provided with a view to negating the impact.

Typical ambient noise levels across the local area have been measured and these are used to identify appropriate construction phase noise criteria. Proposed items of construction plant are also identified and expected noise output data used to predict likely noise levels at surrounding receptors. Predicted levels are assessed in the context of identified criteria, and mitigation measures, where required, are outlined.

12.2 Mitigation

12.3 Construction Phase - Noise

In terms of noise mitigation, the following are some typical measures that may be employed to reduce the effects of noise on the surrounding receptors:

- Use of a standard site hoarding, typically 2.4m height will be erected around the perimeter of the construction site for the duration of works;
- Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;

- Monitoring levels of noise and vibration during critical periods and at sensitive locations;
- Maintaining site access roads even so as to mitigate the potential for vibration from lorries;
- Selection of plant with low inherent potential for generation of noise and/ or vibration;
- Erection of barriers as necessary around items such as generators or high duty compressors;
- Situate any noisy plant as far away from sensitive properties as is reasonably practicable and the use of vibration isolated support structures where necessary;
- Establishing channels of communication between the contractor/developer, Local Authority and residents, and;
- Appointing a site representative responsible for matters relating to noise and vibration.

12.4 Operational Phase – Mechanical and Electrical Plant

As part of the detailed design of the development, plant items with appropriate noise ratings and, where necessary, appropriately selected remedial measures (e.g. enclosures, silencers etc.) will be specified in order that the adopted plant noise criteria is achieved at the façades of noise sensitive properties, including those within the development itself.

12.5 Operational Phase – Inward Noise

As is the case in most buildings, the glazed elements and ventilation paths of the building envelope are typically the weakest element from a sound insulation perspective. In general, all wall constructions (i.e. blockwork or concrete and spandrel elements) offer a high degree of sound insulation, much greater than that offered by the glazing systems. Therefore, noise intrusion via the wall construction will be minimal.

In this instance the facades highlighted in Figure 12.9 will be provided with glazing and ventilation that achieves the minimum sound insulation performance as set out in Table 12.12 and Table 12.13. Other facades in the development have no minimum requirement for sound insulation. Note that the calculations to determine these requirements have taken into account a potential increase in noise due to traffic along the facades facing directly onto the road (as calculated in Section 12.6.1).

Octave Band Centre Frequency (Hz)						R_w
125	250	500	1k	2k	4k	
27	26	33	39	39	47	37

Table 12.12: Sound Insulation Performance Requirements for Glazing, SRI (dB)

Octave Band Centre Frequency (Hz)						$D_{,n,e}$
125	250	500	1k	2k	4k	
29	30	37	39	36	42	39

Table 12.13: Minimum Ventilation Sound Insulation Performance Requirements, $D_{,n,e}$ (dB)

The overall Rw and Dne,w outlined above are provided for information purposes only. The over-riding requirements are the octave band sound insulation performance values which may also be achieved using alternative glazing and ventilation configurations. Any selected system

will be required to provide the same or greater level of sound insulation performance as that set out in Tables 12.12 and 12.13.

It is important to note that the acoustic performance specifications detailed herein are minimum requirements which apply to the overall glazing and ventilation systems. In the context of the acoustic performance specification the 'glazing system' is understood to include any and all of the component parts that form part of the glazing element of the façade, i.e. glass, frames, seals, openable elements etc.

The assessment has demonstrated that the recommended internal noise criteria can be achieved through consideration of the proposed façade elements at the design stage. The calculated glazing and ventilation specifications are preliminary and are intended to form the basis for noise mitigation at the detailed design stage. Consequently, these may be subject to change as the project progresses.

12.6 Residual Effects

It is predicted that when works take place at the closest distances to the receptors a significant impact will occur. However, aside from breaking works, it is expected that most construction activities will not cause significant impacts at distances further than 45m of the receptor locations. It should be noted that the assessment can be considered "worst case" and it is unlikely that all items of plant assessed will be in operational simultaneously. Additionally, the predictions only indicate a potential significant effect (based on a worst-case scenario) when working at the closest location to the dwellings, with lesser impacts predicted at all other locations across site.

Residual impacts associated with construction activities undertaken within 45m of receptors are categorised as:

Quality	*Significance*	*Duration*
Negative	Significant	Temporary

All other construction activities are categorised as:

Quality	*Significance*	*Duration*
Negative	Moderate	Short-term

12.6.1 Construction Vibration

The impacts are predicted to be as follows:

Quality	*Significance*	*Duration*
Negative	Not Significant	Short-term

12.6.2 Additional Traffic on Roads

The impacts are predicted to be as follows:

Quality	*Significance*	*Duration*
Neutral	Not Significant	Permanent

12.6.3 Operational Outward Noise Impact

The impacts are predicted to be as follows:

Quality	*Significance*	*Duration*
Neutral	Not Significant	Permanent

12.6.4 Inward Noise Impact

In terms of the inward noise impacts, specification of noise mitigation will be recommended so that internal noise criterion may be met. With mitigation measures in place it's expected that the impacts will be categorised as:

Quality	*Significance*	*Duration*
Neutral	Not Significant	Permanent

12.7 Cumulative Effects

There are a number of approved applications in the local area including Stocking Retail, South Dublin Reg. Ref. SD19A/0345 and Stocking South - South Dublin Reg. Ref. SD19A/0099/ ABP Ref. PL06S.304670. There is also a proposed application for White Pines Central that will lie directly to the south of this development.

It is expected that the phase most likely to be affected by cumulative impacts is the construction phase. Due to the proximity and adjacency of both the Stocking Retail site and the White Pines Central site it is likely that cumulative impacts will occur at the nearest receptor should all sites progress construction works simultaneously. In this scenario elevated construction noise emissions due to cumulative noise are likely to occur at receptor locations equidistant to both sites (i.e. the White Pines North site) as well as a potential increase in the length of time that the receptor will be exposed to construction noise. Hence, cumulative construction impacts will need to be considered and managed during the construction phase. It is recommended that liaison between construction sites is on-going throughout the duration of the construction phase. Contractors should schedule work in a co-operative effort to limit the duration and magnitude of potential cumulative impacts on nearby sensitive receptors. Cumulative construction noise impacts are expected to be negative, significant and short-term.

During the operational phase any cumulative impacts will be due to an increase in road traffic noise. However, given the insignificant levels of noise increase as a result of the traffic associated with this proposed development, it is not expected that cumulative traffic noise will increase by any significant margin as a result of this proposed development.

12.8 Monitoring

12.8.1 Construction Stage

During the construction phase noise monitoring will be undertaken at the nearest sensitive locations to ensure construction noise limits outlined in Table 12.4 are not exceeded. Noise monitoring will be conducted in accordance with the International Standard ISO 1996: *Acoustics – Description, measurement and assessment of environmental noise* Part 1 (2016)

and Part 2 (2017). The selection of monitoring locations will be based on the nearest sensitive buildings to the working areas.

It is recommended that noise control audits are conducted at regular intervals throughout the construction programme in conjunction with noise monitoring. The purpose of the audits will be to ensure that all appropriate steps are being taken to control construction noise emissions and to identify opportunities for improvement, where required.

12.8.2 Operational Stage

There is no monitoring recommended for the operational phase of the development as effects to noise and vibration are predicted to be not significant.

12.9 Reinstatement

Not applicable to noise and vibration.

12.10 1 Difficulties Encountered

There were no difficulties encountered while completing this assessment.

13.0 MATERIAL ASSETS – WASTE

13.1 Introduction

This chapter of the EIAR comprises an assessment of the likely impact of the proposed development on the waste generated from the development as well as identifying proposed mitigation measures to minimise any impacts.

A site-specific Construction and Demolition Waste Management Plan (C&D WMP) has been prepared by AWN Consulting Ltd to deal with waste generation during the construction phase of the project and has been included as Appendix 13.1. The C&D WMP was prepared in accordance with the 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' document produced by the National Construction and Demolition Waste Council (NCDWC) in conjunction with the Department of the Environment, Heritage and Local Government in July 2006.

A separate Operational Waste Management Plan (OWMP) has also been prepared for the operational phase of the development and is included as Appendix 13.2 of this chapter.

These documents will ensure the sustainable management of wastes arising at the development in accordance with legislative requirements and best practice standards

13.2 Potential Impacts of the Proposed Development

This section details the potential waste effects associated with the proposed development.

13.2.1 Construction Phase

The proposed development will generate a range of non-hazardous and hazardous waste materials during excavation and construction. General housekeeping and packaging will also generate waste materials as well as typical municipal wastes generated by construction employees including food waste.

Waste materials will be required to be temporarily stored on site pending collection by a waste contractor. Dedicated areas for waste skips and bins will be identified across the site. These areas will need to be easily accessible to waste collection vehicles.

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development and on adjacent developments. The knock-on effect of litter issues is the presence of vermin within the development and the surrounding areas.

The use of non-permitted waste contractors or unauthorised waste facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and

national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices.

Wastes arising will need to be taken to suitably registered/permitted/licenced waste facilities for processing and segregation, reuse, recycling, recovery, and/or disposal as appropriate. There are numerous licensed waste facilities in the Eastern Midlands region which can accept hazardous and non-hazardous waste materials and acceptance of waste from the proposed development would be in line with daily activities at these facilities. At present, there is sufficient capacity for the acceptance of the likely C&D waste arisings at facilities in the region. Where possible, waste will be segregated into reusable, recyclable and recoverable materials. The majority of construction materials are either recyclable or recoverable.

Recovery and recycling of C&D waste has a positive impact on sustainable resource consumption, for example where waste timber is mulched into a landscaping product or waste asphalt is recycled for use in new pavements. The use of recycled materials, where suitable, reduces the consumption of natural resources.

There is a quantity of soil, stone, gravel and clay which will need to be excavated to facilitate the proposed development. It is anticipated that c. 9,000m^3 of excavated material will need to be removed offsite, however it is envisaged that c. 14,500m^3 of excavated material will be reused onsite. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.

The potential effect of construction waste generated from the proposed development is considered to be **short-term**, **not significant** and **neutral**.

13.2.2 Operational Phase

The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy which would lead to small volumes of waste being sent unnecessarily to landfill.

The nature of the development means the generation of waste materials during the operational phase is unavoidable. Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste efficiently from this type of development. Waste which is not suitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables which is typically exported for conversion in recycled products (e.g. paper mills and glass recycling).

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development and on adjacent developments. The knock-on effect of litter issues is the presence of vermin within the development and the surrounding areas.

Waste contractors will be required to service the development on a regular basis to remove waste. The use of non-permitted waste contractors or unauthorised facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices.

The potential impact of operational waste generation from the development is considered to be **long-term**, **not significant** and **negative.**

13.3 Mitigation Measures

This section outlines the measures that will be employed in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment.

13.3.1 Construction Phase

As previously stated, a project specific C&D WMP has been prepared in line with the requirements of the requirements of the guidance document issued by the DoEHLG and is included as Appendix 13.1. Adherence to the high-level strategy presented in this C&D WMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development. Prior to commencement, the contractor(s) will be required to refine/update the C&D WMP or submit an addendum to C&D WMP to SDCC to detail specific measures to minimise waste generation and resource consumption and provide details of the proposed waste contractors and destinations of each waste stream.

A quantity of soil, stone, gravel and clay which will need to be excavated to facilitate the proposed development. Project Engineers have estimated that c. 9,000m^3 of excavated material will need to be removed offsite, however it is envisaged that c. 14,500m^3 excavated material will be reused onsite. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.

In addition, the following mitigation measures will be implemented:

- Building materials will be chosen with an aim to ‘design out waste’;
- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated:
  - Concrete rubble (including ceramics, tiles and bricks);
  - Plasterboard;
  - Metals;

- Glass; and
- Timber.

- Left over materials (e.g. timber off-cuts, broken concrete blocks/bricks) and any suitable construction materials shall be re-used on-site, where possible;
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal;
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Article 27 of the EC (Waste Directive) Regulations (2011). EPA approval will be obtained prior to moving material as a by-product. However, it is not currently anticipated that Article 27 will be used.

These mitigation measures will ensure that the waste arising from the construction phase of the development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997, the EMR Waste Management Plan (2015-2021). It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will encourage sustainable consumption of resources.

13.3.2 Operational Phase

As previously stated, a project specific OWMP has been prepared and is included as Appendix 13.2. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the EMR Waste Management Plan 2015 – 2021 and abiding by the DCC waste bye-laws.

In addition, the following mitigation measures will be implemented:

- On-site segregation of all waste materials into appropriate categories including (but not limited to):
    - Organic waste;
    - Dry Mixed Recyclables;
    - Mixed Non-Recyclable Waste;
    - Glass;
    - Waste electrical and electronic equipment (WEEE);
    - Batteries (non-hazardous and hazardous);
    - Cooking oil;
    - Light bulbs;
    - Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);
    - Furniture (and from time to time other bulky waste); and
    - Abandoned bicycles.
- All waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials;
- All waste collected from the development will be reused, recycled or recovered where possible, with the exception of those waste streams where appropriate facilities are currently not available; and
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities.

These mitigation measures will ensure the waste arising from the development is dealt with in compliance with the provisions of the *Waste Management Act 1996*, as amended, associated Regulations, the *Litter Pollution Act 1997*, the *EMR Waste Management Plan (2015 - 2021)* and the SDCC waste bye-laws. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

13.4 Predicted Impact of the Proposed Development

The implementation of the mitigation measures outlined in Section 13.6 will ensure that the high rate of reuse, recovery and recycling is achieved at the development during the excavation and construction phases as well as during the operational phase. It will also ensure that European, National and Regional legislative waste requirements with regard to waste are met and that associated targets for the management of waste are achieved.

13.4.1 Construction Phase

A carefully planned approach to waste management as set out in Section 13.6 and adherence to the C&D WMP during the construction phase will ensure that the effect on the environment will be **short-term**, **imperceptible** and **neutral**.

13.4.2 Operational Phase

During the operational phase, a structured approach to waste management as set out in Section 13.6 will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the

predicted effect of the operational phase on the environment will be **long-term**, **imperceptible** and **neutral**.

13.4.3 Potential Cumulative Impacts

Multiple permission remains in place for both residential and commercial developments within the immediate vicinity. Along with current permission it is envisaged that another residential development will be applied for on the lands immediately to the south of this development. In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors in the Dublin region there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all the developments.

There are similar existing residential developments close by and proposed, along with the neighbouring residential sites and these developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will minimise/mitigate any potential cumulative impacts associated with waste generation and waste management. As such the effect will be a **long-term**, **imperceptible,** and **neutral.**

13.4.4 Do-Nothing Scenario

If the proposed development was not to go ahead there would be no demolition, excavation or construction or operational waste generated at this site. There will be a neutral effect on the environment.

13.5 Monitoring Measures

The management of waste during the construction phase should be monitored to ensure compliance with relevant local authority requirements, and effective implementation of the C&D WMP including maintenance of waste documentation.

The management of waste during the operational phase should be monitored to ensure effective implementation of the OWMP by the building management company and the nominated waste contractor(s).

13.8.1 Construction Phase

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction phases where there is a potential for waste management to become secondary to progress and meeting construction schedule targets. The C&D WMP specifies the need for a waste manager to appointed who will have responsibility to monitor the actual waste volumes being generated and to ensure that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the waste manager should identify the reasons for targets not being achieved and work to resolve any issues. Recording of waste generation during the project will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future projects.

13.8.2 Operational Phase

During the operational phase, waste generation volumes should be monitored against the predicted waste volumes outlined in the OWMP. There may be opportunities to reduce the number of bins and equipment required in the WSAs where estimates have been too conservative. Reductions in bin and equipment requirements will improve efficiency and reduce waste contactor costs.

13.6 Difficulties Encountered

There were no difficulties encountered during the production of this chapter of the EIAR.

13.7 Interactions

Adherence to the mitigation measures outlined in Section 13.9 will ensure that there are no significant impacts on resource or waste management from the proposed development. The management of waste during the construction phase in accordance with the C&D WMP and during the operational phase in accordance with the OWMP will meet the requirements of regional and national waste legislation and promote the management of waste in line with the priorities of the waste hierarchy.

13.10.1 Land and Soils

During the construction phase excavated topsoil and subsoil (c. 23,500 m3) will be generated from the excavations required to facilitate site levelling, construction of new foundations and the installation of underground services. It is estimated that c. 9,000m3 of excavated material will need to be removed offsite, however it is envisaged that c. 14,500m3 material will be reused onsite. Where material has to be taken off site it will be taken for reuse or recovery, where practical, with disposal as last resort. Adherence to the mitigation measures in Chapter 13 and the requirements of the C&D WMP, will ensure the effect **is long-term, imperceptible** and **neutral**.

13.10.2 Traffic and Transportation

Local traffic and transportation will be impacted by the additional vehicle movements generated by removal of waste from the site during the construction and operational phases of the development. The increase in vehicle movements as a result of waste generated during the construction phase will be temporary in duration. There will be an increase in vehicle movements in the area as a result of waste collections during the operational phase but these movement will be imperceptible in the context of the overall traffic and transportation increase and has been addressed in Chapter 14 Traffic and Transportation. Provided the mitigation measures detailed in Chapter 14 and the requirements of the OWMP (included as Appendix 13.2) are adhered to, the effects should be **short to long-term**, **imperceptible** and **neutral**.

13.10.3 Population and Human Health

The potential impacts on human beings in relation to the generation of waste during the construction and operational phases are that incorrect management of waste could result in littering which could cause a nuisance to the public and attract vermin. A carefully planned approach to waste management and adherence to the project specific C&DWMP and OWMP, will ensure appropriate management of waste and avoid any negative impacts on the local population. ***long-term, imperceptible*** and ***neutral***.

14.0 TRAFFIC AND TRANSPORTATION

14.1 Introduction

This section of the report assesses and evaluates the likely impact of the proposed development on the existing Traffic and Transportation environment in the vicinity of the site, as well as identifying proposed mitigation measures to minimise any identified impacts arising from the residential development at Stocking Avenue, Dublin 16.

The scope of this assessment covers transport and sustainability issues including access, pedestrian, cyclist and public transport connections. Recommendations contained within this chapter are based on existing and proposed road layout plans, on site traffic observations and junction vehicle turning count data. Traffic surveys were commissioned specifically for this assessment with the objective of providing background information relating to the existing traffic movement patterns across the local road network.

This chapter was prepared by Daniel Garvey BEng (Hons) and approved by Aimee Dunne MEng BEngTech CEng MIEI MIHE of DBFL Consulting Engineers. Aimee is a Chartered Transportation Engineer with DBFL Consulting Engineers with 8 years' experience working in the areas of traffic engineering and transport planning, with considerable knowledge and experience in strategic transport planning and sustainable travel. Daniel is a Graduate Transportation Engineer with DBFL Consulting Engineers and has been involved in the assessment and preparation of traffic and transport assessments pertaining to several residential and mixed use developments.

This assessment of traffic and transportation was carried out in accordance with the following guidance and established best practice, and was tailored accordingly based on professional judgement and local circumstance:

- Environmental Protection Agency (EPA) Guidelines on the Information to be contained in the Environmental Impact Assessment Reports (EPA, 2017) and will follow all future revisions or finalised EIA guidelines as appropriate; and
- Transport Infrastructure Ireland (TII) (formerly the National Roads Authority) Traffic and Transportation Assessment Guidelines.

14.2 Potential Impact of the Proposed Development

14.2.1 Construction Stage Impacts

14.2.1.1 Management of Construction Activities

All construction activities will be regulated by means of an agreed Construction Traffic Management Plan (CTMP) the details of which will be agreed with the local roads authority prior to the commencement of construction activities on-site. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed residential development upon both the public (off-site) and internal (on-site) environments, are fully considered and proactively managed / programmed respecting key

stakeholders requirements. This thereby ensures that both the publics and construction workers safety is maintained at all times, disruptions minimised and works are undertaken within a controlled environment where hazards are either avoided or minimised.

14.2.1.2 Construction Traffic

Construction traffic will only be generated on weekdays (0700-1900 subject to Planning conditions) and will consist of the following two principal categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff.
- Excavation plant, dumper trucks and delivery vehicles involved in site development works and material delivery vehicles for the following: granular fill materials, concrete pipes, manholes, reinforcement steel, ready-mix concrete and mortar, concrete blocks, miscellaneous building materials, etc.

The likely impact of the construction works will be temporary in nature. The number of staff on site will fluctuate over the implementation of the subject scheme. Nevertheless, based upon the experience of similar projects, it would be expected that approx. 15-20 staff will be on site at any one time, subsequently generating no more than 20 two-way vehicle trips during the peak AM and PM periods over the period of the construction works (a large portion of construction workers will use shared transport). On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. These employees will generally depart after 16:00. A designated on-site car park area will be made available to workers to avoid any overspill of parking on the surrounding network.

The potential impact during the construction phase with all the above considered would have a short-term slight effect on the surrounding network however, with the CTMP and deliveries managed accordingly, this will have imperceptible effect.

A Construction Traffic Management Pan (CTMP) will be prepared in advance of any works commencing on site. This will detail, amongst other matters, how deliveries and HGV movements will be actively controlled and managed. This will help to ensure HGVs and deliveries arrive at a dispersed rate during the course of the working day. It is anticipated that the proposed development would be constructed over a period of approximately 24 months. Following the completion of the initial site clearance works, the generation of HGV movements during the build period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods. For this scale of development, we do not expect HGV vehicle movements to exceed 8 vehicles per hour during the busiest period of construction 'build' works.

An appropriate control and routing strategy for HGVs can also be implemented for the duration of site works as part of the CTMP. It is not proposed to utilise any roads with weight/height restrictions as part of the routing of HGVs during the construction phase. The proposed development gains direct access off Stocking Avenue, which provides direct access to the strategic road network including the M50. HGVs will be directed to use Stocking Avenue and Ballycullen Road when accessing/egressing the site from the wider strategic network.

Considering the site's proximity to the strategic road network and following the implementation of an appropriately detailed CTMP, it is concluded that construction traffic will not give rise to any significant traffic concerns or impede the operational performance of the local road network and its surrounding junctions.

At this initial stage it is assumed that whilst the first 100 units will be completed by the end of 2022, the full scheme is unlikely to be fully completed before 2027, which is the assumed Interim design year for this proposed development.

14.2.1.3 Potential Cumulative Impacts

Other developments currently under construction and other committed development in the vicinity of the site have been considered and are likely to have similar impacts during the construction phase in relation traffic.

Should the construction phase of any developments coincide with development of the site, potential cumulative impacts are not anticipated once similar ameliorative, remedial and reductive measures are implemented.

The applicant is also preparing a planning application for lands to the south of the subject application (known as "White Pines Central"). This planning application is not at as an advanced stage as the subject application and as such is not considered "committed" or "under construction", however, potential cumulative impacts may occur should the construction of both developments coincide.

As noted in the section above, potential cumulative impacts are not anticipated once similar ameliorative, remedial and reductive measures are implemented and co-ordinated between the subject application site and "White Pines Central" should their construction periods overlap.

14.2.2 Operation Stage Impacts

Once the subject development is fully complete and occupied two distinct peak arrival / departure times are expected during a typical weekday. Specifically, there is expected to be AM peak between 07:30 to 08:30 when people are leaving for work or educational purposes. The PM peak is expected around 17:00 to 18:00 when residents would be returning to the subject site.

In order to analyse and assess the impact of the proposed development on the surrounding road network, a traffic generation and distribution model (excel based) of the following key junctions was created as illustrated in Figure 14.16:

- **Junction 1** – Stocking Avenue / Stocking Well Row / Stocking Wood Roundabout
- **Junction 2** – Stocking Avenue / White Pines Way / White Pines Crescent Roundabout
- **Junction 3** – Stocking Avenue / Site Access Junction
- **Junction 4** – Stocking Avenue / Stocking Lane Roundabout

Figure 14.16: Junctions Included in Network Analysis

14.2.2.1 Trip Generation

To estimate the potential level of vehicle trips that could be generated by the proposed development, reference has been made to the TRICS database. TRICS provides trip rate information for a variety of different land uses and development types, which can be applied to the subject development. TRICS data is primarily UK based, although a number of Irish sites have recently been included and the number of Irish sites continues to expand. Nevertheless, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

Table 14.2 presents the trip rates and the traffic generation for the proposed development during the morning and evening peak hour periods. The proposed residential development will be implemented in two different phases to provide an accurate representation of likely construction and occupational trends for a development of this size.

- 2022 Opening Year = 100 Residential Units
- 2027+ Years – Full Development = 359 Residential Units

Land Use	Period	Trip Rates (Per Unit)		Trip Generation (2022)		Trip Generation (2027+)	
		Arr	Dep	Arr	Dep	Arr	Dep
Apartment / Duplex	AM	0.036	0.197	4	20	5	27
	PM	0.188	0.065	19	7	26	9

Table 14.2: Predicted Development Trip Rates and Vehicle Trips Generation

14.2.2.2 Committed Development

There are six committed developments in the vicinity of the subject site which hold planning permissions and one proposed residential development that had not yet been granted planning permission. These may therefore have an impact on the capacity of the local road network influencing traffic flows and junction performances and have been taken into

consideration within the traffic generation excel. These committed developments are as follows:

- The residential development (SD19A/0099) site located to the south of the subject development site, was granted permission for 99 no. residential units.
- The neighbourhood centre development (SD19A/0345) site located to the southwest of the subject development site, was granted permission for a retail unit (1,479m2) and a crèche (385m2) incorporating a community centre (192m2).
- The residential development (SD17A/0121) site located to the west of the subject development site, was granted permission for 133 no. residential units and a crèche.
- The residential development (SD19A/0104) site located to the west of the subject development site, was granted permission for 24 no. residential units.
- The residential development (SD18A/0025) site located to the west of the subject development site, was granted permission for 83 no. residential units.
- The residential development (SD17A/0468) site located to the west of the subject development site, was granted permission for 64 no. residential units.
- The residential development (190004)(White Pines East) site located to the north of the subject development site consists of 250 no. residential units. This development will be accessed via White Pines Crescent. This development has not been issued for / granted planning permission, however, it has been included for robustness.

14.2.2.3 Trip Distribution

The distribution of the subject development traffic is based on the surveyed traffic movements at the nearby key local junctions. The proposed distribution of the subject developments forecast generated vehicle movements as proposed by DBFL are presented in Appendix B of the TTA report.

14.2.2.4 Traffic Growth

An Opening Year of 2022 was assumed for this assessment. In accordance with TII (NRA) Guidance, Future Design years (+5 and +15 years) of 2027 and 2037 have also been adopted.

The TII Project Appraisal Guidelines (PAG) have been utilised to determine the traffic growth forecast rates. The traffic growth forecast rates within the PAG ensures local and regional variations and demographic patterns are accounted for.

Table 6.2 within the PAG provides Annual National Traffic Growth Factors for the different regions within Ireland. The subject site lies within 'County – Dublin' with the growth factors as outlined within Table 14.3 below.

County	Low Sensitivity Growth				Central Growth				High Sensitivity Growth			
	2016-2030		2030-2040		2016-2030		2030-2040		2016-2030		2030-2040	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0163	1.0303	1.0046	1.0123	1.0180	1.0317	1.0062	1.0139	1.0211	1.0348	1.0100	1.0170

Table 14.3: National Traffic Growth Forecasts: Annual Growth Factors

Applying the annual factors (central growth) as outlined in Table 14.5 above for the adopted Opening Year of 2022 and Future Horizon Year of 2037 (+15 years), the following growth rates have been adopted to establish corresponding 2022, 2027 and 2037 baseline network flows:

- 2020 to 2022 – 1.0363 (or 3.6%);
- 2020 to 2027 – 1.1330 (or 13.3%); and
- 2020 to 2037 – 1.2482 (or 24.8%)

14.2.2.5 Assessment Scenarios

In summary the following scenarios are considered:

Do Nothing
A1 – 2022 Base Flows + Committed Development
A2 – 2027 Base Flows + Committed Development
A3 – 2037 Base Flows + Committed Development

Do Something
B1 – 2022 Do Nothing (A1) + Proposed Development Flows (100 Units Complete)
B2 – 2027 Do Nothing (A2) + Proposed Development Flows (Fully Complete)
B3 – 2037 Do Nothing (A2) + Proposed Development Flows (Fully Complete)

14.2.2.6 Impact of Proposals

The Institution of Highways and Transportation document 'Guidelines for Traffic Impact Assessments' (1994) states that the impact of a proposed development upon the local road network is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated a more detailed assessment should be undertaken to ascertain the specific impact upon the network's operational performance. These same thresholds are reproduced in the NRA document entitled Traffic and Transport Assessment Guidelines (2014).

Figure 14.17 below details the total amount of two-way vehicle trips that will pass through the key off-site junctions in the 2037 Future Design Year and the resulting percentage increase in traffic flows as a result of the traffic generated by the proposed development.

Figure 14.17: Increase in Vehicle Trips Generated Through Key Of-Site Junctions (2037)

For the key junctions surveyed, it can be seen that the proposed development (359 units) in 2027 & 2037 would result in the following percentage impacts:

Junction No.	Junction	Design Year	Percentage Impact	
			AM Peak Hour	PM Peak Hour
1	Stocking Avenue / Stocking Well Row / Stocking Wood Roundabout	2022	1.1%	1.3%
		2027	1.4%	1.6%
		2037	1.3%	1.5%
2	Stocking Avenue / White Pines Way / White Pines Crescent Roundabout	2022	3.1%	3.3%
		2027	3.8%	4.0%
		2037	3.5%	3.7%
3	Stocking Avenue / Stocking Lane Roundabout	2022	1.8%	1.8%
		2027	2.2%	2.2%
		2037	2.0%	2.1%

Table 14.4: Proposed Developments Network Impact

The resulting percentage increase in traffic flows as a result of the traffic generated by the proposed development is established as being below the 10% threshold at all off-site junctions in both the AM and PM peak periods. Nevertheless, to ensure a robust assessment of the proposed development, an assessment was undertaken for Junction 2 and the new site access junction (Junction 3).

14.2.2.7 Network Analysis

Junction 2: Stocking Avenue / White Pines Way / White Pines Crescent Roundabout

The four arm roundabout was analysed for all of the modelling scenarios using the Junctions 9 ARCADY software package. The results of the operational assessment of this junction during the weekday morning and evening peaks are summarised in Table 14.5. The four arms of the roundabout junction, were labelled as follows within the ARCADY model:

- Arm A: Stocking Avenue (E)
- Arm B: White Pines Crescent
- Arm C: Stocking Avenue (W)
- Arm D: White Pines Way

The ARCADY results reveal that the roundabout junction operates within capacity for all design year scenarios, with all RFC values being significantly less than the RFC optimum operational capacity of 0.85 (85%).

Year Scenario	Period	Arm	Description	RFC	Mean Max Queue (pcu)	Delay (s)
2022 DN	AM Peak	A	Stocking Avenue (E)	0.19	0.3	4.11
		B	White Pines Crescent	0.06	0.1	3.74
		C	Stocking Avenue (W)	0.39	0.7	4.95
		D	White Pines Way	0.09	0.1	4.89
	PM Peak	A	Stocking Avenue (E)	0.47	1.0	6.14
		B	White Pines Crescent	0.06	0.1	4.44
		C	Stocking Avenue (W)	0.19	0.3	3.77
		D	White Pines Way	0.02	0.0	3.85
2027 DN	AM Peak	A	Stocking Avenue (E)	0.22	0.3	4.29
		B	White Pines Crescent	0.06	0.1	3.83
		C	Stocking Avenue (W)	0.42	0.8	5.29
		D	White Pines Way	0.11	0.1	5.15
	PM Peak	A	Stocking Avenue (E)	0.53	1.2	6.83
		B	White Pines Crescent	0.07	0.1	4.64
		C	Stocking Avenue (W)	0.22	0.3	3.93
		D	White Pines Way	0.02	0.0	3.94
2037 DN	AM Peak	A	Stocking Avenue (E)	0.24	0.4	4.41
		B	White Pines Crescent	0.06	0.1	3.89
		C	Stocking Avenue (W)	0.46	0.9	5.67
		D	White Pines Way	0.12	0.2	5.40
	PM Peak	A	Stocking Avenue (E)	0.57	1.5	7.56
		B	White Pines Crescent	0.07	0.1	4.82
		C	Stocking Avenue (W)	0.24	0.3	4.03
		D	White Pines Way	0.03	0.0	4.00

Table 14.5: Do Nothing ARCADY Analysis Results

The ARCADY results reveal that with the addition of the proposed development traffic (Do-Something Scenario) the roundabout junction continues to operate within capacity for all design year scenarios. Table 14.6 below presents the ARCADY results for the Do Something scenarios.

Junction 3: Site Access/Stocking Avenue Junction

The proposed three arm priority site access junction with Stocking Avenue was analysed for all future scenarios using the Junctions 9 PICADY software package. The results of the operational assessment of the junction during the weekday morning and evening peak periods are summarised in Table 14.7. The three arms of the priority controlled junction were labelled as follows:

- Arm A: Stocking Avenue (W)
- Arm B: Site Access
- Arm C: Stocking Avenue (E)

The PICADY results reveal that the site access junction operates within capacity for all design year scenarios, with all RFC values being significantly less than the RFC optimum operational capacity of 0.85 (85%).

Year Scenario	Period	Arm	Description	RFC	Mean Max Queue (pcu)	Delay (s)
2022 DS	AM Peak	A	Stocking Avenue (E)	0.19	0.3	4.12
		B	White Pines Crescent	0.08	0.1	3.83
		C	Stocking Avenue (W)	0.39	0.7	5.04
		D	White Pines Way	0.09	0.1	4.96
	PM Peak	A	Stocking Avenue (E)	0.49	1.0	6.33
		B	White Pines Crescent	0.07	0.1	4.48
		C	Stocking Avenue (W)	0.20	0.3	3.80
		D	White Pines Way	0.02	0.0	3.87
2027 DS	AM Peak	A	Stocking Avenue (E)	0.23	0.3	4.30
		B	White Pines Crescent	0.09	0.1	3.96
		C	Stocking Avenue (W)	0.43	0.8	5.41
		D	White Pines Way	0.11	0.1	5.24
	PM Peak	A	Stocking Avenue (E)	0.55	1.3	7.17
		B	White Pines Crescent	0.08	0.1	4.70
		C	Stocking Avenue (W)	0.23	0.3	3.97
		D	White Pines Way	0.02	0.0	3.97
2037 DS	AM Peak	A	Stocking Avenue (E)	0.25	0.4	4.43
		B	White Pines Crescent	0.09	0.1	4.02
		C	Stocking Avenue (W)	0.47	1.0	5.81
		D	White Pines Way	0.12	0.2	5.50
	PM Peak	A	Stocking Avenue (E)	0.59	1.6	7.97
		B	White Pines Crescent	0.08	0.1	4.88
		C	Stocking Avenue (W)	0.25	0.4	4.08
		D	White Pines Way	0.03	0.0	4.02

Table 14.6: Do Something ARCADY Analysis Results

14.3 Mitigation and Monitoring Measures

14.3.1 Construction Stage

14.3.1.1 Mitigation

The trip generation of HGV'S during the construction period will be managed and arranged to ensure movements are evenly spread throughout the day and as such will not impact significantly during the peak traffic periods. Nevertheless, mitigations measures outlined for the Construction Stage include the provision of a Construction Management Plan with an associated Construction Traffic Management Plan (CTMP). The CTMP will incorporate a range of integrated control measures and associated management activities with the objective of minimising the construction activities associated with the development. The CTMP will be agreed with the Local Authority and which will include the following initiatives to avoid, minimize and/or mitigate against the anticipated construction period impacts:

- Prescribed and agreed working hours;
- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and adjacent roads;
- Dedicated construction haul routes for incoming materials will be identified and agreed with South Dublin County Council prior to commencement of activities on-site;
- Delivery vehicles to and from the site will be spread across the working day to ensure the number of HGVs travelling during the peak hours will be relatively low;
- Where possible construction team members will be brought to/from site in vans/minibuses, which will serve to reduce trip generation potential;

- Appropriate on-site parking arrangements for construction personnel to prevent overspill parking on the local road network;
- 'Way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas;
- Site entrance point/s from the public highway will be constructed with a bound, durable surface capable of withstanding heavy loads and with a sealed joint between the access and public highway. This durable bound surface will be constructed for a distance of 10m from the public highway;
- Truck wheel wash facilities will be installed at construction entrances and any specific recommendations with regards to construction traffic management made by South Dublin County Council will be adhered to;
- Road cleaning and sweeping measures to be put in place if required;
- Potential localised traffic disruptions during the construction phase will be mitigated through the implementation of industry standard traffic management measures. These traffic management measures shall be designed, implemented and maintained in accordance with the Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks" and "Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition" (2010);
- Material storage zone will be established in the compound area and will include material recycling areas and facilities; and
- On completion of the works, all construction materials, debris, temporary hardstands etc. from the site compound will be removed off-site and the site compound area reinstated in full on completion of the works.

14.3.1.2 Monitoring

While it has been demonstrated that the proposed development has negligible impact on the operation of the local network, it is nevertheless recommended that the local area should be monitored in terms of transportation efficiencies into the future.

14.3.2 Operational Stage

14.3.2.1 Mitigation

In order to promote and maximise sustainable transportation modes, cycle parking has been provided at a rate which exceeds South Dublin County Development Plan (2016-2022) minimum standards which may act as a facilitator for the growth of Cycle trips undertaken for short to medium distance trips to/from the site, whilst apartment vehicle parking spaces have been provided at a rate slightly below the Department of Housing, Planning and Local Government's Sustainable Urban Housing: Design Standards for New Apartments Guidelines (0.81/unit), which is lower than those outlined in the South Dublin County Development Plan 2016-22.

The increase in cycle parking provisions, and simultaneous reduction in vehicle parking provisions for apartment units aim to increase the number of cycle trips taken and therefore encourage a modal split shift towards cycling for short to medium distance trips. Furthermore, the proposed pedestrian access points and pedestrian linkages to/from the subject site will also encourage and support the uptake walking trips for short to medium distance trips.

14.3.2.2 Monitoring

While it has been demonstrated that the proposed development has negligible impact on the operation of the local network, it is nevertheless recommended that the local area should be monitored in terms of transportation efficiencies into the future.

14.4 Residual Impacts

14.4.1 Construction Stage

Provided the above mitigation measures and management procedures are incorporated during the construction phase, the residual impact on the local receiving environment will be temporary in nature and neutral in terms of quality and effect.

14.5 Difficulties Encountered

There were no material difficulties encountered in compiling and assessing the data for this EIAR sufficient to prevent modelling of the likely transport effects of the proposed development. The analysis reported within this chapter is based upon the traffic survey data specifically commissioned for this appraisal and undertaken in 2020.

15.0 MATERIAL ASSETS – SITE SERVICES

15.1 Introduction

This chapter of the EIAR comprises of an assessment of the likely impact of the proposed development on existing utility services in the vicinity of the site as well as identifying proposed mitigation measures to minimize any impacts.

The material assets considered in this chapter of the EIAR include ESB, Gas and Telecommunications. Note that Surface Water Drainage, Foul Drainage and Water Supply are addressed in Chapter 10.0 (Water & Hydrology).

15.2 Potential Impact of the Proposed Development

15.2.1 Construction Phase

There is potential interruption to ESB's network, Gas Networks Ireland's infrastructure and Eir's infrastructure while carrying out road works along the Scholarstown Road (e.g. during formation of site access junction) and while carrying out works to provide service connections to the proposed development.

15.2.2 Operational Phase

On completion of the construction phase, there will be no further impact on electrical, gas or telecommunications supplies.

15.2.3 'Do Noting Scenario'

There are no predicted impacts should the proposed development not proceed.

15.3 Ameliorative, Remedial or Reductive Measures

Noted below are remedial measures associated with the construction and operationl phase of the proposed development

15.3.1 Construction Phase

- Contractor to prepare Method Statement detailing proposals for works in the vicinity of existing utilities (method statement to be agreed with PSDP).
- Contractor to locate and record all services on site prior to commencement of excavations.
- Connections to the existing power, gas and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors.
- Contractor to comply with HSA Code of Practice for Avoiding Danger from Underground Services.
- Contractor to obtain utility company network plans and arrange observation as required.
- Contractor/PSCS to implement safe systems of construction including but not limited to battering the sides of trench excavations and installation of trench shoring systems.

- Contractor to prepare and implement a Construction Traffic Management Plan that will be agreed with the Design Team and local authority and which will ensure the safety of the public during construction.
- Contractor must supervise vehicle movements to and from the site during construction in order to ensure that this traffic management plan is fully implemented. Plan to include deliveries to the site, staff parking, works outside the defined site such as utility connections.
- Public pedestrian routes to be established at site entrance as required.
- Contractor to prepare Method Statement for works in confined spaces, method statement to be agreed with PSDP. Contractor to comply with HAS Code of Practice for Working in Confined Spaces.
- All personnel using machinery/plant to have undergone training on the use of said machinery/plant. Ongoing site supervision to be undertaken to ensure all use of machinery/plant is in accordance with the training undertaken.

15.3.2 Operational Phase

No mitigation measures are proposed for the operational phase of this development.

15.3.3 'Do Nothing Scenario'

No mitigation measures are proposed in relation the site services described in this chapter if the development does not proceed.

15.4 Predicted Impact of the Proposed Development

15.4.1 Construction Phase

Implementation of measures outlined in Section 15.5.1 will ensure that the potential impacts of the proposed development on site services do not occur during the construction phase and that any residual impacts will be short term.

15.4.2 Operational Phase

Demand from the proposed development during the operational phase is not predicted to impact on the existing power, gas and telecoms network.

15.4.3 'Do Nothing' Scenario

There are no predicted impacts should the proposed development not proceed.

15.5 Monitoring

Construction Phase

No specific monitoring is proposed in relation to electrical, gas and telecommunications infrastructure.

Operational Phase

No specific monitoring is proposed in relation to electrical, gas and telecommunications infrastructure.

15.6 Reinstatement

Reinstatement of any excavations, trenches etc. relating to the provision of electrical, gas and telecommunications connections is to be carried out in accordance with the relevant utility provider's requirements.

16.0 INTERACTIONS AND CUMULATIVE IMPACTS

16.1 Introduction

This section of the EIAR has been prepared by Tom Phillips + Associates and deals with likely interactions between effects predicted as a result of the proposed development.

In addition to the requirement under the Planning and Development Regulations, 2001 – 2019, to describe the likely significant effects of the proposed development on particular aspects of the environment, it is also required to consider the interaction of those effects. As such, these are assessed below.

This Chapter of the EIAR will address the intra-project significant effects (i.e. those occurring between environmental topics within the project). Inter-project effects (i.e. those which are likely to occur as result of the likely impacts of the proposed development interacting with the impacts of other projects in the locality) have also been considered.

We have established a range of planned / permitted projects have the potential to interact to with either the construction or operational phases of the development. These are identified in Table 3.1 of this EIAR.

As noted in previous sections of this EIAR, Ardstone Homes are in the process of preparing an additional SHD planning application on a site north of White Pines Central, known as White Pines East. The cumulative impacts of the development of both sites in tandem has also been considered in the assessments below.

Further detail relevant to the interaction of impacts may also be found in the earlier chapters of the EIAR.

16.2 Inter-Relationships/ Interactions

It is noted that all aspects of the environment are likely to interact to some extent and to various degrees of complexity. The likely significant interactions between factors arising from the proposed development are set out in the matrix provided as Table 16.1 below.

2.1.1.1.1.1.1.1.1

Matrix of Interactions Between Environmental Factors											
	Archaeology, & Cultural Heritage	Population & Human Health	Biodiversity	Land and Soils	Water & Hydrology	Air Quality/ Climate	Noise & Vibration	Townscape & Visual	Traffic	Waste	Site Services
Archaeology & Cultural Heritage				✓							
Population & Human Health						✓	✓	✓	✓	✓	
Biodiversity				✓	✓	✓	✓	✓		✓	
Land and Soils					✓	✓	✓		✓	✓	
Water & Hydrology											
Air Quality/ Climate									✓		
Noise & Vibration									✓		
Townscape & Visual											
Traffic										✓	
Waste											
Site Services											

Table 16.1: Matrix of Interactions

17.0 MITIGATION MEASURES

The chapters contained within this EIAR have been ordered in a grouped format by their relevant topic. This chapter summarises all mitigation measures proposed in order to provide a comprehensive overview of the full range of mitigation measures discussed within each chapter.

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".*

The chapter provides a detailed assessment of the mitigation measures as follows;

- Archaeology, Architectural & Cultural Heritage
- Population and Human Health
- Biodiversity
- Land and Soils
- Landscape and Visual Impact
- Hydrology
- Air and Climate
- Noise and Vibration
- Traffic and Transportation
- Site Services

18.0 DIFFICULTIES ENCOUNTERED

No significant difficulties, in terms of technical deficiencies or lack of sources of information, were encountered in compiling the specified information contained in the Statement.

Baseline surveys we're undertaken in advance of the Covid-19 restrictions, which were introduced in Ireland on 12th of March and remained in place at the time of submitting this application. As such, the Covid-19 restrictions did not have any substantial impact of the preparation of this EIAR,

References to published sources of information are acknowledged in the text. In addition, studies commissioned specifically for the purposes of this Environmental Impact Assessment Report are also referenced. A list of all consultants involved in the compilation of information for this EIAR is provided in Chapter 1.

As the proposed development will not require the use of natural resources that are in short supply, nor will the development result in the emission of pollutants that will create nuisance or hazard, the matters referred to in Schedule 6(2)(c) of the *Planning and Development Regulations, 2001* (as amended) do not apply.

The full impact analysis was carried out by experienced consultants and the best available methods were employed to forecast environmental effects.